



































TABLE 1 TIME CORRESPONDING TO EACH PERFORMANCE LEVEL



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| | Hours to | 0 -11- | |
|-------------|--------------------|--------------------|--|
| | | Cycles to | |
| Performance | Noticeable Change* | Noticeable Change* | |
| Level | Accelerated UV | UVA/Condensation | |
| Level 1 | 500 to 1000 | 63 to 125 | |
| Level 2 | 1001 to 2000 | 126 to 250 | |
| Level 3 | 2001 or more | 251 or more | |
| | | | |

Noticeable change following Accelerated UV-A/Condensation testing is defined as a gloss reduction of 25% or more of the initial gloss value measured at a 60° angle or a color change greater than 3.0 ΔE* (see Section 7.2.1).

TABLE 2 SOUTH FLORIDA WEATHERING PERFORMANCE

| Performance Level | Months to Noticeable Char | 16 |
|-------------------|---------------------------|----|
| Level 1 | 12 to 23 | |
| Level 2 | 24 to 47 | 7 |
| Level 3 | 48 or more | 1 |



2K 底面合一DTM脂肪族聚脲涂料标准March 1, 2012

SSPC: The Society for Protective Coatings Coating Standard No. 43

Direct-To-Metal Aliphatic Polyurea Coating, Performance-Based

1. Scope

This standard contains performance requirements for a two-component direct-to-metal aliphatic polyurea coating with a dry-to-handle time ranging from 30 minutes to 2 hours as determined using ASTM D 1640.

混合使用期: 30分钟—2小时

11.1 Typically, the applied dry film thickness of a direct-tometal polyurea coating is 150 to 225 micrometers (6 to 9 mils). This does not preclude lower or higher film builds if recommended by the manufacturer.

DFT: 150-225 微米





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2. Description

根据配方不同 单组份或双组 分喷涂设备

2.1 The coating is a self-priming aliphatic polyurea coating intended for single-coat direct-to-metal application, primarily in fabrication shops. The coating can be touched-up in the field (see Sections 7.2, 7.3, and Note 11.1). Depending upon individual formulation properties, either single-component airless spray or plural-component equipment is used for coating application.

tions than those in the federal rule. In the U.S., information on the VOC content of each container before mixing or thinning is found on the container label and in the manufacturer's safety data sheet. The coating manufacturer's product data sheet usually provides information on the total VOC content of a coating after mixing and any recommended thinning.

VOC 含量与





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2.2 The coating is generally suitable for exposures in SSPC Environmental Zones 1A (interior, normally dry), 1B (exterior, normally dry), 2A (frequently wet by fresh water, excluding immersion), 2B (frequently wet by salt water, excluding immersion), 3B (chemical atmospheric exposure, neutral), and 3C (chemical atmospheric exposure, alkaline).1

National Museum of the Marine Corps (2006)





适用SSPC 6种防腐环境区域





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4.1 This is a performance-based specification. Individual coatings meeting performance requirements of this standard vary in formulation, raw materials, and application characteristics. See Note 11.2 for information on VOC content.

4.2 The reactive components used in the coating shall be comprised primarily of polyamine and polyisocyanate resins to

Ave Maria University Cafeteria

- Single-Coat Polyaspartic Polyurea Coating/Sealer
- Self-priming
- · Fast drying
- Long-term durability/abrasion



4. Composition Requirements

form a polyurea.

反应组分: 聚醚氨与ISO树脂



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4.3 The weathering properties of the coating shall comply with requirements defined in Sections 8.1.1.1 and 8.1.1.2. Corrosion inhibitive pigments that are incorporated into direct-to-metal, single-coat formulations to enhance corrosion resistance properties shall not affect the weathering properties of the coating.

8.1 COLOR AND GLOSS WEATHERING RESISTANCE TEST PROCEDURES

8.1.1 Weathering Resistance: Two weathering test procedures are described below. Performance levels are established using whites and light colors. Outdoor weathering, as described in Section 8.1.2, is preferred. If outdoor weathering test data are not available for the desired color and gloss specified, accelerated test data shall be used until outdoor weathering data becomes available. It is left to the discretion 耐候测试 优先采用户外暴晒实验





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7.2 DIRECT-TO-METAL COATING ADHESION TO SUBSTRATE: Apply the coating to three panels in accordance with Paragraphs 5.1 through 5.4. Adhesion shall be tested according to ASTM D 4541, Method C, D, or E. Report the type of adhesion tester employed and the type of adhesive used for testing. Perform three pulls on each of three test panels. Unless a higher value is specified, the minimum adhesion value of the coating to the substrate for each pull shall be 4.1 MPa (600 psl). The instrument used to verify compliance to this standard (i.e., batch-to-batch consistency; see Section 4.4) shall be of the same type used to perform the initial testing.



DTM 附着力: 600 PSI ASTM D 4541





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7.3.1 Intercoat Adhesion: Coating adhesion between the initial DTM coat and the subsequently applied touch-up coat shall be tested as described in Paragraph 7.2. Unless a higher value is specified, the minimum inter-coat adhesion for each pull shall be 4.1 MPa (600 psi). The adhesion (both cohesive and adhesive) for all pulls shall meet or exceed the cohesive strength of the coating. The instrument used to verify compliance to this standard (i.e., batch-to-batch consistency; see Section 4.4) shall be of the same type used to perform the initial testing.



涂装间隔、修补附着力要求













Coating Standard No. 45

Two-Component, Thick-Film Polyurea and Polyurea/Polyurethane
Hybrid Coatings, Performance-Based

1.1 This standard contains minimum performance requirements for two types of two-component polyurea coatings and two types of polyurea/polyurethane hybrid coatings evaluated by laboratory testing.

and may be applied in single or multiple coats. These coatings typically have a high film build (greater than 508 micrometers $[\mu m]$ or greater than 20 mils) and are applied either by

2.4.1 Polyurea (Types 1a and 1b): A polyurea coating is based upon an isocyanate component and a resin blend component composed of amine terminated raw materials.

2.4.2 Polyurea/Polyurethane Hybrid (Types 2a and 2b): A polyurea/polyurethane hybrid coating is based upon an isocyanate component and a resin plant composed of blends of amine terminated at nated raw materials.

聚脲学院网 www.polyurea-academy.cn

greater than:

| ecember 16, 2013 | | | www.j | polyurea-acade |
|--|------------------------------------|--------------------------------|-------------------------------|----------------------------|
| Technology | Non-Hindered (Fast Cure) | Hindered (Moderate Cure) | | tt bærten |
| Polyurea | Type 1a | Type 1b | | 技术配方和 |
| Polyurea/Polyurethane Hybrid | Type 2a | Type 2b | 性能 | 、分为4种 |
| TYPICAL APPL | IED FILM THIC | KNESSES FO | R VARIOU | S SERVICES |
| TYPICAL APPL | IED FILM THIC | | R VARIOU | S SERVICES Mils |
| | | | neters | |
| Service Urethane foam | Micromete | ers Millin 0.89 | meters - 1.0 | Mils |
| Service Urethane foam roofing: | Micromete 889-1016 | 0.89 - | meters - 1.0 | Mils 35 – 40 |
| Service Urethane foam roofing: Foot traffic: | Micromete 889-1016 1016-1524 | 0.89 - 1 1.0 - 2 1.5 - | neters - 1.0 1.5 2.0 | Mils 35 – 40 40 – 60 |

2.0

80

2032

| SU | MMARY OF PEF | FORMANCE | E TESTING RES | SULTS TO BE REPORTED |
|---|----------------------|---|---|---|
| EXPOSURE TEST | PERFORMANCE LEVEL | EXPOSURE TIME | ASTM TEST METHOD | MINIMUM CRITERIA |
| Weathering | Level 1 | 2000 hrs | G154 | None of the physical properties as measured by the LABORATORY TESTS listed below shall undergo a 50% reduction after the specified period of artificial weathering. |
| | Level 2 | 3000 hrs | | |
| | PROPERTY TESTED | | | |
| Hardness using Type M test gage at sample thickness of 50 ±15 mils (1270±381 micrometers) | | D2240, Shore A or Shore D(1) | Minimum 75A or 40D, the lesser of the two. | |
| Solvent OR water resistance (as specified) | | D6943 | No softening. Maximum hardness reduction of 8A or 5D, the greater of the two. | |
| Solvent resistance (solvent as specified) | | D471 | Maximum of 10 percent Mass change/ 15 percent Volume change. | |
| Tensile Strength at sample thickness of 1270 ± 381 micrometers (50 ± 15 mils) or as specified | | D638 Type IV or D412 Die C ⁽²⁾ | Minimum 1200 psi (8.3 MPa) | |
| Tear Strength (Die C Tear) at sample thickness of 1270 ±381 micrometers (50 ± 15 mils) | | D624 | Minimum 250 pli (43.75 kN/m) | |
| Elongation at sample thickness of 1270 ± 381 micrometers (50 ± 15 mils) | | D638 Type IV or D412 Die C | Minimum 100 percent for applications over comentitious substrates where substrate cracking could occur and over seam movement areas on steel substrates | |

| 聚脲涂层线性 | 到化収 约 | 1947年176 |
|--|------------------------------|---|
| Linear Cure Shrinkage | D6289, modified | Over solid, supported substrate less than 1 percent |
| Abrasion Resistance | D4060 | Less than 250 mg weight loss (H-18 wheels) (depends on application/exposure) |
| Permeance (sample thickness must be that of the actual applied coating thickness for the project) (CONCRETE SUBSTRATES ONLY) | E96 | Non-immersion, less than 0.75 perms Immersion, less than 0.10 perms |
| Pull-Off Adhesion (steel, immersion or non-immersion service) | D4541, Methods D, E, or F | All 3 pulls equal to or greater than 6.8 MPa (1000 psi) on each of 3 replicates |
| Pull-Off Adhesion (concrete) | D7234 | Average of 3 pulse equal to or greater than 2.0 MPa (300 ps) with equal to or greater than 50 percent substrate failure on each of 3 replicates 2 pulse, each equal to or greater than 2.0 MPa (300 ps) with equal to or greater than 5.0 percent substrate failure on each of 3 replicates 1 pul equal to or greater than 1.7 MPa (250 ps) with equal to or greater than 1.7 MPa (250 ps) with equal to or greater than 50 percent substrate failure on each of 3 replicates |



