



ENGINEERING STAFF  
**MATERIAL SPECIFICATION**

*Prepared By:* Engineering Staff

*Approved By:* Jerome T. Schmitz

Handwritten initials in black ink, appearing to be "JS" or similar, located to the right of the "Approved By" line.

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<b>Superseded Date:</b>	01/28/15

**MISCELLANEOUS**

Aliphatic Polyurethane Paint

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**1. SCOPE**

This specification covers an aliphatic polyurethane topcoat used for painting structures for the prevention of atmospheric corrosion.

**2. APPLICABLE DOCUMENTS**

- 2.1 ASTM International (ASTM) B-117, "Salt-Spray (Fog) Testing."
- 2.2 ASTM International (ASTM) D-3134, "Standard Practice for Establishing Color and Gloss Tolerances."
- 2.3 ASTM International (ASTM) D-4214, "Standard Test Method for Evaluating Degree of Chalking of Exterior Paint Films."
- 2.4 ASTM International (ASTM) D-4541, "Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers."
- 2.5 ASTM International (ASTM) D-2794, "Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)."
- 2.6 United States Department of Transportation (DOT), Code of Federal Regulations (CFR), Title 49, Part 192, "Transportation of Natural and Other Gas by Pipeline; Minimum Safety Standards."

**NOTE:** Unless otherwise specified, the editions of the above documents incorporated by DOT 49, CFR 192 are applicable. Documents not incorporated by DOT 49, CFR 192 will be the most recent edition."



**3. TERMINOLOGY**

3.1 General

- 3.1.1 "Southwest Gas," "Southwest" or "SWG" wherever used in this specification and other related documents will refer exclusively to Southwest Gas Corporation.
- 3.1.2 The terms "approved," "as approved," "satisfactory," "as directed," "or equal" or other similar terms wherever used in this specification and other related documents will mean "as determined by Southwest Gas," unless specifically stated otherwise.



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**3. TERMINOLOGY** (Cont'd)

3.1.3 "Product Information Package" or "PIP" wherever used in this specification and other related documents will mean the required technical product information that a manufacturer must submit to SWG to determine if the product is suitable for use by SWG, unless specifically stated otherwise.

**4. MATERIALS AND MANUFACTURING**

- 4.1 The aliphatic polyurethane paint shall be capable of being applied in the field using conventional air or airless equipment and brush.
- 4.2 The minimum volume solids of the aliphatic polyurethane paint shall be 65 percent.
- 4.3 The appearance of the aliphatic polyurethane paint is to be a high gloss color as specified on the purchase order.
- 4.4 The aliphatic polyurethane paint shall not contain any lead or chromate.
- 4.5 Volatile Organic Compounds (VOCs) shall be no greater than 2.1 pounds per gallon prior to thinning.

**5. PERFORMANCE REQUIREMENTS**

- 5.1 The aliphatic polyurethane paint shall be capable of retaining a minimum of 90 percent of its initial gloss and exhibit no chalking after 1000 hours exposure in an Ultraviolet Accelerated Weathering Tester using a UV-B lamp. Gloss shall be measured according to ASTM D-3134 at a temperature of 60°F. Chalking shall be measured according to ASTM D-4214.
- 5.2 The aliphatic polyurethane paint shall dry to touch in 2 to 3 hours and be capable of recoating in 24 hours.
- 5.3 Adhesion shall be no less than 700 psig as measured using ASTM D-4541, "Elcometer Adhesion Test."
- 5.4 Impact resistance shall be no less than 60-inch pounds as measured using ASTM D-2794.



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**5. PERFORMANCE REQUIREMENTS** (Cont'd)

- 5.5 The aliphatic polyurethane paint must be capable of being stored and applied at temperatures ranging from 50°F to 100°F.
- 5.6 The aliphatic polyurethane paint must be capable of being applied at 4 to 6 mils dry film thickness.
- 5.7 Using ASTM B-117, after 1000 hours, the aliphatic polyurethane paint shall show no blistering, cracking or delamination of film and no more than 1/8-inch rust creepage at scribe.

**6. INSPECTION**

- 6.1 Successful review of the Product Information Package (PIP), as well as any future reference by SWG to the Seller's part number or internal code number in any future contract or purchase, will mean only that no conflict with the specification was found, and will not relieve the Seller from meeting all the requirements of this specification.
- 6.2 SWG retains the option to inspect the manufacture and testing of any and all materials, products or systems referenced in this specification that are sold to SWG.
- 6.3 SWG will make appropriate inspections and tests of any and all materials, products or systems supplied to this specification. SWG will have the right, at their option, to reject any material which fails to conform to this specification. Any such rejection may take place at the manufacturer's facility; the supplier's warehouse or any subsequent delivery location, before or after SWG assumes possession. Notice of the rejection will be made promptly to the supplier by SWG. The defective product will be replaced or returned for credit at the manufacturer's expense.
- 6.4 Any changes in the manufacturing of previously approved materials, products or systems described in this material specification for sale to SWG, must be approved by SWG's Engineering Staff. **Failure to obtain SWG's approval may be cause for rejection and disqualification as an approved supplier.**



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**7. CERTIFICATION**

The manufacturer's or supplier's certification will be furnished to Southwest. This certification will state that samples representing each lot have been manufactured, tested and inspected in accordance with this specification and that all requirements have been met. When requested or specified in the purchase order or contract, a report of test results will be provided.

Upon the request of Southwest, the certification of an independent third party indicating conformance to the specification may be considered at Southwest's expense.

**8. SAFETY DATA SHEETS**

In accordance with law, the Seller will supply a Safety Data Sheet for all applicable items supplied under this specification to the following:

- 1) The Receiving Location
- 2) Southwest Gas Engineering Staff
- 3) Southwest Gas Corporation  
Corporate Safety  
Mail Station LVA-120  
P.O. Box 98510  
Las Vegas, NV 89193-8510

**9. PACKAGING AND PACKAGE MARKING**


- 9.1 All cans of aliphatic polyurethane paint shall be marked with type and color of the contents.
- 9.2 The aliphatic polyurethane paint shall be provided in one gallon cans.
- 9.3 The aliphatic polyurethane paint shall be packaged in cardboard boxes with four cans per box. The box shall be clearly marked identifying the contents and color of the material in the box.
- 9.4 All aliphatic polyurethane paint cans shall be marked with storage and application temperatures and application instructions.
- 9.5 All cans and boxes of aliphatic polyurethane paint shall be marked with an expiration date showing the end of the useful life of the contents.



**SOUTHWEST GAS CORPORATION**

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**10. STOCK CLASSIFICATION DESCRIPTION**

PAINT, POLYURETHANE, HIGH GLOSS, \_\_\_\_\_ (COLOR), ONE-GALLON CANS,  
NO LEAD.