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Issue Date:	03/01/16
Superseded Date:	01/30/15

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

CORROSION CONTROL MATERIALS

Spacers-Insulating

1. SCOPE

This specification defines the minimum requirements for laminated electrical insulating sheets used for spacers to prevent electrical contacts between buried or exposed piping and concrete or other metal non-protected structures; and for piping support insulators for meter set assemblies, valves and regulators.

2. APPLICABLE DOCUMENTS

- 2.1 ASTM International (ASTM) D-709, "Standard Specification for Laminated Thermosetting Material."
- 2.2 United States Department of Transportation (DOT), Code of Federal Regulations, Title 49, Part 192, "Transportation of Natural and Other Gas by Pipelines 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.
- 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 Southwest to determine if the product is suitable for use by Southwest, unless specifically stated otherwise.



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4. MATERIALS AND MANUFACTURING

- 4.1 The phenolic material shall consist of laminated thermosetting phenolic resin, fabric base sheet conforming to ASTM D-709 for Type II, Grade CE material with semi-gloss finish and a natural color.
- 4.2 Fiberglass reinforced plastic material shall be filament-wound epoxy with integral epoxy liner and exterior coating.

5. PERFORMANCE REQUIREMENTS

The laminated electrical insulators shall have the following characteristics:

- Be lightweight
- Exhibit high dielectric strength
- Exhibit abrasion resistance
- Have ultraviolet stability
- Not be subject to cold temperature embrittlement
- Not be subject to heat distortion

6. DIMENSIONS AND TOLERANCES

6.1 Sheets:

- Thickness: 1/16-inch
- Length and width: 24-inch X 36-inch

6.2 Roll-On Shields:

- Roll-On Shields must meet the dimensions in Table L-5.1
- Roll-On Shields shall be pre-shaped to have a snug fit and cover 240° of the pipe



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6. DIMENSIONS AND TOLERANCES (Cont'd)

Shields No.	Pipe Diameter Inches	Shield Length Inches
2	2	6
3	3	6
4	4	6
6	6	9
8	8	12
10	10	12
12	12	12
16	16	12

TABLE L-5.1

6.3 Insulating Spacers:

6.3.1 Insulating spacers must meet dimensions as shown in table L-5.2.

6.3.2 Insulating spacers shall be pre-shaped to have a snug fit and cover 120° of the pipe.

Insulator Size	Pipe Diameter Inches	Thickness Inches	Insulator Length Inches
2	2	0.08	12
3	3	0.09	12
4	4	0.12	12
6	6	0.15	12
8	8	0.17	12
10	10	0.19	12
12	12	0.25	12
16	16	0.25	12
18	18	0.25	12
20	20	0.25	12
24	24	0.25	12
30	30	0.25	12
36	36	0.25	12

TABLE L-5.2



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7. INSPECTION

- 7.1 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.
- 7.2 SWG retains the option to inspect the manufacture and testing of any and all materials, products or systems supplied to this specification at the manufacturer's facility.
- 7.3 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 by promptly to the supplier by SWG. The defective product will be replaced or returned for credit at the manufacturer's expense.
- 7.4 Any changes in 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 Southwest approval may be cause for rejection and disqualification as an approved supplier.**

8. CERTIFICATION

The manufacturer's or supplier's certification shall be furnished to Southwest. This certification shall state that samples representing each lot have been manufactured, tested and inspected in accordance with this specification and that 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.



SOUTHWEST GAS CORPORATION

ENGINEERING STAFF

MATERIAL SPECIFICATION

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9. SAFETY DATA SHEETS

In accordance with law, the seller shall supply Safety Data Sheets 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 98193-8510

10. PRODUCT MARKING

The material shall be marked with the manufacturer's name or trademark.

11. PACKAGING AND PACKAGE MARKING

All products covered in this specification will be packaged to prevent damage during shipping.

12. STOCK CLASSIFICATION DESCRIPTION

SHIELDS, FRP-ROLL ON, _____ INCH WIDE X _____ INCH LONG

SPACER INSULATION, FRP, _____ INCH

SHEET, INSULATING REINFORCED LAMINATE, 1/16 INCH X 24 INCH X 36 INCH WITH PHENOLIC RESIN BINDER, NEMA DESIGNATION, GRADE CE

CASING INSULATOR, FRP _____ (SIZE)