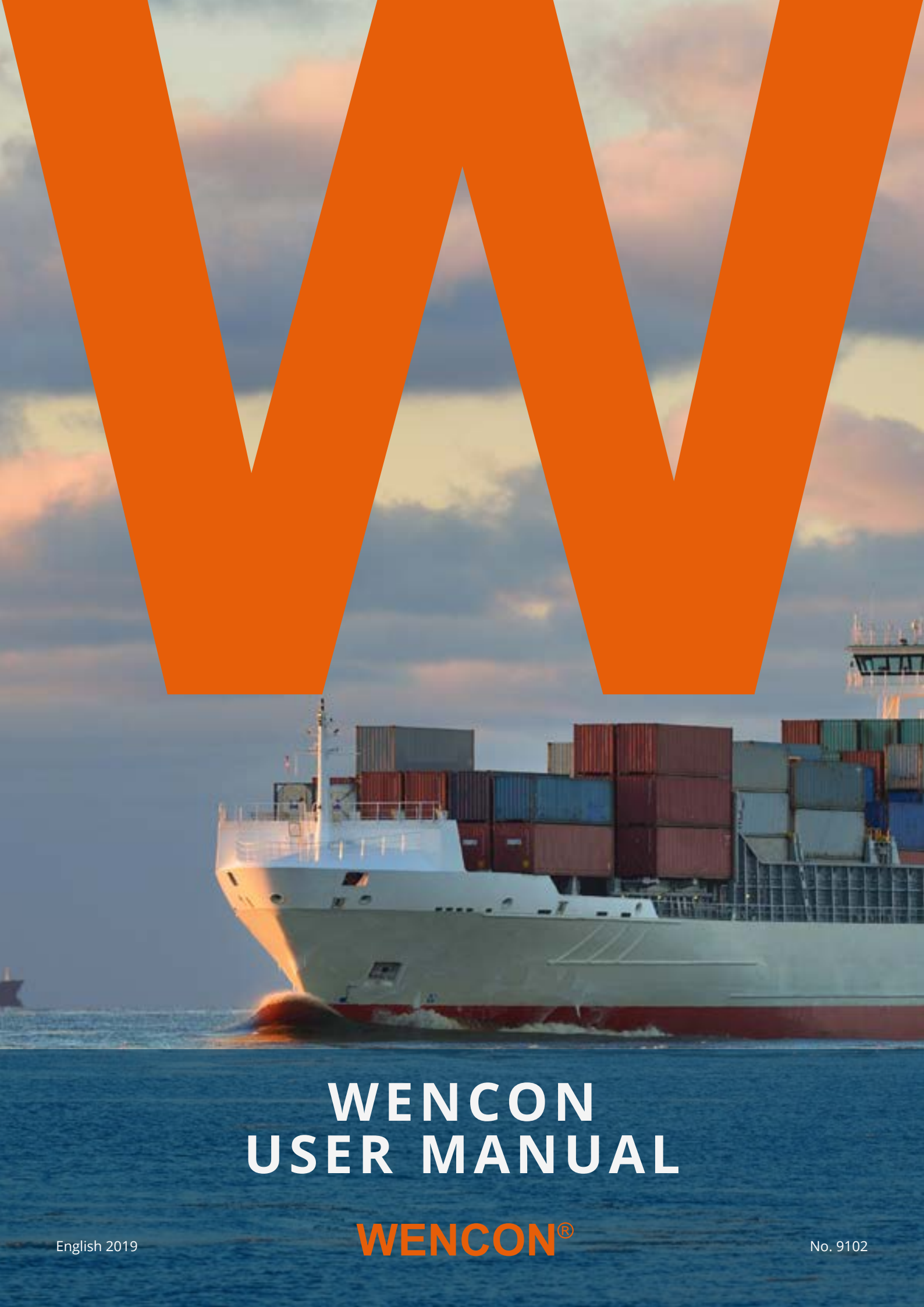

WENCON USER MANUAL

English 2019

WENCON®

No. 9102

About Wencon

Wencon is a worldwide operating company specialised in solutions for rebuilding, protection and life extension of metal exposed to corrosion, galvanic corrosion, cavitation, wear or breakage. The Wencon repair concept is widely used in the marine and the offshore industry.

Our goal is to help you to perform your repair tasks quickly and effectively and thereby reduce downtime. With our global network of Partners, we are dedicated to support you and ready to deliver to you within very short notice.

Thousands of ships around the world carry Wencon products and manuals on board, ready for immediate use in case of leaks and malfunctions caused by corrosion or abrasion in vital machine parts on ships and off-shore installations.

To find a workshop or service partner near you,
we invite you to visit us on www.wencon.com

Emergency and temporary repairs

On-site repairs and maintenance

Solutions done by workshop or shipyards

WENCON®

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Wencon Cream

The basic multipurpose epoxy compound for repair and rebuilding of deteriorated metal parts.

- Wide range of applications
- Strong adhesion to all metal surfaces
- Low curing temperature
- Simple mixing and application
- Fully machinable

General information

Wencon Cream is a basic two-component, epoxy compound suitable for a wide range of applications. The compound is for repair and rebuilding of worn, damaged, cracked and corroded metal parts. Wencon Cream is also excellent as a filling compound.

Wencon Cream exhibits many of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces makes the repair compound highly suitable for repair of corroded and worn metals.

Wencon Cream is non conducting and will therefore not cause bi-metallic corrosion. After curing the compound is resistant to oil, water, saltwater and most diluted acids and a range of solvents. Heat resistance ranges from 60° C (140° F) in corrosive and heavy load environments and up to 250° C (482°F) when applied as a filling compound.

Application areas

Typical applications are corroded tanks, pump housings, impellers, valves, pipes, flange faces, roller bearing seats, worn shafts, hydraulic rams and heat exchangers. Wencon Cream is also excellent as a filling compound.

Mixing

Wencon products are designed to be simple to use and cost effective. Easy mixing ratios (1:1 by volume) reduce waste to a minimum and high specific volume gives high coverage rates.

Product numbers:		IMPA no.	ISSA no.
No. 1010	Wencon Cream, 1 kg (2,2 lb) unit	812335	75.553.20

WENCON®

GENERAL DESCRIPTION

Two-component solvent free paste consistency epoxy repair compound.

SURFACE PREPARATION

The surface must always be dry, clean and degreased

Applying to new steel surface:

- shot blasting to SA 2,5
- if shot blasting is not possible use grinding
- after grinding the surface must be degreased with Wencon Bio Cleaner

Repairing old steel surface:

- shot blasting to SA 2,5
- sweat out water and salts
- shot blasting to SA 2,5 again
- profile 75 microns

MIXING RATIO

Mix by volume 1:1. Mix until an even colour is obtained.

POT LIFE

Depending on amount mixed and temperature. Mixed in small amounts, the pot life is approximately 30-60 minutes at 20°C (68°F)

APPLYING

Wencon Cream has a paste consistency and is applied by spatula, also on vertical surfaces.

CURING TIME

Curing will take place in 10-15 hours at 20°C (68°F)

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

TECHNICAL DATA

Hardness Shore D: 75 **(DIN 53505)**

Tensile strength: 14,3 N/mm2 - 2035 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 1689 N/mm2 - 240,000 p.s.i. **(DIN 53454)**

Rcrack: 58 N/mm2 - 8,500 p.s.i. **(DIN 53454)**

Shear adhesion: 14,40 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 3,0 N/mm2 - **(ISO 4624)**

SPECIFIC VOLUME

775 ccm per kilogramme (49,5 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion: 60°C (140° F)

Light load: 120°C (248°F)

As filler: 250°C (482°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon Rapid

The fast curing multipurpose epoxy compound for repair and rebuilding of deteriorated metal parts.

- Wide range of applications
- Fast curing – reduced down time
- Strong adhesion to all metal surfaces
- Simple mixing and application
- Convenient unit sizes

General information

Wencon Rapid is a fast curing, two-component, epoxy compound suitable for a wide range of applications within emergency repairs and maintenance.

Wencon Rapid exhibits many of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces makes the repair compound highly suitable for repair of corroded and worn metals.

Wencon Rapid is non conducting and will therefore not cause bi-metallic corrosion. After curing the compound is resistant to oil, water, saltwater and most diluted acids and a range of solvents. Heat resistance ranges from 60° C (140°F) in corrosive and heavy load environments and up to 250° C (482°F) when applied as a filling compound.

Application areas

Wencon Rapid is very suitable for applications where thicker layers of material are required, as the compound quickly sets and becomes solid. Typical applications are corroded tanks, pump housings and impellers, valves, tubes, pipes, heat exchangers, flange faces, seats, worn shafts, hydraulic rams and all emergency repairs, where a short curing time is required. The compound can also be used as a filling compound.

Mixing

Wencon products are designed to be simple to use and cost effective. Easy mixing ratio (1:1 by volume) reduces waste to a minimum and high specific volume gives high coverage rates.

Product numbers:		IMPA no.	ISSA no.
No. 1000	Wencon Rapid, 1 kg (2,2 lb) unit	812347	75.553.21
No. 1005	Wencon Rapid 8, 8x125g (8x0,28 lb) unit	812343	75.553.22

WENCON®

GENERAL DESCRIPTION

Fast curing two-component solvent free paste consistency epoxy repair compound.

SURFACE PREPARATION

The surface must always be dry, clean and degreased

Applying to new steel surface:

- shot blasting to SA 2,5
- if shot blasting is not possible use grinding
- after grinding the surface must be degreased with Wencon Bio Cleaner

Repairing old steel surface:

- shot blasting to SA 2,5
- sweat out water and salts
- shot blasting to SA 2,5 again
- profile 75 microns

MIXING RATIO

Mix by volume 1:1. Mix until an even colour is obtained.

POT LIFE

Depending on amount mixed and temperature. Mixed in small amounts, the pot life is approximately 10-20 minutes at 20°C (68°F)

APPLYING

Wencon Rapid has a paste consistency and is applied by spatula, also on vertical surfaces.

CURING TIME

Curing will take place in 40-90 minutes at 20°C (68°F)

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

TECHNICAL DATA

Hardness Shore D: 81 **(DIN 53505)**

Tensile strength: 9,2 N/mm2 - 1310 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 2891 N/mm2 - 411,000 p.s.i. **(DIN 53454)**

Rcrack: 112 N/mm2 - 16,000 p.s.i. **(DIN 53454)**

Shear adhesion: 20 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 2,0 N/mm2 - **(ISO 4624)**

SPECIFIC VOLUME

709 ccm per kilogramme (45,3 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion: 60°C (140° F)

Light load: 120°C (248°F)

As filler: 250°C (482°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon Coating

The versatile and cost effective coating product for general repair, maintenance and protection jobs.

- Strong adhesion to all metal surfaces
- Efficient double coat system
- Easy mixing and application
- High coverage rate
- Fully machinable

General information

Wencon Coating is a two-component, liquid epoxy coating suitable for a wide range of applications. It provides a smooth non porous surface, which is resistant to bi-metallic corrosion, light chemical aggression, corrosion and erosion as well as impingement.

Wencon Coating offers resistance to oil, water, saltwater and most diluted acids and alkalis as well as a range of solvents. Heat resistance ranges from 60° C (140°F) in corrosive and heavy load environments and up to 250° C (482°F) when applied as a filling compound.

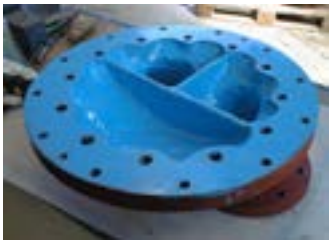
Wencon Coating is a double coat system and is consequently supplied in two different colours, white and blue.

Application areas

Wencon Coating is used for a variety of small and large repair and maintenance jobs. Typical applications are coating of surfaces rebuild after deterioration. Wencon Coating is used for coating of new parts, or protection of pumps, valves, wet liners, cooler end covers or other surfaces, against corrosion and bi-metallic corrosion.

Mixing

The Wencon products are designed to be simple to use and cost effective. Easy mixing ratio (1:2 by volume) reduce waste to a minimum and high specific volume gives high coverage rates.



Product numbers:		IMPA no.	ISSA no.
No. 1020	Wencon Coating, white 0,5 kg (1,1 lb) unit	812337	75.553.10
No. 1030	Wencon Coating, blue 0,5 kg (1,1 lb) unit	812338	75.553.11

WENCON®

GENERAL DESCRIPTION

Two-component solvent free liquid epoxy coating for protection against bi-metallic corrosion, galvanic corrosion and erosion.

SURFACE PREPARATION

The surface must always be dry, clean and degreased

Applying to new steel surface:

- shot blasing to SA 2,5

- profile 75 microns

Repairing old steel surface:

- shot blasting to SA 2,5

- sweat out water and salts

- profile 75 microns

MIXING RATIO

Mix by volume 1:2. Mix until an even colour is obtained.

POT LIFE

Depending on amount mixed and temperature. Mixed in small amounts, the pot life is approximately 20-30 minutes at 20°C (68°F)

APPLYING

Wencon Coating is liquid and is applied by brush, roller or spatula.

OVERCOATING

Wencon Coating is a double coat system. The overcoating time can vary from one to three hours depending on temperature. The second coat must be applied whilst the first coat is still tacky. If full curing has occurred a light sandblasting or grinding is necessary prior to the second coat

CURING TIME

Curing will take place in 10-15 hours at 20°C (68°F)

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

COVERAGE RATE

Theoretical: 0,80 kg per m^2 (0,16 lb/sq. ft.) at 600 microns

Practical: 1,0 kg per m^2 (0,20 lb/sq. ft.)

TECHNICAL DATA

Hardness Shore D: 80 (DIN 53505)

Tensile strength: 12,9 N/mm2 - 1835 p.s.i. (DIN 53454)

Compressive strength:

Modulus of elasticity: 2199 N/mm2 - 314,000 p.s.i. (DIN 53454)

Rcrack: 95 N/mm2 - 13,500 p.s.i. (DIN 53454)

Shear adhesion: 16,20 N/mm2 - (ASTM D1002)

Adhesion to steel: 6,0 N/mm2 - (ISO 4624)

SPECIFIC VOLUME

730 ccm per kilogramme (46,7 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion: 60°C (140° F)

Light load: 120°C (248°F)

As filler: 250°C (482°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

QUALITY TEST

Poretest and test of layer thickness can be tested with normal electronic instrument like high voltage and high frequence.

Wencon Hi-Temp

The high performance coating product for repair and protection in high temperature and aggressive environments.

- High temperature resistance
- Good chemical resistance
- Excellent mechanical wear properties
- Strong adhesion to all metal surfaces
- Fully machinable

General information

Wencon Hi-Temp is a high performance two-component, liquid epoxy coating developed for applications in high load areas. It provides a smooth non porous surface, which is resistant to high temperatures, light chemical aggression and wear as well as bimetallic corrosion.

Wencon Hi-Temp offers resistance to oil, water, saltwater and wide range of acids and alkalis as well as a range of solvents. Heat resistance ranges from 160° C (320°F) in corrosive and heavy load environments and up to 300° C (570°F) when applied as a filling compound.

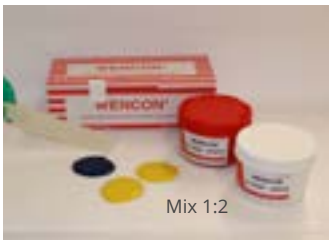
Wencon Hi-Temp is a double coat system and is consequently supplied in two different colours, yellow and green.

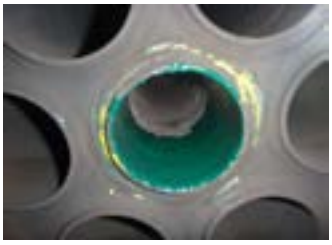
Application areas

Wencon Hi-Temp is ideal for protection of tanks, pumps and valves against chemical and mechanical aggression, corrosion and bi-metallic corrosion. Typical applications are coating of surfaces rebuild with Wencon Cream, including repair of lining on inert gas systems, fresh water generators, hot pipes and heating coils.

Mixing

The Wencon products are designed to be simple to use and cost effective. Easy mixing ratio (1:2 by volume) reduce waste to a minimum and high specific volume gives high coverage rates.





Product numbers:		IMPA no.	ISSA no.
No. 1050	Wencon Hi-Temp, yellow, 0,5 kg (1,1 lb) unit	812345	75.553.12
No. 1060	Wencon Hi-Temp, green, 0,5 kg unit (1,1 lb)	812346	75.553.13

WENCON®

GENERAL DESCRIPTION

Two-component solvent free liquid epoxy coating for protection against wear, bi-metallic corrosion and chemical aggression at high load areas and temperatures.

SURFACE PREPARATION

The surface must always be dry, clean and degreased

Applying to new steel surface:

- shot blasing to SA 2,5
- profile 75 microns

Repairing old steel surface:

- shot blasting to SA 2,5
- sweat out water and salts
- profile 75 microns

MIXING RATIO

Mix by volume 1:2. Mix until an even colour is obtained.

POT LIFE

Depending on amount mixed and temperature. Mixed in small amounts, the pot life is approximately 20-40 minutes at 20°C (68°F)

APPLYING

Wencon Hi-Temp is liquid and is applied by brush, roller or spatula.

OVERCOATING

Wencon Hi-Temp is a double coat system. The overcoating time can vary from one to three hours depending on temperature. The second coat must be applied whilst the first coat is still tacky. If full curing has occurred a light sandblasting or grinding is necessary prior to the second coat

CURING TIME

Curing will take place in 10-24 hours at 20°C (68°F)

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

COVERAGE RATE

Theoretical: 0,86 kg per m^2 (0,17 lb/sq. ft.) at 600 microns

Practical: 1,0 kg per m^2 (0,20 lb/sq. ft.)

TECHNICAL DATA

Hardness Shore D: 82 (DIN 53505)

Tensile strength: 13,8 N/mm2 - 1960 p.s.i. (DIN 53454)

Compressive strength:

Modulus of elasticity: 4284 N/mm2 - 610,000 p.s.i. (DIN 53454)

Rcrack: 96 N/mm2 - 14,000 p.s.i. (DIN 53454)

Shear adhesion: 22,40 N/mm2 - (ASTM D1002)

Adhesion to steel: 3,4 N/mm2 - (ISO 4624)

SPECIFIC VOLUME

680 ccm per kilogramme (43,5 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion: 160°C (320°F)

Light load: 220°C (430°F)

As filler: 300°C (570°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

QUALITY TEST

Poretest and test of layer thickness can be tested with normal electronic instrument like high voltage and high frequence.

Wencon Putty

The quick curing, epoxy moldable repair stick for multipurpose use.

- Cures in 10-20 minutes
- Simple apply procedure with cut and knead
- Patches and seals cracks, leakages and holes
- Strong adhesion to all metal surfaces
- Fully machinable

General information
Wencon Putty is a quick curing, two component, epoxy compound supplied in a practical stick format, which is easy to use.

Wencon Putty exhibits many of the characteristics of metals, which together with a good adhesion to all metallic surfaces makes the repair compound highly suitable for repair of corroded and worn metals.

Wencon Putty is non-conductive and will therefore not cause bi-metallic corrosion. After curing the compound is resistant to oil, water, saltwater and most diluted acids and a range of solvents. Heat resistance ranges from 60° C (140°F) in corrosive and heavy load environments and up to 250° (482°F) C when applied as a filling compound.

Application areas
This multipurpose epoxy paste is ideal for wide range of emergency repairs where an ultra quick curing and mouldable compound is required. Typical applications are sealing, filling of cracks, leakages and holes in pipes, flanges, tanks etc.

Applycation
The Base and Activator is co-extruded into a 125g stick. Cut off the required amount of repair compound, knead it until an even colour is obtained and apply to the damaged area.


cut and knead

Product numbers:		IMPA no.	ISSA no.
No. 1040	Wencon Putty, 8x125g (8x0,28 lb) unit	812342	75.553.40
No. 1042	Wencon Putty, 4x125g (4x0,28 lb) unit	812329	N/A

WENCON®

GENERAL DESCRIPTION

Two-component solvent free pasty consistency epoxy repair compound, for applying under water or on wet surfaces.

SURFACE PREPARATION

Before applying, the surface must be clean from loose paint, scales, under water growth, etc. A mechanical cleaning will do, but even better, if possible, hydro jetting.

APPLYING

Mix the product 1:1 on a mixing plate. Then continue in your hands, wearing wet protection gloves. Mix until the product has an even colour without any “stripes” and press/rub the UW Putty hard against the surface, by hand or by using a spatula.

POT LIFE

Depending on amount mixed and the temperature. Mixed in small amounts, the pot life is approximately 25 minutes at 20°C (68°F)

CURING TIME

Curing will take place in 10-18 hours, but only if the temperature allows it to cure. Curing requires a temperature of at least 10˚C (50˚F), but better at 17-23°C (62-73°F) or higher.

If the coating shall be exposed to chemicals, let it cure for 7 days before exposure.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

TECHNICAL DATA

Hardness Shore D: 76 **(DIN 53505)**

Tensile strength: 17,6 N/mm2 - 5094 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 3400 N/mm2 - 375,000 p.s.i. **(DIN 53454)**

Rcrack: 25,3 N/mm2 -19,000 p.s.i. **(DIN 53454)**

Shear adhesion: 15,90 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 6,5 N/mm2 - **(ISO 4624)**

SPECIFIC VOLUME

556 ccm per kilogramme (35,6 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion and heavy load:	60°C (140°F)
Light load or no load:	95°C (199°F)
As filler:	95°C (199°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon Pipe Tape

The fast curing water activated fiberglass pipe wrap, for a fast and effective repair of cracks, leaks and fractures on pipes carrying water, oil, steam, most gases and even solvents.

- Quick and effective to use
- No mixing – No tools
- Water activated
- Ready for use in 10 seconds – Cures in 10 minutes
- Suitable for all pipes and surfaces

General information

Wencon Pipe Tape is a pre-impregnated fibreglass bandage with a knitted non-woven fibreglass structure, that gives the bandage maximum strength and facilitates repairs on corner joints, elbows and other shaped fittings.

The Wencon Pipe Tape is a fast curing pipe repair bandage especially formulated to make quick and effective repairs of cracks, leaks, fractures, and corrosion porosity

Application areas

Typcal applications are repairs in piping carrying water, oil, steam, most gases and even solvents. Wencon Pipe Tape has good pressure, temperature and chemical resistance.

Packaging

Wencon Pipe Tape is available in 3 standard sizes;

- 5cmx150 cm (2x 60 inch.), designed for pipes up to 50 mm (2 inch) diameter
- 5cmx350 cm, (2x140 inch) designed for pipes up to 125 mm (5 inch) diameter
- 10cmx350 cm (4x140 inch) designed for pipes up to 200 mm (8 inch) diameter

The Wencon Pipe Repair Kit contains Wencon Putty, repair bandages, gloves and plastic bags.


Soak in water

Product numbers:		IMPA no.	ISSA no.
No. 1044	Wencon Pipe Tape, 2 units (10cm x350cm) (4x140 inch)	812328	N/A
No. 1045	Wencon Pipe Tape, 5 units (5cm x150cm) (2x60 inch)	812344	75.553.30
No. 1046	Wencon Pipe Tape, 4 units (5cm x350cm) (2x140 inch)	812348	75.553.31
No. 1047	Wencon Pipe Repair Kit, 2 units/ (5cm x150cm) (2x60 inch) + putty (125gr)		
No. 1048	Wencon Pipe Repair Kit, 5 units/ (5cm x150cm) (2x60 inch)+ putty (125gr)		

WENCON®

GENERAL DESCRIPTION

A preimpregnated fibreglass bandage for repair of cracks, leaks, fractures and corrosion porosity.

SURFACE PREPARATION

Prepare the surface by cleaning and abrading the area surrounding the damage.

Degreasing with Wencon Bio Cleaner will improve adhesion.

MXING RATIO

No mixing is required

Wencon Pipe Tape is pre impregnated with polyurethane resin and is water activated.

POT LIFE

3-6 minutes depending on air and water temperature.

APPLYING

ALWAYS WEAR PROTECTIVE GLOVES.

Select the correct size Wencon Pipe Tape.

Prepare the surface by cleaning and grinding the area surrounding the damage.

Stop the leakage with Wencon Putty if necessary.

Unpack the Wencon Pipe Tape and soak it in water for 10 seconds.

Wrap the Wencon Pipe Tape firmly around the pipe with 50% overlap. A minimum of 9 complete windings is recommendable.

Continue to smoothen the surface and to apply pressure to the bandage with a wetted glove, until it stops bobling and starts to cure. This is important for closing the pores.

For larger diameters, use a second bandage to complete the repair. Wencon Pipe Tape requires no tools.

CURING TIME

The bandage hardens in 10 minutes and is fully cured within 1 hour at 20°C (68°F)

MACHINABILITY

No post curing machining necessary

TECHNICAL DATA

Pipe pressure without Wencon Putty: 10 Bar (145 p.s.i.) *)

Pipe pressure with Wencon Putty: 50 Bar (725 p.s.i.) *)

Flexural strength: **ASTM D709** 111 N/mmsq.

Tensile strengt: **ASTM D638** 172 N/mmsq. (15,800 p.s.i.)

Compression strength: **ASTM D695** 180 N/mmsq. (25,600 p.s.i.)

Adhesion at one-inch single overlap: 19 N/mmsq.

Dielectric strength: 16 KV/mm

Shear adhesion: 19 N/mm2 **(ASTM D1002)**

TEMPERATURE RESISTANCE

Continuous: 120°C (248°F)

Peak: 190°C (374°F)

CHEMICAL RESISTANCE

The Pipe Tape is resistant to oil, water, saltwater and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

*) Laboratory tests have shown higher values, but the mentioned values will count for repairs done in situ. Users are advised to make their own tests if any doubt.

Wencon Exhaust Repair kit

The cold weld exhaust repair compound with particularly high temperature resistance.

- Resists temperatures up to 1300° C (2400° F)
- Resists direct flame contact
- Repairs cracks, fills holes and pits
- Quick cure when heated
- One component compound – no mixing, just stir

General information

Wencon Exhaust Repair is a one-component steel cold weld product that can be used to repair cracks and holes in equipment exposed to temperatures up to 1300° C (2400°F).

Wencon Exhaust Repair can be grinded when cured. The compound has good adhesion on all metal surfaces. Wencon Exhaust Repair will not rust or oxidize and is resistant to chemicals.

Application areas

Wencon Exhaust Repair is especially suitable in areas and situations where traditional heat welding cannot be accomplished. Typical applications include engine heads, blocks and manifolds, as well as furnaces and boilers.

Note:
It is important to note, that this product is designed only for external emergency repairs of cracks and leaks.

Packaging

The Wencon Exhaust Repair Kit contains:

- Wencon Exhaust Repair Compound, 2 x 250 g (2 x 0,23 lb)
- Reinforcement metal mesh, 10 x 50 cm (4 x 20 inch)
- Spatula
- Application data sheet

Product numbers:			IMPA no.	ISSA no.
No. 1070	Wencon Exhaust Repair Kit, 2x250g	(2 x 0,23 lb)	812340	75.553.25

WENCON®

GENERAL DESCRIPTION

One component cold weld repair compound with particularly high temperature resistance.

SURFACE PREPARATION

The surface must always be as clean, dry and degreased.

Improved adhesion can be obtained by grinding or shot blasting of the surface prior to application.

MIXING RATIO

No mixing is required. Just stir the content before use.

APPLYING

Apply a suitable amount of Exhaust Repair Compound in and around the leak.

Cut reinforcement wire mesh and fix it to the area of the repair. Hold the mesh in place using steel bands or steel wire.

Apply a second layer of repair compound and leave for initial curing 3-4 hours.

Heat up slowly to 95°C (200°F) for 15 minutes for full cure.

CURING TIME

Wencon Exhaust Repair cures to 95% at room temperature, within three hours of application.

100% cure can be obtained within 24 hours or in 15 minutes when heat is applied.
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MACHINABILITY

After curing the product can be ground.

SPECIFIC VOLUME

330 ccm per kilogramme (20,1 cu inch/kg)

TEMPERATURE RESISTANCE

Up to 1300°C (2400°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon UW Coating for wet surfaces or under water

Excellent liquid coating for applying on wet surfaces or under water, with a very good adhesion.

- Can be applied on wet surfaces or under water
- Cures under water and on wet surfaces
- Efficient double coat system
- Long pot-life under water
- Strong adhesion to all metal surfaces

General information

The Wencon UW Coating is a two-component product, to be applied on wet surfaces or under water. The UW Coating is ideal for repair of ballast- and cooling pipes, in connecton with Wencon reinforcement tape. Developed for repair jobs which, due to high humidity, have to be done in wet conditions.

After curing, Wencon UW Coating will provide a smooth, nonporous coating, which is resistant to bi-metallic corrosion, light chemical attack, corrosion and impingement. Wencon UW Coating contains no solvents.

Wencon UW Coating is a double coat system and is consequently supplied in two different colours, orange and brown.

Application areas

Typical applications are coatings of steel surfaces rebuild with Wencon UW Cream, and coatings under water - like ships hulls and/or other submerged structures, tanks, pipes etc. Examples of repairs under extreme conditions could be: on-site repair of sea-water filter housings etc. unable to achieve a dry surface. The UW Coating is also used for scratched painting on hulls in splash-zones and under water.

Mixing

Wencon UW Coating has to be mixed above water in the mixing ratio 1:2 by volume.

Mix 1:2

Product numbers:		IMPA no.	ISSA no.
No. 1035	Wencon UW Coating, orange, 0,5 kg (1.1 lb) unit	812336	75.553.92
No. 1036	Wencon UW Coating, brown, 0,5 kg (1.1 lb) unit	812327	N/A

WENCON®

GENERAL DESCRIPTION

Two-component solvent free liquid coating, for protection against corrosion and bi-metallic corrosion, erosion as well as impingement. The coating can be applied under water.

SURFACE PREPARATION

When Wencon UW coating is applied on top of Wencon UW Cream, it has to be applied when the layer of UW Cream is still tacky.

When applying to an old steel surface under water, the surface must be cleaned for loose paint, scales, under water growth, etc. A mechanical cleaning will do, if possible, use hydro-jetting for the best result.

MIXING RATIO

Mix by volume 1:2. Mix until an even colour is obtained. The mixing has to take place above water. After mixing, the product can be taken into the water.

POT LIFE

Depending on amount mixed and the temperature. Mixed in small amounts, the pot life is approximately 25-35 minutes at 20°C. (68°F)

APPLYING

Wencon UW Coating is applied using a spatula, brush or roller. If the temperature is low – use a brush with short bristles. If the temperature is high, use brush with long bristles. The initial wetting of the brush/roller has to take place above water

OVERCOATING

Wencon UW Coating is a double coat system. The overcoating time can vary from one to three hours, depending on the temperature. The second layer has to be applied while the first layer is still tacky. The time will vary from 2-6 hours.

CURING TIME

Curing will take place in 10-18 hours, but only if the temperature allows it to cure. Curing requires a temperature of at least 10°C (50°F), but better at 17-23°C (62-73°F) or higher.

If the coating shall be exposed to chemicals, let it cure for 7 days before exposure.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

COVERAGE RATE

Approximately 0,8 sq. m. per kg per coat. (0,4 lb/sq. ft)

TECHNICAL DATA

Hardness Shore D: 79 **(DIN 53505)**

Tensile strength: 37,5 N/mm2 - 5336 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 3117 N/mm2 - 443,000 p.s.i. **(DIN 53454)**

Rcrack: 133 N/mm2 -19,000 p.s.i. **(DIN -53454)**

Shear adhesion: 31,90 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 7,5 N/mm2 - **(ISO 4624)**

SPECIFIC VOLUME

535 ccm per kilogramme (34,2 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion or heavy load:	60°C (140°F)
Light or no load:	100°C (212°F)
As filling compound:	up to 160°C (320°F)

CHEMICAL RESISTANCE

The coating is resistant to oil, water, saltwater and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon UW Cream for wet surfaces or under water

The excellent cream for applying on wet surfaces or under water, with a very good adhesion.

- Can be applied on wet surfaces or under water
- Cures under water and on wet surfaces
- For filling up cavitation damages
- Long pot-life under water
- Strong adhesion to all metal surfaces

General information

Wencon UW Cream is a two-component compound, to be applied on wet surfaces or under water. The UW Cream is excellent for filling up holes, dents and rebuilding of surfaces which, due to high humidity, have to be done in wet conditions.

After curing Wencon UW Cream will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the compound highly suitable for repair of corroded and worn metal.

Wencon UW Cream is non conducting and will therefore not cause bi-metallic corrosion. After curing Wencon UW Cream is resistant to oil, saltwater, water, most diluted acids and a range of solvents.

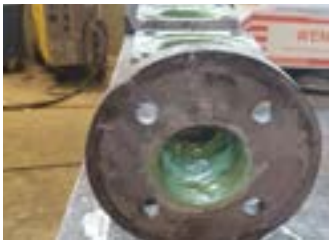
Application areas

Typical applications are corroded hulls and all underwater parts of ships and structures, tanks, pipes, flange faces, etc. Wencon UW Cream is also suitable for filling up cavitation damages on hulls and rudders.

Mixing

Wencon UW Cream has to be mixed above water in the mixing ratio 1:2 by volume.


Mix 1:2



Product numbers:		IMPA no.	ISSA no.
No. 1014 75.553.91	Wencon UW Cream, 0,5 kg (1,1 lb) unit	812334	

WENCON®

GENERAL DESCRIPTION

Two-component solvent free pasty consistency epoxy repair compound, for applying under water or on wet surfaces.

SURFACE PREPARATION

Before applying, the surface must be clean from loose paint, scales, under water growth, etc. A mechanical cleaning will do, but even better, if possible, hydro jetting.

MIXING RATIO

Mix by volume 1:2. Mix until an even colour is obtained. The mixing has to take place above water. After mixing, the product can be taken into the water.

POT LIFE

Depending on amount mixed and the temperature. Mixed in small amounts, the pot life is approximately 25-35 minutes at 20°C (68°F)

APPLYING

Wencon UW Cream is applied using the spatula supplied with the kit.

Work the product well into the surface of the area to be treated, in order to obtain a close contact.

CURING TIME

Curing will take place in 10-18 hours, but only if the temperature allows it to cure. Curing requires a temperature of at least 10˚C (50˚F), but better at 17-23°C (62-73°F) or higher.

If the coating shall be exposed to chemicals, let it cure for 7 days before exposure.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

TECHNICAL DATA

Hardness Shore D: 79 **(DIN 53505)**

Tensile strength: 35,8 N/mm2 - 5094 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 2631 N/mm2 - 375,000 p.s.i. **(DIN 53454)**

Rcrack: 134 N/mm2 -19,000 p.s.i. **(DIN 53454)**

Shear adhesion: 33 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 7,5 N/mm2 - **(ISO 4624)**

SPECIFIC VOLUME

526 ccm per kilogramme (33,6 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion and heavy load:	60°C (140°F)
Light load or no load:	100°C (212°F)
As filler:	160°C (320°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon UW Putty for wet surfaces or under water

The excellent putty for applying on wet surfaces or under water, with a very strong adhesion.

- Can be applied on wet surfaces or under water
- Cures under water and on wet surfaces
- Stop leaking pipes and tanks
- Long pot-life under water
- Strong adhesion to all metal surfaces

General information

Wencon UW Putty is a two-component compound, to be applied on wet surfaces or under water. The UW Putty is excellent for filling up holes, dents and rebuilding of surfaces which, due to high humidity, have to be done in wet conditions. Wencon UW Putty is developed for applications, where bigger quantities is needed in one process.

After curing Wencon UW Putty will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the compound highly suitable for repair of corroded and worn metal.

Wencon UW Putty is non conducting and will therefore not cause bi-metallic corrosion. After curing Wencon UW Putty is resistant to oil, saltwater, water, most diluted acids and a range of solvents.

Application areas

Typical applications are corroded hulls and all underwater parts of vessels and structures, tanks, pipes, flange faces, etc. Wencon UW Putty is also suitable for filling gaps and holes under water or on wet surfaces, before completion with Wencon UW Cream or UW Coating.

Mixing

Wencon UW Putty has to be mixed above water in the mixing ratio 1:1 by volume.

Mix 1:1

Product numbers:		IMPA no.	ISSA no.
No. 1012	Wencon UW Putty, 1 kg (2,2 lb) unit	N/A	N/A

WENCON®

GENERAL DESCRIPTION

Two-component solvent free pasty consistency epoxy repair compound, for applying under water or on wet surfaces.

SURFACE PREPARATION

Before applying, the surface must be clean from loose paint, scales, under water growth, etc. A mechanical cleaning will do, but even better, if possible, hydro jetting.

APPLYING

Mix the product 1:1 on a mixing plate. Then continue in your hands, wearing wet protection gloves. Mix until the product has an even colour without any “stripes” and press/rub the UW Putty hard against the surface, by hand or by using a spatula.

POT LIFE

Depending on amount mixed and the temperature. Mixed in small amounts, the pot life is approximately 25 minutes at 20°C (68°F)

CURING TIME

Curing will take place in 10-18 hours, but only if the temperature allows it to cure. Curing requires a temperature of at least 10˚C (50˚F), but better at 17-23°C (62-73°F) or higher.

If the coating shall be exposed to chemicals, let it cure for 7 days before exposure.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

TECHNICAL DATA

Hardness Shore D: 76 **(DIN 53505)**

Tensile strength: 17,6 N/mm2 - 5094 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 3400 N/mm2 - 375,000 p.s.i. **(DIN 53454)**

Rcrack: 25,3 N/mm2 -19,000 p.s.i. **(DIN 53454)**

Shear adhesion: 15,90 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 6,5 N/mm2 - **(ISO 4624)**

SPECIFIC VOLUME

556 ccm per kilogramme (35,6 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion and heavy load:	60°C (140°F)
Light load or no load:	95°C (199°F)
As filler:	95°C (199°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon Ceramic Cream

The epoxy compound for repair and rebuilding of deteriorated metal parts, exposed to excessive wear.

- High wear resistance
- High temperature resistance
- Strong adhesion to all metal surfaces
- Easy mixing and application
- High abrasion resistance

General information

Wencon Ceramic Cream is a basic two-component, epoxy compound suitable for a wide range of applications. The compound is used for repair and rebuilding of worn, damaged, cracked and corroded metal parts.

Wencon Ceramic Cream exhibits many of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces makes the repair compound highly suitable for repair of corroded and worn metals.

Wencon Ceramic Cream is non conducting and will therefore not cause bi-metallic corrosion. After curing the compound is resistant to oil, water, saltwater and most diluted acids and a range of solvents. Heat resistance ranges from 200° C (392° F) in corrosive and heavy load environments and up to 300° C (572°F) when applied as a filling compound.

Application areas

Wencon Ceramic Cream has a high abrasion resistance, making it suitable for applications on propeller nozzles, rudders, thruster tunnels and housings. In addition, the product also offer high temperature resistance, which makes it ideal for applications on gas scrubbers, condensers and end-covers.

Mixing

Wencon products are designed to be simple to use and cost effective. Easy mixing ratios (1:2 by volume) reduce waste to a minimum and high specific volume gives high coverage rates.

Product numbers:		IMPA no.	ISSA no.
No. 1016	Wencon Ceramic Cream, 1 kg (2,2 lb) unit	812592	N/A

WENCON®

GENERAL DESCRIPTION

Two-component solvent free paste consistency epoxy repair compound for rebuilding of deteriorated metal parts, exposed to excessive wear.

SURFACE PREPARATION

The surface must always be dry, clean and degreased

Applying to new steel surface:

- shot blasting to SA 2,5
- if shot blasting is not possible use grinding
- after grinding the surface must be degreased with Wencon Bio Cleaner

Repairing old steel surface:

- shot blasting to SA 2,5
- sweat out water and salts
- shot blasting to SA 2,5 again
- profile 75 microns

MIXING RATIO

Mix by volume 1:2. Mix until an even colour is obtained.

POT LIFE

Depending on amount mixed and temperature. Mixed in small amounts, the pot life is approximately 30-40 minutes at 20°C (68°F)

APPLYING

Wencon Ceramic Cream has a paste consistency and is applied by spatula.

CURING TIME

Curing will take place in 10-15 hours at 20°C (68°F)

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

TECHNICAL DATA

Hardness Shore D: 80 **(DIN 53505)**

Tensile strength: 25,8 N/mm2 - 3671 p.s.i. **(DIN 53454)**

Compressive strength:

Modulus of elasticity: 2799 N/mm2 - 398.000 p.s.i. **(DIN 53454)**

Rcrack: 65 N/mm2 -9.500 p.s.i. **(DIN 53454)**

Shear adhesion: 30,80 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 6,7 N/mm2 - **(ISO 4624)**

Abrasion Resistance (Taber wear test): 25.6 **(ISO 7784-1)**

SPECIFIC VOLUME

538 ccm per kilogramme (34,4 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion:	200°C (392° F)
Light load:	250°C (482°F)
As filler:	300°C (572°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon Ceramic Coating

The versatile and cost effective coating product for general repair, maintenance and protection of surfaces, exposed to excessive wear.

- High wear resistance
- High temperature resistance
- Strong adhesion to all metal surfaces
- Efficient double coat system
- High coverage rate

General information

Wencon Ceramic Coating is a two-component, liquid epoxy coating suitable for a wide range of applications. It provides a smooth non porous surface, which is resistant to bi-metallic corrosion, light chemical aggression, corrosion and erosion as well as impingement.

Wencon Ceramic Coating offers resistance to oil, water, saltwater and most diluted acids and alkalis as well as a range of solvents. Heat resistance ranges from 220° C (428°F) in corrosive and heavy load environments and up to 320° C (608°F) when applied as a filling compound.

Application areas

Wencon Ceramic Coating has a high abrasion resistance, making it suitable for applications on propeller nozzles, rudders, thruster tunnels and housings. Typical applications are coating of surfaces rebuild after deterioration and protection against wear, corrosion and bi-metallic corrosions. In addition, the product also offer high temperature resistance, which makes it ideal for applications on gas scrubbers, condensers and end-covers.

Wencon Ceramic Coating is a double coat system and is consequently supplied in two different colours, light grey and light green.

Mixing

The Wencon products are designed to be simple to use and cost effective. Easy mixing ratio (1:2 by volume) reduce waste to a minimum and high specific volume gives high coverage rates.

Product numbers:		IMPA no.	ISSA no.
No. 1017	Wencon Ceramic Coating, light grey - 0,5 kg (l,l lb)	812593	N/A
No. 1018	Wencon Ceramic Coating, light green - 0,5 kg (l,l lb)	812594	N/A

WENCON®

GENERAL DESCRIPTION

Two-component solvent free liquid epoxy coating for general repair, maintenance and protection of surfaces exposed to excessive wear.

SURFACE PREPARATION

The surface must always be dry, clean and degreased

Applying to new steel surface:

- shot blasing to SA 2,5

- profile 75 microns

Repairing old steel surface:

- shot blasting to SA 2,5

- sweat out water and salts

- profile 75 microns

MIXING RATIO

Mix by volume 1:2. Mix until an even colour is obtained.

POT LIFE

Depending on amount mixed and temperature. Mixed in small amounts, the pot life is approximately 20-30 minutes at 20°C (68°F)

APPLYING

Wencon Ceramic Coating is liquid and is applied by brush, roller or spatula.

OVERCOATING

Wencon Ceramic Coating is a double coat system. The overcoating time can vary from one to three hours depending on temperature. The second coat must be applied whilst the first coat is still tacky. If full curing has occurred a light sandblasting or grinding is necessary prior to the second coat.

CURING TIME

Curing will take place in 10-15 hours at 20°C (68°F)

MACHINABILITY

After curing, the product can be machined, drilled and worked like metal.

REDUCED CURING TIME WITH INFRARED

This product is tested with and suitable for infrared curing. Curing with infrared radiation can reduce curing time significantly. Result can vary, depending on circumstances and equipment used.

COVERAGE RATE

Theoretical: 0,91 kg per m2 (0,19 lb/sq. ft.) at 600 microns

Practical: 1,2 kg per m2 (0,25 lb/sq. ft.)

TECHNICAL DATA

Hardness Shore D: 81
Tensile strength: 25,4 N/mm2 - 3614 p.s.i. **(DIN 53454)**

Compressive strength

Modulus of elasticity: 3030 N/mm2 - 431,000 p.s.i. **(DIN 53454)**

Rcrack: 124 N/mm2 - 18,000 p.s.i. **(DIN 53454)**

Shear adhesion: 28,90 N/mm2 - **(ASTM D1002)**

Adhesion to steel: 4,5 N/mm2 - **(ISO 4624)**

Abrasion Resistance (Taber wear test): 21.9 **(ISO 7784-1)**

SPECIFIC VOLUME

658 ccm per kilogramme (42 cu inch/kg)

TEMPERATURE RESISTANCE

Corrosion:	220°C (428°F)
Light load:	260°C (500°F)
As filler:	320°C (608°F)

CHEMICAL RESISTANCE

The compound is resistant to oil, water, salt-water and most diluted acids and alkalis as well as a range of solvents.

SHELF LIFE

At 20°C (68°F) : 3 years

HANDLING PRECAUTIONS

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

Wencon Accessories

The complementary range of products and all necessary tools for a successful application.

Wencon Cleaner
Wencon Bio Cleaner
Wencon Release Agent
Wencon Reinforcement Tape
Wencon Aggregate
Wencon Mixed Filler
Wencon Application Tools
Wencon Fixation Tools

Wencon Accessories are high quality products carefully selected and designed to contribute to make your repair application successful. During an emergency repair, or when planning a scheduled repair or maintenance job, it is important to make sure that you have all the necessary components, tools and aids required at hand, before you start.

The application data sheet in the Wencon Repair Manual clearly lists all the products required for the individual application.

The tetrachloroethylene based degreaser (**Wencon Cleaner**) and the water based degreaser (**Wencon Bio Cleaner**) which is an environmentally friendly product, ensuring you the best possible adhesion to the surface.

The greasy cream (**Wencon Release Agent)** which ensures that the compound or coating does not adhere, where it is not suppose to. Sometimes it is necessary to strengthen the repair, by combining the repair compound or coating with a bandage (**Wencon Reinforcement Tape**) or with a wear resistant granulate (**Wencon Aggregate).**

Having the right tools for mixing and applying (**Wencon Application Tools**) will also contribute to a quick and successful repair application.

Wencon Fixation Tools, used for repair of cracks and corrosions in tanks, leaking pittings and welding seams. Helps to support and secure Wencon products to the damaged part.

Product numbers:		IMPA no.	ISSA no.
No. 1100	Wencon Cleaner, 0,5 litre unit	812349	75.553.01
No. 1104	Wencon Bio Cleaner, 0,75 litre unit	812597	N/A
No. 1110	Wencon Release Agent, 50 g unit (0,07 lb)	812350	75.553.60
No. 1120	Wencon Reinforcement Tape 5cm x 10m (400 inch)	812339	75,533,50
No. 1122	Wencon Reinforcement Tape 10cm x 20m (800 inch)	N/A	N/A
No. 1150	Wencon Aggregate No. 24, 1,5 kg unit (3,3 lb)	N/A	N/A
No. 1170	Wencon Mixed Filler	N/A	N/A
No. 2805	Wencon Application Tools	812595	75.553.80
No. 2808	Wencon Fixation Tools	812596	N/A

WENCON®

WENCON CLEANER

General description

Wencon Cleaner is a tetrachloroethylene based degreasing agent, which is used for cleaning purposes prior to application of the Wencon repair compounds and coatings.

Handling precautions
Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Read the Wencon Instruction for Use and the Material Safety Data Sheet.

WENCON BIO CLEANER

General description

Wencon Bio Cleaner is a water based alkaline degreaser, which is used for cleaning purposes prior to application of Wencon products.

Wencon Bio Cleaner is an environmentally friendly product which can be applied on wet or dry surfaces.

WENCON REINFORCEMENT TAPE

General description

Wencon Reinforcement Tape is a flexible fibre tape used for reinforcing repairs made with Wencon compounds and coatings.

Typical applications include pipe repairs, cracks or holes in engine blocks, oil sumps, etc.

WENCON RELEASE AGENT

General description

Wencon Release agent is used in applications where you need to prevent adhesion between the Wencon repair compound, Coating or Putty and the substrate.

WENCON MIXED FILLER

General description

Wencon Mixed Filler is a custommade filler tobe mixed with epoxy products. The Mixed Filler contains 1/3 Silicon Carbide P100, 1/3 Silicon Carbide P280, 1/3 Zirkon Korund 0,2 - 0,4. Weight 850gr.

WENCON AGGREGATE

General description

Wencon Aggregates are silica carbide based fine granulates, which are used for both non-slip surfacing and for wear resistant coating applications.

Wencon Aggregate can be mixed with Wencon compounds and coatings.

WENCON APPLICATION TOOLS

General description

Wencon Application Tools are quality products used in connection with mixing and application of Wencon repair compounds and coatings.

The kit contains:

4 x Spatulas for application of compounds and coatings.

4 x Brushes for application of coatings.

4 x Mixing knives for mixing of Wencon two component.

1 x Pair of scissors for cutting Wencon Reinforcement Tape, Pipe Tape and other soft material.

4 x Pairs of nitrile-gloves.

WENCON FIXATION TOOLS

General description

Wencon Fixation Tools is used for repair of cracks and corrosions in tanks, leaking pittings and welding seams. The Fixation Tools helps to support and secure Wencon products to the damaged part, and can be used in combination with most Wencon products.

The set contain:

2 x Fixation plates 250 mm, flat
2 x Fixation plates 250 mm, angled
4 x Anchor bolts
1 x Metal drill bit, 6,5 mm
4 x M6 Washers, big
4 x M6 Nuts
4 x M6 Wing Nuts
8 x M6 Washers

Rotating Blaster

The Rotating Blaster disc is a product for removal of rust, epoxy, layers of dirt, paint, glue etc.

- Excellent surface preparation
- Needle hammering with electric drill
- Best alternative to blasting
- Easy to use
- Long durability/service life

General information
Rotating Blaster is a rotating disc for removal of rust, dirt, paint, epoxy etc. from various materials, such as steel, iron, metals, stone and concrete.

Rotating Blaster is a rubber disc with 12 steel pins vulcanised inside, with an ax in the middle, for use in a handdrilling machine. The steel pins are made of special hard metal steel pins, mounted with conical shape. The disc is made of 96% natural rubber and is therefore very flexible. When the disc is rotating the pins are moving in different directions and the pins will hammer directly on the surface.

In situations where shotblasting is not possible, the Rotating Blaster is the best way of doing surface preparation, and with a result that is nearly the same. The result is like a sandblasted surface with the appropriate texture suitable for the application of a new protective coating. The hammer effect creates no heat, so tough materials such as tar, adhesives and sealants will be easily removed.

Packaging
The Rotating Blaster discs are available as Single, Duo and Triss discs for handdrilling machines. The Single disc is for use at small surfaces and in corners. Duo and Triss discs are for use at bigger surfaces.

Product numbers:		IMPA no.	ISSA no.
No. 1250	Rotating Blaster Single	-	-
No. 1252	Rotating Blaster Duo	-	-
No. 1254	Rotating Blaster Triss	-	-

WENCON®

GENERAL DESCRIPTION

Rotating Blaster disc for removal of rust, dirt, paint and epoxy from materials, such as; steel, iron, metal, stone anc concrete.

SIZE

Disc Diameter	: 126mm + / - 0.8mm
Disc Thickness	: 6.7mm + / - 0.3mm
Stud Record	: 8 mm

MATERIAL

Rubber	: Natural rubber with binder and 50 Shore A hardness.

Tungsted Carbide/Hard Metal: Hardness 1500HV

USE AND SAFETY

- ALWAYS wear safety goggles, working gloves, dust mask and protective clothing
- Maximum speed 4000 rpm
- Recommended speed between 2500 and 3000 rpm; DIRECTION = clockwise. At a lower rpm the effect will be less, but the disc will then become more flexible and gives the opportunity to reach difficult places like corners. In this situation 1200 rpm is recommended.
- Disc should never be used on: edges, raised surfaces etc.

Product numbers:		**IMPA no.**	**ISSA no.**
No. 1250	Rotating Blaster Single	-	-
No. 1252	Rotating Blaster Duo	-	-
No. 1254	Rotating Blaster Triss	-	-

Wencon Repair Kits

Wencon Repair Kits are available in different sizes,
The Repair Kits cover most aspects of emergency repairs and long lasting maintenance and is suitable for all ships.
All our Kits contain instruction for use, technical information and detailed application data sheets. Choose one of our standard Repair Kits or compose your own customized Kit.

Prod. No.	The standard Wencon Repair Kits contain:	Unit	Kit 1	Kit 2	Kit 3	Kit 4	Tanker Kit	Dock kit standard	Dock kit extended	Dry Bulk Kit	Your Kit
1010	Wencon Cream	1 kg	1								
1000	Wencon Rapid	1 kg	1	1				3		1	
1005	Wencon Rapid, (8 x 125g)	1 kg	1	1	1	1					
1020	Wencon Coating, white	0,5 kg	2	1	1			9			
1030	Wencon Coating, blue	0,5 kg	2	1	1			9			
1050	Wencon Hi-Temp, yellow	0,5 kg	1				1				
1060	Wencon Hi-Temp, green	0,5 kg	1	1	1		1				
1040	Wencon Putty, 8 x 125g	1 kg	1	1	1	1					
1042	Wencon Putty, 4 x 125g	0,5 kg					1			1	
1044	Wencon Pipe Tape 2 unit, 10cm x 350cm	box									
1045	Wencon Pipe Tape 5 unit, 5cm x 150cm	box	1	1	1	1					
1046	Wencon Pipe Tape 4 unit, 5cm x 350cm	box	1	1			1			1	
1070	Wencon Exhaust Repair Kit, 2 x 250g	box	1	1	1	1				1	
1014	Wencon UW Cream	0,5 kg	1				2			1	
1035	Wencon UW Coating, orange	0,5 kg	1				2			3	
1036	Wencon UW Coating, brown	0,5 kg					2				
1012	Wencon UW Putty	1 kg									
1016	Wencon Ceramic Cream	1 kg					1	1	9		
1017	Wencon Ceramic Coating, light grey	0,5 kg						3	21		
1018	Wencon Ceramic Coating, light green	0,5 kg						3	21	1	
1100	Wencon Cleaner	0,5 l									
1104	Wencon Bio Cleaner	0,75 l	3	2	1	1		5	9	1	
1110	Wencon Release Agent	50 g	1	1	1	1		1	2		
1120	Wencon Reinforcement Tape, 5cmx10m	10 m	3	2	2	1	6			6	
1122	Wencon Reinforcement Tape,10cmx20m	20 m					1				
1150	Wencon Aggregate No. 24	1,5 kg									
2805	Wencon Application Tools	box	1	1	1	1	1			1	
2808	Wencon Fixation Tools	set					1				
9101	Wencon User Manual	pcs	1	1	1	1	1	1	1	1	
1250	Rotating Blaster single										
1252	Rotating Blaster duo										
1254	Rotating Blaster tris										
	Plywood Box (Large, Medium or Small)		L	M	S	S	S	S	–	–	

Product numbers:		IMPA no.	ISSA no.
No. 8700	Wencon Repair Kit No. 1	812341	75.553.70
No. 8704	Wencon Repair Kit No. 2	812331	75.553.71
No. 8708	Wencon Repair Kit No. 3	812332	75.553.72
No. 8712	Wencon Repair Kit No. 4	812333	75.553.73
No. 8710	Wencon Tanker Kit	812326	N/A
No. 8721	Wencon Docking Kit Extended	N/A	N/A
No. 8722	Wencon Docking Kit Standard	N/A	N/A
No. 8732	Wencon Dry Bulk Kit	N/A	N/A

WENCON®

No. 1010	**Wencon Cream, 1kg unit**	**IMPA No. 812335**	**ISSA No. 75.553.20**
Wencon Cream is a basic two-component, epoxy compound with a wide range of applications for repair and rebuilding of worn, damaged, cracked and corroded machine and metal parts. Typical applications are corroded tanks, pump housings, impellers, valves, pipes, flange faces, roller bearing seats, worn shafts, hydraulic rams and heat exchangers.			
No. 1000	**Wencon Rapid, 1kg unit**	**IMPA No. 812347**	**ISSA No. 75.553.21**
No. 1005	**Wencon Rapid 8, 8x125g unit**	**IMPA No. 812343**	**ISSA No. 75.553.22**
Wencon Rapid is a fast curing, two-component, epoxy compound with a wide range of applications for emergency repairs and maintenance. Typical applications as for Wencon Cream.			
No. 1020	**Wencon Coating, white, 0,5kg unit**	**IMPA No. 812337**	**ISSA No. 75.553.10**
No. 1030	**Wencon Coating, blue, 0,5kg unit**	**IMPA No. 812338**	**ISSA No. 75.553.11**
Wencon Coating is a two-component, liquid epoxy coating suitable for a wide range of applications. Typical applications are coating of surfaces rebuilt after deterioration, protection of tanks, pumps, valves, wet liners, cooler end covers etc. against corrosion and bi-metallic corrosion.			
No. 1050	**Wencon Hi-Temp, yellow, 0,5kg unit**	**IMPA No. 812345**	**ISSA No. 75.553.12**
No. 1060	**Wencon Hi-Temp, green, 0,5kg unit**	**IMPA No. 812346**	**ISSA No. 75.553.13**
Wencon Hi-Temp is a high performance two-component, liquid epoxy coating developed for applications in high load areas.			
No. 1040	**Wencon Putty, 8x125 g unit**	**IMPA No. 812342**	**ISSA No. 75.553.40**
No. 1042	**Wencon Putty, 4x125g unit**	**IMPA No. 812329**	**ISSA No. N/A**
Wencon Putty is a very quick curing, two-component, epoxy compound supplied in a practical and easy to use stick format. This multipurpose epoxy paste is ideal for wide range of emergency repairs where an ultra quick curing and mouldable compound is required.			
No. 1044	**Wencon Pipe Tape, 2 units (10cmx350 cm)**	**IMPA No. 812328**	**ISSA No. N/A**
No. 1045	**Wencon Pipe Tape, 5 units (5cmx150 cm)**	**IMPA No. 812344**	**ISSA No. 75.553.30**
No. 1046	**Wencon Pipe Tape, 4 units (5cmx350 cm)**	**IMPA No. 812348**	**ISSA No. 75.553.31**
Wencon Pipe Tape is a fast curing pipe repair bandage especially formulated to make quick and effective repairs of cracks, leaks, fractures, and corrosion porosity in piping carrying water, oil, steam, most gases and even solvents.			
No. 1070	**Wencon Exhaust Repair Kit, 2x250g**	**IMPA No. 812340**	**ISSA No. 75.553.25**
Wencon Exhaust Repair is a one component steel cold weld product that can be used to repair cracks and holes in equipment that is exposed to temperatures up to 1300° C. Typical applications include engine heads, blocks and manifolds, as well as furnaces and boilers.			
No. 1014	**Wencon UW Cream, 0,5kg unit**	**IMPA No. 812334**	**ISSA No. 75.553.91**
Special epoxy based cream for applying under water or direct on wet surfaces.			
No. 1035	**Wencon UW Coating, orange, 0,5kg unit**	**IMPA No. 812336**	**ISSA No. 75.553.92**
No. 1036	**Wencon UW Coating, brown, 0,5kg unit**	**IMPA No. 812327**	**ISSA No. N/A**
Special epoxy based coating for applying under water or direct on wet surfaces.			
No. 1012	**Wencon UW Putty, 1 kg unit**	**IMPA No. N/A**	
Special epoxy based compound for applying under water or direct on wet surfaces.			
No. 1016	**Wencon Ceramic Cream, 1kg unit**	**IMPA No. 812592**	**ISSA No. N/A**
Epoxy compound for repair and rebuilding of deteriorated metal parts exposed to excessive wear			
No. 1017	**Wencon Ceramic Coating light grey, 0,5kg**	**IMPA No. 812593**	**ISSA No. N/A**
No. 1018	**Wencon Ceramic Coating light green, 0,5kg**	**IMPA No. 812594**	**ISSA No. N/A**
The cost effective coating product for general repair, maintenance and protection of surfaces exposed to excessive wear.			
No. 1100	**Wencon Cleaner, 0,5 litre unit**	**IMPA No. 812349**	**ISSA No. 75.553.01**
Degreasing agent, used prior to application of epoxy compounds and coatings.			
No. 1104	**Wencon Bio Cleaner, 0,75 litre unit**	**IMPA No. 812597**	**ISSA No. N/A**
Environmental friendly degreasing agent, used prior to application of epoxy compounds and coatings.			
No. 1110	**Wencon Release Agent, 50g unit**	**IMPA No. 812350**	**ISSA No. 75.553.60**
Special grease used to prevent adhesion of epoxy compounds and coatings.			
No. 1120	**Wencon Reinforcement Tape, 5cm x 10m**	**IMPA No. 812339**	**ISSA No. 75.553.50**
No. 1122	**Wencon Reinforcement Tape, 10cm x 20m**	**IMPA No. N/A**	
Fiber tape used for reinforcing repairs made with epoxy compounds and coatings.			
No. 1150	**Wencon Aggregate No. 24, 1,5kg**	**IMPA No. N/A**	
Silica carbide based granulates for non-slip surfacing and wear resistant coating applications.			
No. 2805	**Wencon Application Tools**	**IMPA No. 812595**	**ISSA No. 75.553.80**
Selection of tools for use when mixing and applying of Wencon repair products.			
No. 2808	**Wencon Fixation Tools**	**IMPA No. 812596**	**ISSA No. N/A**
Selection of tools to support and secure Wencon products to the damaged part.			

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General application specification

General specification for use of Wencon products for refurbishing and/or preserving metal structures.

Wencon products are used for refurbishing and/or preventive coating of pumps, valves, coolers, heat exchangers, pipes, tanks, filters, strainers, etc. (Chapter 5 in the WENCON Manual).

The system is built in three layers. First layer is the actual rebuilding of the deteriorated surface Fig. 1. If the machine part is new, you can leave out this first layer. The next two layers consist of a coating that shall prevent the substrate from being deteriorated again in the near future. Normal paint will protect metal surfaces for a few months, the Wencon coatings will protect for many years. Fig. 2 and 3.

First layer

First layer is applied in order to retain the original thickness and/or shape of the surface of the deteriorated machine part. The actual product, used for this application depends on the situation. Basically there are three options: Wencon Cream, for standard applications, Wencon UW Cream for under water applications and Wencon Ceramic Cream for abrasion resistant applications.

Second and third layer

The two layers of coating, that shall be applied wet in wet, just after the previous layer has semi cured, but still tacky, shall be chosen among the variety of Wencon Coatings. The parameters that helps you choose, will be temperature, above or under water, abrasion condition, chemical condition, spray or brush applying, etc. Use the Wencon Manual to find the right Coating for the job, or ask your Wencon representative.

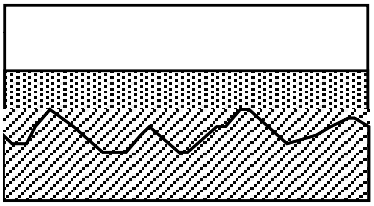


fig. 1

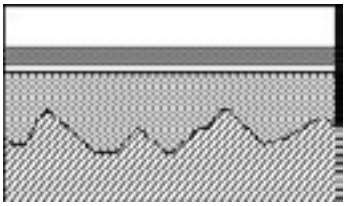


fig. 2

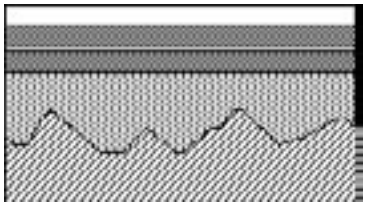


fig. 3

Surface preparation acc. to ISO 12944

Before any application can take place, the surface must be prepared. The adhesion of the chosen Wencon product depends on the surface preparation. However, the situation indicates what is possible and what is needed. Here will be given the full range of the surface preparation.

Shotblasting. Shotblast the area to be treated to min.SA 2,5 acc. to ISO 12944. Test the surface for salt content acc. to ISO 12944. Remove salt if any. Round any sharp edges to radius 3 mm. Apply heat if item is too cold to stay dry during the operation (see: conditions for application below). Repeat the shot blasting to min. SA 2,5 with a sharp profile of min. 75 µ acc. to ISO 12944.

Conditions for application

The temperature of the item and the climatic conditions must be prepared, so the surface at any time, during the application and curing of Wencon products, is min. 3 degrees above dew point, acc. to ISO 12944.

Apply the chosen Wencon products according to the specification and the Instructions for use.

Quality control

Each application must be tested after curing, in order to examine the quality of the job. Even small failures, may have effect on the result of the job.

Visual check

Check carefully for visual defects, areas, where the last coat is missing, or the like.

Thickness test

In order to verify, that the minimum required layer thickness is obtained, a NDT test shall be carried out with a thickness tester. This to indicate the total thickness of the Wencon layers. In some areas, the tester may not show a value. The reason for that, might be that the total thickness of the Wencon products exceeds the measuring capacity of the measuring equipment.

Pore test

A pore test will reveal weak spots in the coating, most often arising from air entrapment in the coating. Basically, there are two types of pore testers, low voltage, wet sponge equipment, and high voltage metal brush equipment.

Adhesion test

A Dyna pull test (ISO 12944) can be made to control the adhesion of the Wencon system used.

Wencon Cream

General Description	Wencon Cream is a two-component compound. After curing, Wencon Cream will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the compound highly suitable for repair of corroded and worn metal. Wencon Cream is non conducting and will therefore not cause bi-metallic corrosion. Typical applications are corroded tanks, pump housings and impellers, valves, tubes, pipes, heat exchangers, flange faces, roller bearing seats, worn shafts, hydraulic rams, keyways, etc. It is also excellent as a filling compound.
Surface Preparation	Before applying, the surface must be clean. If possible shot blasted to Swedish Standard SA 2 1/2. Where impregnation of oil or salt is possible, the item is either left for 10-20 hours or heated to 30-40°C (86-104°F) in order to sweat out the oil or salt. Then the shot blasting is repeated. In some applications sandblasting is not possible and thorough grinding must take place to clean metal. N.B. Steel brushing is not advisable as it gives a smooth surface. After grinding Wencon Bio Cleaner is used for degreasing.
Mixing Ratio	Mixing ratio 1:1 by volume. Mix until even color is obtained.
Pot Life	30 - 60 minutes at 20°C (68°F), depending on amount.
Applying	Wencon Cream is applied using the spatula supplied with the kit.
Curing	Curing time depends on the temperature and the thickness applied. At 20°C (68°F) 10 -15 hours. If faster curing is required, heat can be added. At 100°C (212°F) curing time is reduced to 15-20 minutes.
Machinability	After curing, Wencon Cream can be machined, drilled and worked like metal.
Chemical Resistance	After curing, Wencon Cream will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 120°C (248°F) As filling compound up to 250°C (482°F)
Specific Volume	775 ccm/kg (49,5 cu inch/kg)
Hardness	Shore D 75.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Rapid

General Description	Wencon Rapid is a fast curing, two-component compound. After curing, Wencon Rapid will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the compound highly suitable for repair of corroded and worn metal. Wencon Rapid is non conducting and will therefore not cause bi-metallic corrosion. Wencon Rapid is very suitable for applications where thicker layers of material are required, as the compound quickly sets and becomes solid. Typical applications are corroded tanks, pump housings and impellers, valves, tubes, pipes, heat exchangers, flange faces, seats, worn shafts, hydraulic rams and all emergency repairs, where a short curing time is required.
Surface Preparation	Before applying, the surface must be clean. If possible shotblasted to Swedish Standard SA 2 1/2. Where impregnation of oil or salt is possible, the item is either left for 10-20 hours or heated to 30-40°C (86-104°F) in order to sweat out the oil or salt. Then the sandblasting is repeated. In some applications sandblasting is not possible and thorough grinding must take place to clean metal. N.B. Steelbrushing is not advisable as it gives a smooth surface. After grinding Wencon Bio Cleaner is used for degreasing.
Mixing Ratio	Mixing ratio 1:1 by volume. Mix until even color is obtained.
Pot Life	10-20 minutes at 20°C (68°F), depending on amount.
Applying	Wencon Rapid is applied using the spatula supplied with the kit.
Curing	Curing time depends on the temperature and the thickness applied. At 20°C (68°F) 40-90 minutes. If faster curing is required, heat can be added. At 100°C (212°F) curing time is reduced to 10-15 minutes.
Machinability	After curing, Wencon Rapid can be machined, drilled and worked like metal.
Chemical Resistance	After curing, Wencon Rapid will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 120°C (248°F) As filling compound: up to 250°C (482°F)
Specific Volume	709 ccm/kg. (45,3 cu inch/kg)
Hardness	Shore D 81.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Coating

General Description	Wencon Coating is a two-component liquid coating. After curing, Wencon Coating will provide a smooth non-porous coating, which is resistant to bi-metallic corrosion, light chemical attack, corrosion and impingement. Wencon Coating contains no solvents. Typical applications are coating of surfaces rebuild after deterioration. Wencon Coating is used for coating of new or protection of pumps, valves, wet liners, cooler end covers or other surfaces, against corrosion and bi-metallic corrosion.
Surface Preparation	Before applying, the surface must be clean. If possible shot blasted to Swedish Standard SA 2 1/2. Where impregnation of oil or salt is possible, the item is either left for 10-20 hours or heated to 30-40°C (86-104°F) in order to sweat out the oil or salt. Then the sandblasting is repeated. In some applications sandblasting is not possible and thorough grinding must take place to clean metal. N.B. Steelbrushing is not advisable as it gives a smooth surface. After grinding Wencon Bio Cleaner is used for degreasing.
Mixing Ratio	Mixing ratio 1:2 by volume. Mix the contents of the two tubs until an even colour is reached.
Pot Life	20-30 minutes at 20°C (68°F), depending on amount.
Applying	Wencon Coating is applied using the spatula supplied with the kit or a brush with half the length of the bristles cut away.
Overcoating	Wencon Coating is applied in two operations. It is therefore supplied in two different colours, white and blue. The overcoating time depends on the temperature. The second coat must be applied whilst the first coat is still tacky. The time will vary from one to two hours. If full curing has occured a light shot blasting is necessary prior to the second coat.
Curing	Curing will take place in 10-48 hours. If the coating shall be exposed to chemicals, let it cure for 7 days before the exposure.
Machinability	After curing, Wencon Coating can be machined, drilled and worked like metal.
Chemical Resistance	After curing, Wencon Coating will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 120°C (248°F) As filling compound: up to 250°C (482°F)
Specific Volume	730 ccm/kg. (46,7 cu inch/kg)
Coverage	1 kg/m2 (0,2 lb/sq. ft.) in 600 micron.
Hardness	Shore D 80.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Hi-Temp

General Description	Wencon Hi-Temp is a two-component liquid coating. After curing Wencon Hi-Temp will provide a smooth non porous coating, resistant to bi-metallic corrosion, medium chemical exposure, corrosion and erosion and impingement. Wencon Hi-Temp contains no solvents. Wencon Hi-Temp is ideal for protection of tanks, pumps and valves against chemical and mechanical aggression, corrosion and bi-metallic corrosion. Typical applications are coating of surfaces rebuild with Wencon Cream, including repair of lining on inert gas systems, fresh water generators, hot pipes and heating coils.
Surface Preparation	Before applying the surface must be clean. If possible shot blasted to Swedish Standard SA 21/2. Where impregnation of oil or salt is possible the part is either left for 10-20 hours or heated to 30-40°C (86-104°F) in order to sweat out oil or salt. Then shot blasting is repeated. In some applications shot blasting is not possible and a thorough grinding must take place to clean metal. N.B. Steel brushing is not advisable as it gives a smooth surface. After grinding Wencon Bio Cleaner is used for degreasing.
Mixing Ratio	Mixing ratio 1:2 by volume. Mix the contents of the two tubs until an even colour is reached. At low temperatures, the base part is very stiff. Apply heat for better mixing (up to 25°C).
Pot Life	20-40 minutes at 20 °C (68°F).
Applying	Wencon Hi-Temp is applied using either the spatula supplied with the kit or a brush, with half the length of the bristles cut away.
Overcoating	Wencon Hi-Temp is applied in two operations. It is therefore supplied in two different colours. The overcoating time depends on the temperature. The second coat must be applied whilst the first coat is still tacky. The time will vary from one to three hours. If full curing has occured a light shot blasting is necessary prior to the second coat.
Curing	Curing will take place in 10 - 24 hours at 20 °C (68°F). If high chemical resistance is required, the item should cure for up to 7 days. Elevated temperatures will shorten the curing time.
Machinability	After curing, Wencon Hi-Temp forms a hard, durable material that is machinable with standard tools.
Chemical Resistance	After curing, Wencon Hi-Temp will be resistant to oil, water, salt water, most diluted acids and a number of solvents. It is advised to test the product for suitability.
Temperature Resistance	Corrosion and heavy load: 160°C (320°F) Light or no load: 220°C (430°F) As filling compound: up to 300°C (570°F)
Specific Volume	680 ccm/kg. (43,5 cu inch/kg)
Hardness	Shore D 82.
Coverage	Approx. 1 kg/m2 (0,2 lb/sq. ft.) in 600 micron.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Putty

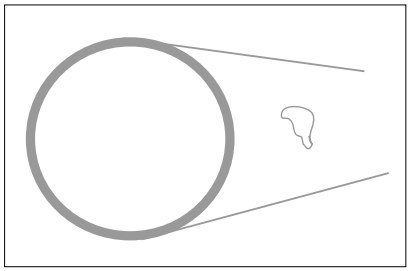
General Description	Wencon Putty is a two-component mouldable repair stick. Wencon Putty is supplied in 125g sticks / units, containing base and hardener. This multipurpose epoxy paste is ideal for wide range of emergency repairs where an ultra quick curing and mouldable compound is required. Typical applications are patching sealing, filling of cracks, leakages and holes in pipes, flanges, tanks etc.
Surface Preparation	Use grinder, emery cloth, etc. to achieve a clean, dry metal surface and degrease using Wencon Bio Cleaner. When repairing leaking pipes, it is possible to apply Wencon Putty direct into the leak and retain with a clip. This allows the area surrounding the leak to be ground and cleaned. Wencon Cream or Rapid is then applied with Wencon Reinforcement Tape to encapsulate the Wencon Putty and the clip.
Mixing Ratio	Tear or cut equal amounts of base and hardener and knead in your hands until even colour develops. Each unit contains both base and hardener. Apply to clean and dry surface.
Pot Life	3-6 minutes at 20°C (68°F)
Applying	After mixing, place the Wencon Putty on to the prepared surface and massage it into the surface using the fingers. Heat cold items for better flow and adhesion.
Curing	Curing time depends on the temperature and the thickness applied. If faster curing is required, heat can be added. At 20°C (68°F): 6 min. Inital Set: 15 min. Machining: 30 min. Full Mechanical: 2 hours
Machinability	After curing, Wencon Putty can be machined, drilled and worked like metal.
Chemical Resistance	After curing, Wencon Putty will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 120°C (248°F) As filling compound: up to 250°C (482°F)
Specific Volume	500 ccm/kg. (30 cu inch./kg)
Hardness	Shore D 85.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Pipe Tape

General Description	Wencon Pipe Tape is a fast curing pipe repair wrap specifically created to make quick and effective repairs of cracks, leaks, fractures, and corrosion porosity in piping carrying water, oil, steam and most gases and solvents. Wencon Pipe Tape has good pressure, temperature and chemical resistance.
Surface Preparation	Prepare the surface by cleaning and abrading the area surrounding the damage. Degreasing with Wencon Bio Cleaner can improve adhesion.
Mixing Ratio	No mixing is required
Applying	Wencon Pipe Tape is pre-impregnated with polyurethane resin and is water activated. • Select the correct size Wencon pipe Tape • Prepare the surface by cleaning and abrading the area surrounding the damage • Soak the Wencon pipe Tape in water for 10 seconds • Wrap the Wencon Pipe Tape firmly around the pipe, min. 9 circles, with 50% overlap, extending 50mm beyond the damage. • Continue by wetting the outside of the bandage in the direction of the wrap until the bandage begins to set.
Pot Life	3-6 minutes depending on air and water temperature. The bandage hardens in 10 minutes and is fully cured within 1 hour at 20°C (68°F)
Curing time	No post curing machining necessary
Machinability	Pipe pressure without Wencon Putty: 10 Bar*) Pipe pressure with Wencon Putty: 50 Bar*)
Technical Data	Flexural strength: ASTM D709 111 N/mmsq. Tensile strength: ASTM D638 172 N/mmsq. Compression strength: ASTM D695 180 N/mmsq. Adhesion at one-inch single overlap: 19 N/mmsq. Dielectric strength: 16 KV/mm
Temperature Resistance	Continuous: 120°C (248°F) Peak: 190°C (374°F)
Chemical Resistance	Water, salt water, oil, diluted acids and alkalis.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet

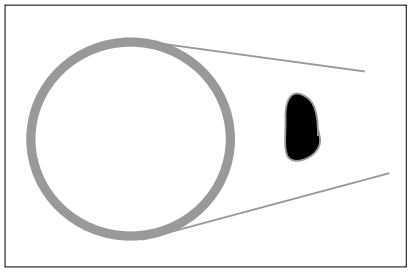
*) Laboratory tests have shown much higher values, but the mentioned values will count for repairs done in situ. Users are advised to make their own tests if in doubt.

Wencon Exhaust Repair Kit

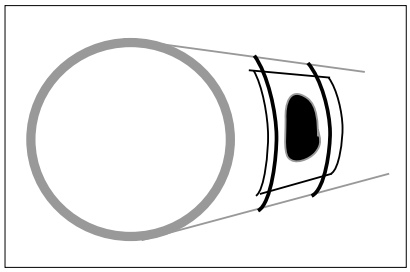


Cracks or leaks in exhaust systems etc. can only be repaired by using a product with a very high temperature resistance.

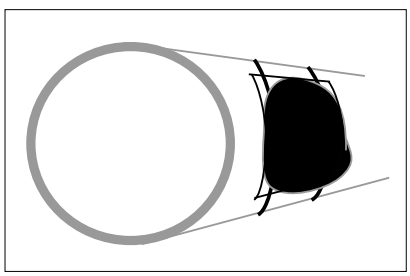
Wencon Exhaust System Repair Compound is a one-component product, with a temperature resistance up to 1300°C (2400°F). To use the product, follow the simple guidelines below:



1. Grind and clean/degrease the affected area and the surrounding area. Use Wencon Bio Cleaner.



2. Open one of the tubs containing the product (Note: this is a one component product). Stir it to an even consistency. Apply a suitable amount in and around the leak.



3. Cut a suitable piece of the metal mesh and fix it to the repair area using steel band or steel wires.

4. Apply second layer of the compound and leave it for initial curing for 3-4 hours, depending on temperature and humidity.
When the compound has turned hard, heat it up slowly to approx. 95°C (200°F) and leave it at that temp. for 15 minutes to fully cure.

Remarks
It is important to note, that this product is designed for emergency repairs of leaks. It is not designed as for instance an internal lining for turbo charger housings.

Read the instructions on the packing and the Material Safety Data Sheet.

Wencon UW Cream for wet surfaces or under water

General Description	Wencon UW Cream is a two-component compound, to be applied on wet surfaces or under water. After curing, Wencon UW Cream will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the compound highly suitable for repair of corroded and worn metal. Wencon Cream is non conducting and will therefore not cause bi-metallic corrosion. Typical applications are corroded hulls and all under water parts of ships and structures, tanks, pipes, flange faces. It is also excellent for filling up cavitation damages on hulls and rudders.
Surface Preparation	Before applying, the surface must be clean from loose paint, scales, under water growth, etc. A mechanical cleaning will do, but even better, if possible, hydro-jetting.
Mixing Ratio	Mixing ratio 1:2 by volume. Mix well until an even color is obtained. The mixing must take place above water. After mixing, the product can be taken into the water.
Pot Life	25 - 35 min. at 20°C (68°F), depending on the amount mixed and temperature.
Applying	Wencon UW Cream is applied using the spatula supplied with the kit. Work the product well into the surface of the area to be treated, in order to obtain a close contact. As an option, you can fill the product into an empty cartridge, and inject it from this. This often helps you keep the working place more clean and thereby prevent contamination of the water.
Curing	Curing will take place in 10-18 hours, in the right temperature. Curing requires a temperature of at least 10°C (50°F), but better at 17-23°C (62-73°F) or higher. If the product shall be exposed to chemicals, let it cure for 7 days before the exposure.
Chemical Resistance	After curing, the Wencon UW Cream will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 100°C (212°F) As filling compound: up to 160°C (320°F)
Specific Volume	526 ccm/kg. (33,6 cu inch./kg)
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.
Remarks	If thick layers shall be applied, the consistency may allow you only to apply part of the required thickness in one application (especially if the temperature is high). The overcoating time depends on the temperature and thickness. Next layer shall be applied while first layer is still tacky.

Wencon UW Coating for wet surfaces or under water

General Description	Wencon UW Coating is a two-component liquid coating, to be applied on wet surfaces or under water. After curing, Wencon UW Coating will provide a smooth non-porous coating, which is resistant to bi-metallic corrosion, light chemical attack, corrosion and impingement. Wencon UW Coating contains no solvents. Typical applications are coatings of steel surfaces rebuild with Wencon UW Cream, and coatings under water - like ships hulls and/or other submerged structures, tanks, pipes etc. Examples of repairs under extreme conditions could be: on-site repair of sea-water filter housings etc. unable to achieve a dry surface. The UW Coating is used for scratched painting on hulls in splash-zones and under water.
Surface Preparation	Before applying, the surface must be clean from loose paint, scales, under water growth, etc. A mechanical cleaning will do, but even better, if possible, hydro-jetting.
Mixing Ratio	Mixing ratio 1:2 by volume. Mix well until an even color is obtained. The mixing must take place above water. After mixing, the product can be taken into the water.
Pot Life	25-35 minutes at 20°C (68°F), depending on amount.
Applying	Wencon UW Coating is applied using either a brush or a roller. If temperature is low, use brushes with short bristles, if temperature is high, use long bristles. The initial wetting of the brush and/or roller shall take place above water. Hereafter you can bring both the mixed product and the brush/roller into the water. Apply in a thickness of totally 300-350µ. Depending on temperature this thickness can be achieved in 2-3 layers.
Overcoating	Wencon UW Coating is applied in 2 operations, and is supplied in two different colours, orange and brown. The overcoating time depends on the temperature. The second coat must be applied while the first coat is still tacky. The time will vary from two to six hours.
Curing	Curing will take place in 10-18 hours, but only if temperature allows it to cure. Curing requires a temperature of at least 10°C (50°F), but better at 17-23°C (62-73°F) or higher. If the coating shall be exposed to chemicals, let it cure for 7 days before the exposure.
Chemical Resistance	After curing, the Wencon UW Coating will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 100°C (212°F) As filling compound: up to 160°C (320°F)
Specific Volume	535 ccm/kg. (34,2cu inch./kg)
Coverage:	approx. 0,8 msq. per kg per coat.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.
Remarks	If thick layers shall be applied, the consistency may allow you only to apply part of the required thickness in one application (especially if the temperature is high). The overcoating time depends on the temperature and thickness. Next layer shall be applied, while first layer is still tacky.

Wencon UW Putty for wet surfaces or under water

General Description	Wencon UW Putty is a two-component compound, to be applied on wet surfaces or under water. After curing, Wencon UW Putty will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the Putty highly suitable for repair of corroded and worn metal. Wencon Putty is non conducting and will therefore not cause bi-metallic corrosion. Typical applications are corroded hulls and all under water parts of ships and structures, and to stop leaking tanks and pipes etc. Wencon Putty is also excellent for filling gaps and holes under water before completion with UW Cream / UW Coating.
Surface Preparation	Before applying, the surface must be clean from loose paint, scales, under water growth, etc. A mechanical cleaning will do, but even better, if possible, hydrojetting.
Mixing Ratio	Mixing ratio 1:1 by volume. Mix well until an even color is obtained. The mixing must take place above water. After mixing, the product can be taken into the water.
Pot Life	Approximately 25min. at 20°C (68°F), depending on the amount mixed and the temperature.
Applying	Wencon UW Putty is applied using your hands or a spatula supplied with the kit. Work the product well into the surface of the area to be treated, in order to obtain a close contact.
Curing	Curing will take place in 10-18 hours, in the right temperature. Curing requires a temperature of at least 10°C (50°F), but better at 17-23°C (62-73°F) or higher. If the product shall be exposed to chemicals, let it cure for 7 days before the exposure.
Chemical Resistance	After curing, the Wencon UW Putty will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 60°C (140°F) Light or no load: 95°C (199°F) As filling compound: up to 95°C (199°F)
Specific Volume	556 ccm/kg.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.
Remarks	If thick layers shall be applied, the consistency may allow you only to apply part of the required thickness in one application (especially if the temperature is high). The overcoating time depends on the temperature and thickness. Next layer shall be applied while first layer is still tacky.

Wencon Ceramic Cream

General Description	Wencon Ceramic Cream is a two-component compound. After curing, Wencon Ceramic Cream will exhibit a wide range of the characteristics of metals, which together with outstanding adhesion to all metallic surfaces, makes the compound highly suitable for repair of corroded and worn metal. Wencon Ceramic Cream is non conducting and will therefore not cause bi-metallic corrosion. Wencon Ceramic Cream has a high abrasion resistance, making it suitable for applications on propeller nozzles, rudders, thruster tunnels and housings. In addition, the product also offer high temperature resistance, which makes it ideal for applications on gas scrubbers, condensers and end-covers.
Surface Preparation	Before applying, the surface must be clean. If possible shot blasted to Swedish Standard SA 2 1/2. Where impregnation of oil or salt is possible, the item is either left for 10-20 hours or heated to 30-40°C (86-104°F) in order to sweat out the oil or salt. Then the shot blasting is repeated. In some applications sandblasting is not possible and thorough grinding must take place to clean metal. N.B. Steel brushing is not advisable as it gives a smooth surface. After grinding Wencon Bio Cleaner is used for degreasing.
Mixing Ratio	Mixing ratio 1:2 by volume. Mix until even color is obtained.
Pot Life	30-40 minutes at 20°C (68°F), depending on amount.
Applying	Wencon Ceramic Cream is applied using the spatula supplied with the kit.
Curing	Curing time depends on the temperature and the thickness applied. At 20°C (68°F) 10 -15 hours. If faster curing is required, heat can be added. At 100°C (212°F) curing time is reduced to 15-20 minutes.
Chemical Resistance	After curing, Wencon Ceramic Cream will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 200°C (392°F) Light or no load: 250°C (482°F) As filling compound up to 300°C (572°F)
Specific Volume	538 ccm/kg (34,4 cu inch/kg)
Hardness	Shore D 80.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Ceramic Coating

General Description	Wencon Ceramic Coating is a two-component liquid coating. After curing, Wencon Ceramic Coating will provide a smooth non-porous coating, which is resistant to bi-metallic corrosion, light chemical attack, corrosion and impingement. Wencon Ceramic Coating contains no solvents. Wencon Ceramic Coating has a high abrasion resistance, making it suitable for coatings on propeller nozzles, rudders, thruster tunnels and housings. Typical applications are coating of surfaces rebuild with Wencon Ceramic Cream and protection against wear, corrosion and bi-metallic corrosions. In addition, the product also offer high temperature resistance, which makes it ideal for applications on gas scrubbers, condensers and end-covers.
Surface Preparation	Before applying, the surface must be clean. If possible shot blasted to Swedish Standard SA 2 1/2. Where impregnation of oil or salt is possible, the item is either left for 10-20 hours or heated to 30-40°C (86-104°F) in order to sweat out the oil or salt. Then the sandblasting is repeated. In some applications sandblasting is not possible and thorough grinding must take place to clean metal. N.B. Steelbrushing is not advisable as it gives a smooth surface. After grinding, Wencon Bio Cleaner is used for degreasing.
Mixing Ratio	Mixing ratio 1:2 by volume. Mix until even color is obtained.
Pot Life	20-30 minutes at 20°C (68°F), depending on amount.
Applying	Wencon Ceramic Coating is applied using the spatula supplied with the kit or a brush with half the length of the bristles cut away.
Overcoating	Wencon Ceramic Coating is applied in two operations. It is therefore supplied in two different colours, light grey and light green. The overcoating time depends on the temperature. The second coat must be applied while the first coat is still tacky. The time will vary from one to two hours. If full curing has occured a light shot blasting is necessary prior to the second coat.
Curing	Curing will take place in 10-15 hours. If the coating shall be exposed to chemicals, let it cure for 7 days before the exposure.
Chemical Resistance	After curing, Wencon Ceramic Coating will be resistant to oil, water, saltwater, most diluted acids and a range of solvents.
Temperatur Resistance	Corrosion and heavy load: 220°C (428°F) Light or no load: 260°C (500°F) As filling compound: up to 320°C (608°F)
Specific Volume	658 ccm/kg. (42 cu inch/kg)
Coverage	1 kg/m2 (0,2 lb/sq. ft.) in 600 micron.
Hardness	Shore D 81.
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Rotating Blaster

General Description	Wencon Rotating Blaster discs are rubber mounted tungsten tips used for surface preparation of steel surfaces, pipes, tanks and bunds, marine decks and hulls that leaves a profile according to standards for hand and powertool surface preparation: ISO 8501, ST3 and SSPC-SP3.
Safety	Always wear goggles, working gloves, dust mask and protective clothing
Use	Hold the disc at 90 degrees to the surface and rotate clockwise Do not press too hard with the single and double discs Always work away from edges
Strip capacity	A single Wencon Rotating Blaster disc will strip 1 to 3m2 per hour The triple Wencon Rotating Blaster disc will strip around 30m2
Rotating speed	Maximum speed 4000 rpm Optimal speed between 2500 and 3000 rpm
Applying	When cleaning iron and steel, prime immediately
Tools	The Rotating blaster disks can be powered by a standard drilling machine.
Technical	Disk diameter: 126 mm +/- 0.8 mm Disk width: 6.7 mm +/- 0.3 mm (Per disc) Stud size: 8 mm Rubber: Natural stained rubber Hardness: 50 Shore A Carbide: Hardness 1500HV Tool mount: M12m
Handling Precautions	Read the instructions on the packaging and the Material Safety Data Sheet.

Wencon Accessories

Wencon Cleaner
General Description

Wencon Cleaner is a tetrachloroethylene based degreasing agent, which is used for cleaning purposes prior to application of the Wencon products. After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Wencon Cleaner is supplied in 500ml units.

Wencon Bio Cleaner
General Description

Wencon Bio Cleaner is a water based alkaline degreaser, which is used for cleaning purposes prior to application of Wencon products. Wencon Bio Cleaner is an environmentally friendly product and is classified as Non Dangerous Goods.

Wencon Bio Cleaner is delivered with a separate spray, which is set for foam spray when delivered. We recommend using foam spray, due to the efficiency.

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off the Wencon Bio Cleaner with plenty of clean water, for proper degreasing and to ensure that all Cleaner residue is washed away. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off the Wencon Bio Cleaner with plenty of clean water, for proper degreasing and to ensure that all Cleaner residue is washed away. Allow the surface to evaporate until completely dry and hereafter any Wencon products can be applied.

Wencon Bio Cleaner is supplied in 750ml units.

Wencon Release Agent
General Description

Wencon Release Agent is used in applications where you want to prevent adhesion between Wencon and the substrate. The Release Agent is applied in a thin layer and left for drying in ten minutes.
Remove excess material using a cloth.

Example:
When repairing an oversized roller bearing house by casting the Wencon compound around the bearing, the Wencon Release Agent is applied to the roller bearing itself.

When repairing a corroded flange face, it can be done by applying Wencon compound to one flange and Wencon Release Agent to the other. Before curing of Wencon compound, the two flanges are
assembled. The use of Release Agent ensures the possibility for disassembly.

Wencon Release Agent is supplied in 50 g units.

Wencon Accessories

Wencon Reinforcement Tape
General Description

Wencon Reinforcement Tape is a fiber tape used for reinforcing the Wencon repair. e.g. pipe repairs and repairs of cracks or holes in engine blocks, oil sumps, etc. After mixing e.g. the Wencon Cream, cut off a length of reinforcement tape. Place it on the mixing board and apply a 2-5 millimetre thick layer of Wencon Cream on top, using the mixing knife.

Next wrap the impregnated Wencon Reinforcement Tape around the pipe having the Wencon Cream on the inner side. The length of the tape should enable it to go 3-4 times around the pipe.

Wencon Reinforcement Tape is supplied in flw. units:
Wencon Reinforcement Tape 0,05 x 10 m (400 inch)
Wencon Reinforcement Tape 0,10 x 20 m (800 inch)

Wencon Aggregate
General Description

Wencon Aggregate are silica carbide based fine granulates, which are used for both the Wencon Non-Slip surfacing and the Wencon Wear Resistant Coating (see special instructions for use).

Wencon Aggregate is supplied in sets containing 1,5 kg.

Wencon Mixed Filler
General Description

Wencon Mixed Filler is a custommade filler to be mixed with epoxy products. For jobs, where there is a demand for an extra wear protection and if you need to improve durability,
For ektra abrasion resistance, mix Wencon Mixed Filler with Wencon Cream, Wencon Rapid or Wencon Coating.
Mix up to 1 tin (500ml) Wencon Mixed Filler with 1 kg Wencon Cream, Rapid or Coating.
Before applying the mixture, apply a thin layer of Wencon Cream ,Wencon Rapid or Wencon Coating on the surface (without Wencon Mixed filler). This will increase the adhesion.

Wencon Accessories

Wencon Fixation tools

Wencon Fixation Tools is used for repair of cracks and corrosions in tanks, leaking pittings and welding seams. The Fixation Tools helps to support and secure Wencon products to the damaged part, and can be used in combination with most Wencon products.
The Fixation Tools contain:

2 x Fixation plates 250mm, flat
2 x Fixation plates 250mm, angled
4 x Anchor bolts
1 x Metal drill bit, 6,5 mm
4 x M6 Washers, big
4 x M6 Nuts
4 x M6 Wing Nuts
8 x M6 Washers

Drill the cracks in both ends with a 6,5mm drill bit, to prevent the crack from running. Make corresponding holes in the fixation plate and push the anchor bolts through the plate and the holes, making sure that the anchor hooks up on the backside of the wall.

Apply the Wencon product between the fixation plate and the wall and tighten it using the washers and the nuts.

The same procedure goes for the angled fixation plate, which is intended for support on leaking welding seams.

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Wencon physical properties - S.I metrics system

	Wencon Cream	Wencon Rapid	Wencon Coating white+blue	Wencon Hi-Temp yellow+green	Wencon Putty	Wencon Pipe Tape	Wencon Exhaust Repair kit	Wencon UW Cream	Wencon UW Coating orange+brown	Wencon UW Putty	Wencon Ceramic Cream	Wencon Ceramic Coating grey+green
Max. Temperature	+60 - +250°C	+60 - +250°C	+60 - +250°C	+160 - +300°C	+60 - +250°C	+120°C	Up to +1300°C (2400°F)	+60 - +160°C	+60 - +160°C	+60 - +95°C	+200 - +300°C	+220 - +320°C
Consistency	paste	paste	fluid	fluid	putty		fluid	paste	fluid	putty	paste	fluid
Mixing ratio vol.	1:1	1:1	1:2	1:2	-		No mixing. Just stir content before use	1:2	1:2	1:1	1:2	1:2
Apply with	spatula	spatula	spatula/brush	spatula/brush	hand/spatula	hand	see prod. Info.	spatula	spatula/brush	hand/spatula	spatula	spatula/brush
Potlife at 20 C.	30-60 min. Mixed in small amounts	10-20 min. mixed in small amounts	20-30 min. mixed in small amounts	20-40 min. mixed in small amounts	3-6 min. mixed in small amounts	4-6 min.		25-30 min. mixed in small amounts	25-35 min. mixed in small amounts	25 minutes	30-40 min. mixed in small amounts	20-30 min. mixed in small amounts
Curing time	10 - 15 hours	40 - 90 min.	10 - 15 hours	10 - 24 hours	10 - 20 min.	10 - 30 min.	Initial curing 3-4 hours	10 - 18 hours	10 - 18 hours	10 - 18 hours	10 - 15 hours	10 - 15 hours
Machinability	yes	yes	yes	yes	yes		yes	yes	yes	yes	yes	yes
Hardness shore D	75	81	80	82	85	N/A	N/A	79	79	76	80	81
Tensile strength Rcrack	14,30 N/mm2	9,20 N/mm2	12,90 N/mm2	13,80 N/mm2	4,60 N/mm2	172 N/mm2	N/A	35,80 N/mm2	37,50 N/mm2	17,6 N/mm2	25,80 N/mm2	25,40 N/mm2
Compressive strength Rcrack	58 N/mm2	112 N/mm2	95 N/mm2	96 N/mm2	35,14 N/mm2	180 N/mm2	N/A	134 N/mm2	133 N/mm2	25,30 N/mm2	65,10 N/mm2	124 N/mm2
Compr.strength modulus of elasticity	1.689 N/mm2	2.891 N/mm2	2.199 N/mm2	4.284 N/mm2	NA		N/A	2.631 N/mm2	3.117 N/mm2	3.400 N/mm2	2.799 N/mm2	3.030 N/mm2
Shear adhesion *	14,40 N/mm2	20 N/mm2	16,20 N/mm2	22,40 N/mm2	4,50 N/mm2	19 N/mm2	N/A	33 N/mm2	31,90 N/mm2	15,90 N/mm2	30,80 N/mm2	28,90 N/mm2
Adhesion to steel **	>3,0 N/mm2	2,0 N/mm2	6,0 N/mm2	3,4 N/mm2	>4,5 N/mm2		N/A	>7,5 N/mm2	>7,5 N/mm2	>6,5 N/mm2	6,7 N/mm2	4,5 N/mm2
Specific volume	775 cm3 / kg	709 cm3 / kg	730 cm3 / kg	680 cm3 / kg	500 cm3 / kg		330 cm3 / kg	526 cm3 / kg	535 cm3 / kg	556 cm3 / kg	538 cm3 / kg	658 cm3 / kg
Heat resistance												
Corrosion	60°C (140°F)	60°C (140°F)	60°C (140°F)	160°C (320°F)	60°C (140°F)	120°C (248°F) peak 190°C (374°)		60°C (140°F)	60°C (140°F)	60°C (140°F)	200°C (392°F)	220°C (428°F)
Light or no load	120°C (248°F)	120°C (248°F)	120°C (248°F)	220°C (430°F)	120°C (248°F)			100°C (212°F)	100°C (212°F)	95°C (199°F)	250°C (482°F)	260°C (500°F)
For filling only	250°C (482°F)	250°C (482°F)	250°C (482°F)	300°C (570°F)	250°C (482°F)			160°C (320°F)	160°C (320°F)	95°C (199°F)	300°C (572°F)	320°C (608°F)
Dieletric strength	10 KV/mm	10 KV/mm	10 KV/mm	10 KV/mm	N/A	N/A		10 KV/mm	10 KV/mm	N/A	N/A	10 KV/mm

Hardness	Shore D, DIN 53505
Tensile strength	N/mm2 (10kg/cm2) DIN 53454
Compressive strength	N/mm2 DIN 53454
Shear adhesion *	Single-lap-joint acc. to ASTM D1002
Adhesion to steel **	N/mm2 (10kg/cm2) / ISO 4624
Specific volume	cm3 per kilogramme

Version 6 - 2019

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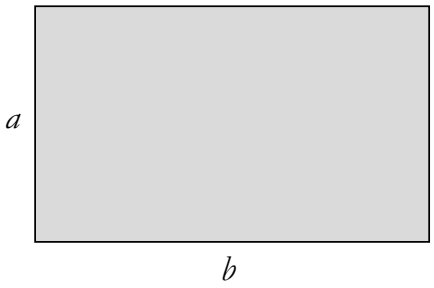
Formulas geometry

Rectangle

Area:
A = a x b

Round:
R = 2 x a + 2 x b



Triangle

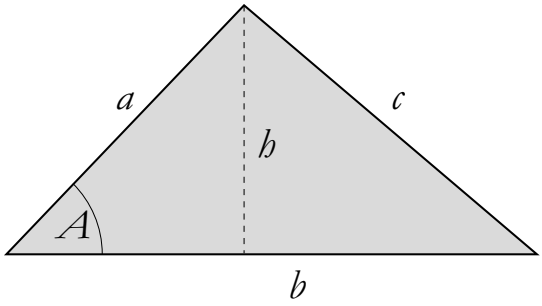
Round:
R = a + b + c

Area:
Area = ½ x h x b

Area = ½ a x b x sin A

Area = √ s (s - a) (s - b) (s - c)

s = ½ (a + b + c)

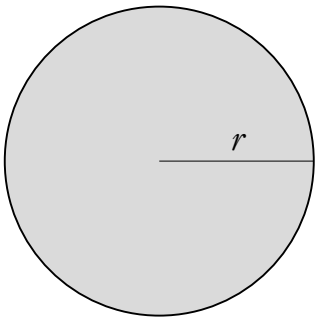


Circle

Area:
A = π x r²

Round:
R = 2 x π x r

π = 3,14



Regular box

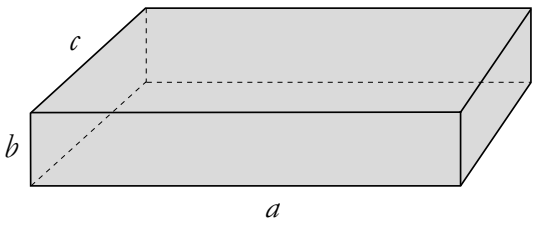
Lenght a

Height b

Wide c

Volume:
V = a x b x c

Surface:
S = 2 x (a x b + a x c + b x c)



Formulas geometri

Ball with radius r

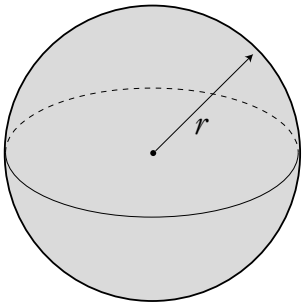
Volume:

$V = 4/3 \times \pi \times r^3$

Surface:

$S = 4 \times \pi \times r^2$

$\pi = 3,14$



Rectangular cylinder

with radius r & height h

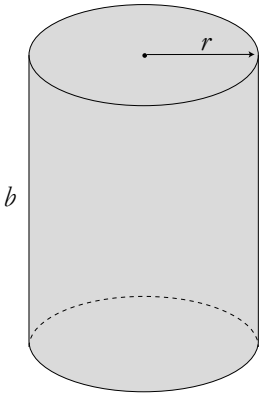
$\pi = 3,14$

Volume:

$V = \pi \times r^2 \times h$

Bending surface:

$S = 2 \times \pi \times r \times h$



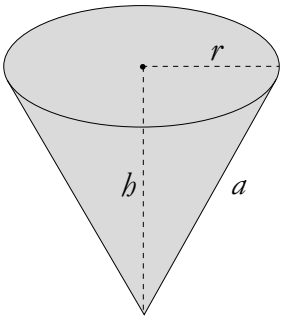
Cone

Volume:

$V = \frac{1}{3} \times \pi \times r^2 \times h$

Bending surface:

$S = \pi \times r \times \sqrt{r^2 + h^2} = \pi \times r \times a$



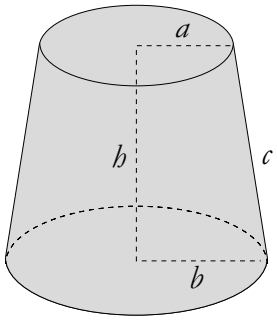
Truncated cone

Volume:

$V = \frac{1}{3} \times \pi \times h \times (a^2 + a \times b + b^2)$

Bending surface:

$S = \pi \times (a+b) \times \sqrt{h^2 + (b-a)^2} = \pi \times (a + b) \times c$



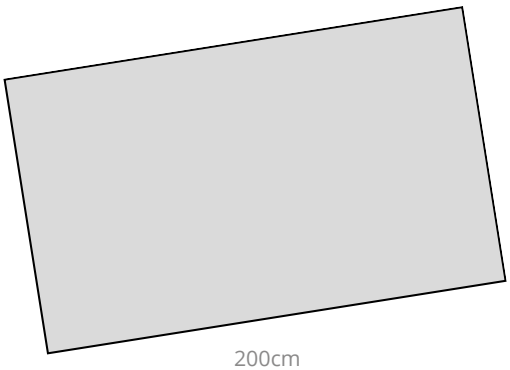
How to calculate

Coating a surface

Coating can be done on a flat surface, or a bended surface (pipe, round tank etc.).

Layer thickness has to be decided, prior to coating a surface. For a coating, Wencon recommends 600-800 microns (0.6 - 0.8 mm). To calculate the consumption of Wencon Coating, use the examples shown below.

Example 1: Coating a flat surface



100cm

Layer thickness (t)= 800 microns (0,08 cm)

200cm

Volume of coating = 200 cm x 100 cm x 0,08 cm = 1600 cm^3

Specific volume of Wencon Coating Blue or Wencon White

1 kg = 745 cm^3

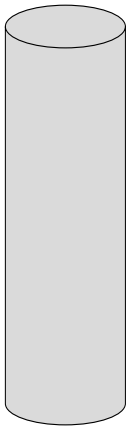
$$\frac{1600\ cm^3}{745\ cm^3} = 2{,}15\ kg$$

Theoretical value is 2.15 kg. There is a calculated waist (mixing, potlife, variation in layer thickness etc.) In practice you have to multiply with a waistfactor varying from 1.2 to 2 according to your own experience.

In our documentation we calculate with a waste of 25 % This means that when the theoretical coverage in 600 micron is 0,8 kg/m2, the practical coverage will be 0,8kg/m2 + 25% = 1 kg/ m2.

How to calculate

Example 2: Coating a tank



Layer thickness (t) 800 microns (0,08 cm)

Cylinder part:

$2 \times \pi \times r \times h \times t = 2 \times 3{,}14 \times 50 \times 300 \times 0{,}08 = 7536 cm^3$

Top and bottom plates:

$\pi \times r^2 \times 2 \times t = 3{,}14 \times 50^2 \times 2 \times 0{,}08 = 1256\ cm^3$

Total coating volume is $7536\ cm^3 + 1256\ cm^3 = 8792\ cm^3$

Specific volume for Wencon Coating 1 kg = $745\ cm^2$

$$\text{Consumption} = \frac{8792\ cm^3}{745\ cm^3} = 11{,}8\ kg\ (\text{theoretical})$$

In practice 11,8 kg x 1,25 (or other weightfactor - see x 1) = 14,75 kg

Example 3: Coating a pipe outside **- examples calculated per m pipe**

Below is a table showing the theoretical consumption of Wencon Reinforcement Tape and Wencon blue / white coating at different pipe diameters, applying 3 rounds or 5 rounds of Reinforcement Tape. All values calculated per m pipe.

The same table can be used for Wencon HiTemp Coating and Wencon UW Coating by adding 8 % to the consumption of blue/white coating.

Important: The shown values are theoretical, and you have to multiply with a waste factor (1,2 - 2 according to your own experience) to reach the practical consumption.

Pipe diameter	3 Rounds	5 Rounds
1 mtr x 20 mm	0,13 kg - 8 m	0,22 kg - 13 m
1 mtr x 30 mm	0,20 kg - 12 m	0,32 kg - 19 m
1 mtr x 50 mm	0,32 kg - 19 m	0,53 kg - 32 m
1 mtr x 60 mm	0,38 kg - 23 m	0,64 kg - 38 m
1 mtr x 70 mm	0,45 kg - 27 m	0,74 kg - 44 m
1 mtr x 80 mm	0,51 kg - 31 m	0,85 kg - 51 m
1 mtr x 90 mm	0,57 kg - 34 m	0,95 kg - 57 m
1 mtr x 100 mm	0,64 kg - 38 m	1,10 kg - 63 m
1 mtr x 120 mm	0,76 kg - 46 m	1,30 kg - 76 m
1 mtr x 160 mm	1,02 kg - 61 m	1,70 kg - 101 m
1 mtr x 200 mm	1,30 kg - 76 m	2,10 kg - 126 m
1 mtr x 250 mm	1,60 kg - 95 m	2,70 kg - 157 m
1 mtr x 300 mm	2,00 kg - 113 m	3,20 kg - 189 m

Wencon Test Methods

All Wencon Epoxy products ares tested according to below mentioned methods.
Only the test, important for calculation of which product to choose for which application, are mentioned below:

1. All tests are with the exception of the determination of the heat resistance, executed at room temperature 20°C (68°F).

2. The potlife and "highest temperature during reaction" are determined with 100 grams mixed material. The rise of temperature is measured with the aid of a digital thermometer.

3. For the determination of the heat resistance, the products are coated on steel plates and stored during seven days at room temperature. After those seven days they are stored at elevated temperature and reviewed every 24 hours.

4. Compressive strength:
   - curing time: 14 days
   - dimensions of the cubes: 13 x 13 x 13 mm
   - used testing machine: Wolpert, type TT 1220 25 kN
   - testing speed: 5 mm / min

Modulus of elasticity: A calculated factor showing the relationship between the press on the material and the defomation.

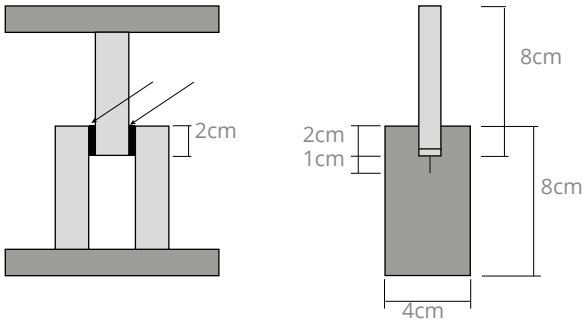
R crack : The point where the material breaks apart

5. Tensile strength:
   - Curing time: 14 days
   - used testing machine: Wolpert, type TT 1220 25 kN
   - Testing speed: 15 mm / min

Modulus of elasticity: A calculated factor showing the relationship between the press on the material and the defomation.

R crack : The point where the material breaks apart

6. Shear adhesion to steel: The shear adhesion is determined according to the subjoined illustration



The test bars are sandblasted to optimise the adhesion of the applicated Wencon product. After the surfaces were glued together with the several Wencon products, they are cured seven days at room temperature.

The shear adhesion is determined using the following testing machine: Wolpert, type TT 1220 25 kN.
The shear adhesion is calculated according to following formula:

X = P / A

X: shear adhesion (N/mm2)

P: pressure at break (N)

A: total of the glued area (mm2)

Test of resistance to liquid pressure

Test of resistance to liquid pressure for Wencon

Product: WENCON RAPID

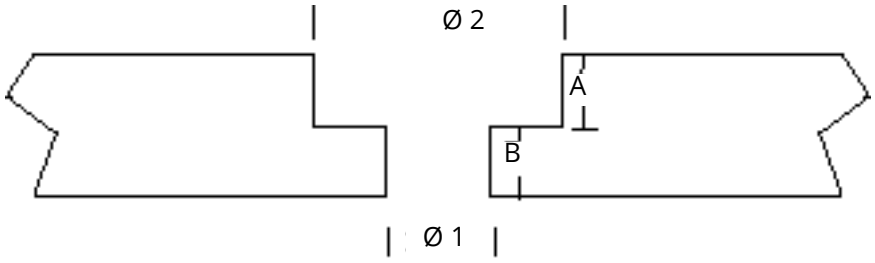
Test issued by: Flådestation Frederikshavn (The Danish Navy) being accredited test facility for pressure tests.

Objective: To establish a description for the product´s ability for use in repairing holes and leaks in pressure vessels, pipes, etc.

Description: Two specimens were made, having holes as shown in ill.

1. Ø 1 = 11,2 mm, Ø 2 = 50,0 mm, A = 5 mm, B = 7 mm, reinforcement.: None.
2. Ø 1 = 16,0 mm, Ø 2= 50,0 mm, A = 10,0 mm, B = 9 mm , reinforcement : 2 layers of fiber tape

The water pressure was given from the side, where Ø 2 is situated.



The test pieces were made and were left for curing in 48 hours. Hereafter they were subjected to water pressure.

1. Test piece No. 1 was mounted in the test stand, sealed with klingerit seal for 25 bar. The pressure was raised to 60 bar, at which pressure the seal was blown out. The test stand was renovated and O-ring seats were machined instead. The test was repeated. In the second test, the pressure was raised to 160 bar, at which pressure the flange was deformed to an extent, where the O-rings were blown out.

Conclusion:

At a pressure of 160 bar, there was no sign of damage to the repaired area of Testpiece 1.

2. Test piece No. 2 was mounted in the test stand, and the pressure was raised to 425 bar, at which pressure the flange was deformed to an extent, where the O-rings were blown out.

Conclusion:

At a pressure of 425 bar, there was no sign of damage to the repaired area of Testpiece 2.

16.05.95

DANAK Reg. No. 8

Test Report

FORCE-Dantest CERT

Wencon ApS
Jyllandsvej 15
DK-5400 Bogense

File No. 133224/m1493-681
Date 2000-03-01
Page 1 of 1
Enclosure 0
KG/BR

FORCE INSTITUTE

FORCE Institute hereby informs you about the result of the testing of 5 pieces of steel pipe delivered to us on 16th February 2000.

The pipes had an outside diameter of approx. 50 mm and a length of approx. 260 mm and they were numbered 2, 3, 5, 6 and 8 respectively.

The pipes were closed in both ends with a welded end plate - one solid and one with a threaded hole, and each pipe had a wrapped bandage with a total width of approx. 90 mm. According to statement the bandages were placed to cover bored holes with diameter 5 mm.

To each pipe an increasing internal water pressure was applied up to 240 bar at room temperature.

All the bandages leaked water at a pressure lower than 240 bar but after releasing the pressure of 240 bar no visible defects were observed on the bandages.

The pressures where the bandages showed leakage are stated in the table below.

Pipe No.	Leakage occurred at
2	155 bar
3	160 bar
5	175 bar
6	169 bar
8	158 bar

FORCE Institute
Inspection and Testing

Kjeld Grønfeldt
B.Sc. (Mech. Eng.)

Declaration of Asbestos-Free Products

Manufacturer / Supplier

Company name:	Wencon ApS
Street:	Jyllandsvej 15
ZIP code:	5400
City:	Bogense
Country:	Denmark
Name of authorized representative:	Erik Wendelin
Position:	CEO
Phone:	+45 6481 1010

We declare in accordance with the SOLAS Regulation II-I/3-5, New Installation of Asbestos in connection with IMO MSC.1/Circ.1374 and 1379:

All materials, products and components for supply by our company are completely free of asbestos.

On behalf of:	Wencon ApS (Company name)
Date:	August 14, 2013
Signature / company stamp:	

Chemical resistance list

Inorganic Acids	Arsenic acid	2
	Carbonic acid	2
	Hydrobromic acid (0-10%)	2
	Hydrochloric acid (0-10%)	2
	Hydrochloric acid (10-20%)	1
	Hydrochloric acid (above 20%)	0
	Nitric acid (0-10%)	2
	Nitric acid (10-20%)	1
	Nitric acid (above 20%)	0
	Nitrous acid (0-10%)	2
	Oleum	-
	Phosphoric acid (0-5%)	2
	Phosphoric acid (5-10%)	1
	Sulfuric acid (0-10%)	2
	Sulfuric acid (10-20%)	1
Organic Acids	Acetic acid (0-10%)	2
	Acetic acid (10-20%)	2
	Acetic acid (above 20%)	0
	Benzoic acid	2
	Carbolic acid	0
	Chloroacetic acid	0
	Chlorosulphonic acid (dry)	0
	Chlorosulphonic acid (wet)	0
	Creosote oil	0
	Cresylic acid	-
	Fatty acid (high mol.w)	2
	Formic acid (0-10%)	1
	Formic acid (above 10%)	0
	Lactic acid (0-10%)	1
	Linoleic acid	2
	Maleic acid	2
	Malic acid	2
	Oleic acid	2
	Phenol (100%)	-
	Phthalic acid	2
	Phthalic anhydride	2

Chemical resistance list

Alcohols	The test for alcohols show good resistance. However, Wencon recommend to make a test for each application.	
Alkalis	Ammonia, anhydrous	2
	Ammonia, solution	2
	Barium hydroxide	2
	Calsium hydroxide	2
	Magnesium hydroxide	2
	Potassium hydroxide (0-20%)	2
	Potassium hydroxide (above 20%)	1
	Soap solutions (stearates)	2
	Sodium Hydroxide (0-20%)	2
	Sodium hydroxide (above 20%)	1
Oils	The system seems to be resistant to all types of oil, vegetable, animal and mineral types as well as hydrocarbons except for the halogenated ones.	
Key	Very good	2
	Good	1
	Fair	0
	Not good	-
	Before entering large application jobs, it is recommended to test the product against the medium.	
	THIS RESISTANCE LIST IS ONLY FOR INTERNAL USE AND IS NOT MEANT AS PART OF THE BROCHURES. LABORATORY TESTS DO NOT ALWAYS SHOW RELIABLE FIGURES. WENCON COMPANY TAKES NO RESPONSIBILITY FOR APPLICATIONS MADE.	

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1 Blasting

There are basically two different methods of blasting. Wet blasting and dry blasting. Shot-blasting, sand-blasting and grit-blasting employ different types of blasting material, but are essentially the same. In this manual we will use the word blasting.

1.1. Dry Blasting

Dry blasting is the most common kind of blasting. Blasting is not only used for cleaning metal surfaces, but is also used widely for cleaning before painting houses, steel constructions etc. Blasting offers the best physical adherence, prior to application with Wencon products and is the most efficient way of cleaning the parts. We recommend to use blasting prior to an application. If blasting is impossible, other ways of surface preparation must be adopted. Machine parts that have been in use, for instance in sea water, will have quite an amount of water and salt penetration into the metal structure. This penetration should be removed before application, meaning; sufficient salt and water should be removed, to ensure salt and water do not enter the surface of the substrate, before Wencon compound has cured. If the surface of a machine part shortly after blasting, turns black or very dark, it may be a sign of salts sweating from the substrate. A way of accelerating the sweating out of the salts, is by heating up the part or leaving it in a warm place for at least 12 hours. The most efficient way of removing water from the substrate is by using dehumidification units. (See Wet Blasting) In most cases it may be a good idea to use written specifications.

Specification for Dry Blasting

1. Blast the machine part to SA 2 ½ using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40 °C (86-104 °F) using gas torches.
3. Blast again to SA 2 ½ immediately prior to the application.
4. For parts containing lots of water and salt it may be necessary to repeat 2. and 3. until the surface remains light grey for at least 2 hours after blasting. Most companies will understand a specification like this, but it may be necessary to check the blasting prior to application. If there are any signs of salts sweating out, the parts must be blasted again.

1.2 Wet Blasting

Some applications do not allow dry blasting, due to dust coming from the process. For instance on site, with motors, pumps, valves etc. in close proximity. The reason being that dust will enter roller bearings, etc. even inside the motors. In such conditions, the solution might be wet blasting. Wet blasting is carried out in almost the same manner as dry, but using water in union with air and grit. We use the same standards as for the dry blasting (SA 2.5, SA 3 etc.). There are two challenges that might follow wet blasting. The first being that the technique leaves the substrate wet, the other being the fact that a wet surface will oxidize before getting dry.

Dehumidification. Prior to application on a surface that has been wet blasted, a dehumidification must take place. Dehumidification units can be hired from a relevant supplier. Make sure you are instructed, to choose the correct type and size for the application. After dehumidification a light dry blasting may be necessary. It may be done using equipment, that retrieves the blasting material and dust by means of vacuum suction.

2. Rotating Blasting

Using a Rotating Blaster is like blasting, but without sand. Rotating Blaster is a rubber disc with hard steel spikes mounted on the perifericke. Rotating Blaster can be mounted in a normal drilling machine, and the result is a surface close to a blasted surface - clean and rough with sharp edges. Rotating Blaster discs can be ordered at Wencon and at all Wencon distributors.

3. Grinding

Grinding is for small repair jobs, with too many objections for blasting. Wheel grinding may be an solution, in cases where it is possible to grind the entire surface, mostly when repairing mechanical damages. Corroded areas are often in a state where a wheel grinder will only be able to cover part of the surface, and is therefore not advisable. When grinding use a coarse stone. Use Wencon Bio Cleaner before and after grinding. Grinding with sandpaper or emery cloth is only advisable when, for example, carrying out shaft-repair on a lathe.

4. Needle Gunning

Needle gunning is mainly used for very rough cleaning or removal of rust. Needle gunning takes time and should be closely supervised. It is essential, that the marks from the sharp needles cover the entire surface, so that none of the original surface remains. It is recommendable to steam clean the surface before needle gunning. (see steam cleaning)

5. Machining

When carrying out mechanical repair jobs, using a lathe mill for turning is often the best and easiest way of preparing the surface. By repairing, for instance a worn shaft damaged by a loose roller bearing, using a lathe to a rough standard should be done prior to degreasing and application.

6. Steam cleaning

An effective method of removing salt and oil remaining in the substrate is to use steam cleaning. Steam cleaners are available from most plant hire firms. Use steam temperature of approx. 95 °C and repeat the process three times, leaving the substrate to dry for some 15 minutes between each cleaning. Steam cleaning is not sufficient in itself. It must be followed by blasting or one of the other surface preparation methods.

7. Dehumidification

A very simple and effective method of removing moisture, whether it be moisture in the metal or from wet shot-blasting, is dehumidifying. Even parts which appear to be completely dry, can contain large quantities of moisture. When coating tanks, or other totally or partly enclosed parts - large pumps, pipes, etc. - dehumidification is recommended, as humidity emanating may condense on the part and reduce the physical adherence. Dehumidification units (DU) in different types and capacity units can be rented in most places. Position the DU close to the substrate to be treated, and insert the tube carrying dry air into the tank or part. If the parts to be treated are numerous and small, make a tent of plastic sheets and feed the tent. A few hours of dehumidification is enough to obtain a dry and good surface ready for the application. A quality requirement of dehumidification, is that during the coating process there must be a temperature of minimum 3°C. above the point of condensation. The point of condensation temperature is the highest the part must have, when moisture from the surroundings falls on the part and condenses. The point of condensation is thus dependent upon the temperature of the part, the ambient temperature, and the relative humidity of the air. Instruments exist for measuring these values, and where the repair of large parts is concerned, conditions should be laid down regarding this, if the application is to be done by subcontractor or customer.

8. Steel brushing

Cleaning by using a steel brush (by hand or on a machine) is not recommended. A steel brush leaves a polished surface, which will reduce the adhesion of Wencon or other products - paint etc.

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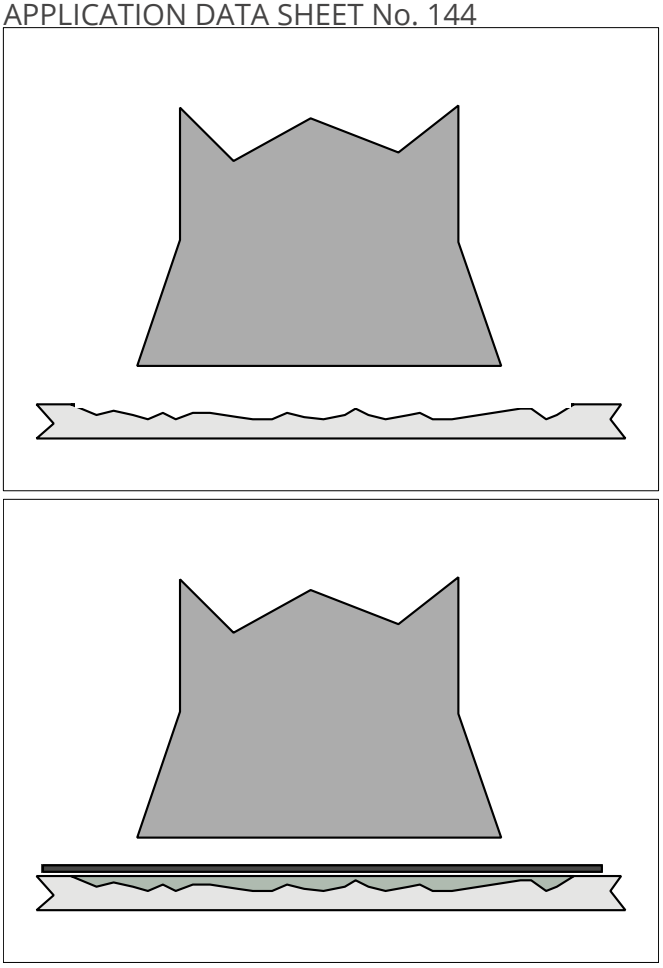
Ballast tanks - corrosion

APPLICATION DATA SHEET No. 144



Steel construction near the inlet of a pump often suffers from erosion/corrosion and impingement. If the deterioration has reached a point, where the thickness of steel plates is critically small, doublers should be welded in before this treatment.

1. Clean the area around the inlets thoroughly acc. to Wencon surface preparation, next page.

2. Mix and apply a suitable amount of Wencon Cream or Rapid to rebuild the damaged area. Let it cure until the surface is stiff but still slightly tacky.

3. Mix and apply Wencon Coating white, with brush or spatula, see instructions for use. Let it cure for approx. one hour.

   Apply the final coat of Wencon Coating, blue and after curing the Application is completed.

If a general tank coating shall be applied on top of the repaired area, it is advisable to grind the cured, glossy surface for better adhesion. Alternatively, if the tank coating is epoxy based, it can be applied shortly after the final coating, and make an excellent adhesion.

Alternative - wet surface

If the repair has to take place during normal traffic, it will be difficult to dry the surface before applying. In this case it is very convenient to use Wencon UW Cream and Wencon UW Coating, which give a good adhesion.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

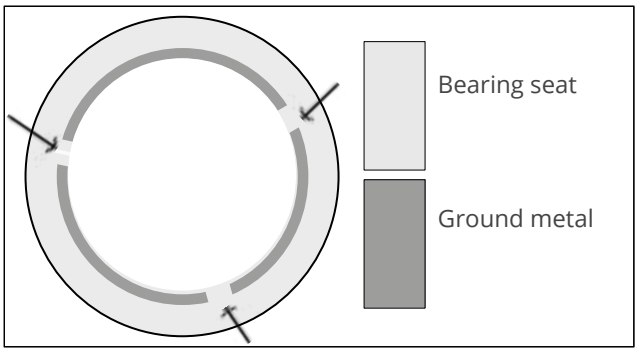
- Blasting
- Grinding
- Needle Gunning

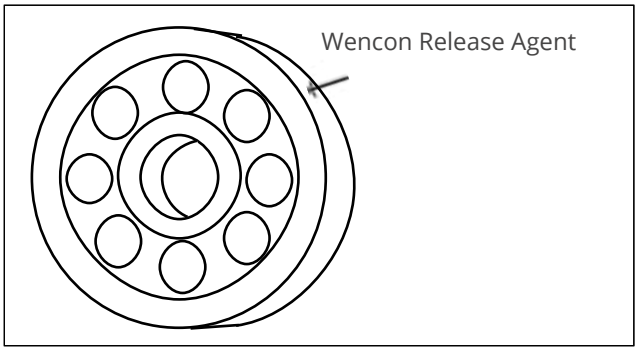
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

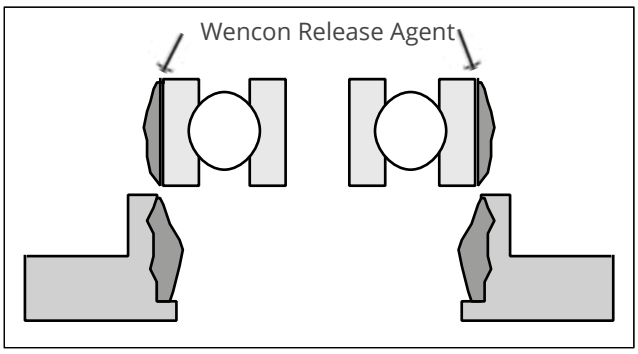
For further information on Wencon surface preparation, please contact our Area Sales Managers.

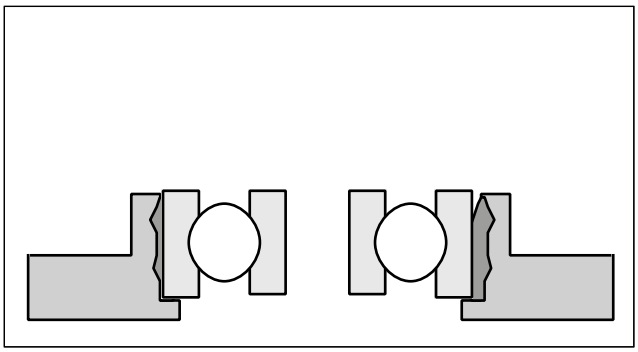
Bearing seat - oversized

APPLICATION DATA SHEET No. 103









1. Remove the old bearing. Degrease the bearing seat acc. to Wencon surface preparation. Mark out three locations (note the arrows) which must not be grinded. The purpose of these marks is to ensure good centering. Grind between these locations approx. 0.5-1,0 mm (0,02- 0,04 inch) into the metal. Clean again acc. to Wencon surface preparation, next page.

2. Apply a thin layer of Wencon Release Agent to the new bearing. Allow to dry for approx. five minutes, then wipe clean until only a film is left.

3. Mix and apply an adequate layer of Wencon Cream or Rapid to both the bearing seat and the bearing itself.

4. Position the bearing correctly in the seat and allow curing. Please refer also to directions for use.

The repaired bearing seat has a compressive strength 7-12 times higher than normally required.

Variations:

Seats for bushings are repaired in the same way.

This type of work can also be carried out in a turning lathe. All Wencon products are fully machinable after curing.

In some cases it may be an advantage to use a purpose made mandrel to do the casting.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

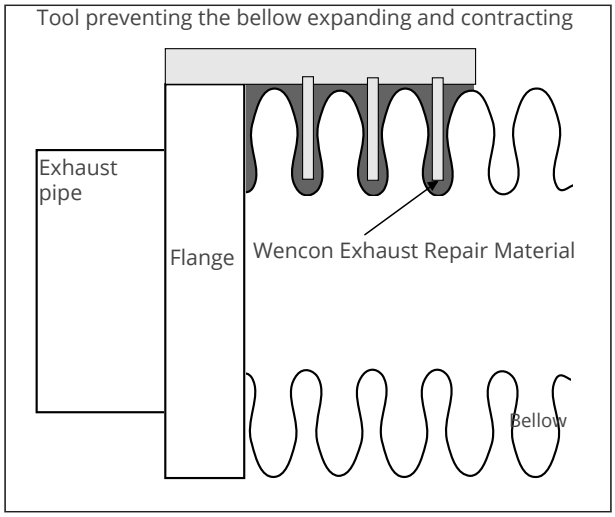
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Bellow repair

APPLICATION DATA SHEET No. 155



Repair of Bellow can be done as an emergency repair. Below description will guide you through the steps.

1. Prepare pieces of iron that shall prevent the bellow to move in the area, in which they are inserted.

2. Prepare one or more pieces of iron, onto which you weld the pieces mentioned in 1. in order to hold them in position.

3. Apply the Wencon Exhaust Repair material into the grooves of the bellow.

4. Before it cures, put your tool as mentioned above into the wet material and weld it to the flange or the like, depending on how it looks.

5. Let the Exhaust Repair material cure as long time as posssible. If it is not allowed to cure enough, the gas will leak again.

Importent:
Only meant for emergency, until a new bellow can be mounted.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

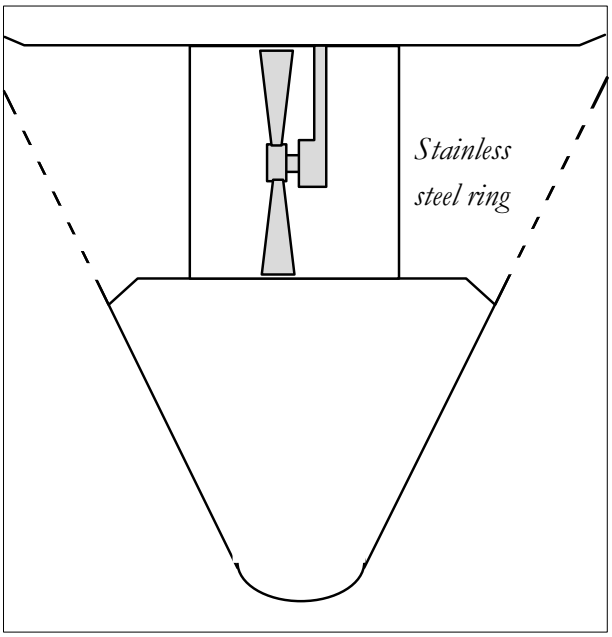
- Blasting
- Grinding
- Needle Gunning

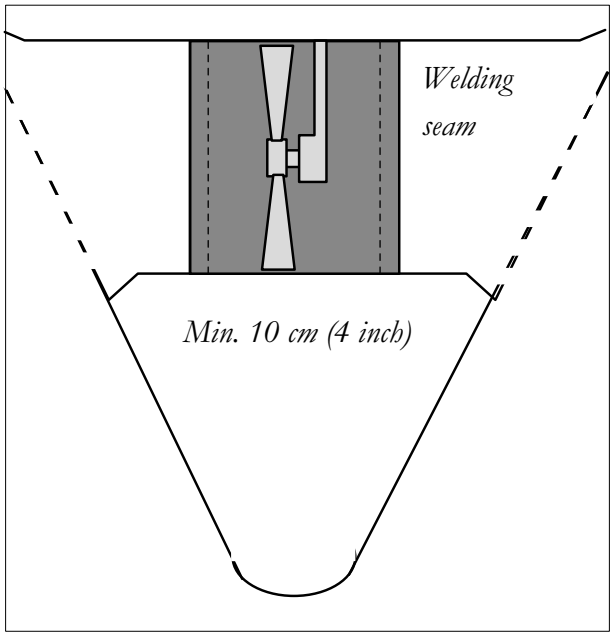
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Bow Thruster tunnel - corrosion

APPLICATION DATA SHEET No. 156





Wencon

The Bow thruster tunnel can be suffering from bi-metallic corrosion. The reason is a mix of many different metals in the area - mild steel, stainless steel ring, bronze head / propeller etc.

The area is easy to repair and to protect against bi-metallic corrosion, by rebuilding the pittings with Wencon Rapid, and coating with Wencon Coating.

1. Blast the area to SA 2,5. All the attacked areas have to be blasted - at least to 10 cm on each side of the welding seams for the stainless steel ring. Clean acc. to Wencon surface preparation, next page.

2.Coating white, while the Rapid is tacky, and let it cure.

3. Mix and apply the second layer of Wencon Coating blue, while the first layer is still tacky and let it cure.

4. The tunnel can be painted with a common ship paint here after to have an even colour.

Bow Thruster Heads can be suffering from bi-metallic corrosion. This can be repaired using the same method.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

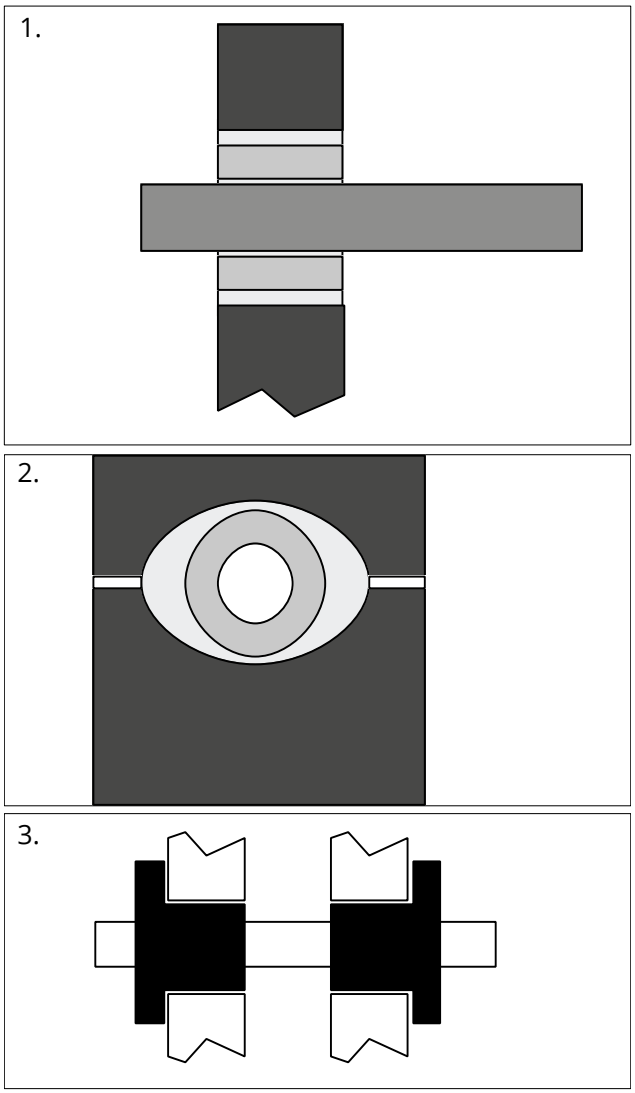
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Bushing seats - casting

APPLICATION DATA SHEET No. 140



Casting of seats for bushings, bearings, etc. provide some advantages, compared to more conventional techniques.

1. Remove the old bushing or bearing. Grind and prepare the surface acc. to Wencon surface preparation, next page.

   To secure easy disassembly, apply a thin film of Wencon Release Agent on the bushing or bearing.

   Basically, there are two different ways of making the application, injecting the material after having mounted the bushing or by applying the material before the bushing is mounted.

2. & 3. Drill holes in the bushing seat as shown in ill. 3. Mount the bushing and hold it in position (typically by inserting the shaft).

Mix a suitable amount of Wencon Cream or Rapid and fill it into an empty cartridge for the injection gun (cartridges can be supplied by Wencon).

The gap between the seat and the bushing can easily be sealed with Wencon Putty. In some cases it is more convenient to drill the holes in the bushing.

If the bushing is not available, the seat can be casted by the means of a casting tool, made to the right measures. see ill 3.

The technique is as described above. Less accurate is the technique, where you apply the Wencon Cream or Rapid to the surface of the bushing as well as into the seat.

Hereafter the bushing is inserted and the centration is then established by the means of the shaft or a tool made for it.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

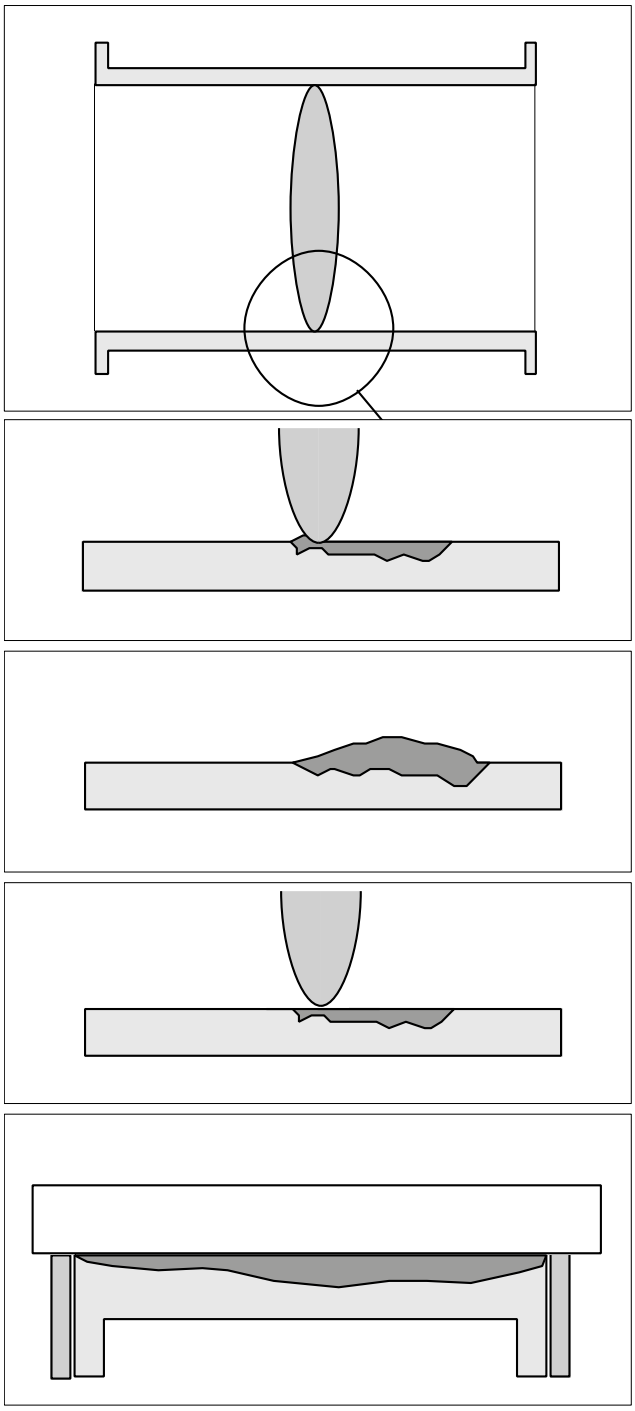
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Butterfly valve - corrosion

APPLICATION DATA SHEET No. 127



Valves are normally repaired due to bimetallic corrosion or erosion / corrosion. In both cases, the surface preparation is very important.

Carry out surface preparation, acc. to Wencon surface preparation, next page.

Method 1
Open the valve, and apply Wencon Release Agent on the valve plate.

Mix and apply a suitable amount of Wencon Cream or Rapid into the corroded area in the valve housing and close the valve.

A perfect fit between the plate and the housing is hereby created, see fig. 1. After curing, open the valve and grind away excess material.
If the plate is corroded, this must be repaired prior to the housing.

After the repair, the entire surface should be coated with Wencon Coating to prevent further corrosion.

Method 2
Disassemble the valve, and grit blast the parts.

Apply Wencon Cream or Rapid to the corroded areas (or the whole internal surface), leave it for curing and machine it to the right measures.

After machining, apply Wencon Coating to prevent future damage.

If the housing is badly corroded, it can be advantageous to make two plywood "flanges" to help give the right surface inside.

Use a big template for the application see fig. 4.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

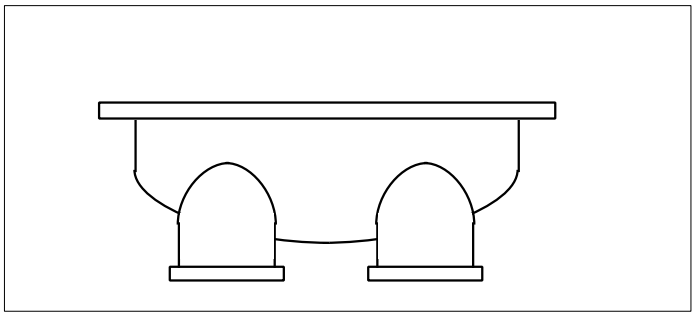
- Blasting
- Grinding
- Needle Gunning

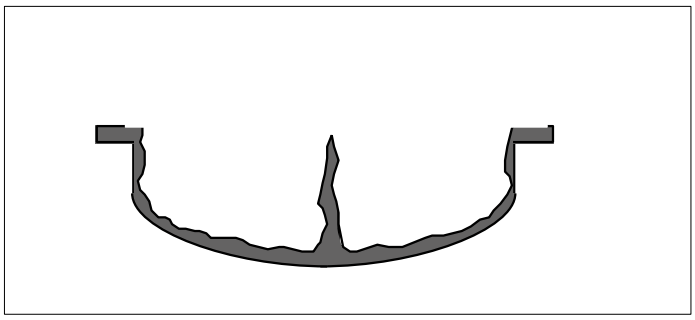
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

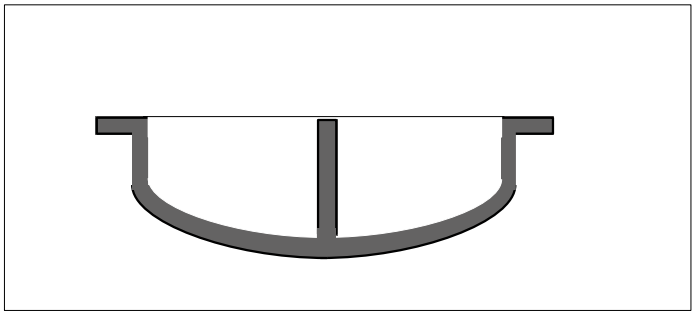
For further information on Wencon surface preparation, please contact our Area Sales Managers.

Cooler end cover - corrosion

APPLICATION DATA SHEET No. 105







1. Disassemble the end cover and carry out the surface preparation acc. to Wencon surface preparation, next page.

2. Build up the end cover to its original shape with Wencon Cream or Rapid. If there are holes in the metal, in the outer sides or in the division bar, it will be an advantage to reinforce the repair with Wencon Reinforcement Tape or a piece of metal mesh. The metal mesh is particularly advantageous with big holes, as the rigidity of the mesh, eases the application.

   Apply the Wencon well beyond the edges, and after curing grind away the surplus with a wheel grinder.

3. Build up also the edge of the division bar and prior to curing fit and tighten in place a piece of angle iron or the like, on the flanges, in such a manner that the division bar is given its required shape. The iron rail is treated with Wencon Release Agent before tightening in place.

After rebuilding and partial curing brush a layer of Wencon Coating, white over the entire end cover. Allow to cure for 1-2 hours, then finish with a coating of Wencon Coating, blue.

Alternatives

If the end cover is corroded only on the packing surface of the division bar, the repair is done by grinding and cleaning this, applying thereafter a coat of Wencon Rapid, followed by a coat of release agent on the tube end plate. Mount the end cover before curing takes place. The packing surface will then be shaped automatically.

Re. curing times. Please refer to the appro-priate directives.

NOTE ! Be careful with the coating. If there are holes in the coating, these may cause bi-metallic corrosion.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

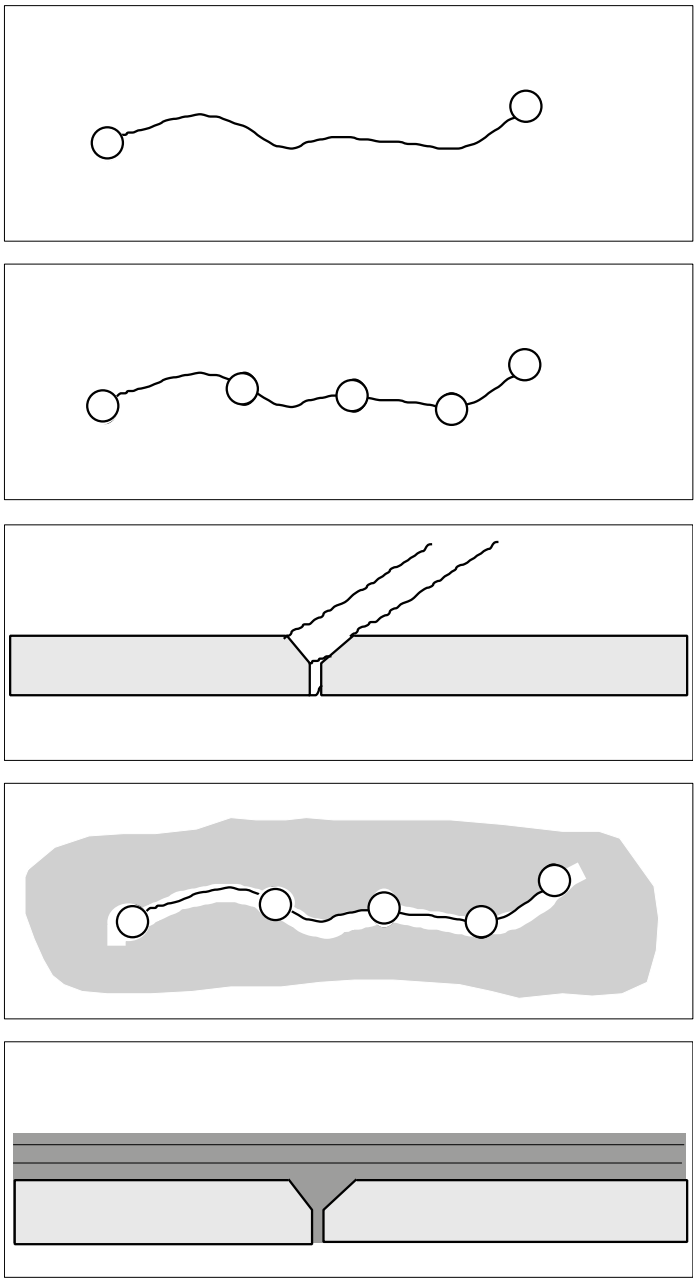
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Cracks in cast iron

APPLICATION DATA SHEET No. 101



1. Drill a hole in each end of the crack, to prevent the crack elongating.

2. Drill holes (at least one) at 5 cm (2 inch) intervals, directly in the crack. Place a self-tapping screw in each hole (except for the two extreme positions) to prevent the crack from moving.

3. With an angle-grinder, grind a "V" directly in the crack. Also grind away the screwheads.

4. Grind the surface in a wide belt around the repair area and clean acc. to Wencon surface preparation, next page.

5.a Apply a thin layer (approx. 1 mm) of Wencon Cream (or Rapid). Place a piece of Wencon Reinforcement Tape in the layer, and apply 2-5 additional layers of Wencon Cream with Wencon Reinforcement Tape between the layers. Allow curing.

5.b Make corresponding holes in the fixation plate and push the anchor bolts through the plate and the holes, making sure that the anchor hooks up on the backside of the wall. Apply the Wencon product between the fixation plate and the wall and tighten it using the washers and the nuts.

Remarks
Make sure to prepare the backside of the fixation plate.

Note: The purpose of this repair job is only to seal the crack, not provide physical strength.

Alternative products: Wencon UW Cream

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

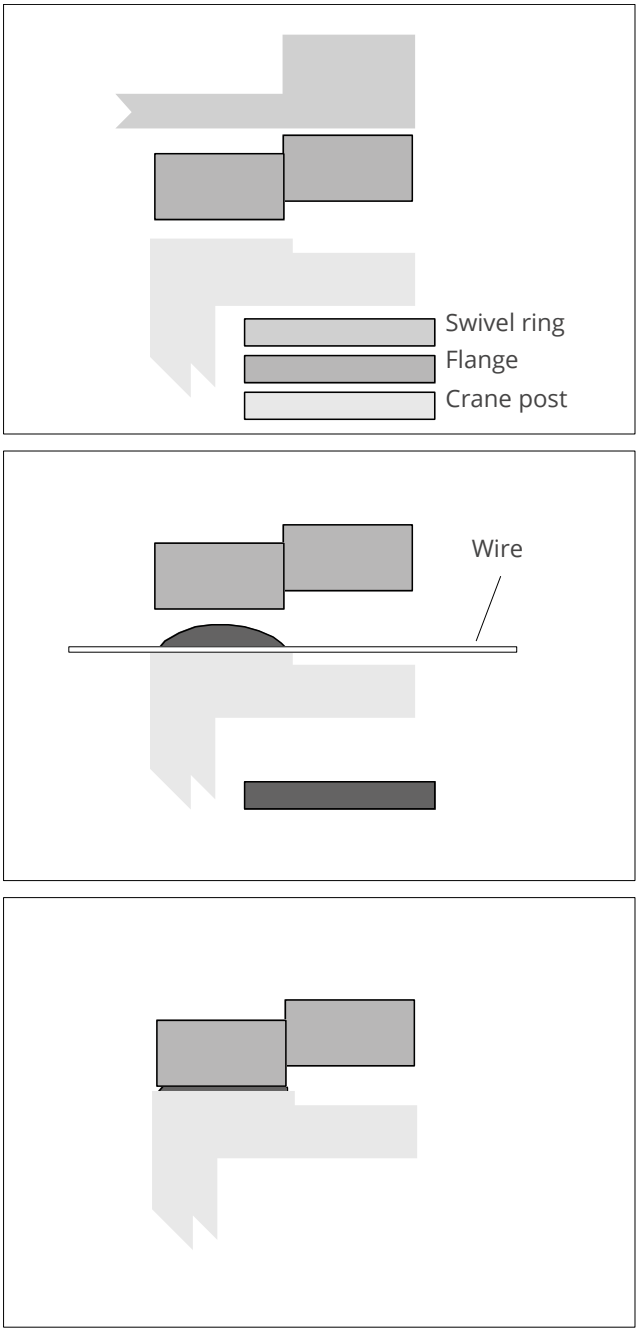
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Crane, swivel ring - casting support

APPLICATION DATA SHEET No. 130



There can be many reasons for gaps between a flange and the swivel ring to mate the surface of the flange. Poor machining, no machining, distortion arising from welding, corrosion, bimetallic corrosion etc.

1. Prior to starting up the application, the compression of the swivel ring must be known. Wencon requires at least 5 - 10 N/mmsq. Wencon Cream offer a compressive strength of 86 N/mmsq., so in most cases, a Wencon solution would be ideal for this application.

2. The job is simple. Lift the swivel ring to enable grinding of the flange top. Clean the flange top using Wencon Cleaner. Apply Wencon Release Agent to the bottom surfaces of the swivel ring. Allow to dry for 5-10 min., and remove eccess. Also threat the bolts.

Mix and apply a suitable amount of Wencon Cream. The final layer must be min. 2-3 mm (0,08-0,12 inch). To avoid air entrapment, apply thickest on the middle. For every 20 cm, place a 2 mm (0,08 inch) metal wire (welding electro de) across the flange to create an even casting.

3. Place the ring in position, and empty the bolt holes for Wencon material. Mount the bolts, but do not tighten them.

After curing, loosen the bolts, and take away the wire.

The job is done, and you can mount the swivel ring. If you have got air entrapment, these can be repaired easily, by grinding the dent, and fill it with Wencon Cream, let it cure and grind away excess material.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

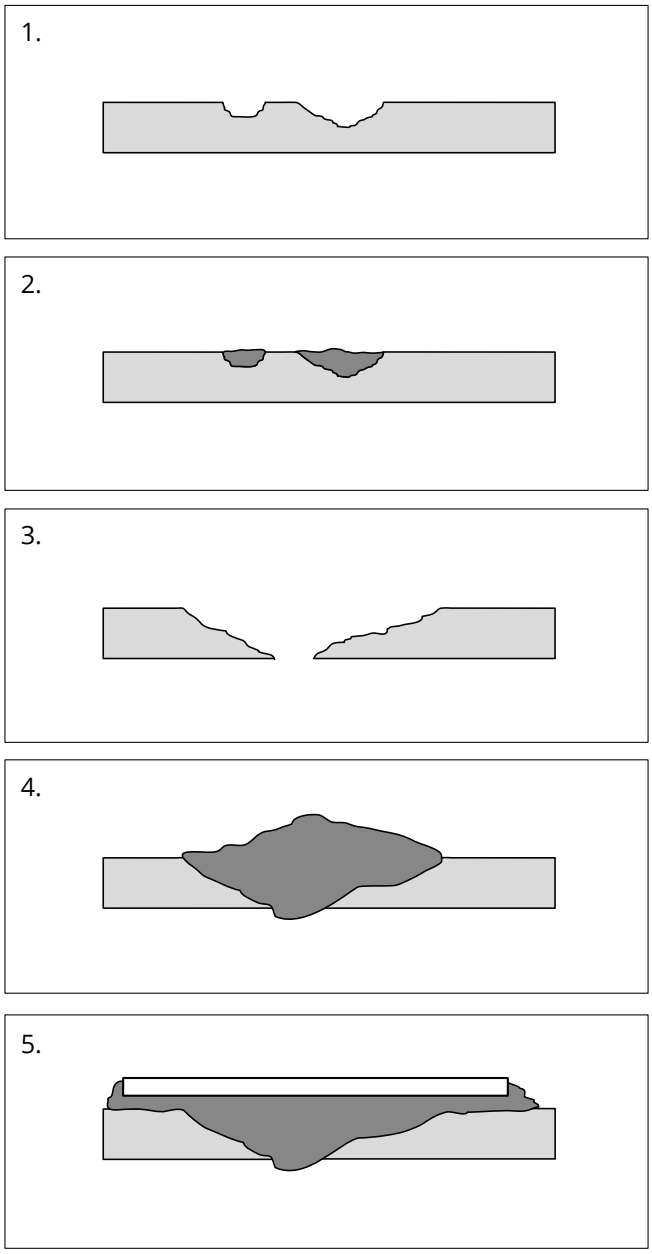
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Deck - corrosion

APPLICATION DATA SHEET No. 132



Corrosion attack on deck can be refurbished using Wencon products. Wencon products have a penetration time of more than 15 years, and has an outstanding adhesion to metals.

1. Prepare the surfaces acc. to Wencon surface preparation, next page.

2. Mix and apply a suitable amount of Wencon Cream or Rapid, and leave it for curing. After curing 4 - 8 hours, it can be painted.

3. In situations, where the corrosion has come through the deck, it is advised to put on a doubler.

4. Apply the Wencon as shown.

5. Press firmly a small steel plate, already ground and degreased on one side, into the uncured material, to provide strength.

Follow the instructions in Wencon Instruction for use, supplied with the material.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

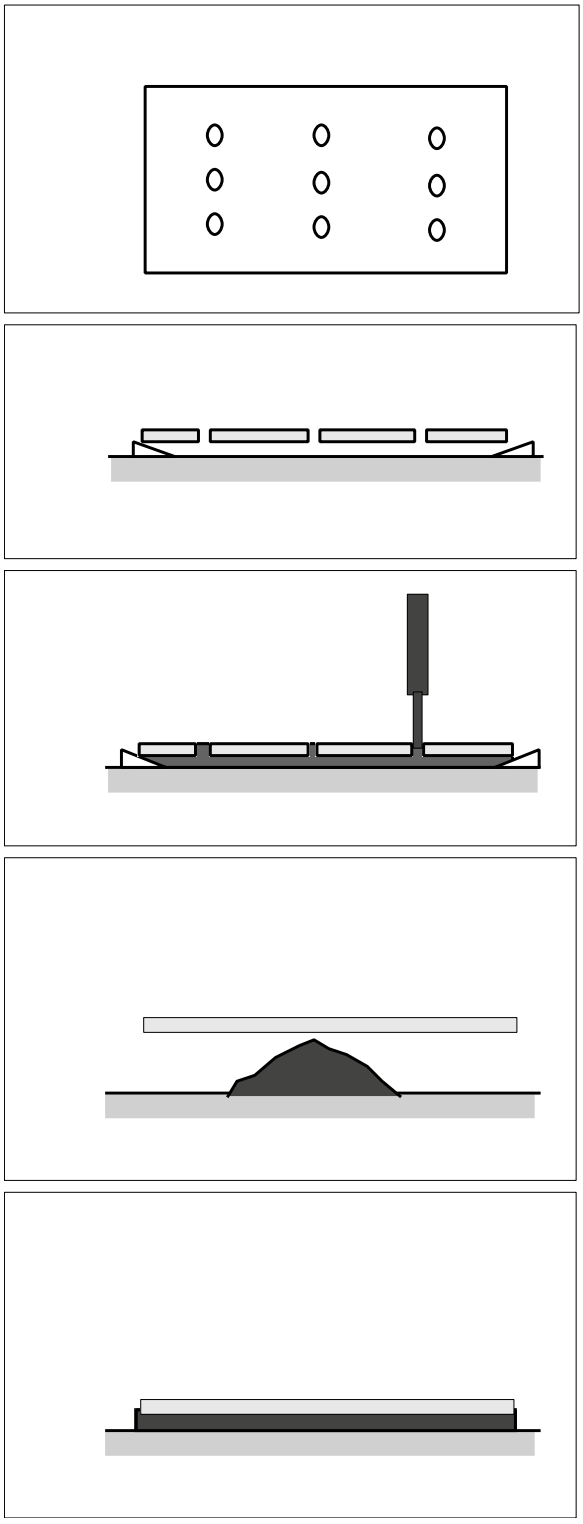
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Doubler plates on deck - fixation

APPLICATION DATA SHEET No. 131



Often, it is not possible to fix a doubler by welding. For instance on a tank top.

Below find two methods for the application.

Method 1

1. Drill holes in the doubler 6-8 mm (0,24-0,32 inch) Ø for injection. Make one hole for every 400 cmsq. Grind or shot blast the mating surfaces acc. to Wencon surface preparation, next page.

2. Place the doubler on 4 wedges in the desired height min. 3-4 mm (0,12-0,16 inch).

3. Wencon Cream or Coating is mixed, filled into empty cartridges and injected through the holes. Begin in the middle area and work your way out. Make sure the gap being totally filled. After curing (see instructions leaflet) the job is finished.

Method 2

4. The job can be done avoiding the drilled holes. Mix and apply Wencon Cream or Rapid as shown in fig. 4. Make sure, that there is enough material to be squeezed out from the gap during the mounting.

5. Mount the doubler in the wet material and make sure, that excess material is being squeezed out all way round the plate to be sure of total fixation. It may be advantageous to apply a very thin layer of Wencon on both mating surfaces initially. Let it cure before loading.

Method 2 is the fastest, but has limitations with regards to the size of the doubler. If method 2 is used on very irregular surface, it is recommended, that Wencon Cream or Rapid should be used to create an even surface before the mounting. The larger doublers the more difficult it will be to press the plate in position.

Apply vibration by the means of a pneumatic hammer or the like on the top.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

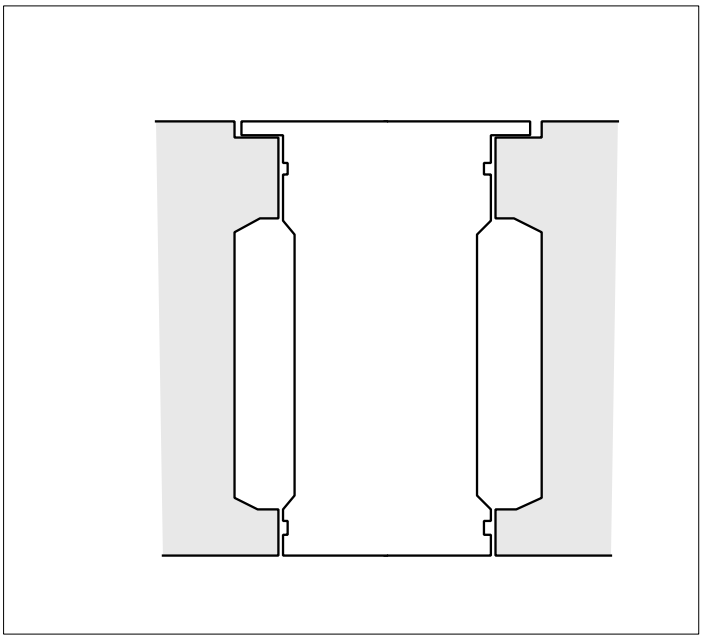
- Blasting
- Grinding
- Needle Gunning

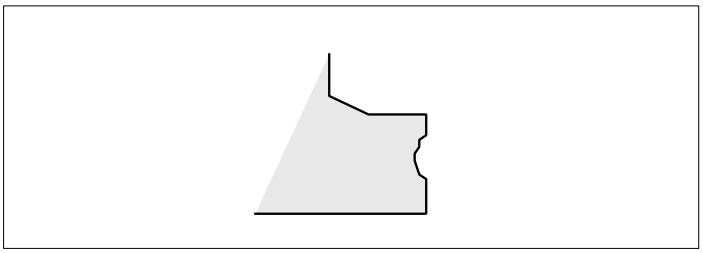
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

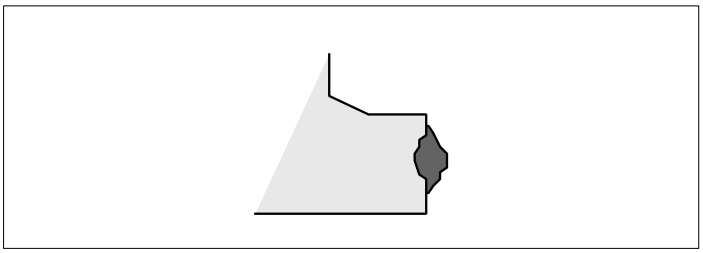
For further information on Wencon surface preparation, please contact our Area Sales Managers.

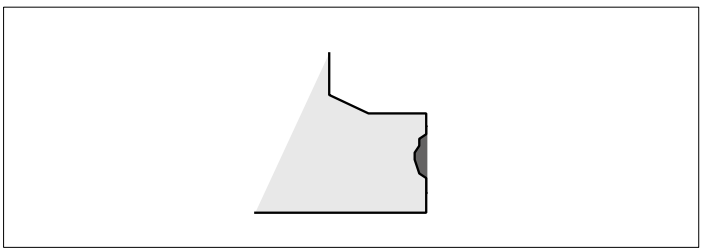
Engine blocks, O-ring seat - corrosion

APPLICATION DATA SHEET No. 137









A typical example of a small damage, having a substantial effect is the corroding of the surface that supports an O-ring between the wet liner and the engine block.

In some engines, the O-ring seat are placed in the liner, in other engines in the block, but corrosion in the mating surface will always cause severe problems.

This technique is a good alternative to welding.

1. Remove the liner and clean the corroded areas thoroughly acc. to Wencon surface preparation, next page.

2. Mix and apply a suitable amount of Wencon Ceramic Cream or Ceramic Coating and leave the surface slightly proud.

3. Let the Wencon cure according to the instructions for use. Grind the surface to an even shape using a grinding tool made with the right shape. Wencon Putty is very convenient for making a grinding tool with the correct shape.

Alternative products: Wencon Hi-Temp

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

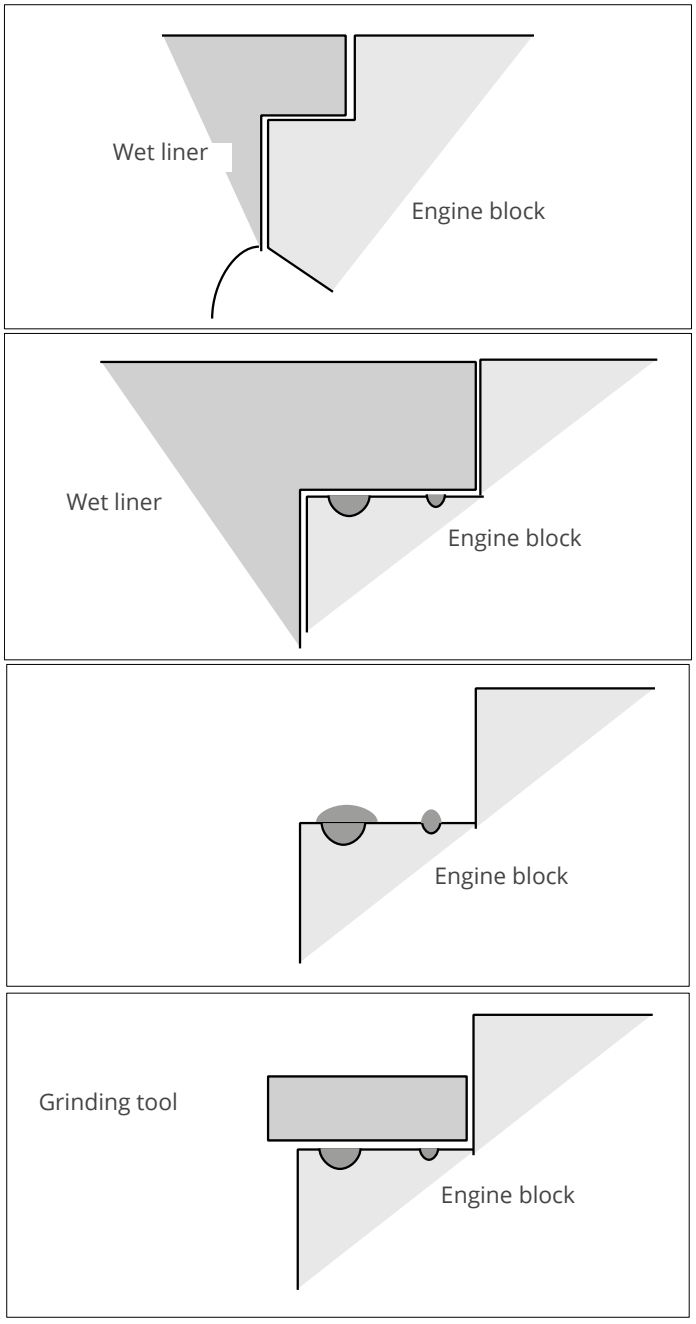
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Engine, top land surface for wet liner - corrosion

APPLICATION DATA SHEET No. 138



Problem:
Corrosion in top land surface for wet liners.

Purpose of application:
To prevent further corrosion in the pittings and to prevent leakage.

1. Grind the pittings in the surface to bare metal using small rotating equipment.

2. Prepare the surface thoroughly acc. to Wencon surface preparation, next page.

4. Mix and apply a suitable amount of Wencon Ceramic Cream or Ceramic Coating to the affected areas, and leave the surface slightly proud, see ill. 3.

5. After curing, cut most of the excess material away with a knife, and grind the surface with appropriate grinding tool as in ill. 4.

   Neither sea water, nor oil will have damaging effect on the cured repair material.

Alternative products: Wencon Hi-Temp

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

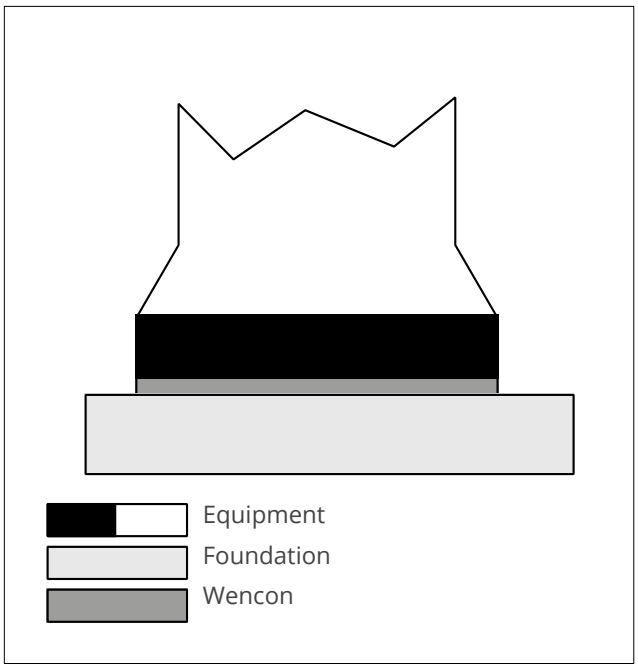
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Engines, generators - Chocking

APPLICATION DATA SHEET No. 120



Chocking, grouting or casting of resins for the purpose of creating a strong connection between foundation and equipment, has become more common in the marine industry.

It is a very quick way of securing an engine, and specially when doing repair on a ship, the time consumption is of the greatest importance.

Wencon supplies a small and efficient range of products for these kind of applications. Wencon Cream is paste consistency for injection and Wencon Coating for pouring and injection.

The Wencon range is known for its quick curing and for the limited amount of product needed. Whilst most chocking compounds should be applied in a thickness of about 25-35 millimeters (1,0-1,4 inch), Wencon products will do with only 4-5 mm (0,16-0,2 inch) and still cure perfectly within a short time.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

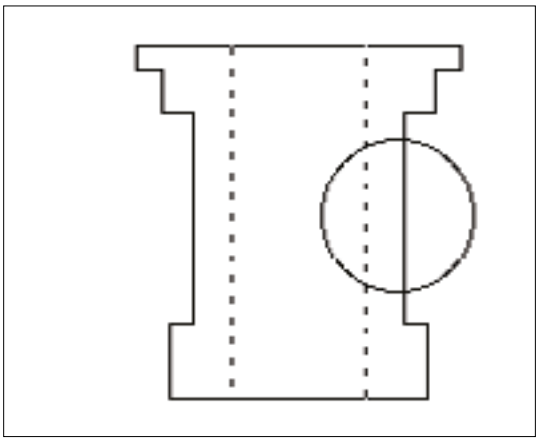
- Blasting
- Grinding
- Needle Gunning

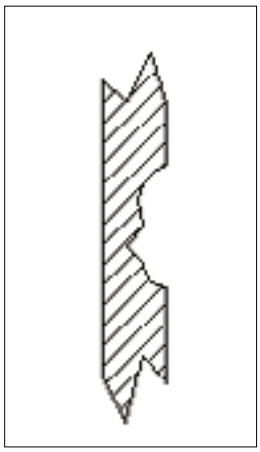
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

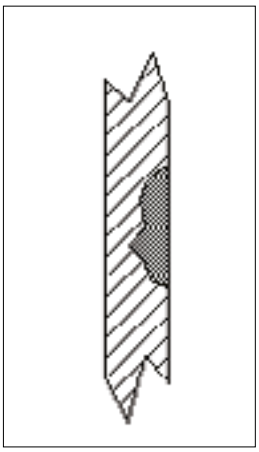
For further information on Wencon surface preparation, please contact our Area Sales Managers.

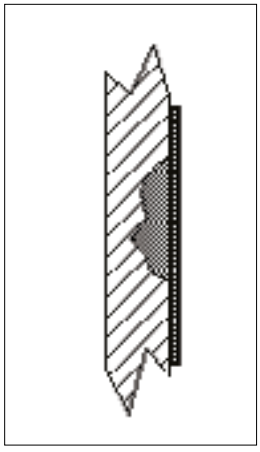
Engines, wet liners - corrosion

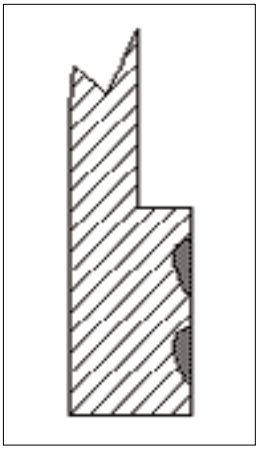
APPLICATION DATA SHEET No. 134











Wencon can provide a solution to repair of wet liners for engines. Corrosion on the outside of the liner, and deterioration of the metal surface of the O-ring seats in either the top or the bottom.

1. Remove the liners from the engine, and protect the machined areas on the liner with tape.

2. Shot blast the affected areas acc. to Wencon surface preparation, next page.

3. Rebuild affected areas using Wencon Ceramic products.

4. Coat the external surface of the liner, but avoid coating the machined surfaces, which shall mate the engine block.

The coating with Wencon products will prevent the bi-metallic corrosion from arising again.

Usually, the sealing of the cooling water in an engine, is created by the means of O-rings. The O-ring seats will be positioned in either the liner or in the engine block. Both the O-ring seats and the sealing surface on the other part can corrode. Either bi-metallically or by the continuos rubbing of the O-ring.

In both cases the damage can be repaired with Wencon products.

5. Use the same procedure as above, but machine the surface after the curing has taken place. The machining can be done in either a lathe or by carefully grinding with a wheel grinder. If the damage is on the block, the initial surface preparation cannot be done by shot blasting, but by grinding and degreasing with Wencon Cleaner.

Follow the instructions carefully and ask your supplier if you are in doubt.

Experience has shown us clearly, that the treatment has no effect on the temperature of the cooling water.

Alternative products: Wencon Hi-Temp

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

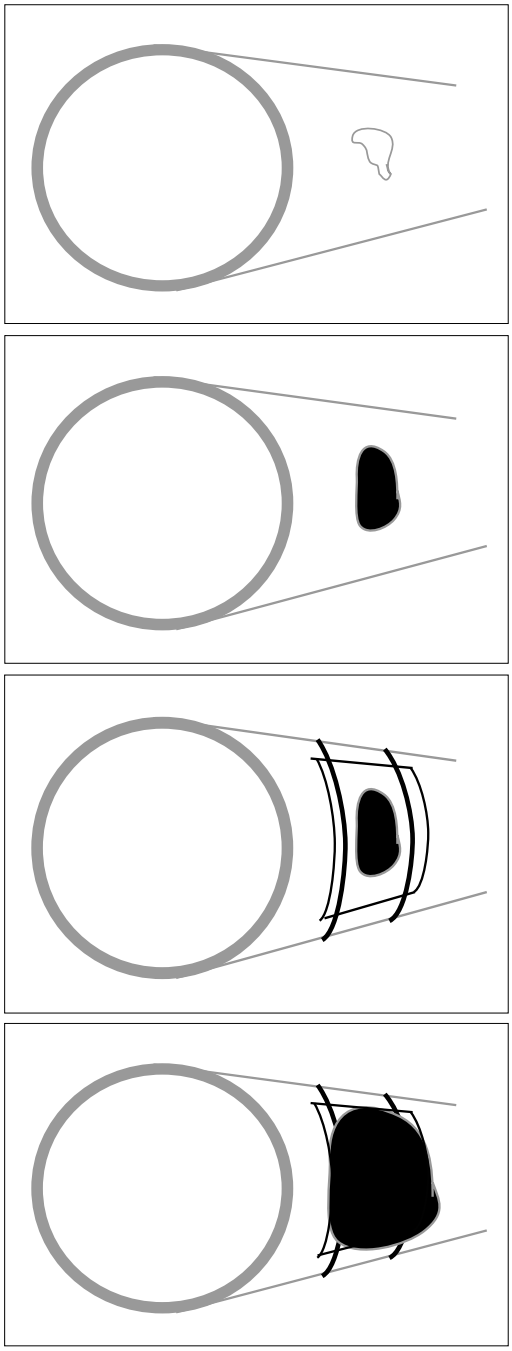
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Exhaust systems - leaks

APPLICATION DATA SHEET No. 147



Cracks or leaks in exhaust systems must be repaired by using a compound with a very high temperature resistance.

Wencon Exhaust Repair Compound is a one component product, with a temperature resistance of 1300°C (2400°F), which is ideal for this type of application.

1. Grind and clean the affected and the surrounding area thoroughly acc. to Wencon surface preparation, next page.

2. Open one of the tubs containing the product (remember this is a one component). Stir it to an even consistency. Apply a suitable amount in and around the leak.

3. Cut a suitable piece of the metal mesh and fix it to the repair area using steel band or steel wires.

4. Apply second layer of the compound and leave it for initial curing for 3-4 hours, depending on temperature and humidity. When the compound has turned hard, heat it up slowly to approx. 95°C (200°F) and leave it at that temp. for 15 minutes to fully cure.

Remarks

It is important to note, that this product is designed for emergency repair of leaks.

Read Wencon MSDS before using the product.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

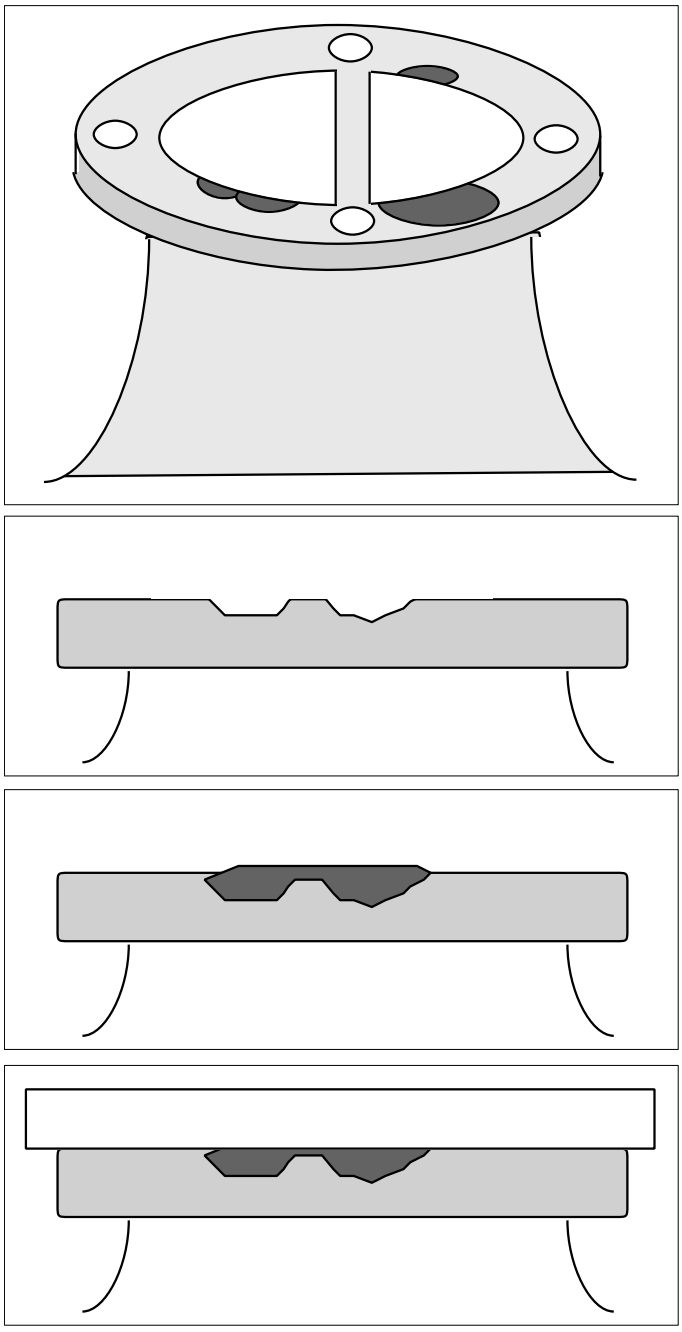
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Flange - corrosion

APPLICATION DATA SHEET No. 126



Corroded flanges can be repaired, using Wencon compound. The obvious way would be by shut blasting the flange, applying of Wencon, letting it cure, and machine the flange to size. This method is not always possible, so below find a guide how to do the application on site.

Dismantle the flange and clean thoroughly acc. to Wencon surface preparation, next page.

Prepare for application, by cleaning the corroded area acc. to Wencon surface preparation, next page.

Apply a suitable layer of Wencon Cream or Rapid on the corroded area.

Mount and hold a template to the flange until full cure has occurred. The template can be made in thick plastic plate (polyethylene) to avoid the use of release agent. If it is made of metal, use Wencon Release Agent on the template to avoid adhesion.

After curing, remove the template, and form the holes in the flange by the use of a round file.

If a number of flanges on i.e. a manifold should be in line, use a big template covering all the flanges at the same time. It is also possible to use the engine, being the mating surfaces as a template. In this case, it is essential to dismantle the manifold after curing and remove excess material.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

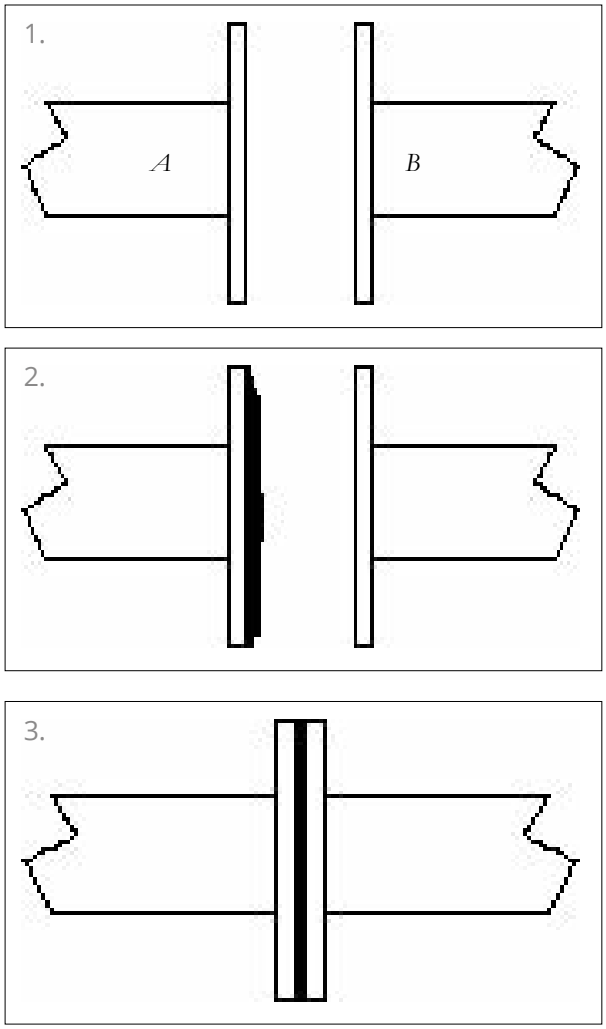
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Flange faces, bushings etc - hard seal

APPLICATION DATA SHEET No. 133



Wencon provides a very easy, quick and long lasting technique for creating mating surfaces on i.e. flange faces, bushing seats, conical couplings of shafts and/or pipes, condensers, heat exchangers, bearing seats, etc.

Follow below procedure:

1. Clean flange A using a wheel grinder and the Wencon Bio Cleaner. Clean flange B using only Wencon Bio Cleaner. See Wencon surface preparation, next page.

2. Apply a thin film of Wencon Release Agent on flange B, and let it dry for ten minutes. Mix and apply a suitable amount of the product on flange A.

3. Put together the two flanges, and thereby squeeze out surplus material. After curing, which can be accelerated considerably with heat, the application is finished.

Read the Wencon Instructions for use before application.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

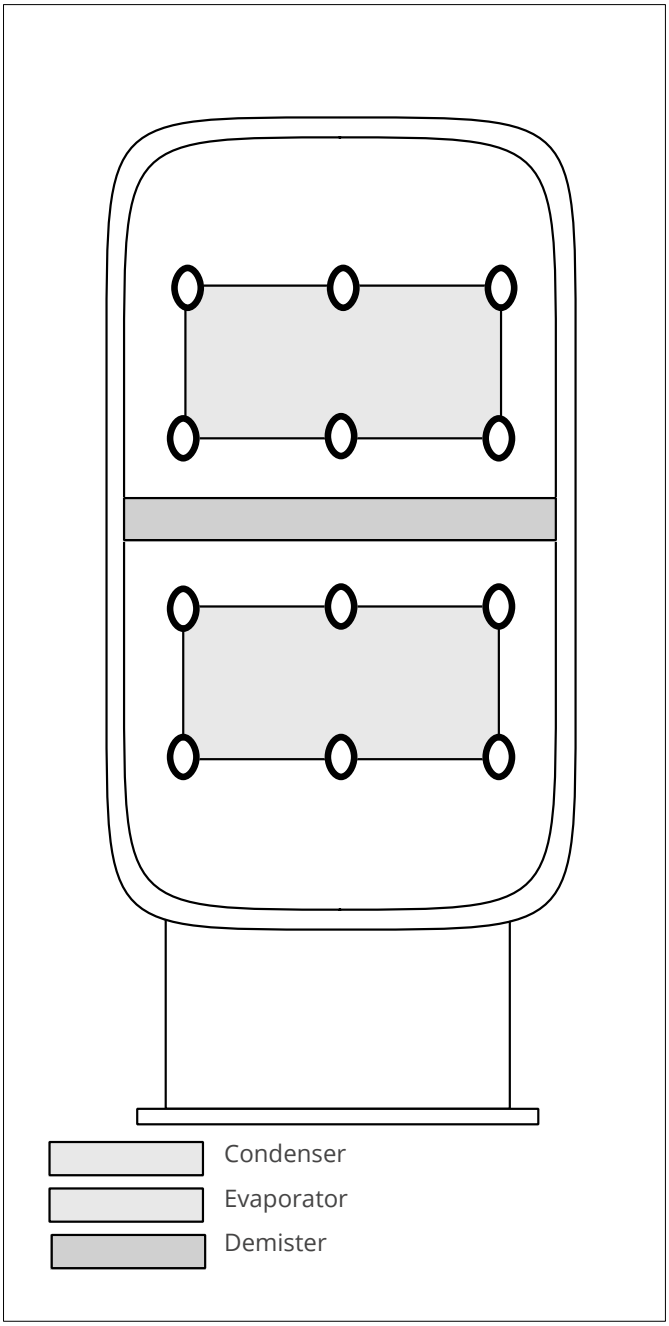
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Fresh water generators - corrosion

APPLICATION DATA SHEET No. 116



Fresh water generators made of coated mild steel, often suffer from salt water penetration, through the coating. The severe conditions inside the generator, might cause corrosion problems. It is ideal to have the coating repaired just after having noticed the damage.

Wencon Hi-Temp is meant for this repair, and it will adhere to all common coatings like epoxy, polyester and even thermo plastics.

1. Tear off loose and damaged coating.

2. Shot blast or grind the affected area including an overlap of min. 5 cm (2 inch).

3. Clean the area acc. to Wencon surface preparation, next page.

4. Apply the Wencon Hi-Temp as described in the instructions for use. Apply two times, each approx. 300 µ (3/10 of a millimeter).

5. After curing, the surfaces should be cleaned using the Wencon Cleaner, and the application is finished.

Variations

If the generator body is badly corroded, apply the Wencon Cream or Rapid to rebuild the surface, before the Wencon Hi-Temp is applied.

The Wencon Hi-Temp is not approved for use in combination with potable water, but in cases, where there is a demand or requirement for such, apply a layer of approved two-component paint as a top coat. Apply this final layer before the Wencon Hi-Temp has fully cured to assure the best possible adhesion.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

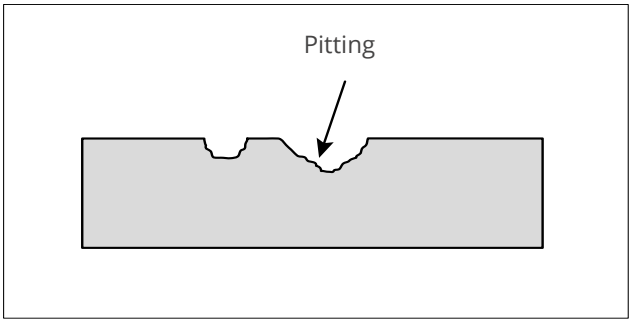
- Blasting
- Grinding
- Needle Gunning

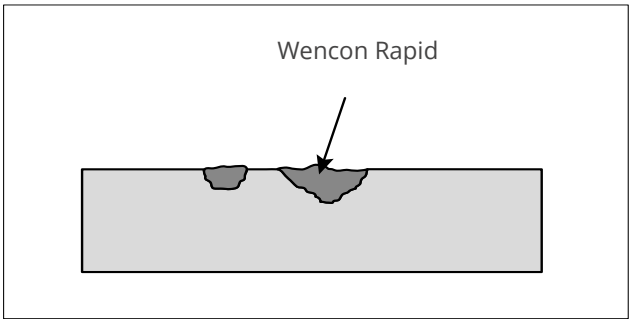
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Hatch covers, sealing surface - corrosion

APPLICATION DATA SHEET No. 157





Hatch covers can be exposed to corrosion on the sealing surfaces.

This repair is easy to do and will last for a long time, especially on areas where there is no hard wear. Meaning, that on areas where you find a lot of wear, the repair will last shorter.

1. Prepare the corroded area acc. to Wencon surface preparation, next page.
2. Mix and apply Wencon Rapid, by using a spatula. Be sure that you fill up all pittings.
3. Let it cure.
4. After curing grind the area using emery paper to an even surface.
5. If all pittings are not filled up, repeat 4-7.

   It is possible to paint on top of the Wencon Rapid after the repair.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

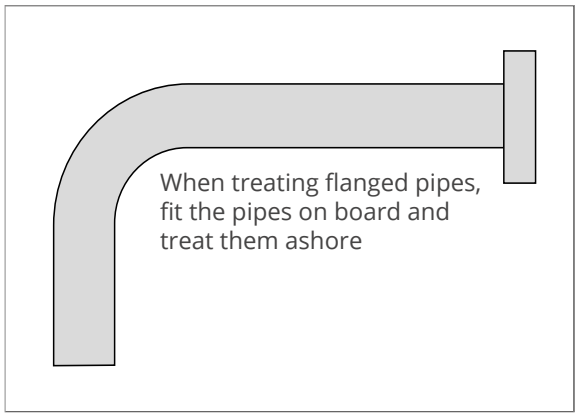
- Blasting
- Grinding
- Needle Gunning

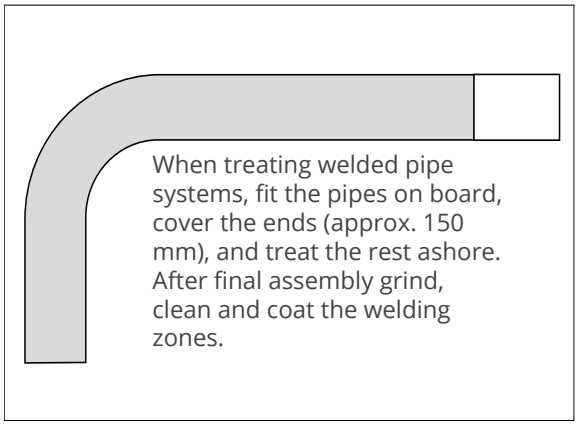
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

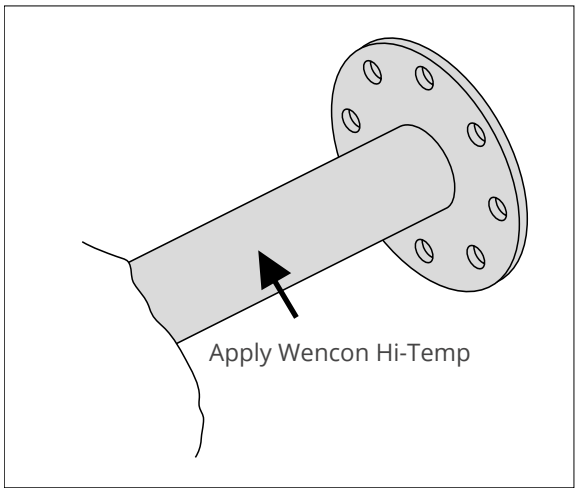
For further information on Wencon surface preparation, please contact our Area Sales Managers.

Hot pipes - protection

APPLICATION DATA SHEET No. 115







Hot-water, hot-oil or steam pipes will often be exposed to corrosion on the outer side, due to moisture or water in the insulation. Wencon can eliminate this breakdown with a coat of Wencon Hi-Temp.

Wencon Hi-Temp is a two-component fluid. It can be applied with a paint brush, and quite exceptionally it can be applied at temperatures of over 120°C (248°F).

The cured coating can withstand temperatures up to 160-200°C (320-424°F) depending upon ambient influences.

The coating is very simple to apply and can be made either before or after the pipes have been installed. The most common method, especially with new buildings, is that the pipes are first fitted on board, then removed ashore to be shot-blasted and coated. The only hindrance to making this operation on board is the lack of space.

One of the big advantages with the coating is that damages on the finished coating are easily repaired. The repair is limited to grinding the damaged area and applying a new coat.

Consumption of material. See chapter 1 in the Wencon Repair Manual.
For this application use radiator brushes with half the bristles cut off. This makes the brush well suited to the consistency of Wencon Hi-Temp.

1. Grit blast or grind a belt around the area to be repaired, and clean acc. to Wencon surface preparation, next page.
2. Apply the first layer of Wencon Hi-Temp yellow and let it semicure.
3. While the first layer is still tacky, apply the next layer of Wencon Hi-Temp Green.
4. The repair can be reinforced by using Wencon Reinforcement Tape wrapped tight in the wet Hi-Temp.
5. The finished layer thickness shall be 600-800 microns.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

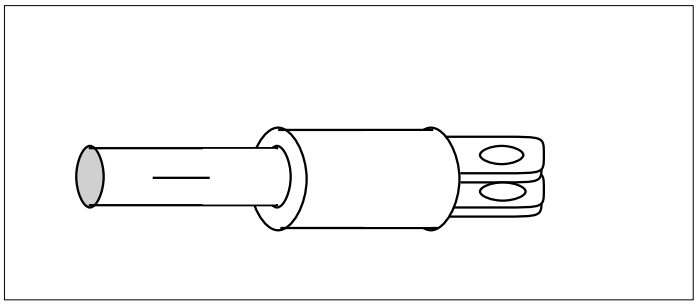
- Blasting
- Grinding
- Needle Gunning

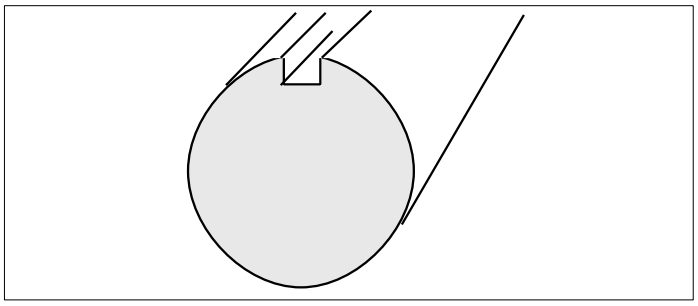
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

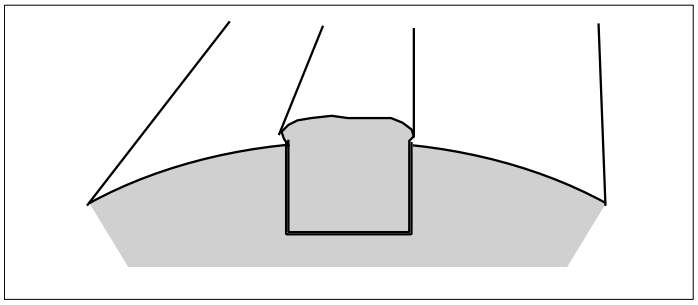
For further information on Wencon surface preparation, please contact our Area Sales Managers.

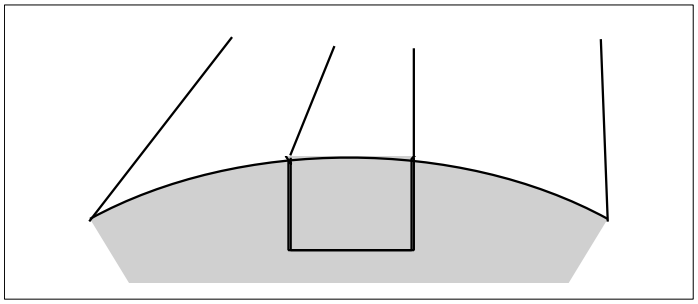
Hydraulic rams - repair of scores

APPLICATION DATA SHEET No. 108









1. Clean the ram thoroughly acc. to Wencon surface preparation, next page.

2. Grind the score down with a wheel grinder, until the grinding score is more or less as wide as it is deep. Clean again thoroughly acc. to Wencon surface preparation next page. To aid cleaning, the ram can be heated, but only to approx. 40° C using hot air or oxygen/gas.

3. Mix and apply an adequate amount of Wencon Cream or Rapid (see diagram). Allow the Wencon to semi harden and cut off the superfluous material with a sharp knife. Allow the Wencon to harden completely and then grind the surface clean with a fine grained emery cloth.

4. To have a grinding tool in the right shape, you can use a hardened brick of Wencon Putty to hold the emercy cloth. Apply a thin layer of Wencon Release Agent to a not damaged area of the ram. Mix and apply some Wencon Putty on the ram where you have applyed the Release Agent, and let it cure. After it is cured you can break it of and use it as a tool to hold the emery cloth.

Variations:

The damage can also be due to a blow, or can be sore arising from contact with electric cables.

If the damage is a result of normal wear and tear and covers a large area, the repair described above is not particularly suitable.
In such cases machining must be recommended after Wencon material has cured. In special cases it is an advantage to turn a mandrel, especially if the ram has a large diameter.

Alternative products: Wencon Ceramic Cream

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

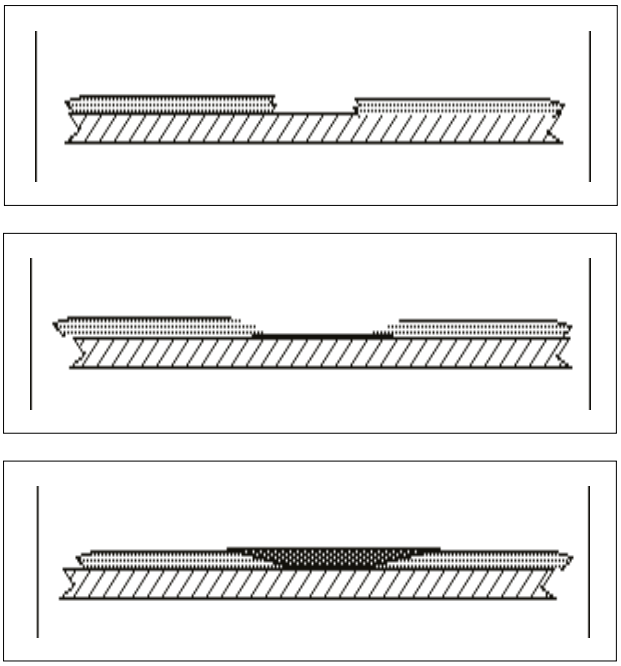
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Inert gas systems - lining

APPLICATION DATA SHEET No. 143



Lining of / or repair of existing lining of inert gas systems can be solved with Wencon Ceramic Coating.

In many cases, such lining consist of multilayer polyester systems, which are difficult and time consuming to repair. Furthermore, the polyester systems must be reinforced with glass flake material for longer penetration time.

Most of these systems require priming, which prolonges the process.

Wencon Ceramic Coating offers a fast and easy solution for this application and has an excellent adhesion to polyester and the epoxide systems.

1. Clean the area with steam or hot water removing acid and salts etc. and prepare the surface acc. to Wencon surface preparation, next page.

2. Mix and apply a suitable amount of Wencon Ceramic Coating. Let it cure for 1-2 hours, and finish the repair with a final coat of Wencon Ceramic Coating.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

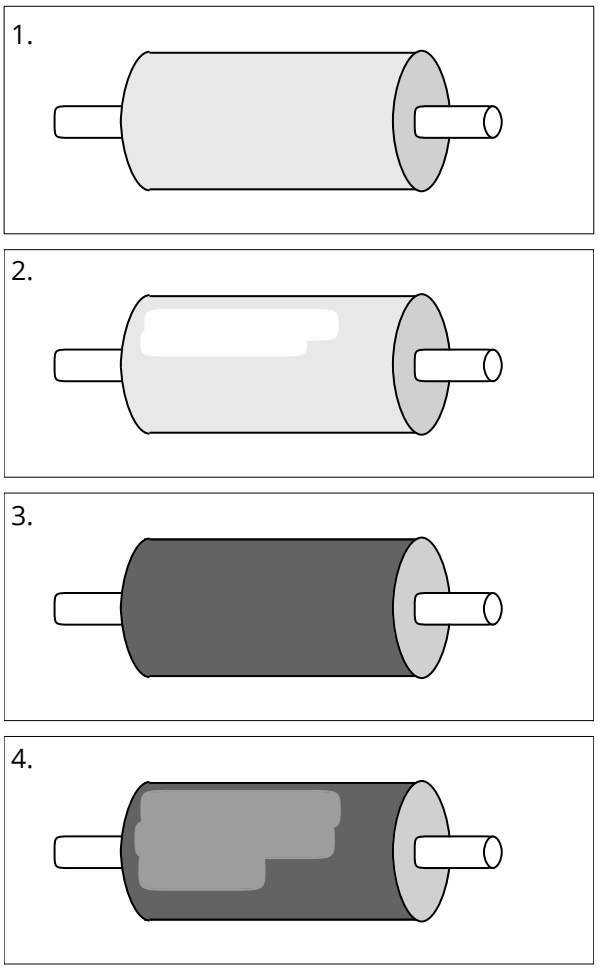
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Non-slip coating of rollers

APPLICATION DATA SHEET No. 125



In many industrial units, there is an extensive use of rollers having a non-slip coating.

Repair or refurbishment of the non-slip coating requires most often dismantling and shipment to a workshop, which is costly and time consuming.

The benefits of using Wencon for this application, is that most applications can be done on site, sometimes even without dismantling.

Furthermore, the Wencon non-slip coating can be repaired on site as well.

1. Clean the surface acc. to Wencon surface preparation, next page. Grit blasting may be the best solution and grinding the only solution if the roller is not dismantled.

2. Apply a layer of Wencon Coating. Use spatula or brush (angled brush, cut off half the length of the bristles). The thickness applied shall correspond to the type of Wencon Aggregate used. Emphasize an even thickness.

3. Apply Wencon Aggregate no. 24 into the wet coating. If possible, rotate the roller during the application. Leave the roller for curing.

Curing time depends on temperature. The higher temperature, the shorter curing time. Curing time at 20°C (68°F) is 24 hours, at 60°C (140°F) 4-6 hours.

4. If the finished surfaces is more rough than expected, you can apply a thin coat of Wencon Coating on top of the Aggregate. If you want to apply a very thin coat on top. you can thin the product, using up to 10% alcohol.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

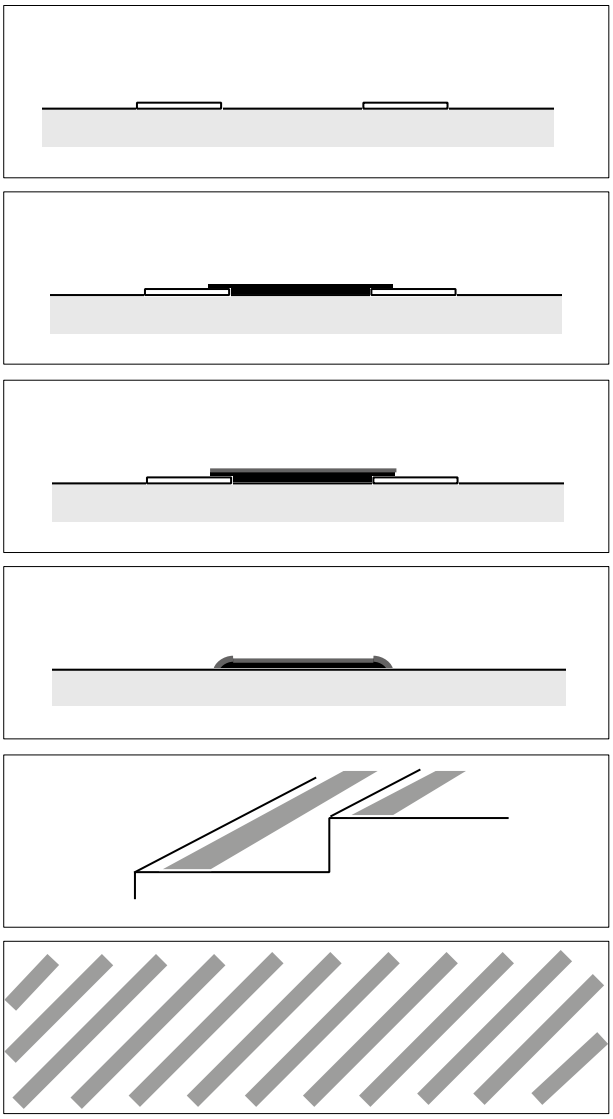
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Non-slip surfacing floors - stairs, drive rollers etc.

APPLICATION DATA SHEET No. 111



Wencon Coating and Aggregate are used to ensure non-slip surfaces in different situations. Most common applications are non-slip surfacing of floors, steps, stairs, passages etc. It is of equal interest to name conveyor belt drive rollers, forks on fork-lift trucks, rear loading ramps on lorries, and steps on cars or other transport machines. The system is very simple to use. Apply Wencon Coating to the surface to be treated, and sprinkle Wencon Aggregate on top.

1. Clean the surface acc. to Wencon surface preparation, next page. Required patterns can be formed by using a covering strip tape.

2. Mix and apply a thin coat of Wencon Coating.

3. Immediately after applying the coating, sprinkle a layer of Wencon Aggregate on the uncured surface.

4. Remove the tape before curing in order to obtain a nice round edge.

5. When non-slip treating stairs it is important that the strip is placed a few centimeters from the edge of each step, otherwise it is easy to scrape ones legs.

6. In many cases it is not necessary to cover the whole surface. Non-slip can be applied in strips, as shown. A strip width of 3 to 4 cm (1,2-1,6 inch), and intervals of 6 to 8 cm (2,4-3,2 inch) could be a starting point.

When non-slip surfacing drive rollers it is advised to treat the whole surface.

Wencon non-slip surfaces are resistant to oil, salt water, pure water and to most diluted acids.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

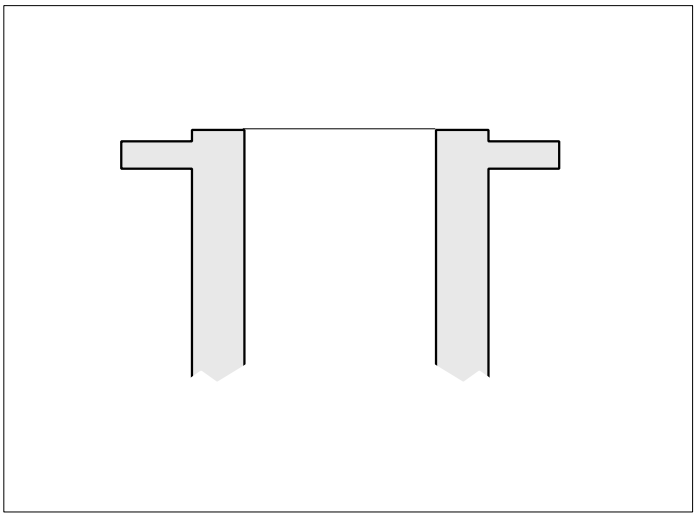
- Blasting
- Grinding
- Needle Gunning

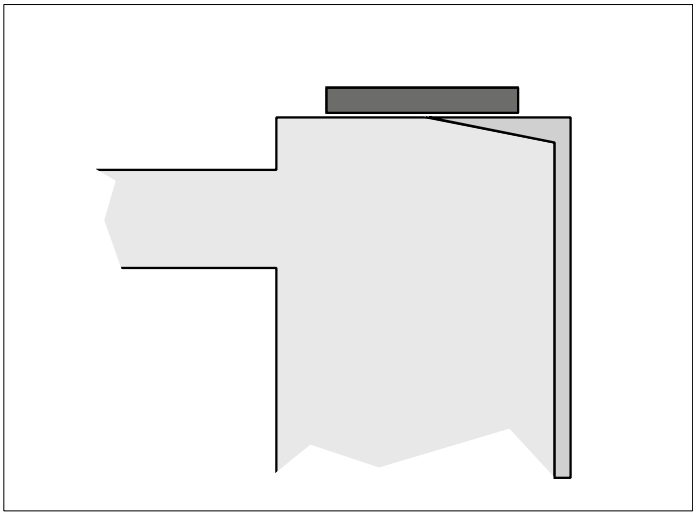
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

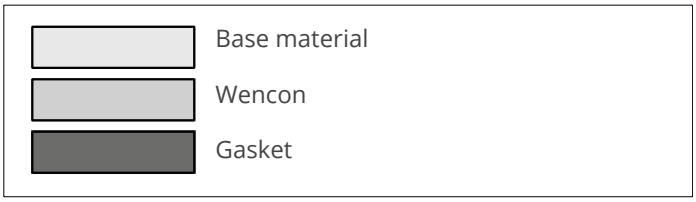
For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe ends and flanges - coating

APPLICATION DATA SHEET No. 106







For extension of lifetime, the pipe ends can be coated internally. The coating must be done carefully, and according to below instructions.

1. Determine how far into the pipe, the coating has to be applied. Clean the surface acc. to Wencon surface preparation next page.

2. Before applying the Wencon Coating the innermost edge of the packing surface must be ground as shown in the diagram. It is important that the seal and the coating over lap, so as to avoid the untreated portion of the packing surface becoming wet. Apply the coating as shown in the diagram. Please refer also to the directions for use of Wencon Coating.

After curing, grind or turn to obtain a smooth packing surface.

This operation can be obviated if, before curing, a mandrel is fitted tightly on to the flange. This mandrel must be given a coat of Wencon Release Agent or be made of plastic.

When assembling the pipe, it is of great importance that the gasket does not press on the innermost edge of the flange (see diagram).

Alternative products: Wencon UW Coating

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

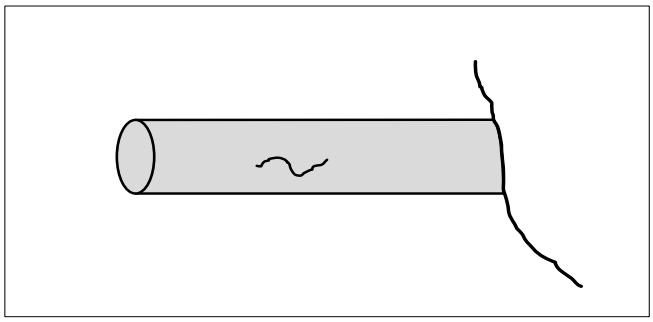
- Blasting
- Grinding
- Needle Gunning

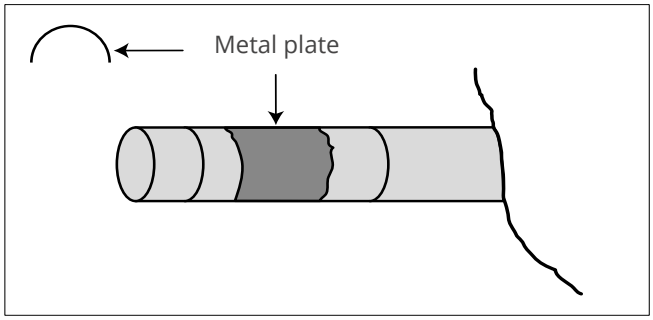
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

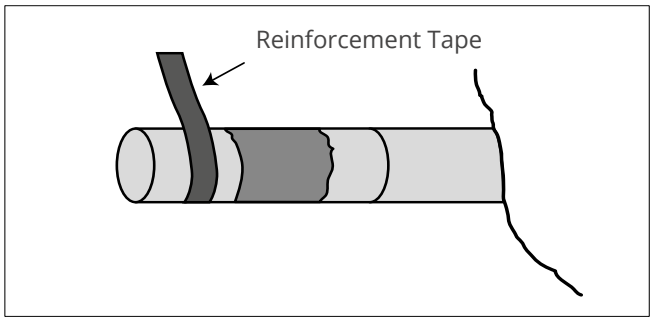
For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - ballast pipes

APPLICATION DATA SHEET No. 151







On all pipe repairs you have to consider tempera-ture and pressure during operation.

This will help you to choose the right Wencon product and the right application datasheet.

1. If possible drain the pipe. Clean and dry the repair area and determine the size of the leak.

2. With an angle grinder, a Rotating Blaster or coarse emery cloth, grind a belt around the pipe over an area of 10-15 cm (4-6 inch) wider than the leak. Clean the repair spot thoroughly acc. to Wencon surface preparation, next page.

3. If liquid is still coming out of the leak, mix and apply a suitable amount of Wencon Putty directly into the crack, to stop the leak. Clean again acc. to Wencon Surface prepa-ration.

4. Cover the leak with a metal plate bended in the same shape as the pipe using Wencon UW Cream as a glue. The metal plate has to be blasted / grinded and cleaned on both sides.

5. Apply the first layer of Wencon UW Cream, using a brush or a spatula. (0,3-0,5 mm / 0.01-0.02 inch)

6. Again apply a layer of Wencon, and repeat until you have 3 layers of Wencon Reforce-ment Tape and 4 layers of Wencon UW Cream.

7. For repairs that shall last for a longer period, we recommend to apply extra 2 layers of Wencon UW Cream using the same method.

Curing time can be speeded up by heating up - Halogen lamps or similar.

To see the theoretical consumption of Wencon material and Wencon Reinforcement Tape, see Chapter 1 in the Wencon Repair Manual.

Alternative products: Wencon Ceramic Coating

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - cable pipes

APPLICATION DATA SHEET No. 153

Wencon Pipe Tape is a very quick and easy way of repairing cable pipes.

Wencon Pipe Tape is a fiber reinforcement tape impregnated with a polyurethan resin. It is activated by water, and shall be wrapped tight around the pipe as shown below.

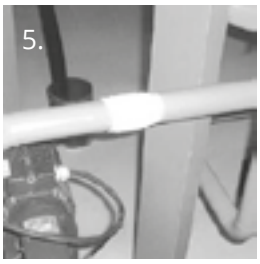
Wencon Pipe Tape can be painted with all types of ship paint.

1. Clean the pipe and grind it with emery paper or the like. See Wencon surface preparation, next page.

2. Unpack the Wencon Pipe Tape and submerge it in water for 10 seconds.

3. Wrap the Wencon Pipe Tape tight around the pipe (min. 9 circles), with 50% overlap, extending 50mm beyond the damage.

4. Continue by wetting the outside of the bandage in the direction of the wrap, until the bandage begins to set.



5. After 10 minutes the products semi cures, and after 60 minutes it is fully cured at 20°C (68°F).

Wencon Pipe Tape usage chart

Pipe Diameter	Pipe Circ.	9xCircles	Pipe Tape	Pipe Tape
mm	mm	mm	5cm x 150cm	5cm x 350cm
15	47	423	One	
20	63	567	One	
25	79	707	One	
32	101	905	One	
40	126	1131	One	
50	157	1414	One	
80	251	2262	Two	One
100	314	2828	Two	One
125	393	3535		One
150	471	4242		Two
200	628	5656		Two
250	786	7070		Two
300	943	8483		Three

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

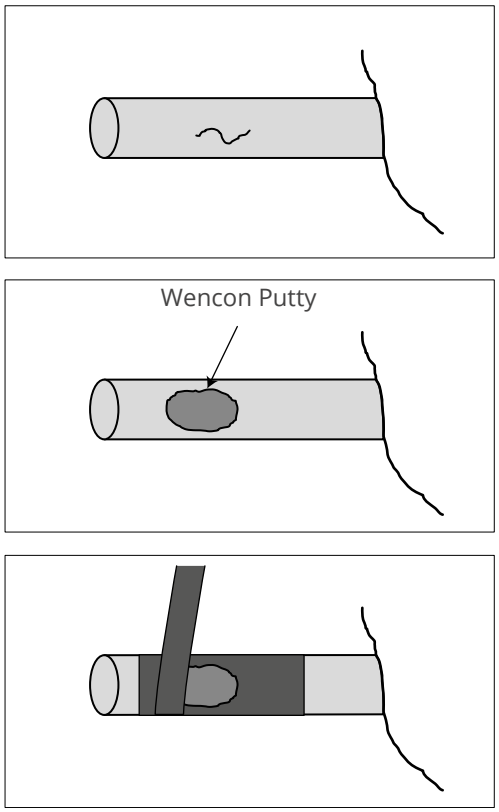
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - cargo pipe

APPLICATION DATA SHEET No. 150



On all pipe repairs, you have to consider temperature and pressure during operation. This will help you to choose the right Wencon product and the right application datasheet.

Below find a guideline for the use of Wencon products:

For normal temperatures:
Use Wencon UW Cream or Rapid.

For top coating:
Use Wencon blue / white coating.

For high temperature pipes:
Use Wencon Hi-Temp or Ceramic products.

For wet surface (ballast pipes):
Use Wencon UW Cream and Wencon UW Coating as top coating.

1. If possible drain the pipe. Clean and dry the repair area and determine the size of the leak.

2. With an angle grinder, a Rotating Blaster or coarse emery cloth, grind a belt around the pipe over an area of 10-15 cm (4-6 inch) wider than the leak. Clean the repair spot thoroughly acc. to Wencon surface preparation, next page.

3. If liquid is still coming out of the leak, mix and apply a suitable amount of Wencon Putty directly into the crack, to stop the leak. Clean again acc to Wencon Surface preparation.

4. Mix an adequate amount of Wencon Cream or Rapid.

5. Apply the first layer of Wencon Cream or Rapid. (0,3-0,5 mm / 0.01-0.02 inch)

6. Wrap the Wencon Reinforcement Tape tight around the pipe with 50% overlap.
Make sure the Reinforcement Tape is fully impregnated with Wencon.

7. Again apply a layer of Wencon, and repeat until you have 3 layers of Wencon Reinforcement Tape and 2-3 layers of Wencon Cream or Rapid.

8. For repairs that shall last for a longer period, we recommend to apply extra 2 layers of Wencon Coating and Wencon Reinforcement Tape using same method.

Curing time can be speeded up by heating up - Halogen lamps or like.

To see the theoretical consumption of Wencon material and Wencon Reinforcement Tape, see Chapter 1 in the Wencon Repair Manual.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - emergency

APPLICATION DATA SHEET No. 128

1. Empty and clean the leaking pipe and grind it with emery paper or the like. See Wencon surface preparation, next page.

2. Unpack the Wencon Pipe Tape and sub-merge it in water for 30-40 seconds. For higher pressure, use Wencon Putty. (se fig. 6)

3. Wrap the Wencon Pipe Tape tight around the pipe. (min. 9 circles)

4. Dip the gloves in water and smoothen the surface with your hands.

5. After 2 minutes the products semi cures, and after 15 minutes it is fully cured (at 20°C (50-68°F).

6. If the pipe cannot be emptied, use the Wencon Putty. Even-tually hold it in place with a small metal plate and a steel band, before applying the pipe tape.

Technical Data

Pipe pressure without Wencon Putty: 10 Bar*)
Pipe pressure with Wencon Putty: 50 Bar*)
Flexural strength: ASTM D709 111 N/mmsq.
Tensile strength: ASTM D638 172 N/mmsq.
Compression strength: ASTM D695 180 N/mmsq.
Adhesion at one-inch single overlap: 19 N/mmsq.
Dielectric strength: 16 KV/mm

Temperature Resistance

Continuous: 120°C (248°F)
Peak: 150°C (310°F)

Chemical Resistance

Water, salt water, oil, diluted acids and alkalis.

Handling Precautions

Read the instructions for use and the Material Safety Data Sheet

*) Laboratory tests have shown much higher values, but the mentioned values will count for repairs done in situ. Users are advised to make their own tests if in doubt.

Pipe Diameter	Pipe Circ.	9 x Circles	Wencon Pipe Tape	Wencon Pipe Tape	Max pressure with Putty •)	Max pressure without Putty •)
mm	mm	mm	5cm x 150cm	5cm x 350cm	Bar/P.s.i.	Bar/P.s.i.
15	47	423	One		50/725	10/145
20	63	567	One		50/725	10/145
25	79	707	One		50/725	10/145
32	101	905	One		50/725	10/145
40	126	1131	One		50/725	10/145
50	157	1414	One		50/725	10/145
80	251	2262	Two	One	45/652	10/145
100	314	2828	Two	One	40/580	10/145
125	393	3535		One	35/510	10/145
150	471	4242		Two	30/430	8/120
200	628	5656		Two	25/360	5/70
250	786	7070		Two	20/290	5/70
300	943	8483		Three	10/145	5/70

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - heating coils

APPLICATION DATA SHEET No. 148

Heating coils often leak in the welding sleeve joints, due to the use of improper welding material. Heavily pitted pipe surfaces are often seen in the bottom area, and they are normally caused by the combination of bad steel – aggressive media- and high surface temperature.

Both types of leakage are easily repaired by use of Wencon Hi-Temp Coating and Reinforcement Tape.

Following procedure can be used:

1. Return pipes are dismounted and the pipes are drained for water, and blown through with compressed air, to ensure a dry surface.

2. Clean the area around the leak and carry out surface preparation acc. to Wencon surface preparation, next page.

3. Apply one layer of Wencon Hi-Temp Coating with a brush (half the bristles cut away, so it is more stiff)

4. Wrap Wencon Reinforcement Tape with a 50% overlap into the wet Coating, ensuring that the coating is penetrating the tape.

5. Apply a new layer of Wencon Hi-Temp, and a new layer of Reinforcement Tape, and follow the same procedure until you have at least 3 layers of Reinforcement Tape and 4 layers of Wencon Hi-Temp coating.

6. Let it cure for at least 8-10 hours before use.

Alternative products: Wencon Ceramic Coating

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

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Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

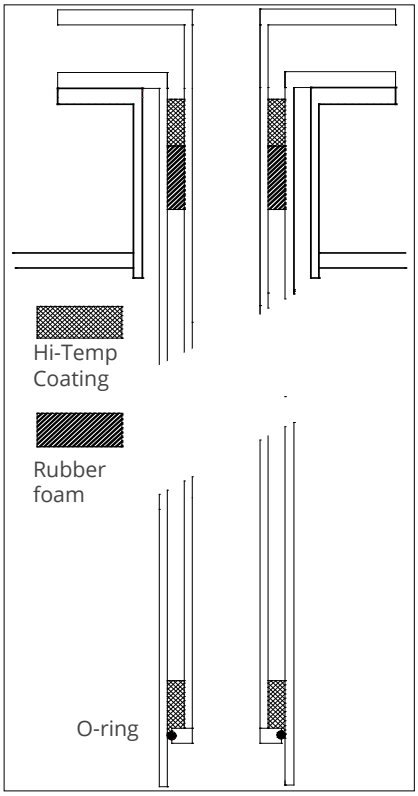
- Blasting
- Grinding
- Needle Gunning

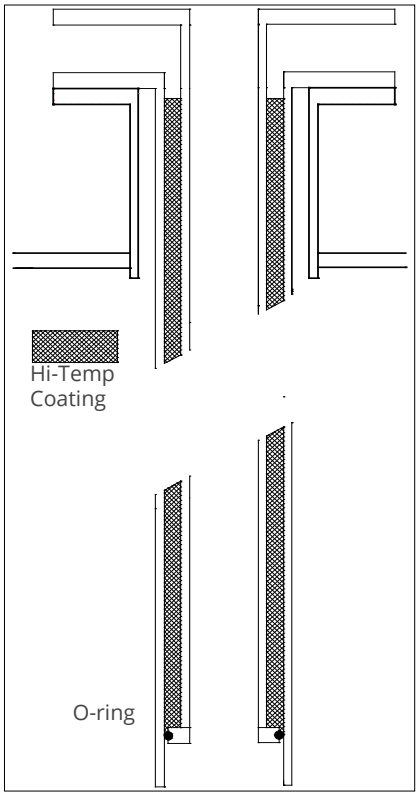
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - heating coils upper tank area

APPLICATION DATA SHEET No. 149





This area is normally very difficult to reach, and demands the use of scaffolding from inside the tank.
Below find an alternative method of repairing this kind of damage from the deck-side.

Cast an insert pipe into the original pipe by injecting Wencon Hi Temp, which also helps to delay the bi-metallic corrosion. The insert pipe will naturally reduce the flow in the heating medium, so it has to be considered how much this will effect the heating capacity. An insert pipe is prepared, 2-3 cm (0,8-1,2 inch)smaller in outer diameter than the inner diameter of the original pipe, and in a length about 20 cm (8 inch) beneath the damaged area. In the bottom of the insert pipe there has to be a groove for an O-ring, to seal for the later injected Wencon Hi Temp Coating. The insert pipe can be made with a flange on the top. Make sure that the insert pipe will not fall down in the original pipe during the curing process. In case of larger holes in the original pipes, use method 1, if no leaks we recommend method 2.

Method 1

1. Slide in the insert pipe. If you choose a flange in the top on the insert pipe, leave approximately 10-15 cm (4-6 inch) free for injecting.
2. Mix Wencon Hi-Temp Coating and fill it in a standard cartridge for a “sealant-gun”.
3. By means of a thin-walled steel- or plastic pipe mounted on the gun, a layer of 5 cm Coating is injected in the bottom area between the two pipes.
4. Remove the filling-pipe, and push in a layer of approximately 5 cm (2 inch) of rubber-foam to form a seal between the two pipes, and force it down 5-10 cm (2-4 inch) under the flange surface.
5. Fill the remaining gap between the two pipes with Wencon Hi-Temp. If the insert pipe has a flange, use Wencon Hi Temp coating as a sealing compound between the old and the new flange.
6. Let the coating cure for 8-10 hours. (The rubber-foam is used, to prevent coating leaking into the tank-area through holes in the damaged surface)

Method 2

1. Slide in the insert pipe into the original pipe.
2. Mix Wencon Hi-Temp Coating and fill it in a standard cartridge for a “sealant-gun”.
3. By means of a thin-walled steel- or plastic pipe mounted on the gun, fill up the gap between the two pipes.
4. Let the coating cure for 8-10 hours.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

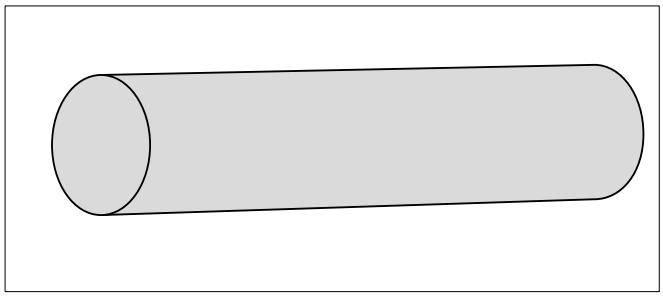
- Blasting
- Grinding
- Needle Gunning

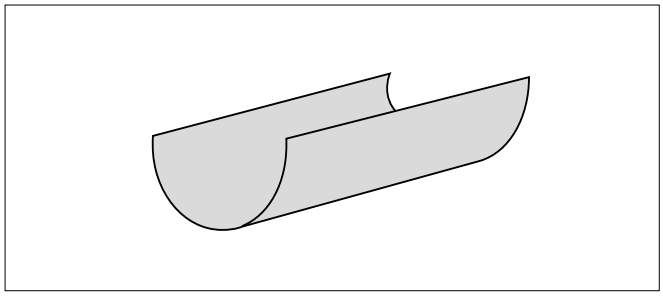
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

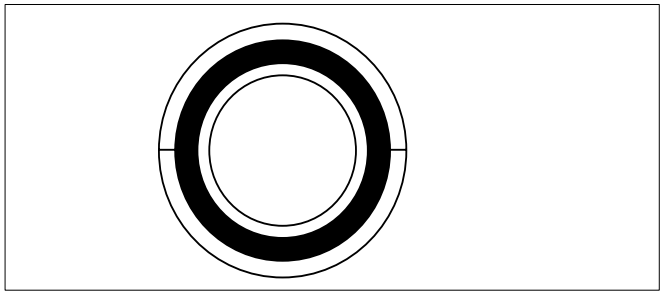
For further information on Wencon surface preparation, please contact our Area Sales Managers.

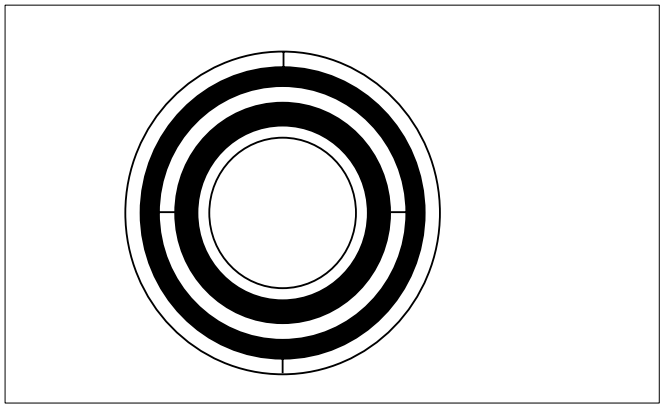
Pipe repair - high pressure pipes

APPLICATION DATA SHEET No. 152









Repair of pipes with high pressure must always be considered carefully and acc. to national regulations.

The safest way of repairing a pipe is by using a prime quality repair compound in combination with additional pieces of pipe.

1. Empty the pipe, if possible. If not, depressurize it. Grind and clean the repair area acc. to Wencon surface preparation, next page.

2. Prepare two pipe shells, as shown in ill. 2, allowing a gap of 3-10 mm (0,12-0,4 inch) between the external surface of the existing pipe and the internal surface of the pipe shells. The streght / thickness of the pipe shells shall be chosen according to pressure. Grind and clean the internal surfaces of the shells.

3. Mix and apply Wencon Cream or Rapid to the prepared areas and mount the shells as shown in ill. 3. Hold the shells in position by the use of pipe clamps or the like.

4. For further reinforcement, you can apply yet another set of pipe shells as shown in ill. 4.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

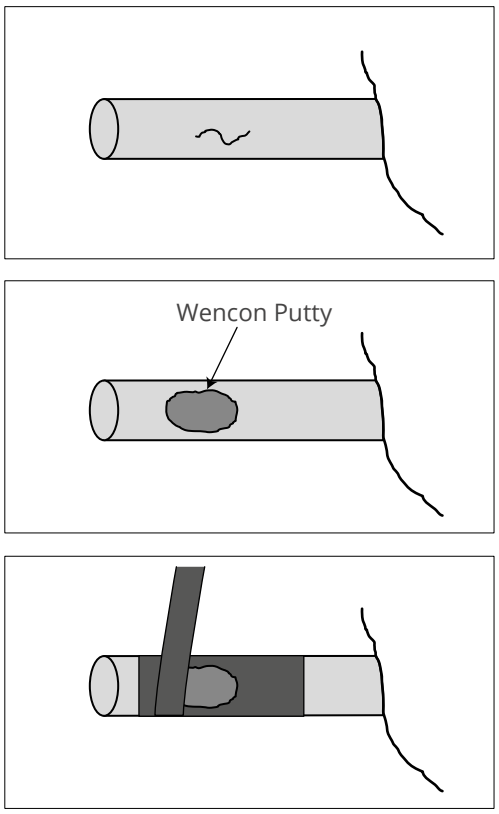
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pipe repair - sea water pipe

APPLICATION DATA SHEET No. 102



On all pipe repairs you have to consider temperature and pressure during operation. This will help you to choose the right Wencon product and the right application datasheet.

Below find a guideline for the use of Wencon products:

For normal temperatures:
Use Wencon UW Cream or Rapid.

For top coating:
Use Wencon blue / white coating.

For high temperature pipes:
Use Wencon Hi-Temp or Ceramic products.

For wet surface (ballast pipes):
Use Wencon UW Cream and Wencon UW Coating as top coating.

1. If possible drain the pipe. Clean and dry the repair area and determine the size of the leak.

2. With an angle grinder, a Rotating Blaster or coarse emery cloth, grind a belt around the pipe over an area 10-15 cm (4-6 inch) wider than the leak. Clean the repair spot thoroughly acc. to Wencon surface preparation, next page.

3. If liquid is still coming out of the leak mix and apply a suitable amount of Wencon Putty directly into the crack, to stop the leak. Clean again acc. to Wencon surface preparation.

4. Mix an adequate amount of Wencon UW Cream.

5. Apply the first layer of Wencon UW Cream, using a brush or a spatula. 0,3-0,5 mm (0.01-0.02 inch).

6. Wrap the Wencon Reinforcement Tape tight around the pipe with 50% overlap. Make sure the Reinforcement Tape is fully impregnated with Wencon.

7. Again apply a layer of Wencon, and repeat until you have 3 layers of Wencon.

8. For repairs that shall last for a longer period, it is recommended to apply 2 layers of Wencon UW Coating on top of UW Cream or Rapid after same method. Curing time can be speeded up by heating up Halogen lamps or similar.

Alternative products: Wencon Rapid

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
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Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

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Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

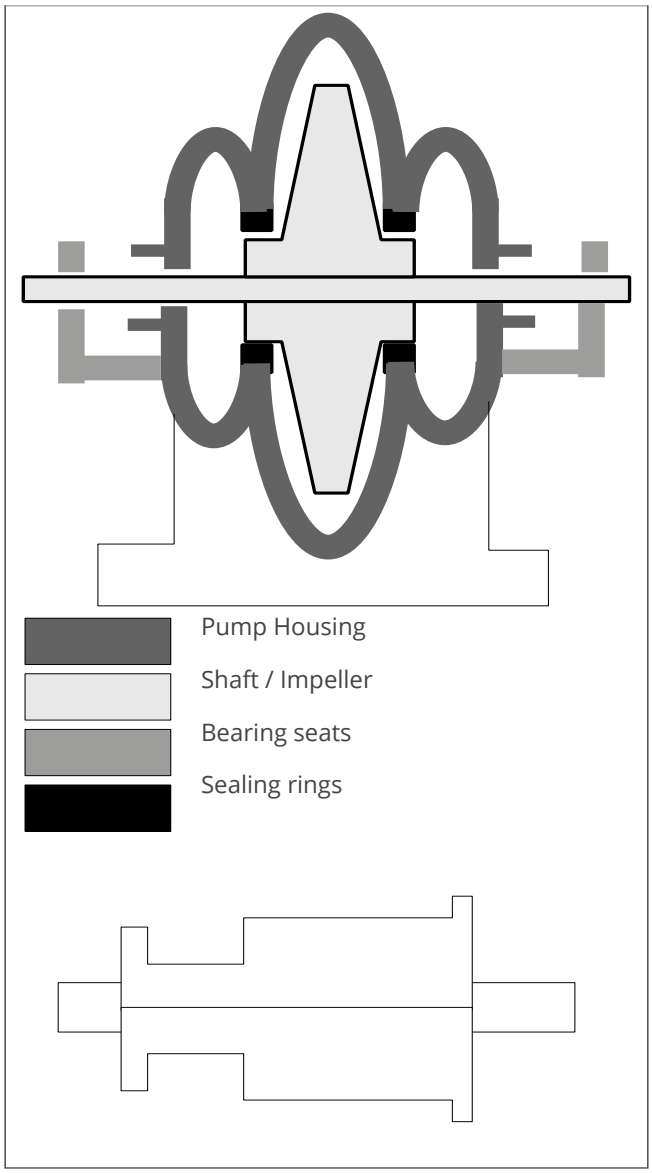
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pumps split-case, sealing rings - corrosion

APPLICATION DATA SHEET No. 109



Corroded sealing ring seatings and stuffing box housings are normally repaired by welding and line boring, but it is a long and costly process.

1. Disassemble the upper part of the pump housing and the impeller. Leave the bearings on the shaft.

2. Fit new sealing rings on the impeller placing a layer of foil or paper paper between the ring and the impeller. This ensures centering of the ring. Apply a coat of Wencon Release Agent on the outer side of the ring.

3. Clean the seatings in the lowest part of the pump. Mix and apply Wencon Cream to the seatings and the outer sides of the sealing rings. Assemble the impeller and mount the bearing seats. This moulds the ring seatings to an exact fit to the rings.

4. After curing remove the impeller, finish grind the edges, treat the rings surfaces of the upper part with release agent, and mould the upper part of the housing in a corresponding manner. Remember to insert the gasket during this second moulding.

5. Stuffing box housings are cast in a similar manner, possibly at the same time. The casting template is made of two pipe shells (see diagram) which are tightened on the shaft. These must have the same shape as the stuffing box house is to have. Treat the shells with Wencon Release Agent before casting.

A very big advantage with this method of repair, apart from the cost is the quickness the repair can be made, and the fact that the new rings seatings and stuffing box housings cannot corrode in the future.

Also the roller bearing seatings can sometimes become damaged. These can be renewed to shape by using the same method as above.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
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Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

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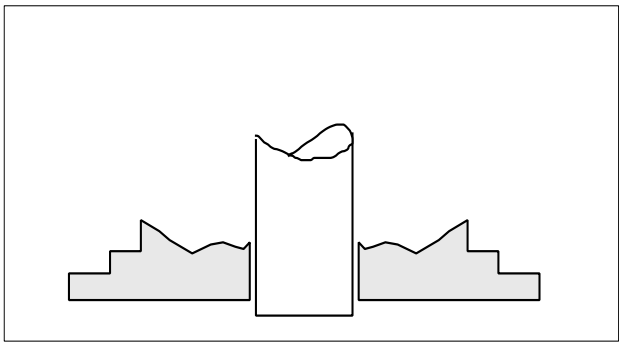
- Blasting
- Grinding
- Needle Gunning

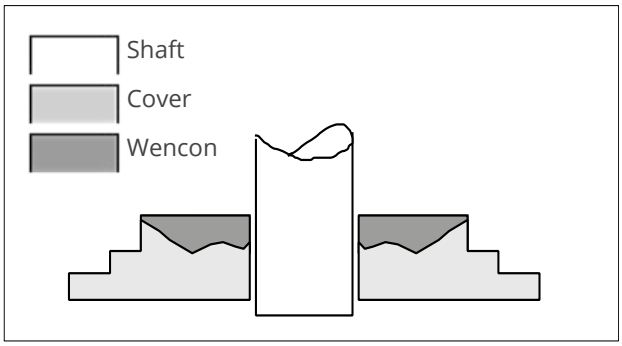
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pumps, casing cover - corrosion

APPLICATION DATA SHEET No. 123





1. Carry on surface preparation acc. to Wencon surface preparation, next page.

2. Build up the work piece to it´s original shape using Wencon Cream or Rapid.

3. After rebuilding and partial curing, brush apply a layer of Wencon Coating, White over the entire internal surface.

4. Finish with a coat of Wencon Coating, blue.

Options:

The center aperture may be casted using Wencon Release Agent on the casting piece (bearing bush) and reassembling the impeller shaft to provide centrification.

The space between the casting piece and the body may be filled up with Wencon Cream or Rapid and left to cure.

After curing, the impeller shaft and bearing may be disassembled. A perfect cast on the body would then be achieved.

Alternately, the center shaft area can be overbuild with Wencon material, left to cure and hereafter machined to size.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

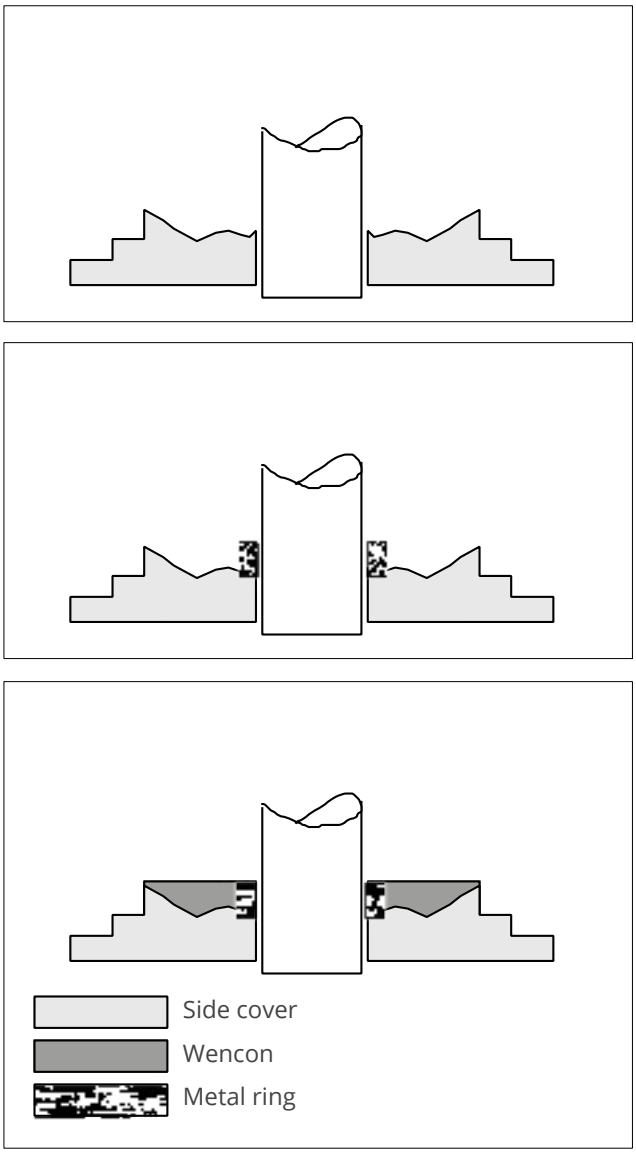
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Pumps, side cover - corrosion

APPLICATION DATA SHEET No. 124



When a pump housing is suffering from deterioration, caused by some degree of wear, for instance in pumps pumping sand and stones, it is advised to use Wencon material. Besides we advice to reinforce it using steel.

In this case, the side cover suffers from corrosion and wear in the inlet.

1. Clean the surface acc. to Wencon surface preparation, next page.

2. Create a steel ring having the same inner diameter as the inlet, and weld it into the cover. After the welding, fill the space behind the ring with Wencon Cream or Rapid, filled with Wencon Aggregate in weight ratio up to 1:1. The Aggregate will increase the wear resistance of the Wencon material.

When repairing other parts of those pumps, be aware, that it is not likely, that the Wencon material will stand the impact of big stones, so if the inner surface of the pump shall be made, the Wencon should only act as a support for wear segments. See Application Data Sheet No. 119.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

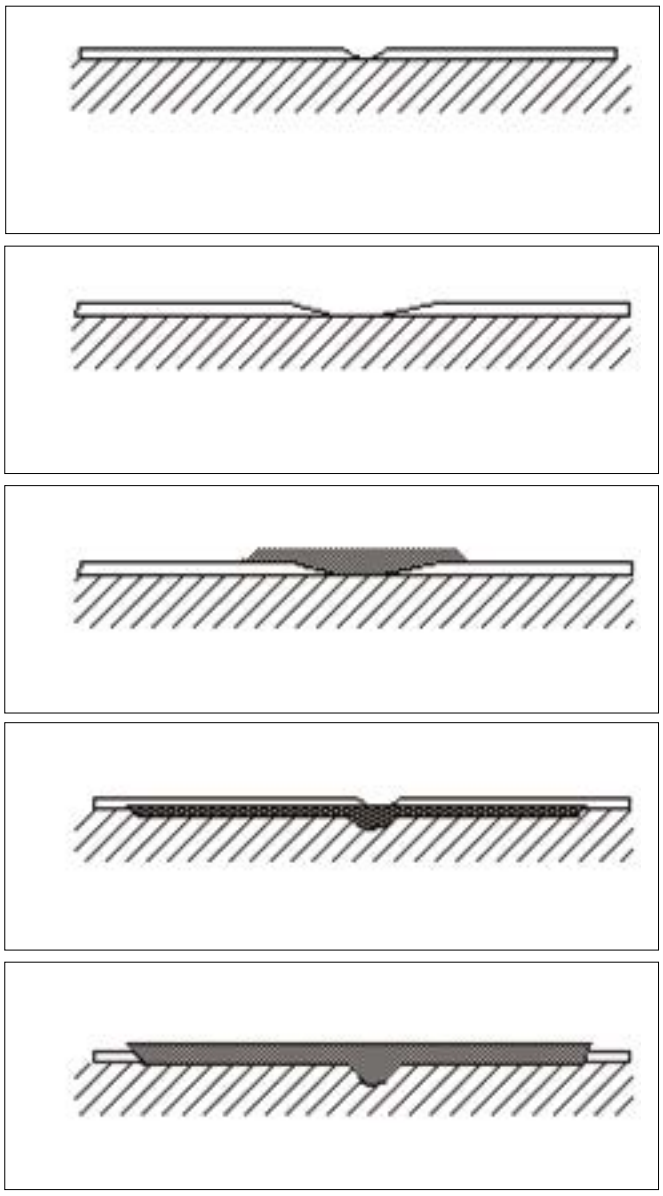
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rilsan coatings - damaged

APPLICATION DATA SHEET No. 112



1. Damaged Rilsan or other polyester and/or epoxy powder coating often require a quick solution, if substancial damage to the substrate shall be avoided.

2. Grind or shot blast the surface in and around the crack and in an overlab zone. Clean the the area thoroughly acc. to Wencon surface preparation, next page.

3. Mix and apply a suitable amount of Wencon Hi-Temp. If a quick curing is required, heat the area using a hot air gun.

Variations

If larger parts of the Rilsan coating has loosened, remove all the loose coating before the application is made.

If the damage is deeper than approx. 1 mm, use Wencon Cream or Rapid to build up the surface prior to coating with Wencon Hi-Temp.

If the damaged area is located near a flange, see Application Data Sheet No. 106 for further instructions.

Wencon Hi-Temp is resistant to water, salt water, oil and the most diluted acids and alkalis.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

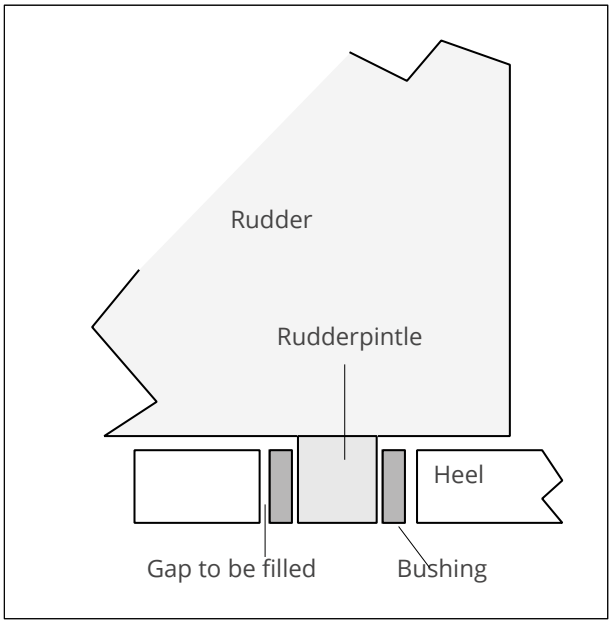
- Blasting
- Grinding
- Needle Gunning

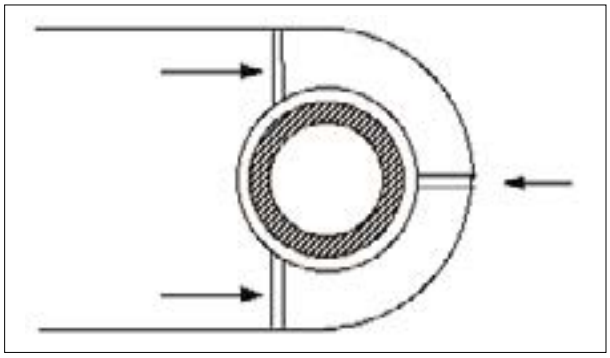
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rudder heel bushing - casting of seat

APPLICATION DATA SHEET No. 122





Oversized bearing houses for the rudder pintle bearing is a common problem. The deterioration of the seat is caused by bimetallic corrosion.

Before making the application, consult the local Wencon supplier and the classification society.

1. Shot blast the bearing housing to SA 2,5 and clean surface acc. to Wencon surface preparation, next page. During winter time, apply heat.

2. Machine the bearing leaving min. 3 millimeter (0,12 inch) space to be filled.

3. Drill 2 or 4 injection holes in the heel.

4. Mount the bearing and secure it either using the rudder pintle or by stick welding it to the heel.

5. Make sure, that the gap is filled in the bottom to prevent injected material to get out. Use Wencon Rapid.

6. The appropriate amount of Wencon Cream or Coating is mixed and injected using compressed air cartridges in a mastic gun. Mount self cutting screws in the holes when not using them anymore.

7. Curing. If the temperature is low, apply heat to the heel 30-40°C (70-93°F). Do not apply heat to the bearing. After approx. 8 hours at min. 20°C (68°F) the work can proceed.

The same technique is used for creating fit between rudder pintle and its seat.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

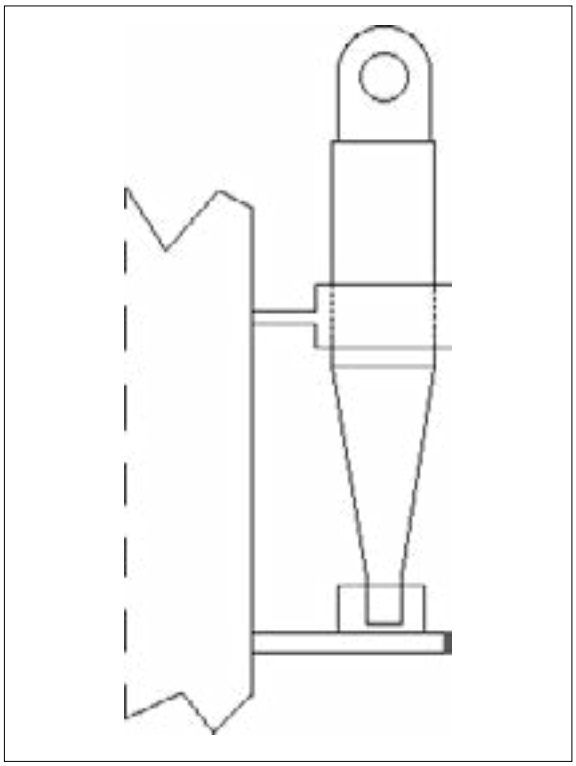
- Blasting
- Grinding
- Needle Gunning

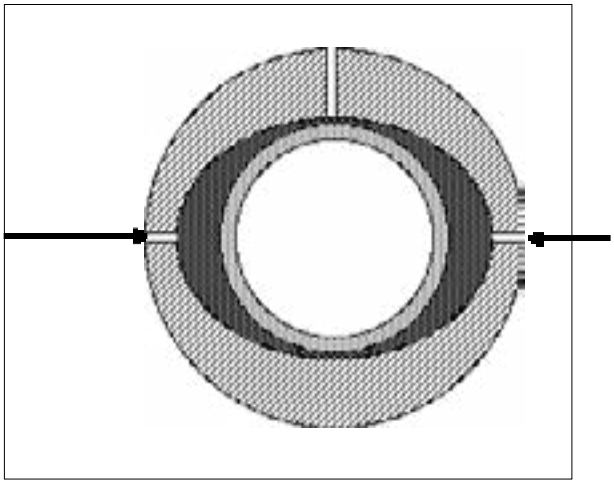
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rudder heel pin, derrick - oversized

APPLICATION DATA SHEET No. 136





The traditional repair of oversized or oval needle bearings consists of welding and line boring. The method is very time consuming, especially because of the line boring.

Another method for this type of repair job is casting, which is described below:

1. Machine a thin bushing, and create room for it by means of grinding or using a blow torch.

2. The internal surface in the bushing seat should be prepared acc. to Wencon surface preparation, next page.

3. Apply a thin coat of Wencon Release Agent on the outside of the bushing. This prevents adhesion to the bushing and eases future replacement of the bushing.

4. Mix and apply a suitable amount of Wencon Cream or Rapid on to both the mating surfaces.

5. Put the bearing in position, and center it by mounting the pin.

Alternative:

In some cases, the time factor makes you want to alter the method a bit. Mount the bushing without the Wencon material in between. Place it in position, and inject the Wencon through holes made as shown in fig. 2.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

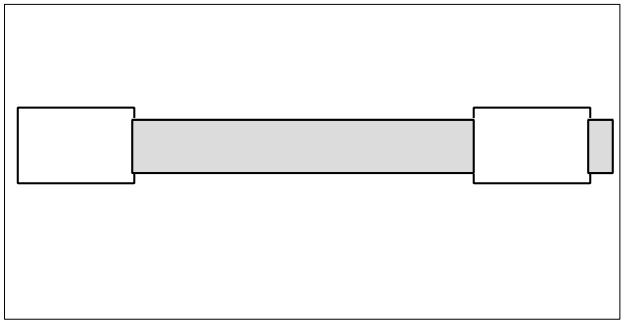
- Blasting
- Grinding
- Needle Gunning

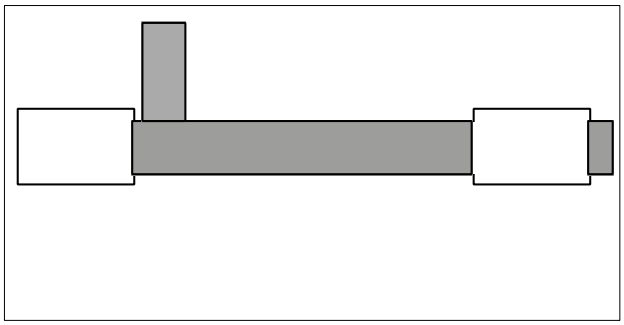
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rudder tailshaft / stock - coating

APPLICATION DATA SHEET No. 139





For new parts, leave out point 3. For corroded parts, start at point 1.

1. Grind or shot blast the surface acc. to Wencon surface preparation, next page.

3. Mix and apply a suitable amount of Wencon Rapid to fill out the pits. Let it cure to a degree, where the surface is still a bit tacky.

4. Mix and apply the first layer of Wencon Coating, white in a thickness of 300 µ (0,3 mm) Use a flat angled brush having cut off half of the length of the bristles.

5. Wrap a layer of Wencon Reinforcement Tape tight around the shaft with an overlap of approx. 2 cm. Make sure, that some of the coating is pressed through the tape during the wrapping.

6. Leave it for curing for approx. one hour, and apply a layer of Wencon Coating, blue on the top to finish the application. Let it cure.

Handle the shaft carefully, in order not to damage the coating.

If the shaft has been penetrated by salt water or oil, heat the shaft to 30-40° C (102-136°F), prior to shot blasting, in order to sweat out salt and oil.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

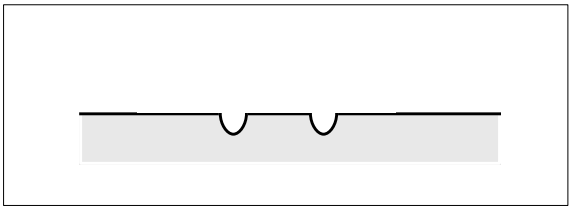
- Blasting
- Grinding
- Needle Gunning

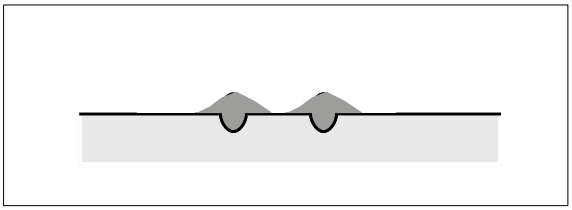
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

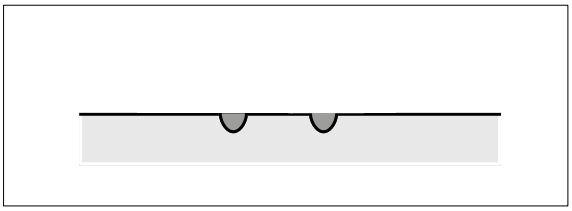
For further information on Wencon surface preparation, please contact our Area Sales Managers.

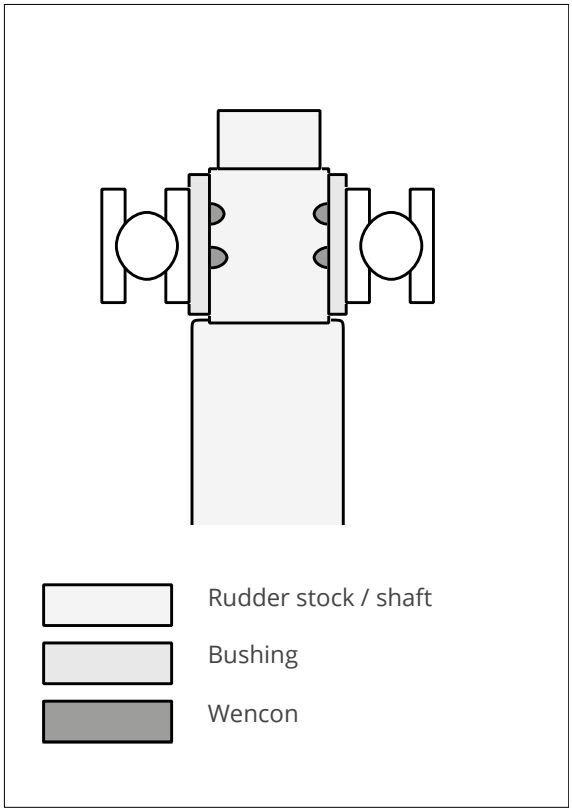
Rudderstock / shaft - scored

APPLICATION DATA SHEET No. 121









When removing a bushing, from a rudder stock or any other shaft, there might be created scores. In most cases, this damage can be repaired with Wencon.

The obvious advantage is, that no heat is required for the application; unlike welding. The technique is very simple.

1. Grind the scores with a wheel grinder to bare metal (round shapes). Degrease and clean the area acc. to Wencon surface preparation, next page.

2. Mix and apply a suitable amount of Wencon Cream or Rapid as shown in the fig.

3. After a couple of hours, most of the excess material can be cut away using a knife. After full cure, the surface can be ground with emery cloth.

When remounting the bushing, do not heat above 100°C (212°F).

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

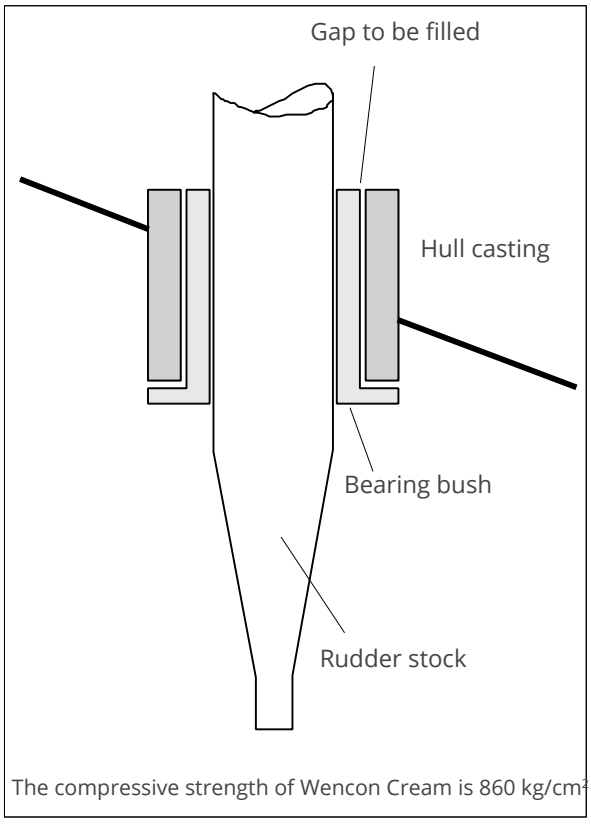
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rudderstock bearing - casting of seat

APPLICATION DATA SHEET No. 110



The compressive strength of Wencon Cream is 860 kg/cm²

Before making this type of application, it is highly recommended to contact the local Wencon supplier and the classification society in charge.

Below is an example, how the majority of this type of application is done.

1. Shot blast the seat for the bearing to SA 2,5. During winter time apply heat.

2. Machine the bushing leaving min. 3 mm (0,12 inch) space to be filled. If the bushing is mounted as shown on the figure, apply Wencon Release Agent to the surface of the bushing. If no bolts are being used to secure the bushing, do not use release agent.

3. Drill injection holes in the hull casting. Four holes in the bottom approx. 30 mm (1,2 inch) from the bottom (spread around the circle), four holes in the middle, and two or four venting holes in the top.

4. Mount the bushing. The shown type can be mounted without use of the stock. Other types can be mounted by help of the rudder stock.

5. Make sure, that the gap is filled in the bottom to prevent injected material to get out. Use Wencon Rapid.

6. The appropriate amount of Wencon Cream or Coating is mixed and injected using compressed air cartridges in a mastic gun. Fill from the bottom and continue until material gets out of the venting holes in the top. Mount a self cutting screw in the holes when not using them anymore.

7. Curing. If the temperature is low, apply heat to the heel 30-40°C (86-104°F). Do not apply heat to the bearing. After approx. 8 hours at min. 20°C (68°F) the work can proceed.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

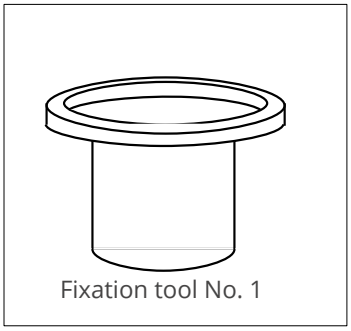
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

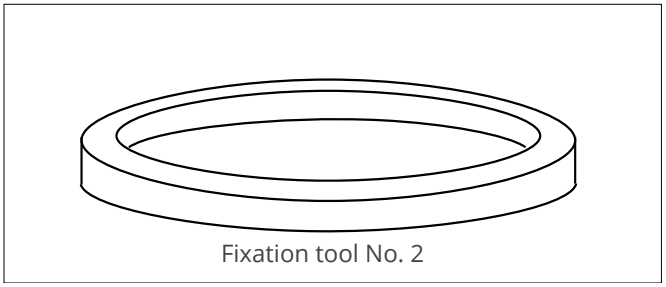
For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rudderstock cone application

APPLICATION DATA SHEET No. 113.1



Fixation tool No. 1



Fixation tool No. 2

Problem:
Corrosion and/or bimetallic corrosion attack on inner surface of rudder blade cone and/or rudder stock cone (with key and key way).

Solution:
Building up a new surface in the inside of the rudder blade cone.

It is important that two auxiliary tools are prepared. The tools shall make it possible to centrate the rudder stock and to keep the total length of the rudder stock/rudder blade.

Fixation tool No. 1
The height is given from the space under the bottom of the stock. The diameter of the upper part is given from the diameter of the bottom part of the stock. After fabrication the tool is stick welded to the rudder.

Fixation tool No. 2
The diameter of this ring is given from the diameter of the stock on the top side of the rudder. The ring shall be stick welded to the top of the rudder.

These tools will assure that the Wencon material, which is used for creating the new seat for the cone, will be casted in an even thickness round the rudder stock.

The rudder blade cone shall be cleaned acc. to Wencon surface preparation, next page.

It is hereafter ready to be taken back to the workshop and to be installed in an upright position.

If necessary, machine the rudder stock cone to remove corrosion. Place the rudder blade cone. Apply a thin layer of Wencon Release Agent on the rudder stock cone. Leave it for drying in at least five minutes and remove excess Wencon Release Agent leaving only a thin film.

The application
Mix a suitable amount of Wencon Cream and apply it to both the surface of the rudder blade cone and the rudder stock cone. Make sure that enough material is applied.

continued 113.2

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

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Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

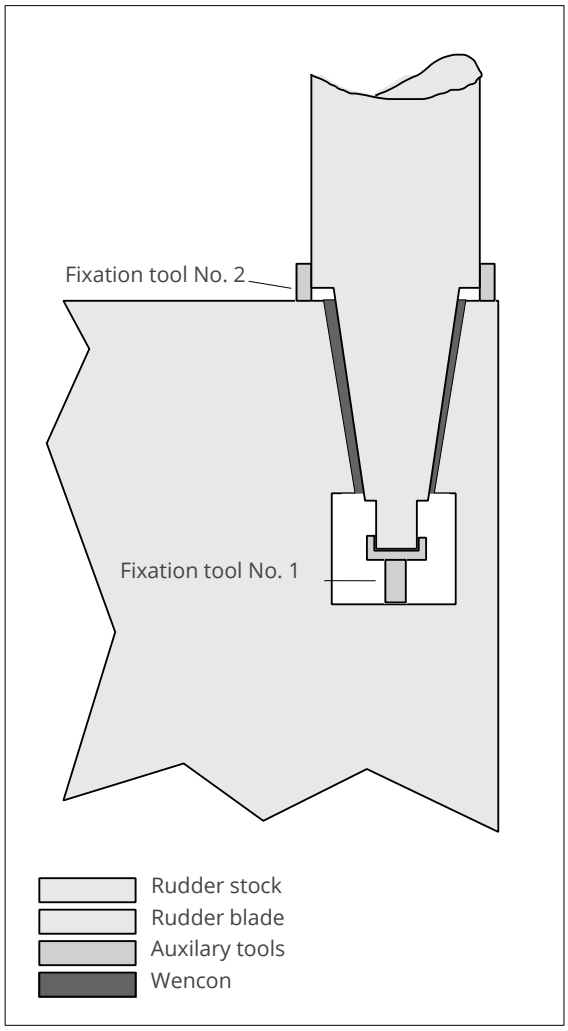
- Blasting
- Grinding
- Needle Gunning

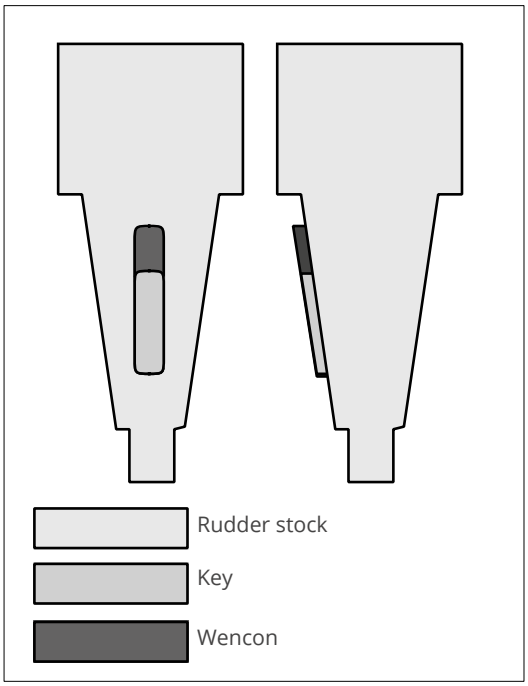
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Rudderstock cone application

APPLICATION DATA SHEET No. 113.2





continue from page 1

Be careful during the application to avoid air entrapment within the Wencon material.

After application of Wencon Cream, put the rudder stock into position, leaving excess Wencon material to be squeezed out from the gap.

To ensure the curing within a reasonable time (at winter), apply heat from e.g. two hot air blowers, blowing the hot air onto the rudder blade (not the rudder stock. Leave the application for curing approx. 8 hours.

Variations:
To ensure a proper cast in the key way, it is advisable to extend the key, at least when doing the application. A temporary extension of the key can be modelled using Wencon Putty as shown. Apply release agent on top, before casting.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

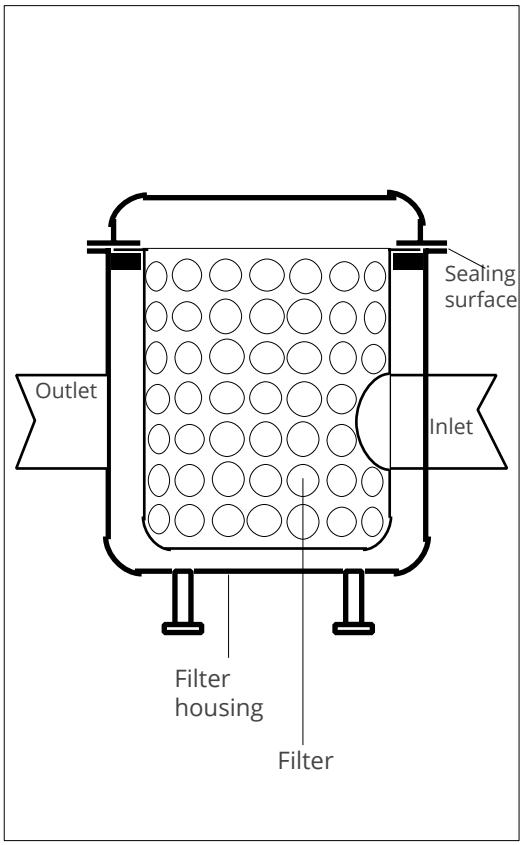
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Sea water filters - corrosion

APPLICATION DATA SHEET No. 114



Sea water filters are very varied in appearance, but despite this they contain the same components internally, viz. a filter housing, a filter, an inlet, an outlet, and a sealing surface between filter and housing.

Sea water filters are naturally exposed to erosion / corrosion and bimetallic corrosion.

Before starting the repair it must be decided whether it is an emergency repair, which can be done on the spot, or a long-lasting reno-vation which necessitates the filter being taken ashore for shot-blasting. The long-lasting renovation is described below.

1. Disassemble the filter and blast acc. to Wencon surface preparation, next page.

2. Fill corroded spots with Wencon Cream or Rapid. If the sealing surface of the filter is corroded, make first an application of a thin layer of Wencon.

3. After the first layer has semi-hardened mix and apply Wencon Coating, white. Apply with a radiator brush from which a half of the bristles have been cut away. When the coat has cured to a sticky consistency, apply a final coat of Wencon Coating, blue.

4. Now clean carefully the sealing surface of the filter and apply a layer of Wencon Release Agent. Then apply a suitable layer of Wencon Cream or Rapid on the sealing surface of the filter housing and fit the filter into place. A new sealing surface is thus established. After curing, the filter can be lifted out again and a gasket can be fitted. In a number of cases the gasket will not be necessary.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

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Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

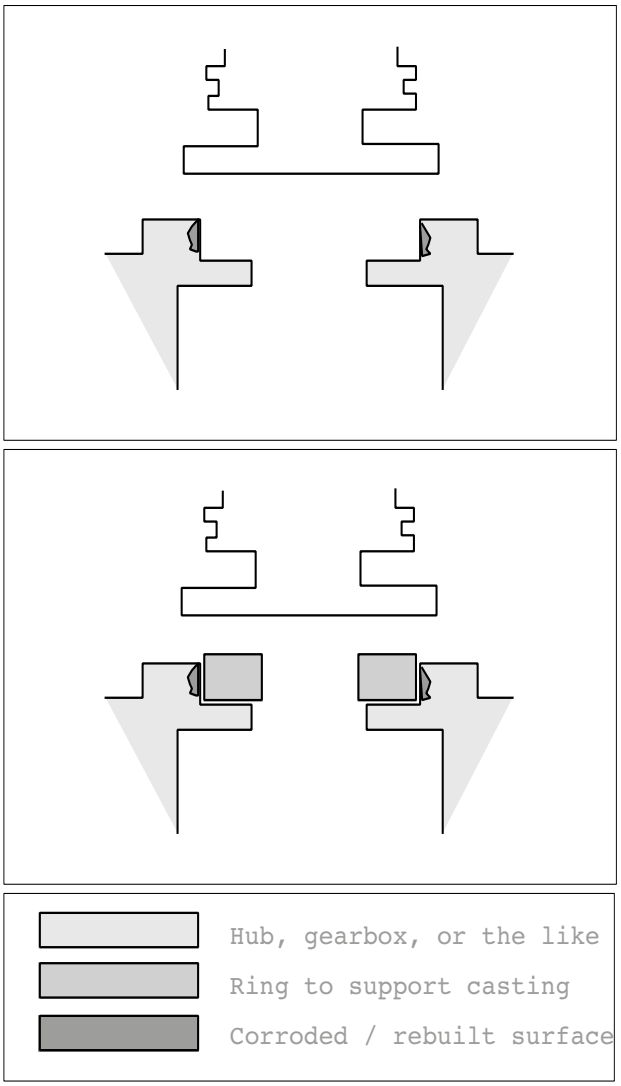
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Sealing ring seats - corrosion

APPLICATION DATA SHEET No. 141



Corroded sealing ring seats in gear boxes, ship`s hub in propeller head, etc., may suffer from either bimetallic corrosion or erosion/corrosion due to leakage and fluid flow.

In situations, where the turning speed is big and rotation takes place constantly, Wencon solutions are ideal. Especially if the cyclic contact does not happen between metal and the surface of Wencon material.

In situations, where the speed is low, and the rotation appears from time to time (i.e. the rotation between propeller blades and the hub), the technique will work well, whether the rotating contact happens directly on the Wencon material or not.

1. Grind the attacked surface acc. to Wencon surface preparation, next page. Mix and apply a suitable layer of Wencon Cream or Rapid. After curing, grind or machine the surfaces to the required shape.

2. Alternative
   To avoid the grinding or machining, make a ring to support the casting during the curing. If the ring is made of metal, apply a thin film of Wencon Release Agent before the casting.

   If the ring is made of PE plastic or the like, the Release Agent is not needed.

   If the ring is made to the right tolerances, the application will be finished after removing the ring after curing.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

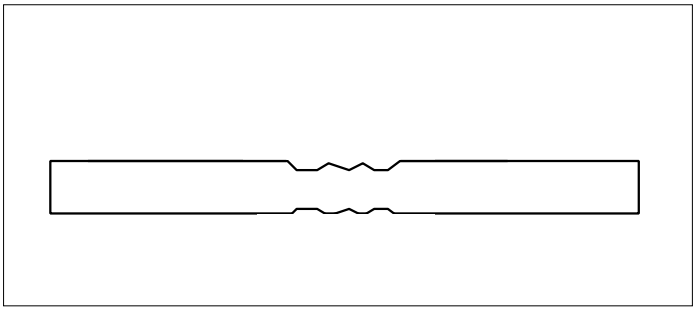
- Blasting
- Grinding
- Needle Gunning

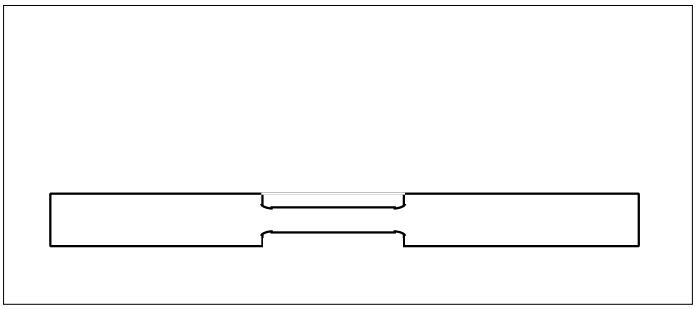
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

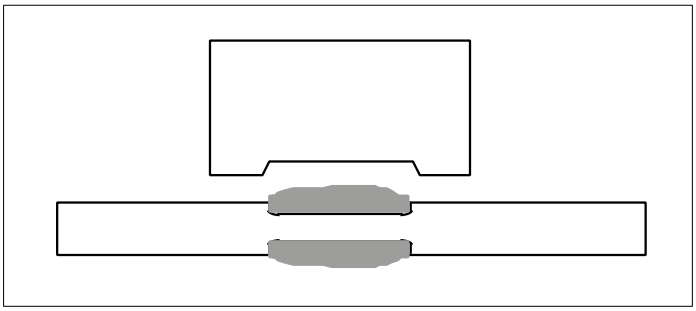
For further information on Wencon surface preparation, please contact our Area Sales Managers.

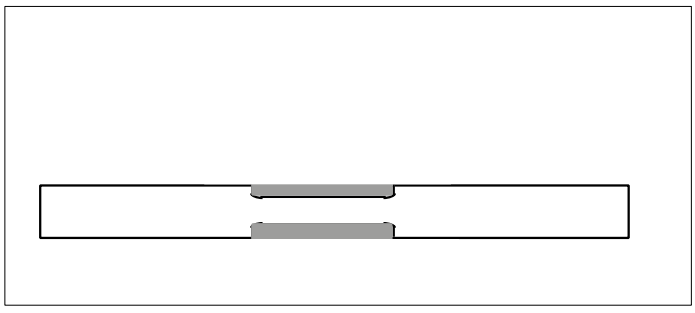
Shafts - damaged

APPLICATION DATA SHEET No. 104









Cases, where the object was meant to be fixed to the shaft, but has been damaged by an object and therefore has rotated. Any repair presupposes that the shaft is of adequate mechanical strength.

1. Place the shaft in the lathe.

2. Turn the shaft as shown. Finish off with a rough turning or a thread.

3. Mix a suitable amount of Wencon Cream or Rapid and apply one layer to the shaft. If necessary, make a spatula as shown.

4. When cured, turn to final size. If so desired, an interference fit can be machined, or the bearing can be glued.

Variations:

Rather than using the lathe, the first turn can be replaced by grinding with an angle-grinder. A couple of bushes must also be made with the internal diameter of the final size required. These bushes should be approx. twice the length of the damaged area, and be used for casting of the new surface on the bearing site. The bushes must be treated with Wencon Release Agent prior to casting.

Alternative products: Wencon Ceramic Cream

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

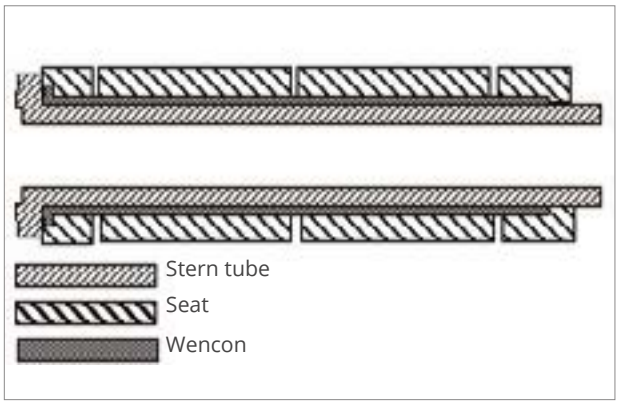
- Blasting
- Grinding
- Needle Gunning

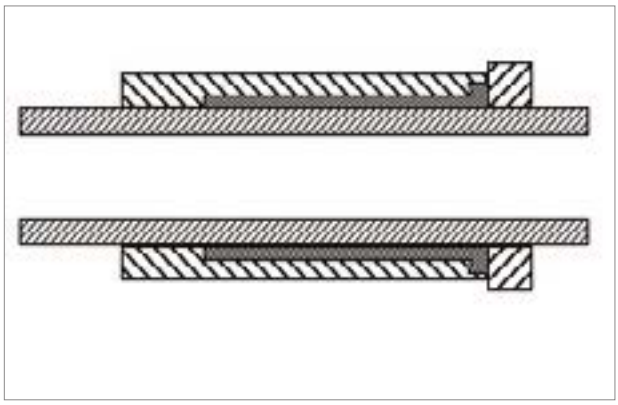
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Stern tubes - casting of seats

APPLICATION DATA SHEET No. 117





Some of the advantages in the technique for casting seats for stern tubes are: better mating surfaces, no demand for line boring.

1. The seat shall be given a rough and clean surface. The diameter shall be approx. 8 mm (0,32 inch) larger than the stern tube.

2. Drill holes in the bottom of the seat (a) for injection. The number of holes depends on the length. Drill holes in the top for ventilation. All the holes may be tapped to make it easy to mount bolts after injection has been finished.

3. In the bottom (b) an O-ring or the like creates a seal to avoid casting material to escape.

4. Mount the stern tube in the desired position. Seal the outer flange with a sealant or with Wencon Rapid.

5. The temperature of the working area shall be 15-20°C (51-68°F). Avoid heating of the stern tube.

6. Use an air driven mastic gun for the injection.

7. Calculate the approx. consumption of casting material.

8. Mix one unit of Wencon Coating and fill it in an empty cartridge (can be supplied from Wencon) and inject into the rear hole. Repeat this until the casting has reached the next hole, plug the first hole and continue in the second. Repeat until the entire gap is filled.

Technique approved by B.V.

The bottom drawing shows the other end of a stern tube that shall be treated the same way.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
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5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

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Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

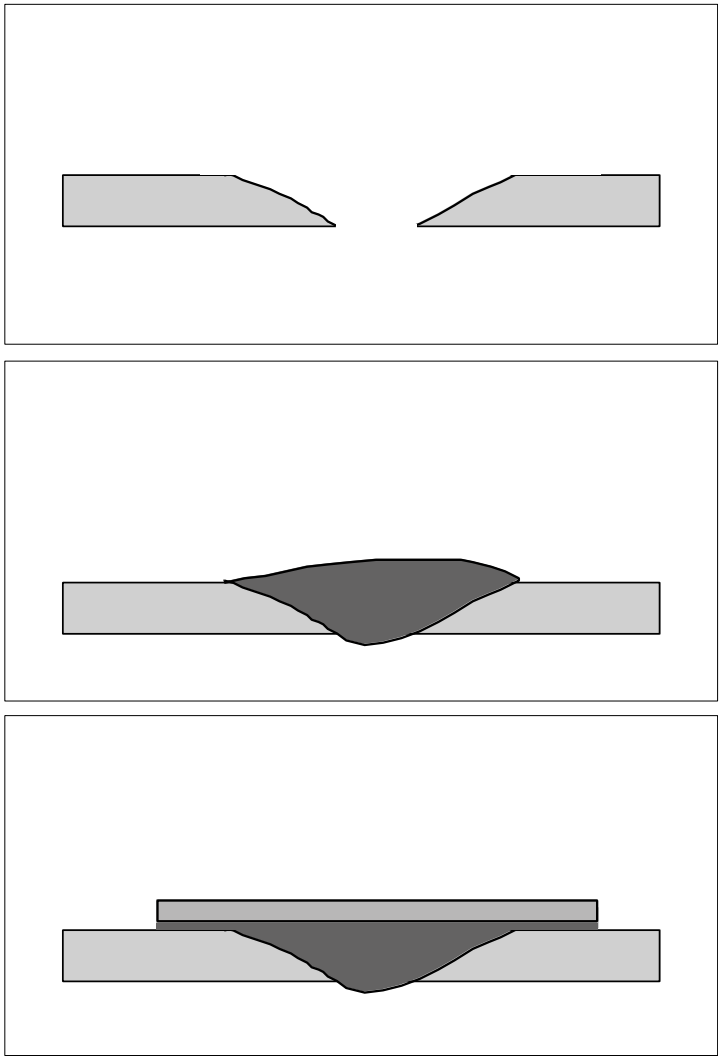
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Tank holes - not leaking

APPLICATION DATA SHEET No. 129



When repairing leaking tanks, the best result is obtained by repairing on the pressure side.

Often, when a tank is leaking, it is corroded not only where the leak is, but also in the surrounding area.

By repairing only the small area that leaks, it often leads to further repairs in the near future.

1. Carry out surface preparation acc. to Wencon surface preparation, next page.

2. Mix and apply a suitable amount of Wencon Rapid. Make sure to get a good contact between the Wencon and the substrate. Avoid air entrapment.

3. For extra security, it is advisable to reinforce the application by the means of a steel plate, grit blasted or ground on one side, and fixed into the Wencon before curing. If the surface of the substrate is shaped, give the plate the approximate same shape before bedding it into the repair. Make sure, that the plate will get in good contact with the Wencon material.

4. To protect against further bi-metallic corrosion, treat the entire surface with Wencon Coating, white and blue.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

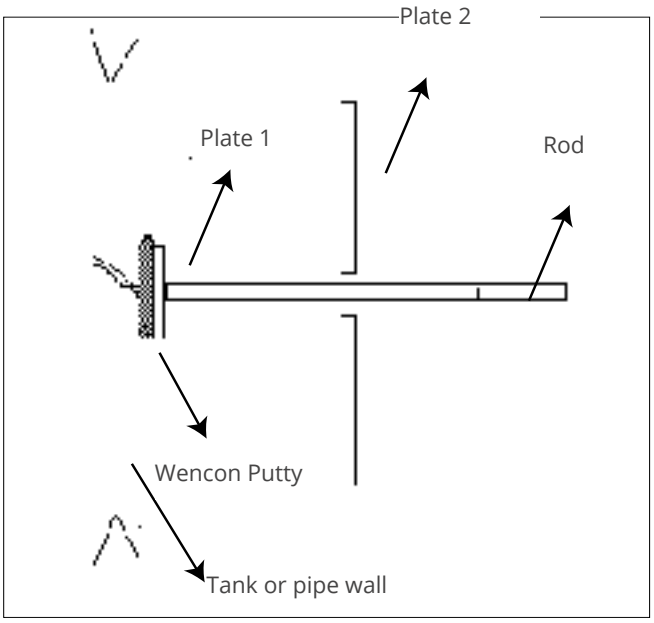
- Blasting
- Grinding
- Needle Gunning

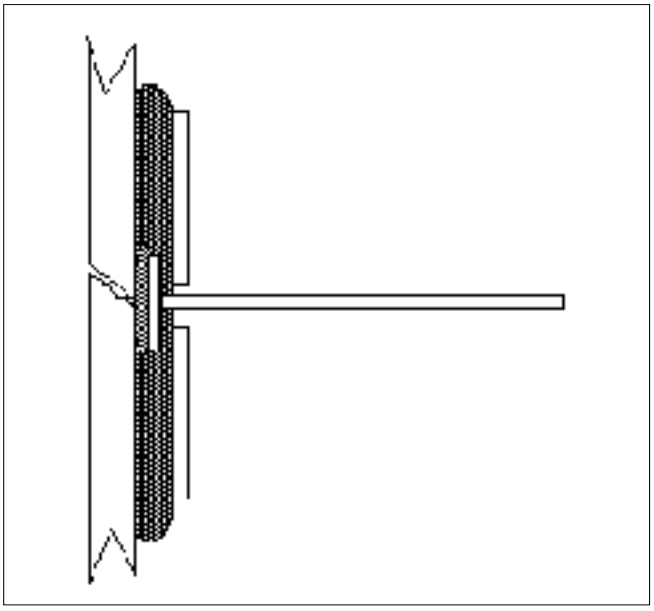
In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Tanks - emergency repair of leaking cracks

APPLICATION DATA SHEET No. 146





Cracks in tanks, pipes and other structures.

If possible, reduce or eliminate pump pressure during application.

The technique involves two steps. First, the leak must be stopped, thereafter, it must be secured.

1. Prepare three tools
   One small steel plate (Plate 1.) big enough to cover the leak, and larger than the hole in the large plate (see below).

   One larger steel plate (Plate 2.) to cover an area of 100 x 100 mm or larger. The size has influence on the strength of the repair. In the middle of this plate, drill a hole for the rod (see below). Clean the surface thoroughly acc. to Wencon surface preparation, next page.

   One rod (could be a large screwdriver), long enough to serve its purpose (see below)

2. Stop the leak
   Mix a suitable amount of Wencon Putty and place it directly in the leak. If pressure is high, await semi curing, that will make the Putty more stiff. Before the Putty cures, press and hold it by the means of the small plate, and fixate it with the rod. This will stop the leak.

As an alternative, a wooden plug can be hammered into the leak, to take most of the pressure.

3. Secure the leak
   Grind an area around the leak, slightly larger than the large steel plate. Clean it using the Wencon Bio Cleaner. Mix and apply a thick layer of Wencon Rapid to the surface. Make sure that the thickness exceeds the combined thickness of the Putty and the small steel plate. Mount the large steel plate into the uncured Wencon Rapid, and hold until full cure.

Variation
On applications where the crack is not on a flat surface, the plates will have to be shaped accordingly.

For quick cure, apply heat up to 100°C (340°F).

Alternative products: Wencon UW products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

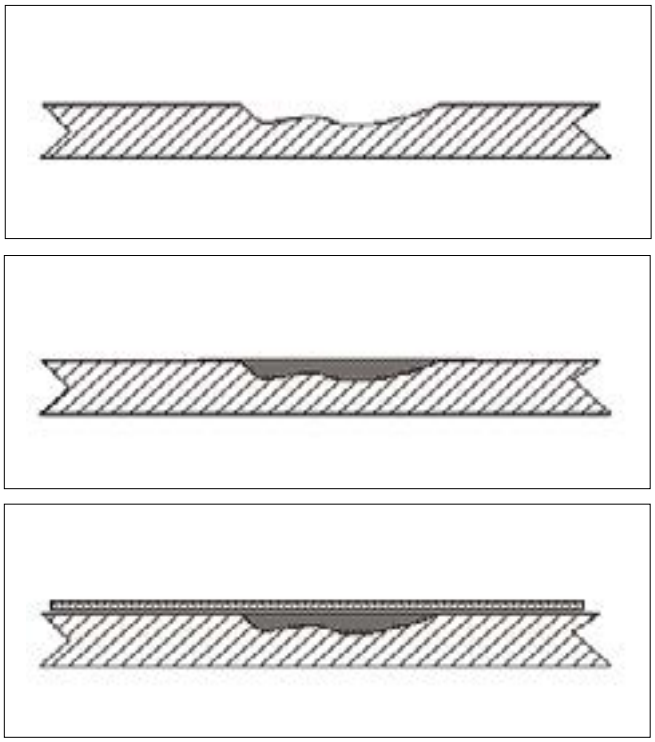
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Tanks - pittings

APPLICATION DATA SHEET No. 145



Steel
Wencon Cream or Rapid
Wencon Coating or other tank coating

Whether the tank is coated or not, the pittings shall be cleaned thoroughly acc. to Wencon surface preparation, next page.

1. After surface treatment, mix and apply a suitable amount of Wencon Cream or Rapid (use Rapid for quick curing and/or deep pittings on vertical surfaces).

   Make sure the material gets in good physical contact with the substrate.

2a. Coating with Wencon Coating:

After 1-2 hours curing, apply first layer of Wencon Coating, white, and after yet another hour (while the white coating is still a bit tacky) apply the final coat of Wencon Coating, blue.

2b. Coating with other brands of tank coating:

Apply first layer of any well known tank coating before the Wencon Cream or Rapid has fully cured, to ensure a first class adhesion.

Alternative products: Wencon Ceramic products

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

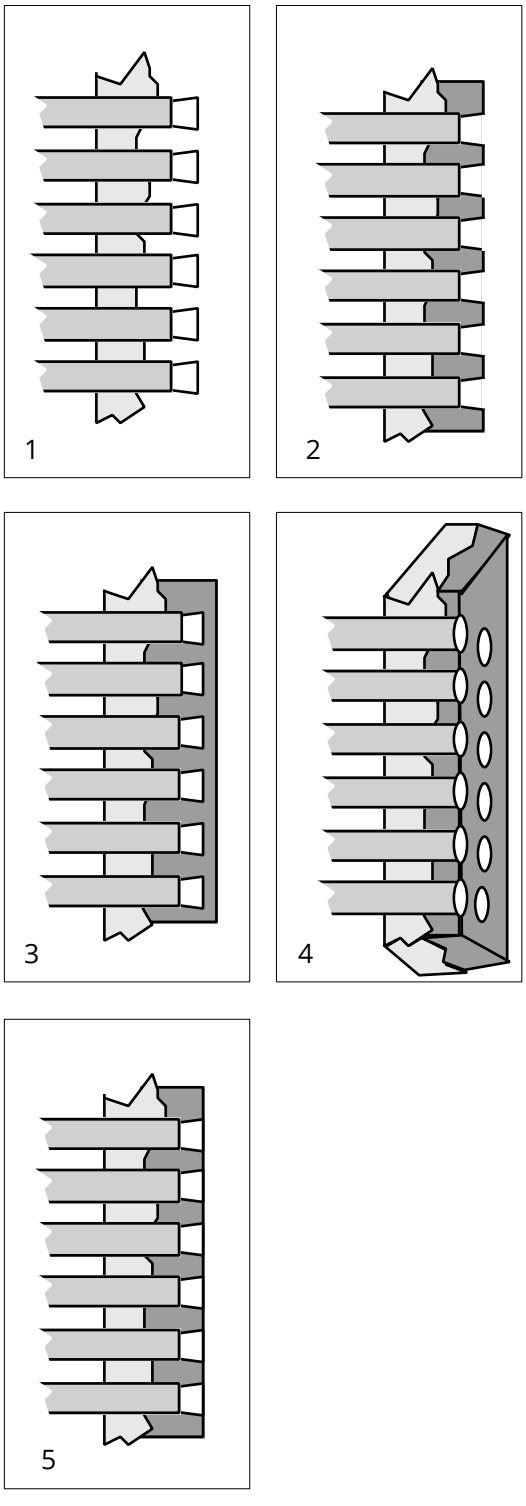
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Tube end plates - corrosion

APPLICATION DATA SHEET No. 118



Corroded tube end plates provide an excellent example of how a surface repair should be carried out. The accuracy of the preparatory work is of great importance.

1. Insert rubber plugs in the tubes to protect these when shot blasting. Shot blast the tube end plate acc. to Wencon surface preparation, next page.

2. Replace the rubber plugs with cork plugs treated with Wencon Release Agent, and having a diameter 2 mm smaller at the one end than the inner diameter of the tube, 2 mm (0,08 inch) larger at the other end. Insert the cork plugs in the tubes, and to ensure they sit level, knock into plan by using a piece of wood or the like and a hammer.

Mix and apply a thick layer of Wencon Cream, and cover the cork plugs completely.

3. After curing, grind the surface to develop the plugs again. Because of this grinding it is not recommended to rebuild a sealing surface which mates with the end cover, if the surface is not corroded. If, however the sealing surface is in need of repair, wait until the above application has been done, and then build up the sealing surface as follows. First apply a coat of Wencon Release Agent on the flange, then apply a coat of Wencon Cream on the sealing surface, and then fit the cover into position before curing.

4. Remove the plugs. Preferably by means of a wooden screw in a drilling machine that can rotate in both directions. You can also push them out from the opposite end with a rod, or use compressed air.

5. Finally, apply two coats of Wencon Coating (see instructions). Use a paint roller for this - a thin one with hard felt covering - to avoid coating material coming into the tube ends.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

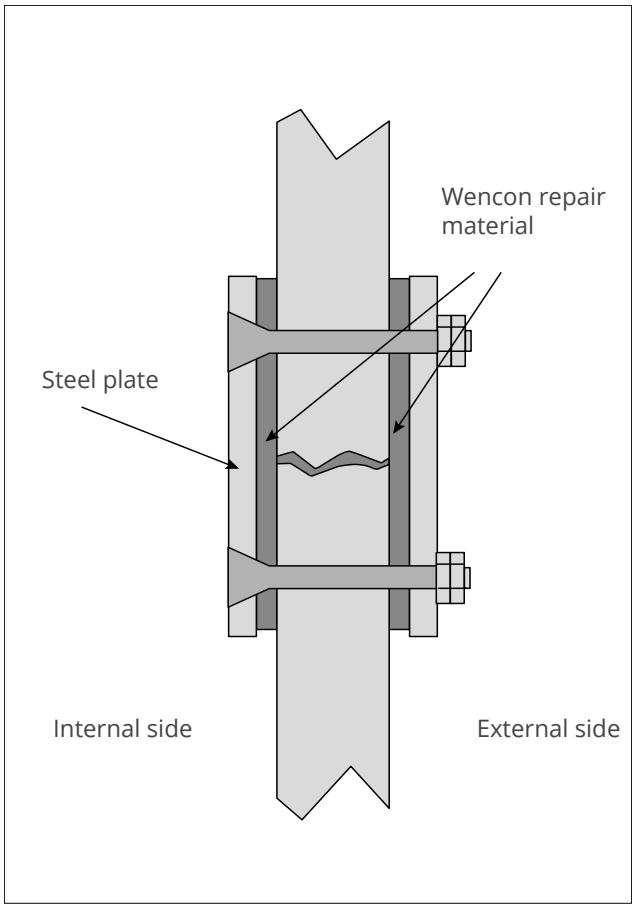
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Turbo charger casings - sealing cracks

APPLICATION DATA SHEET No. 154



Remarks
This application is meant to seal a well stabi-lised crack. Application will only work, if the crack is stabilised

Stabilise the crack
Find the ends, stop the crack and stabilise it as described by suppliers of crack repairs.

Seal the crack
1. Prepare the entire area internally as well as externally acc. to Wencon surface prepa-ration, next page.

Inside job
2. Make two pieces of metal plate, approx. 100 mm (4 inch) wide and 50-100 mm (2-4 inch) longer than the crack. The plates shall cover the repair area.

3. Form it in the shape of the crack. Use welding, bending or the like.

4. Drill holes as shown in the plates.

5. Clean the area again. Also the metal plate.

6. Mix and apply a layer of Wencon Hi-Temp or Wencon Ceramic Coating directly in the crack in a thickness of min. 5 mm (0,2 inch) as shown in the ill.

7. Before curing, place the prepared metal plates over the crack and make sure to get good contact. Remove excess material.

8. After semi cure the work with extra securing of the plate can start. Drill and tap holes in the engine block as shown, and mount bolts as shown. Secure the bolts with an anaerobic adhesive, bolt wires or the like.

Remarks
There is always a risk when mounting loose parts in a turbo charger. Calculate the risk in the situati-on and act accordingly.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

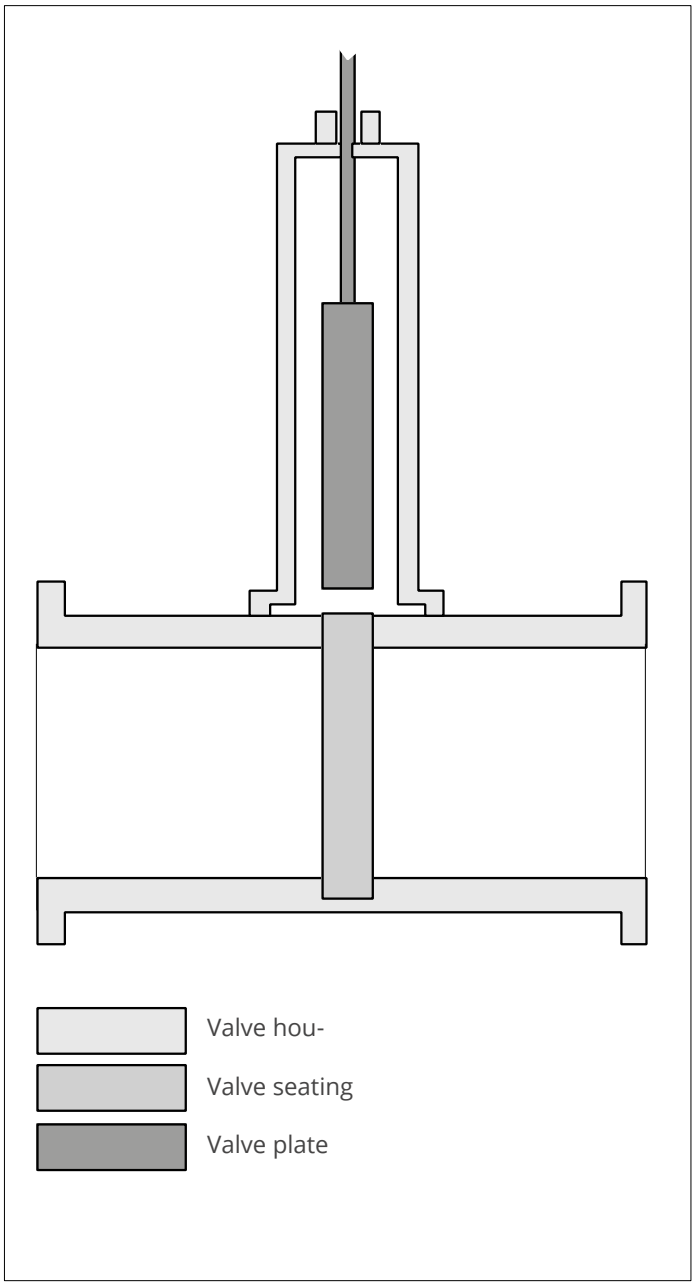
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Valve seatings - corrosion

APPLICATION DATA SHEET No. 107



Leakages in valves often occur, due to corrosion in the seatings. As a rule the valve is a construction of a number of different metals. Therefore there is every possibility of light acidic agents, such as sea water, causing bimetallic corrosion.

This application, deals only with emergency repair of corroded seatings. Complete renovation of valves is dealt with in another application sheet. Whether the valves in question are plate valves or butterfly and non-return valves, the method of application is much the same.

Clean the corroded seating acc. to Wencon surface preparation, next page.

Apply a coat of Wencon Release Agent to the valve plate. This will prevent adhesion. Mix and apply an adequate amount of Wencon Cream or Rapid to the valve seating and close the valve immediately afterwards.

When curing is completed open the valve and grind the seating edges to shape. Wencon adheres to all metals. Wencon retains its form and size during curing.

Please refer also to the application instructions accompanying the Wencon product.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

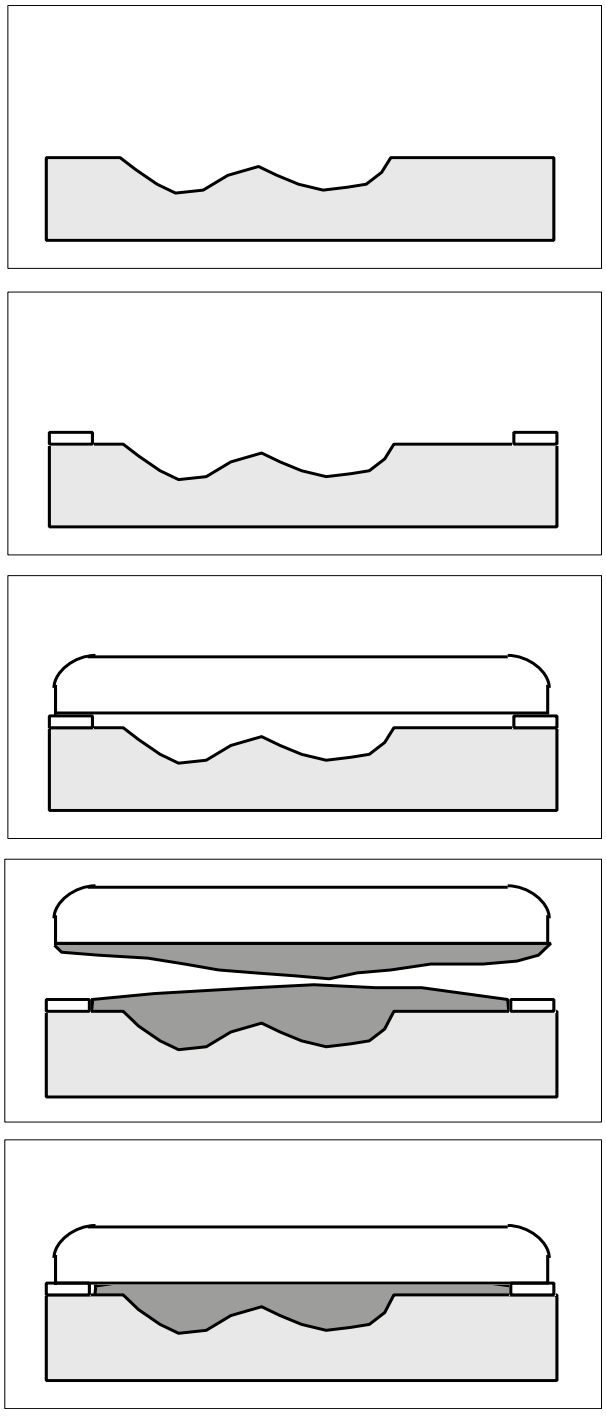
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Wear plates - casting support

APPLICATION DATA SHEET No. 119



It is often the case that wear plates are replaced too late. This results in excessive wear of the surface of the seat for the plate. Welding and machining of this surface can be expensive. By using the Wencon application, these surfaces can easily be built up to exact alignment with the wear plate. In many cases it is even possible to obviate the necessity of machining the rear side of the wear plates.

1. Clean the worn surface acc. to Wencon surface preparation, next page.

2. On each seat, fix four small iron shims to guide the wear plate during the casting. They must ensure a minimum casting height of 2 mm (0,08 inch), and must be removed after casting.

3. Before casting, check the plate for correct positioning. Then apply a film of Wencon Release Agent to the rear of the plate, to prevent adhesion between the plate and Wencon. Allow the release agent to dry for at least 5 minutes.

4. Clean the worn surface with Wencon Bio Cleaner. Mix an adequate amount of Wencon Cream. Build up a layer, as shown in the diagram, on both the seat and the plate. Allow some 30% of the Wencon to be squeezed out when fitting in order to ensure a complete support.

5. Press down the plate on to the shims, either by means of the bolts that holds the plates or by means of a jack. Thereafter remove the excess Wencon material and the job is finished. Curing time depends on temperature. At 20°C (68°F) Sit will be about 10-15 hours. Curing time can be shortened at higher temperatures. After curing, remove the shims, and retighten the plates to the required tension.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

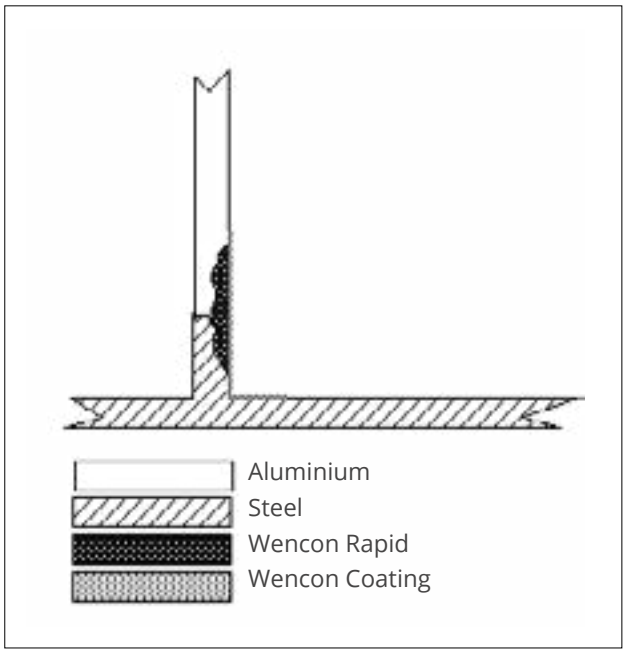
- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Wheel house aluminium - corrosion

APPLICATION DATA SHEET No. 135



Drawing shows corrosion in the area, where steel and aluminum meet. The corrosion is of bimetallic nature, and is very simple to repair (avoid) with Wencon.

1. Prepare the surface acc. to Wencon surface preparation, next page.

2. Mix and apply a layer of Wencon Cream or Rapid to create an even surface.

3. After semi curing, while the first layer is still a bit tacky, apply the Wencon Coating, white on the whole area in question, and leave it again for semi curing. Apply the final layer, being the Wencon Coating, blue.

4. If the area is subjected to high temperatures or chemical attack, use the Wencon Hi-Temp in stead of the Wencon Coating.

Wencon surface preparation

Choose the relevant surface preparation, depending on the nature of the job.

Surface preparation using dry blasting methods:

Application with Wencon products on a dry surface, at minimum 3°C. above dew point.

1. Blast the machine part to SA 2,5 using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40°C (86-104 °F) using gas torches.
3. Blast again to SA 2,5, prior to the application.
4. For parts containing a lot of water and salt, it may be necessary to repeat point 2 and 3, until the surface remains light grey, for at least 2 hours after blasting.
5. For optimal adhesion of Wencon products, always use Wencon Bio Cleaner or Wencon Cleaner prior to application. Follow one of below two methods:

5.1 **Wencon Bio Cleaner**

Wet surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and wipe off with an absorbing cloth. Apply Wencon UW Coating as a primer, and hereafter any Wencon products can be applied.

Dry surface: Apply Wencon Bio Cleaner and let it work for 5-10 min. If necessary use a brush, to make sure the surface is clean. Rinse off with clean water and dry with an absorbing cloth or with compressed air for a completely dry surface. Hereafter any Wencon products can be applied.

5.2 **Wencon Cleaner**

After surface preparation, apply Wencon Cleaner with a brush and allow the product to evaporate before applying other Wencon products. Wencon Cleaner is non-flammable. Use only in large or well ventilated rooms.

Surface preparation using wet/damp methods:

Water jet the entire surface with water and sand to a standard equal, to SA 2,5 as described above.

If the surface is left wet after surface preparation, is it important to dry out the surface or alternatively use a Wencon UW product as a primer.

Surface preparation for emergency/temporary applications:

If above surface preparation methods are not possible, it may be necessary to use one of below methods:

- Blasting
- Grinding
- Needle Gunning

In emergency / temporary applications it may be difficult to prepare the surface according to above methods. In any case, it is important to clean the surface to SA 2,5 and 75 microns roughness. If possible dry the surface before applying. If not possible, use Wencon UW products prior to applying any other Wencon products.

For further information on Wencon surface preparation, please contact our Area Sales Managers.

Index - Chapter 6

American Bureau of Shipping. 186
Bureau Veritas Certificate 190
DNV-GL Certificate 194
RINA Certificate. 206

CERTIFICATE NUMBER
17-LD1664594-PDA

DATE
05 Sep 2017

ABS TECHNICAL OFFICE
London Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of

WENCON

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Synthetic Repair Compounds & Resins**

Model: **See Attachment**

This Product Design Assessment (PDA) Certificate 17-LD1664594-PDA, dated 05/Sep/2017 remains valid until 04/Sep/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Nikolaos Vrellos
Engineer/Consultant

AE2580116

WENCON
15 JYLLANDSVEJ
BOGENSE
Denmark DK-5400
Telephone: 45-648-11010
Fax:
Email: wencon@wencon.com
Web: www.wencon.com

Tier: 2 - PDA Issued

Product: **Synthetic Repair Compounds & Resins**
Model: **See Attachment**
Intended Service:
1) Repair of and/or protection against deterioration of metals in pumps, valves, filters, pipes, heating coils, tanks, bulk heads, coolers, rudder stocks, propeller shafts, etc.;
2) For creating fixture and preventing future corrosion in the seats for rudder stock bushings, rudder heel bushings, rudder cone assemblies, rudder pintle bushings, rudder pintle cones, stern tubes, and the like.

Description:
Wencon Repair and Protection System

Rating:
Product ratings are included in the Attachment.

Service Restriction:
Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:
The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

1) Repair procedures including surface preparation and application are to be carried out in accordance with the manufacturer's specifications and procedures and as per Wencon Manual "Repair of deteriorated machine parts" (latest edition available at www.wencon.com).
2) Replacing metal that is essential for the structural strength of the item the Surveyor is to be contacted prior to commencing repair, in order to obtain the Surveyor's acceptance for the specific application.
3) Repairs to pressure containing systems the Surveyor is to be contacted prior to commencing repair, in order to obtain the Surveyor's acceptance for the specific application.
4) The following limitations apply to the repair of pressure containing systems using Wencon Pipe Tape:
a) Maximum temperature 120 Deg C.
b) Maximum pressure when used with Wencon Putty 50bar.
c) Maximum pressure when used without Wencon Putty 10bar.
d) The use of these products is not permitted on any pressure part in containing a toxic or flammable liquid or gas.

Notes/Drawing/Documentation:
Drawing No. wencon_repair_manual, WENCON Repair Manual
Drawing No. Declaration of Conformity Wencon, Declaration of Conformity
Drawing No. Previous Certificate 05-LD483521-1-PDA - Certificate in file

Terms of Validity:
This Product Design Assessment (PDA) Certificate 17-LD1664594-PDA, dated 05/Sep/2017 remains valid until 04/Sep/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

WENCON
15 JYLLANDSVEJ
BOGENSE
Denmark DK-5400
Telephone: 45-648-11010
Fax:
Email: wencon@wencon.com
Web: www.wencon.com

Tier: 2 - PDA Issued

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
2017 Steel Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4
2017 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1A3

National:
NA

International:
NA

Government:
NA

EUMED:
NA

OTHERS:
Manufacturer's Standards

Marine & Offshore

Certificate number: 03892/F1 BV
File number: ACM 171/2301/001
Product code: 0015H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

WENCON ApS (SUPPLIER)

Bogense - DENMARK

for the type of product

SURFACE PROTECTION AND COLD REPAIR PRODUCTS

BASIC PRODUCTS : WENCON CREAM, RAPID, COATING, HI-TEMP, PUTTY, PIPE TAPE, EXHAUST REPAIR
UNIQUE PRODUCTS : WENCON UW CREAM, UW COATING, UW PUTTY, CERAMIC CREAM, CERAMIC COATING

Requirements:
BUREAU VERITAS Rules for the Classification of Steel Ships,
BUREAU VERITAS Rules for Offshore Units.

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 28 Mar 2024

For Bureau Veritas Marine & Offshore,
At BV FREDERICIA, on 29 Apr 2019,
Jesper Jensen

BUREAU VERITAS SURVEYORS AT PARIS 1828 FREDERICIA INTERNATIONAL REGISTER

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

WENCON PLASTIC STEEL consists of a range of one and two-component epoxy, polyurethane and silica based products.

Resistant products to oil, water, sea water and some other products (as diluted acids, solvents, etc.) manufactured by **WENCON ApS.**

The range of products is as follows :

BASIC PRODUCTS : WENCON Cream, Rapid, Coating, Hi-Temp, Putty, Pipe Tape, Exhaust repair.

UNIQUE PRODUCTS : WENCON UW Cream, UW Coating, UW Putty, Ceramic Cream, Ceramic Coating.

Nota: UW indication is for products suitable for wet surface or underwater application.

2. DOCUMENTS AND DRAWINGS:

Main characteristics:

COMPRESSIVE STRENGTH:	Mini 60 N/mm2.
TEMPERATURE RESISTANCE:	60°C - 250°C (1300°C for exhaust repair only)
HARDNESS:	Shore D 80.
SPECIFIC GRAVITY at 20°C:	About 1.5.
POT LIFE: - WENCON Cream:	1/2 - 1 Hour at 20°C
- WENCON Coating:	15 - 30 minutes at 20°C
- WENCON Rapid:	10 - 15 minutes at 20°C
- WENCON Putty:	3 - 6 minutes at 20°C
- WENCON Hi-Temp :	20 - 40 minutes at 20°C
- WENCON Exhaust repair:	15 - 20 minutes at 20°C
- WENCON pipe tape:	3 - 6 minutes at 20°C

Datasheets:

Name	**Revision & date**
WENCON Ceramic coating	n°2 - 2013/04/01
WENCON Ceramic cream	n°2 - 2013/04/01
WENCON UW coating	n°4 - 2013/04/01
WENCON UW cream	n°4 - 2013/04/01
WENCON UW Putty	n°2 - 2013/04/01
WENCON Exhaust repair kit	n°5 - 2018/01/31
WENCON Pipe tape	n°5 - 2018/01/31

3. TEST REPORTS:

The production takes place under the governance of ISO 9001/14001.
All tests have been carried out in the Manufacturer's works to either BSI, DIN or ASTM test methods.

4. APPLICATION / LIMITATION:

4.1 - Products are dedicated for:

- Repair and/or protection against bimetallic corrosion and erosion/corrosion attacks in pump, valves, filters, pipes, tanks, coolers, etc.
- For creating fixture and preventing future corrosion in the seats for rudder stock bushing, rudder heel bushing, rudder cone assembly, rudder pintle bushing, rudder pintle cone, sterntube, etc.
- Composite wrap for piping lines transferring oil, fresh & sea water, diluted acids & solvents, etc.

4.2 - Limitations:
Components in rubbing or cycling contact with other components where temperature exceeds 90°C.
4.3 - As per Manufacturer's instructions.
4.4 - Prior to an application, a WENCON Engineer or somebody appointed by WENCON should be contacted to help projecting the application.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The WENCON PLASTIC STEEL are to be supplied by **WENCON ApS** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **WENCON ApS** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

6. MARKING OF PRODUCT:

6.1 - Packages are to be marked with the following indications:

- Name of the supplier.
- Product designation.
- Packing date.
- Storage conditions.

6.2 - Each delivery is provided with a "Certificate of Conformity".

"Instructions for Use" shall explain actions which are to be taken during the product application in order to avoid some physical troubles. Further more detailed instructions for use, application data sheets, technical data and safety data sheets are included in the WENCON technical manual, available as hardcopy, on CD-Rom or to be down-loaded from internet at www.wencon.com.

7. OTHERS:

7.1 - It is **WENCON ApS**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate n° 03892/F0 issued on 28 March 2019 by the Society.

***** END OF CERTIFICATE *****

DNV·GL

Certificate No:
TAK00001K2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Polymer Repair System

with type designation(s)
Wencon Standard Products:
-Wencon Coating,
-Wencon Cream,
-Wencon Rapid,
-Wencon Putty

Issued to
Wencon ApS
Bogense, Syddanmark, Denmark

is found to comply with
DNV GL rules for classification – Ships

Application :

Epoxy-based compounds for repairs of steel components. Each repair shall be carried out in accordance with Manufacturer's instructions, approved by DNV GL, and under surveillance of DNV GL, when deemed applicable.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-05-01**

This Certificate is valid until **2024-04-30**.
DNV GL local station: **Fredericia FiS**

Approval Engineer: **Gisle Herstvik**

for **DNV GL**
Digitally signed by Törnqvist, Rikard
Location: DNV GL Høvik, Norway
Signing Date: 2019-05-01

Rikard Törnqvist
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Wencon Standard Products:
- **Wencon Coating**
- **Wencon Cream**
- **Wencon Rapid**
- **Wencon Putty**

The listed products are commonly used for Temporary and Permanent Maintenance tasks, but also proves useful for a range of Emergency Repairs in Dry surroundings and environments.
The products are not intended for tasks where Wet, Hot or Harsh Abrasion surroundings and environment is a part of the task.

Application/Limitation

Repair activities for components which affect or might affect the Class of the ship, have to be reported in advance to DNV GL.

Installation only in accordance with DNV GL Rules and Manufacturer's work instructions.

For limitations as to environmental conditions and exposure to chemicals, confer manufacturer's instructions.

The maximum working temperature shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

An adequate curing shall be proven by a Shore D test. The hardness shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

The lifetime and the performance of a repair is, apart from the procedure of application of the system, dependent on the service environment, imposed mechanical loads and deformations and may vary significantly from case to case. A careful assessment of the expected reliability of the repair shall always be carried out by the DNV GL surveyor and the manufacturer's representative with due regard to the service requirements and the requirements to the reliability of the component to be repaired.

The system has limited or no resistance to exposure to fire. Requirements to the performance of the repair under fire shall be carefully evaluated by the DNV GL surveyor and the manufacturer's representative.

Any significant changes in design and/or quality of the material will render the approval invalid.

Planning and execution of repair

Each repair shall be carried out in close co-operation with the DNV GL surveyor:
- The surveyor shall be informed about and participate in (if required by the surveyor) the planning of the repair.
- When required by the surveyor, the surface preparation shall be witnessed and/or the finally prepared surfaces shall be made available for inspection and approved by the surveyor.
- When required by the surveyor, the application of the system and curing shall be witnessed by the same.
- When required by the surveyor, other operations shall be witnessed and approved by the surveyor.
- When required by the surveyor, the final condition of the repair shall be approved by the same.

Type Approval documentation

1. Assessment Report from DNV GL Fredericia of 2019-04-29.
2. Application for Type Approval of 2019-04-15.
3. TDS

INDEX

4. MSDS
5. Experiences

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

All components of the system are to be marked with manufaccurer's name, type designation, date of fabrication and shelf l fe or exoiry date. In addition, the following documentation shall be submitted with the product:

- Product specification.
- Spec fication of range of application and limitations.
- Detailed procedures for surface preparation.
- Detailed procedures for application.
- Detailed procedures for curing.
- Hazards and precautions to be taken with regard to occupational safety.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Period.cal Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and DNV GL Type Approval Certificate.

END OF CERTIFICATE

DNV·GL

Certificate No:
TAK00001K3

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Polymer Repair System

with type designation(s)
Wencon Under Water Products:
-Wencon UW Coating,
-Wencon UW Cream,
-Wencon UW Putty,
-Wencon Pipe Tape

Issued to
Wencon ApS
Bogense, Syddanmark, Denmark

is found to comply with
DNV GL rules for classification – Ships

Application :

Epoxy-based compounds for repairs of steel components. Each repair shall be carried out in accordance with Manufacturer's instructions, approved by DNV GL, and under surveillance of DNV GL, when deemed applicable.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-05-01**

This Certificate is valid until **2024-04-30**.
DNV GL local station: **Fredericia FiS**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**
Digitally Signed By: Törnqvist, Rikard
Location: DNV GL Høvik, Norway
Signing Date: 03.05.2019

Rikard Törnqvist
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Wencon Under Water Products:
- **Wencon UW Coating**
- **Wencon UW Cream**
- **Wencon UW Putty**
- **Wencon Pipe Tape**

The listed products are commonly used targeting on Temporary Solutions and Emergency Repairs in wet surroundings and environments, because its excellent adhesion under water and on high moisture surfaces.

Application/Limitation

Repair activities for components which affect or might affect the Class of the ship, have to be reported in advance to DNV GL.

Installation only in accordance with DNV GL Rules and Manufacturer's work instructions.

For limitations as to environmental conditions and exposure to chemicals, confer manufacturer's instructions.

The maximum working temperature shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

An adequate curing shall be proven by a Shore D test. The hardness shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

The lifetime and the performance of a repair is, apart from the procedure of application of the system, dependent on the service environment, imposed mechanical loads and deformations and may vary significantly from case to case. A careful assessment of the expected reliability of the repair shall always be carried out by the DNV GL surveyor and the manufacturer's representative with due regard to the service requirements and the requirements to the reliability of the component to be repaired.

The system has limited or no resistance to exposure to fire. Requirements to the performance of the repair under fire shall be carefully evaluated by the DNV GL surveyor and the manufacturer's representative.

Any significant changes in design and/or quality of the material will render the approval invalid.

<u>Planning and execution of repair:</u>
Each repair shall be carried out in close co-operation with the DNV GL surveyor:
- The surveyor shall be informed about and participate in (if required by the surveyor) the planning of the repair.
- When required by the surveyor, the surface preparation shall be witnessed and/or the finally prepared surfaces shall be made available for inspection and approved by the surveyor.
- When required by the surveyor, the application of the system and curing shall be witnessed by the same.
- When required by the surveyor, other operations shall be witnessed and approved by the surveyor.
- When required by the surveyor, the final condition of the repair shall be approved by the same.

Type Approval documentation

1. Assessment Report from DNV GL Fredericia of 2019-04-29.
2. Application for Type Approval of 2019-04-15.
3. TDS
4. MSDS
5. Experiences

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

All components of the system are to be marked with manufacturer's name, type designation, date of fabrication and shelf life or expiry date. In addition, the following documentation shall be submitted with the product:

- Product specification.
- Specification of range of application and limitations.
- Detailed procedures for surface preparation.
- Detailed procedures for application.
- Detailed procedures for curing.
- Hazards and precautions to be taken with regard to occupational safety.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and DNV GL Type Approval Certificate.

END OF CERTIFICATE

DNV·GL

Certificate No:
TAK00001K4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Polymer Repair System

with type designation(s)
Wencon High Temperature Products:
-Wencon Exhaust Repair,
-Wencon Hi - Temp

Issued to
Wencon ApS
Bogense, Syddanmark, Denmark

is found to comply with
DNV GL rules for classification – Ships

Application :

Epoxy-based compounds for repairs of steel components. Each repair shall be carried out in accordance with Manufacturer's instructions, approved by DNV GL, and under surveillance of DNV GL, when deemed applicable.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-05-01**

This Certificate is valid until **2024-04-30**.
DNV GL local station: **Fredericia FiS**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**
Digitally Signed By: Törnqvist, Rikard
Location: DNV GL Høvik, Norway
Signing Date: 03.05.2019

Rikard Törnqvist
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Wencon High Temperature Products:
- **Wencon Exhaust Repair**
- **Wencon Hi – Temp**

The listed products are suitable for applications where there is a demand for resistance to warm environments like Hot Oil and Steam such as Heating Coils, Boilers, and Exhaust Systems.

Application/Limitation

Repair activities for components which affect or might affect the Class of the ship, have to be reported in advance to DNV GL.

Installation only in accordance with DNV GL Rules and Manufacturer's work instructions.

For limitations as to environmental conditions and exposure to chemicals, confer manufacturer's instructions.

The maximum working temperature shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

An adequate curing shall be proven by a Shore D test. The hardness shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

The lifetime and the performance of a repair is, apart from the procedure of application of the system, dependent on the service environment, imposed mechanical loads and deformations and may vary significantly from case to case. A careful assessment of the expected reliability of the repair shall always be carried out by the DNV GL surveyor and the manufacturer's representative with due regard to the service requirements and the requirements to the reliability of the component to be repaired.

The system has limited or no resistance to exposure to fire. Requirements to the performance of the repair under fire shall be carefully evaluated by the DNV GL surveyor and the manufacturer's representative.

Any significant changes in design and/or quality of the material will render the approval invalid.

Planning and execution of repair:
Each repair shall be carried out in close co-operation with the DNV GL surveyor:
- The surveyor shall be informed about and participate in (if required by the surveyor) the planning of the repair.
- When required by the surveyor, the surface preparation shall be witnessed and/or the finally prepared surfaces shall be made available for inspection and approved by the surveyor.
- When required by the surveyor, the application of the system and curing shall be witnessed by the same.
- When required by the surveyor, other operations shall be witnessed and approved by the surveyor.
- When required by the surveyor, the final condition of the repair shall be approved by the same.

Type Approval documentation

1. Assessment Report from DNV GL Fredericia of 2019-04-29.
2. Application for Type Approval of 2019-04-15.
3. TDS
4. MSDS
5. Experiences

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

All components of the system are to be marked with manufacturer's name, type designation, date of fabrication and shelf life or expiry date. In addition, the following documentation shall be submitted with the product:

- Product specification.
- Specification of range of application and limitations.
- Detailed procedures for surface preparation.
- Detailed procedures for application.
- Detailed procedures for curing.
- Hazards and precautions to be taken with regard to occupational safety.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and DNV GL Type Approval Certificate.

END OF CERTIFICATE

DNV·GL

Certificate No:
TAK00001K5

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Polymer Repair System

with type designation(s)
Wencon Abrasion & Heat Resistance Products:
-Wencon Ceramic Coating,
-Wencon Ceramic Cream

Issued to
Wencon ApS
Bogense, Syddanmark, Denmark

is found to comply with
DNV GL rules for classification – Ships

Application :

Epoxy-based compounds for repairs of steel components. Each repair shall be carried out in accordance with Manufacturer's instructions, approved by DNV GL, and under surveillance of DNV GL, when deemed applicable.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-05-01**

This Certificate is valid until **2024-04-30**.
DNV GL local station: **Fredericia FiS**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

Digitally Signed By: Törnqvist, Rikard
Location: DNV GL Høvik, Norway
Signing Date: 03.05.2019

Rikard Törnqvist
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Wencon Abrasion & Heat Resistance Products:
- **Wencon Ceramic Coating**
- **Wencon Ceramic Cream**

The listed products are characterized by being resistant to both abrasion and heat, and is therefore preferred in harsh environments where there is both a requirement for Heat Resistance and Abrasion Resistance.

Application/Limitation

Repair activities for components which affect or might affect the Class of the ship, have to be reported in advance to DNV GL.

Installation only in accordance with DNV GL Rules and Manufacturer's work instructions.

For limitations as to environmental conditions and exposure to chemicals, confer manufacturer's instructions.

The maximum working temperature shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

An adequate curing shall be proven by a Shore D test. The hardness shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

The lifetime and the performance of a repair is, apart from the procedure of application of the system, dependent on the service environment, imposed mechanical loads and deformations and may vary significantly from case to case. A careful assessment of the expected reliability of the repair shall always be carried out by the DNV GL surveyor and the manufacturer's representative with due regard to the service requirements and the requirements to the reliability of the component to be repaired.

The system has limited or no resistance to exposure to fire. Requirements to the performance of the repair under fire shall be carefully evaluated by the DNV GL surveyor and the manufacturer's representative.

Any significant changes in design and/or quality of the material will render the approval invalid.

Planning and execution of repair:
Each repair shall be carried out in close co-operation with the DNV GL surveyor:
- The surveyor shall be informed about and participate in (if required by the surveyor) the planning of the repair.
- When required by the surveyor, the surface preparation shall be witnessed and/or the finally prepared surfaces shall be made available for inspection and approved by the surveyor.
- When required by the surveyor, the application of the system and curing shall be witnessed by the same.
- When required by the surveyor, other operations shall be witnessed and approved by the surveyor.
- When required by the surveyor, the final condition of the repair shall be approved by the same.

Type Approval documentation

1. Assessment Report from DNV GL Fredericia of 2019-04-29.
2. Application for Type Approval of 2019-04-15.
3. TDS
4. MSDS
5. Experiences

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

All components of the system are to be marked with manufacturer's name, type designation, date of fabrication and shelf life or expiry date. In addition, the following documentation shall be submitted with the product:

- Product specification.
- Specification of range of application and limitations.
- Detailed procedures for surface preparation.
- Detailed procedures for application.
- Detailed procedures for curing.
- Hazards and precautions to be taken with regard to occupational safety.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and DNV GL Type Approval Certificate.

END OF CERTIFICATE

TYPE APPROVAL CERTIFICATE
No. MAC081219XG

This is to certify that the product identified below is in compliance with the regulations herewith specified.

Description	**Surface Protection and Cold Repair Products**
Type	**BASIC PRODUCTS: WENCON CREAM, RAPID, COATING, HI-TEMP, PUTTY, PIPE TAPE, EXHAUST REPAIR** **UNIQUE PRODUCTS: WENCON UW CREAM, UW COATING, UW PUTTY, CERAMIC CREAM, CERAMIC COATING**
Applicant	**Wencon ApS** **Jyllandsvej 15** **5400 Bogense** **DENMARK**
Manufacturer *Place of manufacture*	**Wencon ApS** **Jyllandsvej 15** **5400 Bogense** **DENMARK**
Reference standards	**RINA Rules for testing, certification and acceptance of marine materials and equipment, Chapter 3**

Issued in **HAMBURG** on **April 24, 2019**. *This Certificate is valid until* **April 23, 2024**

RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure.

RINA Services S.p.A.
Via Corsica, 12 - 16128 Genova
Tel +39 010 53851
Fax +39 010 5351000

TYPE APPROVAL CERTIFICATE

No. MAC081219XG

Enclosure - Page 1 of 1

BASIC PRODUCTS: WENCON CREAM, RAPID, COATING, HI-TEMP, PUTTY, PIPE TAPE, EXHAUST REPAIR

UNIQUE PRODUCTS: WENCON UW CREAM, UW COATING, UW PUTTY, CERAMIC CREAM, CERAMIC COATING

Reference documents:

Documents submitted by Wencon ApS and filed for information under RINA dwg no. HMMC-13225.

Technical characteristics:

WENCON products consist of a range of one and two-component epoxy, polyurethane and silica based products.
Resistant products to oil, water, sea water and some other products (as diluted acids, solvents, etc.) manufactured by WENCON ApS.
Generic product properties as per RINA dwg no. HMMC-13225

Fields of application:

This product may be used on board of ships and other units classed by the RINA for :
- Repair and/or protection against bimetallic corrosion and erosion/corrosion attacks in pumps, valves, filters, pipes, tanks, coolers, etc.
- Creating fixture and preventing future corrosion in the seats for rudder stock bushing, rudder heel bushing, rudder cone assembly, rudder pintle bushing, rudder pintle cone, stern tube, etc.
- Composite wrap for piping lines transferring oil, fresh & sea water, diluted acids & solvents, etc.

Acceptance conditions:

- Repair procedures including surface preparation and application are to be carried out in accordance with the manufacturer's specifications and procedures and manuals available at www.wencon.com.
- The local RINA Surveyor is to be contacted prior to commencing any repair, in order to obtain an acceptance for the particular application.
- This product as a temporary or permanent repair measure will be accepted by the RINA attending Surveyor, if the repaired part of machinery or piping system passes all the tests required by the RINA Rules.
- This product is not allowed for components in rubbing or cycling contact with other components where temperature exceeds 90°C.
- All tests are to be carried out as per a relevant BSI, DIN, ASTM method at the Manufacturer sites.
- The production sites are to bear the RINA Production Control Certificates.

Remarks:

- This product is to be marked with the following description:
name of the Supplier, product designation, packing date, storage condition.
- Each delivery is to be provided with a Certificate of Conformity.

HAMBURG April 24, 2019

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Wencon physical properties - S.I metrics system

WENCON®

	Wencon Cream	Wencon Rapid	Wencon Coa-ting white+blue	Wencon Hi-Temp yel-low+green	Wencon Putty	Wencon Pipe Tape	Wencon Exhaust Repair kit	Wencon UW Cream	Wencon UW Coating orange+brown	Wencon UW Putty	Wencon Ceramic Cream	Wencon Ceramic Coating grey+green
Max. Temperature	+60 - +250°C	+60 - +250°C	+60 - +250°C	+160 - +300°C	+60 - +250°C	+120°C	Up to +1300°C (2400°F)	+60 - +160°C	+60 - +160°C	+60 - +95°C	+200 - +300°C	+220 - +320°C
Consistency	paste	paste	fluid	fluid	putty		fluid	paste	fluid	putty	paste	fluid
Mixing ratio vol.	1:1	1:1	1:2	1:2	-		No mixing. Just stir content before use	1:2	1:2	1:1	1:2	1:2
Apply with	spatula	spatula	spatula/brush	spatula/brush	hand/spatula	hand	see prod. Info.	spatula	spatula/brush	hand/spatula	spatula	spatula/brush
Potlife at 20 C.	30-60 min. Mixed in small amounts	10-20 min. mixed in small amounts	20-30 min. mixed in small amounts	20-40 min. mixed in small amounts	3-6 min. mixed in small amounts	4-6 min.		25-30 min. mixed in small amounts	25-35 min. mixed in small amounts	25 minutes	30-40 min. mixed in small amounts	20-30 min. mixed in small amounts
Curing time	10 - 15 hours	40 - 90 min.	10 - 15 hours	10 - 24 hours	10 - 20 min.	10 - 30 min.	Initial curing 3-4 hours	10 - 18 hours	10 - 18 hours	10 - 18 hours	10 - 15 hours	10 - 15 hours
Machinability	yes	yes	yes	yes	yes		yes	yes	yes	yes	yes	yes
Hardness shore D	75	81	80	82	85	N/A	N/A	79	79	76	80	81
Tensile strength Rcrack	14,30 N/mm2	9,20 N/mm2	12,90 N/mm2	13,80 N/mm2	4,60 N/mm2	172 N/mm2	N/A	35,80 N/mm2	37,50 N/mm2	17,6 N/mm2	25,80 N/mm2	25,40 N/mm2
Compressive strength Rcrack	58 N/mm2	112 N/mm2	95 N/mm2	96 N/mm2	35,14 N/mm2	180 N/mm2	N/A	134 N/mm2	133 N/mm2	25,30 N/mm2	65,10 N/mm2	124 N/mm2
Compr.strength modu-lus of elasticity	1.689 N/mm2	2.891 N/mm2	2.199 N/mm2	4.284 N/mm2	NA		N/A	2.631 N/mm2	3.117 N/mm2	3.400 N/mm2	2.799 N/mm2	3.030 N/mm2
Shear adhesion *	14,40 N/mm2	20 N/mm2	16,20 N/mm2	22,40 N/mm2	4,50 N/mm2	19 N/mm2	N/A	33 N/mm2	31,90 N/mm2	15,90 N/mm2	30,80 N/mm2	28,90 N/mm2
Adhesion to steel **	>3,0 N/mm2	2,0 N/mm2	6,0 N/mm2	3,4 N/mm2	>4,5 N/mm2		N/A	>7,5 N/mm2	>7,5 N/mm2	>6,5 N/mm2	6,7 N/mm2	4,5 N/mm2
Specific volume	775 cm3 / kg	709 cm3 / kg	730 cm3 / kg	680 cm3 / kg	500 cm3 / kg		330 cm3 / kg	526 cm3 / kg	535 cm3 / kg	556 cm3 / kg	538 cm3 / kg	658 cm3 / kg
Heat resistance												
Corrosion	60°C (140°F)	60°C (140°F)	60°C (140°F)	160°C (320°F)	60°C (140°F)	120°C (248°F) peak 190°C (374°)		60°C (140°F)	60°C (140°F)	60°C (140°F)	200°C (392°F)	220°C (428°F)
Light or no load	120°C (248°F)	120°C (248°F)	120°C (248°F)	220°C (430°F)	120°C (248°F)			100°C (212°F)	100°C (212°F)	95°C (199°F)	250°C (482°F)	260°C (500°F)
For filling only	250°C (482°F)	250°C (482°F)	250°C (482°F)	300°C (570°F)	250°C (482°F)			160°C (320°F)	160°C (320°F)	95°C (199°F)	300°C (572°F)	320°C (608°F)
Dieletric strength	10 KV/mm	10 KV/mm	10 KV/mm	10 KV/mm	N/A	N/A		10 KV/mm	10 KV/mm	N/A	N/A	10 KV/mm

Hardness	Shore D, DIN 53505
Tensile strength	N/mm2 (10kg/cm2) DIN 53454
Compressive strength	N/mm2 DIN 53454
Shear adhesion *	Single-lap-joint acc. to ASTM D1002
Adhesion to steel **	N/mm2 (10kg/cm2) / ISO 4624
Specific volume	cm3 per kilogramme

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Version 5 - 29.10.2018

WENCON PROTECTIVE AND LIFE EXTENDING SOLUTIONS

BEFORE DURING AFTER

SEA WATER FILTER

Attacked by corrosion. Grit blasted and rebuild with Wencon Cream and protected with Wencon Coating white and blue.



SPLIT CASING PUMP

Bronce pump affected by corrosion / erosion. Support ring seats rebuild with Wencon Rapid. Protected with Wencon Coating white and blue.



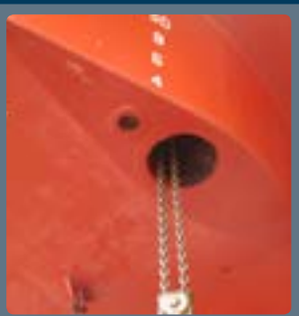
THRUSTER GEAR CASING

Attacked by bi-metallic corrosion. Grit blasted and rebuild using Wencon Cream and protected with Wencon Coating white and blue.



RUDDER TRUNK BUSHING

Surface prepared and new bushing installed using Wencon Rapid in existing oversized seat. Bushing cast to fit, using Wencon Coating injected to fill the clearance.



Distributor / Agent

WENCON®

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