





SOUTHWEST GAS CORPORATION
ENGINEERING STAFF
MATERIAL SPECIFICATION

Section No.:	MS I-8
Page No.:	1 of 12
Issue Date:	06/14/17
Superseded Date:	01/21/15

Prepared By: Engineering Staff 
Approved By: Jerome T. Schmitz 

COUPLINGS
PVC/ABS to PE Adapter Couplings

1. SCOPE

This specification covers mechanical compression to solvent/cement socket weld adapter couplings used to transition from PE to PVC/ABS pipe and tubing, in PE sizes 1/2" and 1" CTS, 1-1/4" and 2" IPS and in PVC/ABS sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2" and 3" IPS. The adapter couplings are used in gas distribution systems operating at pressures up to, and including, 60 psig.

Adapter couplings may be installed as single components without pressure testing.

2. APPLICABLE DOCUMENTS

- 2.1 ASTM International (ASTM) D-2466, "Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40."
- 2.2 ASTM International (ASTM) D-2513, "Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings."
- 2.3 ASTM International (ASTM) D-2517, "Specification for Reinforced Epoxy Resin Gas Pressure and Fittings."
- 2.4 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 information that a manufacturer must submit to Southwest Gas to determine if the product is suitable for use by Southwest Gas, unless specifically stated otherwise.



4. MATERIALS AND MANUFACTURER

- 4.1 All adapter couplings must be made from a material listed and approved as a thermoplastic or thermoset material suitable for gas pipe or fittings in ASTM D-2513 or ASTM D-2517.
- 4.2 The adapter coupling shall consist of a body or barrel that can be installed over the O.D. of the pipe segments for full length of the body or barrel.
- 4.3 The adapter coupling shall consist of an elastomeric seal ring which meets the requirements of Part 192, paragraph 192.281(e)(1) and be capable of maintaining a seal with no leak from -20°F to +140°F.
- 4.4 The adapter coupling shall consist of a compression nut used to compress the elastomeric seal to prevent leakage with a bottoming out feature to prevent overtightening.
- 4.5 The adapter coupling shall consist of an internal rigid tubular stiffener to prevent the PE pipe from creeping away from the elastomeric seal during the life of the fitting.
- 4.6 The adapter coupling shall consist of a fitting with a solvent socket for the PVC/ABS pipe and shall be designed for interference fit per ASTM D-2466.
- 4.7 All materials used in the adapter couplings must be compatible with natural gas.



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5. PERFORMANCE REQUIREMENTS

- 5.1 Adapter couplings must be designed and tested according to the following;
- Paragraph 192.283(b) of Part 192.
 - Long-term testing to show a log-log regression curve with 10,000 hours of testing, extrapolated to 100,000 hours that meet the minimum long-term curve for the pipe to be joined.
 - Sustained tensile testing for 2,000 hours at a static load equal to 90 percent of the yield stress load obtained at .20 inches per minute test rate ($\pm 25\%$) for the pipe to be joined.

6. DIMENSIONS AND TOLERANCES

Dimensions and tolerances shall be in accordance with Appendix A of this specification.



7. INSPECTION

- 7.1 Successful review of the 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 referenced in this specification that are sold to SWG.
- 7.3 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.
- 7.4 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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8. CERTIFICATION

The manufacturer's or supplier's certification will be furnished to SWG. 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.

9. SAFETY DATA SHEETS

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

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

10. PRODUCT MARKING



10.1 Adapter couplings sold to Southwest Gas will comply with the marking requirements of ASTM D-2513-87. The marking method will provide permanent identification of the fitting, enabling access to quality and manufacturing records at any time and will include manufacturer's name or trademark, or both, size, the ASTM standard designation "D2513," material classification, serial number, manufacture date and temperature rating.

10.2 All polyethylene pipe extensions (pups) must have the pipe manufactured date visibly indicated on the pipe by print line, label or another acceptable method that is clearly and completely readable.



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10. PRODUCT MARKING (Cont'd)

10.3 The temperature rating marking will be in accordance with ASTM D-2513-87, which consists of, at minimum, a two-letter coding (i.e., "CE"). The first code letter is to identify the high temperature rating and the second letter is to identify the HDB rating at that high temperature rating. A third code letter may be included which signifies the melt index. The first code letter must have a minimum of a "C" rating which signifies a temperature rating of 140°F (60°C). The second code letter pertaining to the HDB rating must be sufficient to meet the performance requirements of this specification which requires a design pressure rating of 60 psig at 140°F (60°C).

11. PACKAGING AND PACKAGE MARKING

All compression fittings will be packaged in a manner to prevent damage during transportation and storage.