

**GranBond**

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Two-Component Epoxy Aluminum Powder Iron Red Anti-Corrosion Primer (HY-CB7002) Technical Data Sheet (TDS)

Two-Component Epoxy Aluminum Powder Iron Red Anti-Corrosion Primer

Product Number: HY-CB7002

Product Type: Two-Component Epoxy Anti-Corrosion Primer

1. Product Description

This product is a high-performance two-component epoxy anti-corrosion primer formulated with epoxy curing agents and various additives. After curing, the coating exhibits excellent anti-corrosion performance, salt spray resistance, water resistance, and adhesion. The addition of aluminum powder enhances the coating's barrier properties and cathodic protection effect. It is suitable for long-term anti-corrosion priming of ships, offshore facilities, and steel structures.

2. Main Applications

- Used as an anti-corrosion primer for shipbuilding and ship maintenance applications, including hulls, ballast tanks, decks, and related areas.
- Suitable as a primer coating for heavy-duty anti-corrosion protection in offshore platforms, docks, and port facilities.
- Applicable as an anti-corrosion primer for steel structures, storage tanks, bridges, pipelines, and other steel surfaces.

3. Key Performance Features

- **Excellent Anti-Corrosion Performance:** The synergistic effect of iron oxide red pigment and aluminum powder provides outstanding physical barrier protection and chemical rust resistance.
 - **Excellent Salt Spray Resistance:** The cured coating offers strong resistance to corrosive media such as chloride ions, making it suitable for marine environments.
 - **Strong Adhesion:** Provides excellent adhesion to steel substrates and properly prepared old coatings, making it suitable for maintenance and refurbishment projects.
 - **Good Water Resistance:** After curing, the coating forms a dense film resistant to fresh water and seawater immersion.
 - **Easy Application:** Suitable for spraying and brushing, with good compatibility with epoxy intermediate coatings and polyurethane topcoats.
 - **Environmentally Compliant:** Low VOC content, meeting national environmental protection requirements.
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Technical Parameters:

Item	Specification	Test Standard / Method
Color	Iron red, silver grey (aluminum powder effect)	Visual comparison
Gloss (60°)	Semi-gloss (≤ 40 GU)	ASTM D523
Volume Solids	65% \pm 2%	ISO 3233
Density (mixed)	Approx. 1.50 kg/L	ASTM D1475
Mixing Ratio (by weight)	Base : Hardener = 8 : 1	Internal method
Typical Dry Film Thickness	80–120 μm	—
Theoretical Coverage (based on 100 μm DFT)	Approx. 5.5 m^2/kg	—
VOC Content	≤ 300 g/L	EPA Method 24
Flash Point	$\geq 25^\circ\text{C}$	ISO 3679 / ASTM D93
Drying Time (25°C, 50% RH)	Surface dry: ≤ 2 h; Hard dry: ≤ 24 h; Full cure: 7 days	ASTM D1640
Recoating Interval (25°C)	Min: 4 h; Max: 7 days	ASTM D1640

4.Recommended Coating System

- **Primer:** HY-CB7002 Epoxy Aluminum Powder Iron Red Anti-Corrosion Primer
- **Intermediate Coat:** Epoxy Micaceous Iron Oxide Intermediate Paint (such as HY-01G)
- **Topcoat:** Acrylic Polyurethane Topcoat / Polyurethane Topcoat / Fluorocarbon Topcoat
- **Typical Film Thickness System (New Shipbuilding):**
Primer 80–120 μm + Intermediate Coat 100–150 μm + Topcoat 60–80 μm
- **Maintenance & Refurbishment System:**
After roughening or sanding the existing coating surface, apply this primer directly at 80–100 μm , followed by the appropriate intermediate and topcoats.

5.Surface Preparation

Item	Requirements
Degreasing	Use suitable cleaning agents or solvents to thoroughly remove oil, grease, and dust from the substrate surface, then rinse thoroughly with clean water.
Rust Removal (New Steel)	Abrasive blasting to Sa 2½ grade (ISO 8501-1), with a surface profile of 30–75 μm .
Old Coating Refurbishment	For sound existing coatings, carry out high-pressure fresh water washing and surface roughening/sanding. Remove all loose coatings and contaminants. The surface must be dry and free from oil contamination.
Surface Condition	Clean, dry, free from oil, loose rust, dust, and salts.
Note	Substrate temperature should be at least 3°C above the dew point and not lower than 5°C.

6. Application Guidelines

Item	Requirements
Mixing	Stir the base component (Component A) thoroughly using a power mixer. Add the hardener (Component B) according to the specified ratio, mix thoroughly until uniform, and allow to induct for 5–10 minutes before use.
Pot Life (25°C)	4 hours
Thinner	Epoxy thinner (recommended: HY-301X)
Thinning Ratio (by volume of mixed paint)	Airless spraying: 5–15%; Conventional spraying: 10–20%; Brush/Roller: 0–10%
Airless Spraying	Nozzle size: 0.43–0.53 mm; Pressure: 15–17 MPa
Conventional Spraying	Nozzle size: 1.0–1.5 mm; Pressure: 0.3–0.5 MPa
Brush / Roller	Suitable for small-area touch-up and edge areas; ensure even application and avoid missed spots

7. Safety and Precautions

- This product contains organic solvents. Ensure good ventilation during application and wear appropriate personal protective equipment such as safety goggles, respirators, and protective gloves.
- If the coating surface becomes contaminated with oil, water, or dust, remove the contamination using a stiff brush or light abrasion, then clean thoroughly.
- When refurbishing old coatings, adhesion testing should be carried out first to confirm compatibility between the primer and the existing coating before large-scale application.
- Application conditions: temperature above 5°C, relative humidity below 85%, and substrate temperature at least 3°C above the dew point.
- Avoid application under high temperatures, direct sunlight, or strong wind conditions, as rapid solvent evaporation may affect leveling and adhesion.
- Before the maximum recoating interval is exceeded, the coating surface should be roughened to ensure proper intercoat adhesion.
- Clean tools and equipment immediately after use with the recommended thinner.

8. Packaging, Storage and Shelf Life

● Packaging:

Base: 24 kg/drum (approx. 16.0 L)

Hardener: 3 kg/drum (approx. 2.1 L)

(Calculated based on a density of 1.45 kg/L, corresponding to the 8:1 mixing ratio)

● Storage Conditions:

Store in a cool, dry, and well-ventilated place. Keep away from fire sources and avoid high temperatures and direct sunlight. Recommended storage temperature: 5–35°C.

● Shelf Life:

12 months (unopened)

Disclaimer:

All information provided in this Technical Data Sheet is based on our typical test data and experience. Actual performance may vary depending on application conditions, substrate preparation, and application methods. It is recommended to conduct a small-scale trial or consult our technical personnel before use. We reserve the right to modify the technical data without prior notice.

Technical Data Sheet

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