Application Case

WENCON®

Cooler End Cover, corroded

A.1016

Problem
Bi-metallic corrosion

Place & performer
Aberdeen, Scotland UK, performed by Dales Marine Service Ltd. Aberdeen, Scotland.

Application method
Rebuild and protection of cast iron.

Application date
April 2010

Products used
Wencon Cream / Rapid
Wencon Coating, white and blue
Wencon Cleaner
Wencon Application Tools

Pictures
1. End cover after shotblasting

2. End cover rebuild with Wencon Cream.

3. After application of Wencon Coating white

4. Ready for remounting the end cover. Seawater is now separated from the metal, ready for many years of service without corrosion problems.

1.

2.

3.

4.

Surface preparation

WENCON®

Choose the relevant surface preparation, according to the nature of the job. Seek advice from a Wencon Technician if needed.

Specification for surface preparation for Dry Applications

Defined as applications, where the Wencon product will be applied to a surface at a temperature minimum 3 degrees above dew point. Use the Wencon Products: Wencon Cream, Wencon Rapid, Wencon Coating, Wencon Ceramic Cream, Wencon Ceramic Coating, Wencon Hi-Temp, all requiring a dry surface.

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.

5. Always use Wencon Cleaner prior to application.

Specification for surface preparation for Wet/Damp Applications

Defined as applications, where the Wencon product will be applied to a surface at a temperature less than 3 degrees above dew point. Use the products Wencon UW Putty, Wencon UW Cream and Wencon UW Coating for applications on wet or damp surfaces.

1. Water jet the entire surface with water and sand to a standard equal to SA 2½, as described above.

Specification for surface preparation for Emergency/Temporary Applications

Perago Treatment

Perago is a rubber disk with hard steel spikes mounted on the periphery. Perago can be mounted in a normal drilling machine, and gives a surface close to a blasted surface - clean and rough with sharp edges. Perago dishes can be ordered at Wencon and at all Wencon Distributors.

Grinding

Wheel grinding is often an acceptable surface preparation for emergency applications, where shot blasting is not possible. When grinding use a coarse stone or flap. Use the Wencon Cleaner before and after grinding. Grinding with sandpaper or emery cloth is only advisable when, for example, carrying out shaft-repair on a lathe. Often the grinding will not hit the dents.

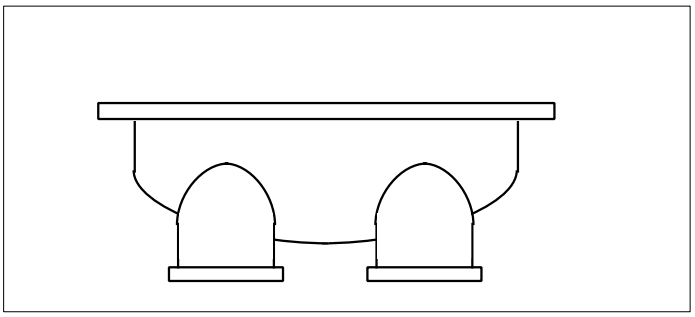
Needle Gunning

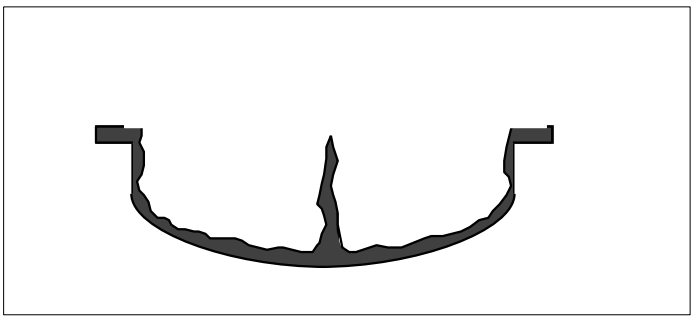
Needle gunning is a method that has almost been forgotten in recent years. Or should we say is mostly used for very rough cleaning or removal of rust. It is possible to do a very nice job using a needle gun, but it takes time and should be closely supervised. It is essential that the marks from the sharp needles cover the whole surface so that none of the original surface remains. It is recommendable to steam clean the surface before needle gunning.

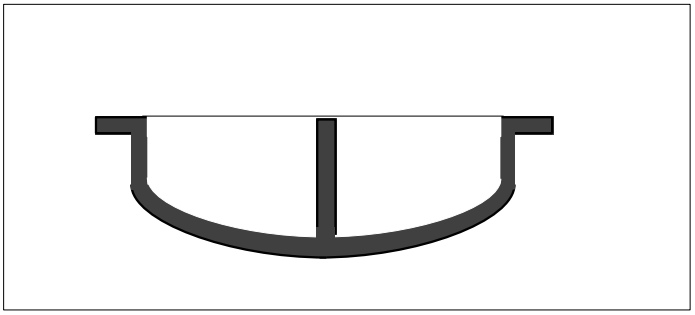
Wire Brushing

Wire brushing can be a good way of removing scales, rust and old paint. However, you will need to grind the surfaces after the wirebrushing to make the surface as rough as possible.

Repair of corroded cooler end cover







Corroded cooler end covers are very common problems on board a ship. There are several ways of dealing with this. A temporary repair can be made, or the repair can be of a longer lasting nature. The latter method necessitates shot blasting, which as a rule is undertaken ashore. Grinding or needle gunning are other means of carrying out the preparatory work. It is important to remove the graphite as the aim is to obtain a clean metal surface. The inlet and outlet end cover is shown here.

1. Disassemble the end cover and carry out the preparatory work. Finished by cleaning with Wencon Cleaner.

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

   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 appropriate directives.

NOTE ! Be careful with the coating. If there are holes in the coating, these will give risen to bi-metallic corrosion.

WENCON ApS • Jyllandsvej 15 • DK-5400 Bogense •
Phone +45 6481 1010 • wencon@wencon.com • www.wencon.com