

Use and Retention of Pre-Construction Primers on Steel in Shipbuilding

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Section 1: Scope

This guide provides the specifier and user with information regarding the use of pre-construction primers (PCPs) on structural steel in shipbuilding. It provides background on the reasons to use and retain PCPs, the types of PCPs and their application and inspection, and the secondary surface preparation processes that are used when PCPs are retained in the final, compatible primary coating system. While this document contains details specific to the shipbuilding industry, the technical concepts related to the application and retention of PCP may apply to other industrial applications.

Section 2: Background and Use

A PCP is a very thin-film primer coating applied to blast cleaned steel plates and shapes to provide preservation of the blasted steel during the shipbuilding process. It may also be referred to as a shop primer, or a pre-fabrication primer. Typical film thickness for weldable preconstruction primers is 15 to 25 micrometers [μm] (0.6 to 1.0 mils). Thicknesses beyond this range may be used for other situations such as non-weldable preconstruction primers with an extended corrosion requirement. A PCP is not a suitable substitute for the primer that is part of the primary coating system. Its function is purely to preserve the steel during the construction period (which may range from 6 months to 18 months or more), while allowing welding to be performed directly over (or through) the PCP without requiring the added expense to remove it. Unless otherwise required by the owner or specifier for special service environments, in most cases the PCP does not need to be removed in order to achieve acceptable coating system performance, provided that it is suitably prepared/cleaned and topcoated with a compatible primary coating system.

For commercial vessels, the use of pre-construction (shop) primers in seawater ballast tanks and the void spaces of double-skin hull bulk carriers and in the cargo oil tanks of crude oil tankers is discussed in the International Maritime Organization (IMO) Performance Standards for Protective Coatings (PSPC).⁽¹⁾ The American Bureau of Shipping (ABS) Coating Performance Standard (CPS) Guide for Class Notation also discusses the use of PCPs in relation to the IMO PSPC seawater ballast tank standard (PSPC-SWBT).⁽²⁾

⁽¹⁾ International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR United Kingdom, www.imo.org.

⁽²⁾ American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Drive, Houston, Texas 77060, ww2.eagle.org.