

Coatings

The correct outer hull and internal tank coatings are imperative

Hull and tank coatings should also be taken into careful consideration. For while traditional anti-corrosive systems, including pure epoxy solutions, are tried and tested in warmer climes, they are not resistant to ice abrasion. The ice can abrade or gouge into the paint system exposing the steel substrate, leading to corrosion and other problems.

Joey Keasberry, Sigma Marine and Protective Coating's market intelligence manager said that in the permanently immersed areas an impressed current or sacrificial anode cathodic protection system will prevent serious pitting corrosion, but in the boot-top belt where the surface is periodically exposed to the marine atmosphere, pitting corrosion can occur. In order to protect against such damage, special anti-abrasion coatings should be used."

Sigma has its SigmaShield 1200 for ships operating in Arctic conditions. This is a solvent-free epoxy with special anti-abrasion pigment which, the company claims, gives the coating "excellent resistance" to ice damage.

"In the past, coatings for outside hulls on ice-going ships have had to be applied by hot twin-feed airless spray. In contrast, the SigmaShield 1200 can be applied by single feed airless spray

and has a long and successful track record for this specialised service," said Sigma's Keasberry.

Yet while ice class vessels trading in first-year-ice do not require complete coating of the underwater hull, they should, as a minimum, be coated in the 'ice belt' region. Norway's Jotun Paints suggested that as different regions of the ships hull have differing ice-impact experiences, "it might be possible to make different coating specifications for different ice class notations and regions on the ship."



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Consequently, Jotun has developed a number of coatings for different areas of the ice-going vessel. These are: Marathon IQ; Marathon; Jotacote Universal and Jotamastic 87 GF; and Safeguard Universal ES

(with an anti-fouling).

International Paint, meanwhile, has its Intershield 163 Inerta 160. This system is said to provide up to 2.5 times the impact and erosion resistance of standard epoxies and has been specially formulated for operation in temperatures down to -50 deg C.

International said its low frictional resistance controls fuel costs and improves operating efficiency while its abrasion resistant properties control mechanical damage and hull roughness, saving on future maintenance and repair costs. A reduction in steel thickness at the ice belt leading to reduced overall vessel weight and improved fuel efficiency is also said to be achievable.

Specifically designed for ships trading in the Baltic