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Two-Component Epoxy Tie-Coat（HY-CB04）Technical Data Sheet（TDS）

Two-Component Epoxy Tie-Coat
Product Number：HY-CB04
Product Type：Single-Component Bitumen Coating

1. Product Description

This product is a high-performance two-component epoxy tie-coat, formulated from epoxy resin and special adhesion-promoting additives, combined with anti-corrosive pigments. Once cured, the coating exhibits excellent flexibility and intercoat adhesion. It is specifically designed to enhance the bonding strength between the primer and subsequent coatings, preventing coating delamination. Suitable for use in multi-coat systems for ships and offshore structures.

2. Main Applications

· Acts as a tie-coat between primer and intermediate/topcoats in new-build and refit ships.
· Serves as a coating transition layer for hulls, ballast tanks, decks, and superstructures.
· Enhances adhesion between old and new coatings during refurbishment of existing coatings.
· Functions as a tie-coat in heavy-duty anti-corrosion systems for steel structures and offshore platforms.

3. Key Performance Features

· **Excellent Intercoat Adhesion:** Strong bonding with epoxy primers, epoxy micaceous iron oxide intermediate coatings, polyurethane topcoats, and other compatible coatings.
· **Good Flexibility:** The coating has a certain degree of elasticity, which helps buffer stresses between different layers and reduces the risk of cracking.
· **Good Water Resistance:** Once cured, the coating is dense and resistant to both freshwater and seawater immersion.
· **Easy Application:** Can be applied by spraying or brushing; fast drying helps shorten the construction cycle.
· **Environmentally Compliant:** Low VOC content, meeting national environmental regulations.

Technical Parameters：

Item	Specification	Test Standard/Method
Color	Gray, Light Gray	Visual Comparison
Gloss (60°)	Semi-gloss (≤40 GU)	ASTM D523
Volume Solids	60% ± 2%	ISO 3233
Density (mixed)	Approx. 1.40 kg/L	ASTM D1475
Mixing Ratio (by weight)	Base : Curing Agent = 7:1	Internal Method
Typical Dry Film Thickness	40–60 μm	—
Theoretical Coverage (calculated at 50 μm DFT)	Approx. 8.9 m²/kg	—
VOC Content	≤300 g/L	EPA Method 24
Flash Point	≥25°C	ISO 3679 / ASTM D93
Drying Time (25°C, 50% RH)	Touch dry: ≤1 h; Hard dry: ≤8 h; Full cure: 7 days	ASTM D1640
Recoat Interval (25°C)	Minimum: 2 h; Maximum: 7 days	ASTM D1640

4. Recommended Coating System

- **Primer:** Zinc-rich epoxy primer / Aluminum-pigmented red iron oxide epoxy primer / Universal modified gray epoxy primer
- **Tie-Coat:** This product, HY-CB04 Epoxy Tie-Coat
- **Intermediate Coat:** Epoxy micaceous iron oxide intermediate coating (optional)
- **Topcoat:** Acrylic polyurethane, polyurethane, or fluorocarbon topcoat
- **Typical Film Thickness System (Ships):**
- Primer: 80–120 μm
- Tie-Coat: 40–60 μm
- Intermediate Coat: 80–120 μm
- Topcoat: 60–80 μm

5.Surface Preparation

Item	Requirements
Degreasing	Thoroughly remove oils, grease, and dust from the substrate using a dedicated cleaning agent or solvent, then rinse with clean water.
Rust Removal	Perform abrasive blasting to Sa2.5 (ISO 8501-1), achieving a surface roughness of 30–75 μm.
Refurbishment of Existing Coatings	For firmly adhering old coatings, perform high-pressure freshwater washing and sanding/roughening. Remove any loose coatings and contaminants. The surface must be dry and free of oil.
Surface Condition	Clean, dry, free of 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	Use a mechanical stirrer to thoroughly mix the Base (Part A). Add the Curing Agent (Part B) according to the specified ratio, and stir thoroughly until homogeneous. Allow to mature for 5–10 minutes before use.
Pot Life (25°C)	4 hours
Thinner	Epoxy-specific thinner (recommended: HY-301X)
Thinning Ratio (by volume of mixed paint)	Airless spray: 5–15%
Air spray: 10–20%	
Brush/Roller: 0–10%	
Airless Spray	Nozzle size: 0.38–0.48 mm; Pressure: 13–16 MPa

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 (Part A): 21 kg per drum (approx. 15.0 L)
Curing Agent (Part B): 3 kg per drum (approx. 2.1 L)
(Calculated based on a density of 1.45, corresponding to a 7:1 mixing ratio)
· **Storage Conditions:** Store in a cool, dry, and well-ventilated place. Keep away from fire and heat sources. Avoid direct sunlight. 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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