

SSPC: The Society for Protective Coatings

PAINT SPECIFICATION NO. 12

Cold-Applied Asphalt Mastic (Extra Thick Film)

1. Scope

1.1 This specification covers a cold-applied asphalt mastic coating for structural steel. It has no rust inhibiting characteristics and affords protection by excluding corrosive media to a high degree. It acts as a vapor seal because of its relative impermeability, which is attained by application in thick coats.

1.2 This mastic is suitable for exposures in Environmental Zones 2A (frequently wet by fresh water), 2B (frequently wet by salt water), 3B (chemical, neutral), and 3C (chemical, alkaline); and is intended for spray application over steel surfaces prepared in accordance with SSPC-SP 6, "Commercial Blast Cleaning," or SSPC-SP 8, "Pickling." It is to be applied in accordance with SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel." A rust inhibitive priming coat or pretreatment is recommended in highly corrosive environments.

2. Description

2.1 Cold-applied asphalt mastic contains asphalt and petroleum solvents, either naturally occurring or petroleum derived or both. Details of the composition are given in Table 1.

2.2 This mastic contains approximately 50% by volume of nonvolatile film-forming solids (pigment and binder). The theoretical spreading rate for a 63 mil (1,600 micrometers) dry film thickness is 12.7 square feet/U.S. gallon (0.3 square meters/liter). Actual spreading rates can be significantly lower.

3. Reference Standards

3.1 The standards referenced in this specification are listed in Sections 3.4 through 3.7 and form a part of this specification.

3.2 The latest issue, revision, or amendment of the referenced standards in effect on the date of invitation to bid shall govern unless otherwise specified.

3.3 If there is a conflict between the requirements of any of the cited reference standards and this specification, the requirements of this specification shall prevail.

3.4 SSPC STANDARDS AND JOINT STANDARDS:

PA 1	Shop, Field, and Maintenance Painting of Steel
PA Guide 3	A Guide to Safety in Paint Application
Paint 27*	Basic Zinc Chromate – Vinyl Butyral Wash Primer
SP 6/NACE No. 3	Commercial Blast Cleaning
SP 8	Pickling

3.5 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS:

B 117	Practice for Operating Salt Spray (Fog) Apparatus
D 5	Test Method for Penetration of Bituminous Materials
D 235	Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)

TABLE 1
COMPOSITION

INGREDIENTS	REQUIRED		INGREDIENT STANDARDS	
	Min. Wt. %	Max. Wt. %	ASTM	Federal
FILLER: (40 wt. % max.) Inorganic Filler Contains Short Fiber Asbestos and Free Inert Material	—	100	—	—
VEHICLE: (60 wt. min.) Asphalts	45	65	—	—
Mineral Spirit Thinner	35	55	D 235	TT-T-291, Type I

- D 1296** Test Method for Odor of Volatile Solvents and Diluents
- D 1856** Test Method for Recovery of Asphalt from Solution by Abson Method
- D 2369** Test Method for Volatile Content of Coatings
- D 2939** Test Methods for Testing Emulsified Bitumens Used as Protective Coatings
- D 3278** Test Methods for Flash Point of Liquids by Setaflash Closed-Cup Apparatus

3.6 FEDERAL STANDARDS AND SPECIFICATIONS:

- A-A-2904** Thinner, Paint, Mineral Spirits, Regular and Odorless
- A-A-59295** Corrosion Preventive Compounds Cold Application (for New and Fielded Motor Vehicles and Trailers)
- TT-C-520**** (canceled) Coating compound, Bituminous, Solvent Type, Underbody (for Motor Vehicles) (Refer to A-A-59295)
- TT-T-291** (canceled) Thinner, Paint, Mineral Spirits, Regular and Odorless (Refer to A-A-2904)

FED-STD-141 Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing

- Method 3011** Condition in Container
- Method 3021** Skinning (Partially Filled Container)
- Method 4021** Pigment Content (Ordinary Centrifuge)
- Method 4053** Nonvolatile Vehicle Content
- Method 4203** Reducibility and Dilution Stability
- Method 4311** (canceled) Volume Percentage of Pigment in Total Nonvolatile Matter (Calculation Method)

3.7 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARD:

- Z129.1** Hazardous Industrial Chemicals — Precautionary Labeling

4. Composition

4.1 Ingredients and proportions shall be as specified in Table 1 and in Sections 4.2 through 4.6.

4.2 ASPHALTS: Bitumens shall consist of asphalts, either naturally occurring or petroleum derived, and may

include up to 50% by weight of gilsonite; any petroleum asphalt used shall be a straight run, steam or vacuum refined residue and shall be air blown in accordance with good commercial practice.

4.3 FILLERS: Fillers used shall be suitable inorganic minerals and short fiber asbestos. Sand and other harsh abrasive materials shall not be used. The fillers (exclusive of asbestos) shall be fine enough to pass through a 325 mesh screen. Not more than 15% by weight of the total mastic shall be retained on a 325 mesh screen as determined by washing the mastic through the screen with suitable solvent.

4.4 PETROLEUM SOLVENTS: The volatile solvents shall consist of any suitable aliphatic petroleum solvents with a minimum flash point of 90°F (32°C).

4.5 The mastic based on the specified ingredients shall be uniform, stable in storage, and free from grit and coarse particles. No water, coal, tar, or coal tar solvents may be added.

4.6 The paint shall conform to the composition (analysis) requirements of Table 2.

5. Properties

5.1 The paint shall meet the requirements of Table 3, Sections 5.2 through 5.18.

5.2 ODOR: Shall be normal for the materials permitted (ASTM D 1296).

5.3 COLOR: The color shall be black.

5.4 COMPATIBILITY: There shall be no evidence of incompatibility of any of the ingredients of the mastic when two volumes of the mastic are slowly mixed with one volume of mineral spirits (FED-STD-141, Method 4203).

5.5 WORKING PROPERTIES: The mastic shall be capable of application by brush and trowel in addition to spraying with standard high pressure spray equipment of the types recommended for the application of mastics. The consistency shall be such that it may be sprayed at a temperature of 50°F (10°C) with a tank pressure of not more than 80 psi (550 kPa) gage and no more than 80 psi (550 kPa) gage air pressure on the gun nozzle. A coating thus applied shall be uniform, continuous, and free from any pinholing.

5.6 CONDITION IN CONTAINER: The mastic shall show no thickening, curdling, gelling, or hard caking when tested as specified in FED-STD-141, Method 3011, after storage for six months from date of delivery in a full, tightly