

BEFORE COATING

Surface Preparation Guide for Marine Epoxy Coating Systems

Surface cleanliness, soluble salt control, profile depth and coating interval are decisive for epoxy coating adhesion and long-term corrosion protection.

Preparation Principles

Clean

Remove oil, grease, dust, salts, mud, loose rust and previous coating contamination.

Profile

Create or maintain a suitable anchor pattern for epoxy adhesion on carbon steel.

Control

Confirm substrate dryness, environmental condition, coating interval and compatibility.

Recommended Preparation by Substrate

SUBSTRATE / CONDITION	RECOMMENDED PREPARATION	RELEVANT PRODUCTS	NOTES
Oxidized carbon steel	Remove oil and grease. Abrasive blast to Sa2.5 where high-performance service is required.	JDH06-4, JDH815, JDH819, JDH835, JDH836	Catalog data repeatedly specifies Sa2.5 for oxidized steel before epoxy primer application.
Non-oxidized steel	Grinding or power-tool cleaning to St3 where specified by the project.	JDH06-4, JDH815, JDH816, JDH818	Useful for repair areas or where full blasting is not possible.
Rough maintenance steel	Remove loose rust, oil and weak coating. Mechanically clean to a stable surface.	JDH818 Rough Surface Epoxy Primer	JDH818 is intended for areas where rust is difficult to remove completely.
Galvanized steel	Clean water-soluble salts, oil and surface contaminants. Use suitable cleaners and fresh water wash where needed.	JDH838	For best adhesion, roughen surface where practical and keep surface dry and clean.

SUBSTRATE / CONDITION	RECOMMENDED PREPARATION	RELEVANT PRODUCTS	NOTES
Aluminum / stainless steel	Remove grease, dust and contaminants using suitable cleaners. Light surface roughening may be required.	JDH838	Use special substrate primer where normal epoxy adhesion is uncertain.
Tank interior steel	Prepare carbon, galvanized or stainless steel according to tank service and project specification.	JDH912	Tank lining systems require strict contamination control and ventilation during curing.

Step-by-Step Procedure

- 1. Initial inspection:** identify substrate type, existing coating condition, corrosion level, welds, edges and contamination.
- 2. Degreasing:** remove oil and grease before blasting or grinding so contamination is not driven into the steel profile.
- 3. Salt removal:** wash salt-contaminated surfaces with clean fresh water and verify dryness before coating.
- 4. Abrasive blasting or tool cleaning:** prepare steel to the specified standard, commonly Sa2.5 for high-performance oxidized steel or St3 for selected non-oxidized repair work.
- 5. Dust removal:** remove all abrasive dust and residue using clean dry air, vacuum or suitable cleaning method.
- 6. Stripe coating:** apply stripe coat on welds, edges, bolt areas and difficult geometry before full coat application.
- 7. Primer application:** apply selected epoxy primer within the allowed holding time and before flash rust appears.
- 8. DFT inspection:** measure dry film thickness and repair under-film areas before subsequent coats.

Product Selection by Preparation Difficulty

SITUATION	PREFERRED PRODUCT ROUTE	REASON
Newbuild or full dry-dock blasting	JDH06-4 zinc-rich primer or JDH815 epoxy primer	Strong anti-corrosion foundation where high surface preparation standard is achievable.
General steel protection	JDH815, JDH819 or JDH835	Balanced adhesion, compatibility and anti-corrosion performance.
Heavy-duty high-build requirement	JDH836	90% volume solids and 300 um dry film thickness in one spray according to catalog data.
Maintenance with limited rust removal	JDH818	Designed for difficult-to-remove rust areas and first anti-rust repair coating.
Galvanized or non-ferrous substrate	JDH838	Special adhesion primer for galvanized, aluminum and stainless steel surfaces.

Do not apply epoxy coatings over condensation, loose rust, soluble salts, oil contamination or unstable existing coatings. Surface temperature, humidity and dew point control should be checked before application.

