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Weather-Resistant Aliphatic Polyurethane Topcoat (TwoComponent) （ZFZ-JAZ3000） Technical Data Sheet（TDS）

Weather-Resistant Aliphatic Polyurethane Topcoat (Two-Component)

Product Number：ZFZ-JAZ3000

Product Type：Two-Component Aliphatic Polyurethane Topcoat

1. Product Description

This product is a high-performance two-component aliphatic polyurethane topcoat, formulated with a highly weather-resistant aliphatic isocyanate curing agent and hydroxyl-functional acrylic resin as the film-forming material, combined with weather-resistant pigments and additives. The cured coating offers excellent UV resistance, color and gloss retention, abrasion resistance, and chemical resistance, making it suitable for outdoor high-weatherability areas such as ship decks, bulwarks, and superstructures.

2. Main Applications

· Protective and decorative topcoat for ship decks, bulwarks, superstructures, and above-waterline hull surfaces.
· Topcoat for heavy-duty anti-corrosion systems such as offshore platforms, dock facilities, and bridges.
· Topcoat for industrial equipment and steel structures with high requirements for weather resistance, gloss retention, and color retention.

3. Key Performance Features

- **Excellent Weather Resistance:** The aliphatic polyurethane coating provides superior UV aging resistance, maintaining color and gloss over long-term outdoor exposure without chalking or fading.
- **High Gloss and Decorative Finish:** Forms a smooth, full-bodied film with excellent gloss retention and color stability.
- **Abrasion and Impact Resistance:** The coating is tough and resilient, able to withstand deck foot traffic and mechanical impacts.
- **Chemical Resistance:** Offers good resistance to seawater, oils, and mild acids and alkalis.
- **Easy Application:** Can be applied by spray or brush; fast drying and flexible recoating intervals.
- **Environmentally Compliant:** Low VOC, in accordance with national environmental regulations.

Technical Parameters：

Item	Specification / Requirement	Test Standard / Method
Color	Various colors (customizable)	Visual comparison
Gloss (60°)	≥85 GU	ASTM D523
Volume Solids	58% ± 2%	ISO 3233
Density (mixed)	Approx. 1.25 kg/L	ASTM D1475
Mixing Ratio (by weight)	Base : Curing Agent = 4.5:1	Internal method
Typical Dry Film Thickness	60–80 μm (per coat)	—
Theoretical Coverage	Approx. 7.3 m²/kg (for 70 μm dry film)	—
VOC Content	≤420 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: ≤24 h; Fully cured: 7 days	ASTM D1640
Recoating Interval (25°C)	Minimum: 4 h; Maximum: unlimited (on clean surface)	—

4. Recommended Coating System

- **Primer:** Epoxy zinc-rich primer / Epoxy aluminum-ferric red anti-rust primer / General modified gray epoxy anti-corrosion primer (e.g., HY-CB7002 / HY-CB7003)
- **Intermediate Coat:** Epoxy micaceous iron oxide intermediate coat (e.g., HY-01G) / Epoxy tie coat (e.g., HY-CB04)
- **Topcoat:** This product, **ZFZ-JAZ3000 Weather-Resistant Aliphatic Polyurethane Topcoat**
- **Typical Dry Film Thickness (Ship Deck):**
  - Anti-corrosion primer: 80–120 μm
  - Intermediate coat: 80–120 μm
  - Topcoat: 60–80 μm (applied in two coats)

5.Surface Preparation

Item	Requirement / Description
Degreasing / Cleaning	Thoroughly remove oil, grease, and dust from the substrate using a specialized cleaner or solvent, then rinse with clean water.
Rust Removal (New Steel)	Abrasive blasting to Sa2.5 (ISO 8501-1), surface roughness 30–75 μm.
Refurbishing Old Coatings	Sand or roughen intact old coatings, remove loose paint and contaminants; the surface should be dry and free of oil.
Surface Condition	Clean, dry, free of oil, rust bloom, dust, and salts.
Note	Substrate temperature should be at least 3°C above the dew point and not less than 5°C.

6.Application Guidelines

Item	Requirement / Description
Mixing	Stir the base component (Part A) thoroughly using a mechanical mixer. Add the curing agent (Part B) according to the specified ratio, mix thoroughly until uniform, and allow to mature for 5–10 minutes before use.
Pot Life (25°C)	4 hours
Thinner / Reducer	Polyurethane-specific thinner (Recommended: ZFZ-T01)
Thinning Ratio (by volume of mixed paint)	Airless spray: 15–25%; Conventional air spray: 20–30%; Brush/Roller: 0–10%
Airless Spray	Nozzle: 0.38–0.48 mm; Pressure: 13–16 MPa
Conventional Air Spray	Nozzle: 1.0–1.5 mm; Pressure: 0.3–0.5 MPa
Brush / Roller	Suitable for small-area repairs and edges; ensure even coating and avoid missed spots.

7.Safety and Precautions

- This product contains organic solvents. Ensure good ventilation during application and wear protective gloves, goggles, and a respirator.
- Avoid direct skin contact and inhalation of vapors. In case of contact, rinse thoroughly with plenty of water; seek medical attention if necessary.
- Keep away from open flames, heat sources, and sparks during storage and use.
- Do not mix with water or oily contaminants; seal the container immediately after use.
- Do not apply at substrate temperatures below 5°C or relative humidity above 85%.
- Ensure the anti-fouling or protective coating is fully dry before immersion in water (typically at least 24 hours).
- Dispose of empty containers and leftover materials in accordance with local environmental regulations.

8.Packaging, Storage and Shelf Life

· **Packaging:**
Base (Part A): 20 kg / drum (approx. 16.0 L)
Curing Agent (Part B): 4.5 kg / drum (approx. 3.8 L)
· **Storage Conditions:**
Store in a cool, dry, and well-ventilated area, away from open flames and oxidizers. Avoid direct sunlight. Storage temperature: 5–35°C.
· **Shelf Life:**
12 months (unopened, in original packaging).

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

Revision Date: March 1, 2026

Version: 2.0