

Thermal Coating on NOAA 55' Catamaran

Built for NOAA by All-American Marine in Bellingham, WA, this Nic de Waal-designed 55' catamaran is scheduled for marine studies and enforcement work in the Florida Keys.

NOAA's multi-mission task requirements and related equipment to fulfill those needs posed a significant challenge for the New Zealand-based designer and his US-based builder. Keeping weight to a minimum while maintaining crew comfort eventually trickled down to a close examination of insulation options. While crew and operating spaces are supported with air conditioning, dealing with solar heat loads of 130°F to 150°F can strain that equipment.



Mascoat Marine-DTM, a ceramic-loaded latex thermal insulation coating, was applied throughout the cabin and pilot house at thickness of 0.040." Another 0.020" layer was applied on overhead surfaces to further reduce heat loads. While keeping weight to a bare minimum (0.14 to 0.21 lbs/ft²), the coating also eliminates condensation while reducing heat radiation from internal stiffeners. Another benefit was fast application during a 24 hour spray cycle. This resulted in significant cost reduction compared to batt, or board materials, which require pins, fitting, gluing and taping. Compared to conventional insulation materials that absorb heat and become internal sources of radiant heat energy, the coating is a non-conductive thermal barrier that greatly reduces heat energy transmission into the living space.

The water-based thermal insulation has all required certifications for marine use by ABS, USCG, DNV, Transport Canada and Lloyds.