



SOUTHWEST GAS CORPORATION

ENGINEERING STAFF

MATERIAL SPECIFICATION

Prepared By: Engineering Staff 

Approved By: J.F. Wunderlin 

Section No.:	MS N-3
Page No.:	1 of 4
Issue Date:	04/13/09
Superseded Date:	08/28/07

BOLTS, NUTS AND HARDWARE

Washers, Wrought Steel, General Use

1. SCOPE

This specification covers the general use of wrought steel washers for bolt sizes 3/16-inch through 2-inches in diameter.

2. APPLICABLE DOCUMENTS

- 2.1 ASTM International (ASTM) A 325, "Standard Specification for Structural Bolts, Steel, Heat Treated, 120/150 ksi Minimum Tensile Strength."
- 2.2 ASTM International (ASTM) F 436, "Standard Specification for Hardened Steel Washers."
- 2.3 SWG Design Standards, Section C, "Use of Materials, C-11a, Bolts and Nuts."
- 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.
- 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 SWG to determine if the product is suitable for use by SWG, unless specifically stated otherwise.



SOUTHWEST GAS CORPORATION

ENGINEERING STAFF

MATERIAL SPECIFICATION

Prepared By: Engineering Staff 

Approved By: J.F. Wunderlin 

Section No.:	MS N-3
Page No.:	2 of 4
Issue Date:	04/13/09
Superseded Date:	08/28/07

BOLTS, NUTS AND HARDWARE

Washers, Wrought Steel, General Use

4. MATERIALS AND MANUFACTURE

All washers will be clean, flat, smooth, and free from burrs, loose scale, sharp edges and all other defects that might affect their performance.

5. PERFORMANCE REQUIREMENTS

Distribute load of nut and bolt equally over an area as not to cause damage to insulators (flange).

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 supplied to SWG under this specification at the manufacturer's facility.
- 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 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 products, 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.**



SOUTHWEST GAS CORPORATION

ENGINEERING STAFF

MATERIAL SPECIFICATION

Prepared By: Engineering Staff 

Approved By: J.F. Wunderlin 

Section No.:	MS N-3
Page No.:	3 of 4
Issue Date:	04/13/09
Superseded Date:	08/28/07

BOLTS, NUTS AND HARDWARE

Washers, Wrought Steel, General Use

7. 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.

8. MATERIAL SAFETY DATA SHEETS

In accordance with law, the Seller will supply Material 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

9. PACKAGING AND PACKAGE DESCRIPTION

All products covered in this specification will be packaged in a manner to prevent damage during transportation and storage.

10. STOCK CLASSIFICATION

WASHER, FLAT, _____ INCH, ZINC PLATED, HEAT TREATED, HIGH STRENGTH STEEL, SAE.