



TECHNICAL CIRCULAR No. 752 of 4th November 2022

To	All Surveyors/Auditors. All flags
Title	Extended hull corrosion
Reference	CONARINA Instructions

Extended hull corrosion

A general cargo vessel in Caribbean reduced-operating status, was placed on drydock in conjunction with the special survey.

The surveyor found pitted shell plating along with eroded and corroded weld seams.

The vessel owner considered scrapping the vessel due to the extent of corrosion and pitting.

Excessive shell plate pitting and eroded and corroded welds can result in a compromised watertight, failure of the hull structure, casualty to the vessel, and environmental pollution.

A CONARINA-approved hull thickness measurement firm mapped out all shell plate pitting indicating the location, depth, and extent of pitting.

A root cause analysis was carried out by a CONARINA head office. The corrosion pitting was determined to be the result of a defective impressed current cathodic protection and zinc anodes system.

This resulted in an anodic polarization of the hull. This caused rapid corrosion in way of welds, scratches, and other weak points in the coating.

The existing anodes were replaced with new ones, also supplemental sacrificial anodes were installed.

The surveyor identified the corrosion pitting repair standards.

Shallow pits may be filled by applying coating or pit filler. Pits can be defined as shallow when their depth is less than one-third of the original plate thickness.

If deep pits or grooves are clustered together or remaining thickness is less than 6 millimeters, the plates should be renewed.

Corroded and eroded weld seams were gouged to sound material and rewelded.

Premature scrapping of the vessel was avoided by providing guidance to the owner and shipyard concerning methodologies for corrosion pitting repairs.

The repairs brought the vessel back into compliance with CONARINA Rules.

CONARINA Head Office

6505 Blue Lagoon Dr. Suite 455

Miami, Fl., 33126

Tel: 1 (786) 558 5288,

Fax: 1 (786) 325 0200,

joel@conarinagroup.com



REFERENCES:

- CONARINA Instructions

ATTACHMENTS: No

Kindest Regards,
CONARINA Technical Office

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6505 Blue Lagoon Dr. Suite 455
Miami, Fl., 33126
Tel: 1 (786) 558 5288,
Fax: 1 (786) 325 0200,
Joel@conarinagroup.com