

Standard Marking System
for
Valves, Fittings, Flanges,
and Unions

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Standard Practice
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This MSS Standard Practice was developed under the consensus of the MSS Technical Committee 302 and the MSS Coordinating Committee. The content of this Standard Practice is the result of the efforts of competent and concerned volunteers to provide an effective, clear, and non-exclusive specification that will benefit the industry as a whole. This MSS Standard Practice is intended as a basis for common practice by the manufacturer, the user, and the general public. The existence of an MSS Standard Practice does not in itself preclude the manufacture, sale, or use of products not conforming to the Standard Practice. Mandatory conformance is established only by reference in a code, specification, sales contract, or public law, as applicable.

Unless otherwise specifically noted in this MSS SP, any standard referred to herein is identified by the date of issue that was applicable to the referenced standard(s) at the date of issue of this MSS SP (See Annex A).

U.S. customary units in this Standard Practice are the standard; the metric units are for reference only.

Substantive changes in this 2008 edition are “flagged” by parallel bars as shown on the margins of this paragraph. The specific details of the changes may be determined by comparing the material flagged with that in the previous edition.

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FOREWORD

The initial issue of the Standard Marking System was made by the Manufacturer's Standardization Society in 1934. It stated the basic rules but was considered to need more details for general use. A second edition was therefore prepared with additional details and examples and was published in 1936.

The third edition, in 1954, recognized the use of new materials, increased operating temperatures and pressures and added more examples of markings for regular products. In 1958, the fourth edition incorporated relatively minor changes and updates and included some additional examples.

The format was revised for the fifth edition in 1960. It permitted the use of nameplates on valve bodies, and added requirements for making ductile iron products. The sixth edition in 1964 broadened the scope of the Marking Standard Practice and revised the examples and sections of the text to reflect changes in piping requirements.

The seventh edition in 1978 was completely revised and rewritten to simplify its cross references and to improve its readability. It also incorporated the marking features of pressure-temperature marking designations contained in American National Standards on products and materials. It was rearranged so that the General Rules were stated in Sections 1 to 11. These were amplified in Sections 12 to 18 which gave specific rules and examples of marking requirements for various products and materials.

In 1993, the eighth edition incorporated relatively minor changes and updates. The 1998 ninth edition includes minor revisions required per current MSS practices.

This 2008 tenth edition includes revisions to the ASME B16.34 example marking and mandatory MSS conformance marking and clarifies general requirements.

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STANDARD MARKING SYSTEM FOR VALVES, FITTINGS, FLANGES, AND UNIONS

1. SCOPE

1.1 This marking system applies to valves, fittings, flanges, and unions used in piping connections which include (but are not limited to) flanged, soldered, brazed, threaded, or welded joints.

1.2 These specified markings serve to identify the manufacturer, the rating designation, materials of construction and special service limitations imposed by the manufacturer. They are used for product identification and to assist in proper application.

2. GENERAL MARKING REQUIREMENTS

2.1 Each product of a size and shape permitting legible marking shall be marked in accordance with the provisions of this Standard Practice.

2.2 Markings shall be applied to the body of valves, fittings and the nut of unions or on an identification plate. For quarter turn valves, markings shall be applied to the body, identification plate, or handle. Markings on covered quarter turn valve handles may not be integral with the base handle material.

2.3 Markings shall consist of numerals, letters, or symbols cast, forged, stamped, or otherwise made integral with the product; or markings on an identification plate attached to the product; or both. Where stamping is used on pressure containing walls, low stress stamps which produce a round bottom impression shall be used; such low stress stamps are not required on flanged edges or on raised pads provided for marking purposes.

2.4 Unless otherwise prohibited, markings obliterated during manufacturing of steel products may be replaced by weld deposition, welded plates, or stamping.

2.5 Markings indicating conformance with recognized documents, such as the ASME Boiler Pressure Vessel Codes, API, Factory Mutual, and Underwriter's Laboratories may be applied only by authorized, licensed, or approved manufacturers. Such markings shall be applied only to products fully conforming to the code qualification

requirements and may be shown on the body or an attached plate, at the option of the manufacturer.

2.6 Manufacturers may apply markings indicating conformance with codes and standards such as API, ASME, MSS, AWWA, on products that fully conform to the standards. Certain codes and standards specify mandatory product conformance markings and methods. Such markings may be shown on the body, on an attached plate, or as otherwise specified.

2.7 Nothing in this Standard Practice shall be construed as prohibiting the use of additional markings such as "Made in U.S.A.", catalog reference numbers, pattern numbers, patent numbers, dates, customer specification numbers, etc. Product markings indicating special designs, particular requirements, or special limitations, should also carry additional special marking to distinguish them from regularly available standard products. All additional markings shall be applied in such a manner as to avoid confusion with standard markings.

2.8 Flow or pressure indication shall be marked on unidirectional valves. Commonly used markings include arrows or the words "inlet" or "outlet" or "high pressure side" marked at an appropriate end.

3. MANUFACTURER'S NAME OR TRADEMARK

All valves, fittings, flanges, and unions shall be marked with the manufacturer's name, trademark, or symbol, unless size or shape does not permit.

4. RATING DESIGNATION

4.1 The expression "Rating Designation" includes the intent of the expressions "Pressure Designation", "Class Designation", "Pressure Class", and similar terms used to define the pressure/fluid/materials temperature limitation of the product. The rating designation shall be shown by one of the systems in the sections that follow.

4.1.1 The rating designation for products that fully conform to recognized standards, may be designated by the class numbers alone, e.g., a steam pressure rating or a pressure class designation. Pressure Rating Values may be abbreviated by using "M" to designate units of one thousand (for example, 3M in place of 3000).

4.1.2 The rating designation for products that conform to recognized standards, but are not suitable for the full range of pressures or temperatures of these standards where allowed, shall be marked as prescribed in Section 4.1.1 as appropriate and shall also show the numbers and letters representing the service limitation at the limiting condition.

4.1.3 The rating designation for products that do not conform to recognized national product standards may be shown by numbers and letters representing the pressure ratings at maximum and/or minimum temperatures in the following format: 2000 at 100F, 725 at 925F. The rating designation may also be shown as the maximum pressure followed by "CWP"^(a) and the allowed pressure at the maximum temperature (e.g. 2000 CWP, 725 at 925F). Products intended for ambient room temperature may show the allowable pressure followed by letters CWP or equivalent.

4.2 When marking in metric or SI notation, the units of preference will be bar^(b) or kilopascals (kPa) of gauge pressure and degrees Celsius for temperature. Numbers designating pressure will be followed by the term, "bar or kPa", and temperature designation by the letter, "C". Conversion of direct pressure values is permitted, but conversion of pressure classes to "metric equivalents" should not be attempted.

4.3 Products made to attach to specific pipe may be marked with the appropriate pipe schedule number or pipe wall designation.

4.4 Special markings for rating designation may be specified in individual product standards.

5. MATERIAL DESIGNATION

5.1 Products made of conforming materials shall be marked in accordance with ASTM, ASME, or other recognized materials specifications, as described in the Product Marking sections which follow. In a composite structure made of several materials, the material most important to its pressure-temperature rating shall be marked. Products may be marked instead with proprietary materials designations, provided confusion is avoided with nationally recognized material standards symbols, and provided confusion is avoided with other sections of this Standard Practice.

NOTES:

^(a) CWP (Cold Working Pressure) is the maximum pressure rating allowed under normal "ambient" temperature conditions, which are usually understood to be -20°F to 100°F (-29°C to 38°C). Certain "ambient temperature" standards and practices have a different range or are limited by recognized codes and standards. Consult the applicable codes, standards, or manufacturer's technical data for specific information.

Other symbols which are in common usage throughout the industry include:

SP - Steam pressure	}	Correspond to SWP (Steam Working Pressure)
WSP - Working steam pressure		
S - Steam		
WO - Water, oil pressure	}	Correspond to CWP
WOG - Water, oil, gas pressure		
GLP - Gas, liquid pressure		
WWP - Working water pressure		
W - Water pressure		

These markings may be continued in use at the manufacturer's option unless, prohibited by codes, standards, or specification applicable to a particular product.

^(b) The pressure unit of 1 bar is equal to 14.5 pounds per square inch. The conversion factor of 1 bar is equal to 100 kilopascals.

5.2 Products made of one material and lined with another, excluding corrosion resistant coatings, shall carry the regular markings specified by this Standard Practice and additional markings that indicate that the product is lined and state the material used for lining.

5.3 Material markings are not required on ASTM B 61, B 62 and B 584 alloys, C 83800 and C 84400, cast copper alloy threaded or solder-joint fittings, flanges, unions, valves, or on wrought copper solder-joint products.

5.4 Material marking is not required for gray iron, except as shown in Section 12.2. Alloyed gray iron may be identified by a manufacturer's symbol, provided that confusion with standard symbols is avoided.

5.5 The symbols for metals shown in Table 1 are in common use and may be used as standard references for marking nameplates and bodies. Non-ferrous body materials may be marked with the symbols shown. Products with steel bodies shall be marked with the ASTM specification grade identification symbol. Other symbols including manufacturer's tradenames and material codes are permitted if confusion is avoided with standard symbols.

5.6 The non metallic symbols, shown in Table 2, are typical. The use of specific names and tradenames is also permitted if confusion is avoided with standard symbols. For valves trimmed with composite construction elements, the dominant functional material should be named.

6. **MELT IDENTIFICATION**

If part size permits and when required by the product or materials specification standard, carbon, alloy and stainless steel castings and forgings used for fittings, flanges, valve bodies, bonnets and covers shall be marked with a melt identification and material symbol. Melt identification is not required for materials of Sections 5.3 and 5.4.

7. **VALVE TRIM IDENTIFICATION**

7.1 Trim identification marking is required on the identification plate for all flanged end and butt-welding end steel or flanged-end ductile iron body valves having trim material which is different than the body material. Symbols for material identification can be found in Tables 1 and 2 of this Standard Practice. If all trim materials are the same, the identification plate may be marked with the word "Trim", followed by the appropriate material symbol.



TABLE 1

Common Symbols for Metallic Materials

Aluminum	AL	Soft Metal (for example, lead babbitt, copper, etc)	SM
Brass	BRS	Stainless Steel	SS
Bronze	BRZ	Steel, 13 Chromium	CR 13
Carbon Steel	CS	Steel, 18 Chromium	CR 18
Gray Iron	GI	Steel, 28 Chromium	CR 28
Copper-Nickel Alloy	CU NI	Steel, 18-8	18-8
Ductile Iron	DI	Steel, 18-8 with Molybdenum	18-8SMO
Hardfacing	HF	Steel, 18-8 with Columbium	18-8SCB
Integral Seats	INT	Surface Hardened Steel (for example nitrided surface)	SH
Malleable Iron	MI		
Nickel-Copper Alloy	NI CU		

TABLE 2

Common Symbols for Non-Metallic Materials

Asbestos	ASB	Fusion Bonded Epoxy	FBE
Butadiene Rubber	BR	Isoprene Rubber	IR
Butyl Rubber	IIR	Natural Rubber	NR
Chloroprene or Neoprene	CR	Nitrile or Buna N Rubber	NBR
Chlorosulfonated Polyethylene	CSM	Nylon	NYL
Chlorotrifluoroethylene	CIFE	Polyacrylic Rubber	ACM
Ethylene-Propylene Diene Monomer	EPDM	Poly Vinyl Chloride	PVC
Ethylene-Propylene Rubber	EPR	Silicone Rubber	SI
Ethylene-Propylene Ter Polymer	EPT	Styrene Butadiene Rubber	SBR
Flexible Graphite	GRAF	Tetrafluoroethylene	TFE
Fluorocarbon Rubber	FKM	Thermoplastic material	T PLAS
Fluorinated Ethylene Propylene	FEP	Thermosetting material	T SET

7.1.1 When required, trim identification marking for gate, globe, angle, and cross valves or valves with similar design characteristics shall consist of three material symbols. The symbols may either be preceded by the words "STEM", "DISC", "SEAT", or used alone. If used alone, the symbols shall appear in the following order. The first symbol shall indicate the material of the stem, the second shall indicate the material of the disc or wedge face and the third shall indicate the material of the seat face.

7.1.2 When required, the trim identification marking for check valves having no stem shall consist of two material symbols. The symbol may either be preceded by the words "DISC", "SEAT", or if used alone, the first symbol shall indicate the material of the disc face and the second, the material of the seat face.

7.1.3 Plug, ball, and butterfly valves or other quarter-turn valves require no trim identification marking unless the plug, disc, or closure member, or stem or both are different material than the body. In such cases, trim identification symbols on the nameplate will first indicate the material of the stem, second indicate the material of plug, ball, disc or closure member. When required, valves with seating or sealing materials different than the body material shall add a third symbol to indicate the material of the seat. In these cases, symbol identification shall be preceded by the words "STEM", "DISC", (or "PLUG", "BALL", or "GATE", as appropriate) and the word "SEAT". If used alone, the material symbols must appear in the order given.

8. SIZE DESIGNATION

8.1 Size markings will be in accordance with the product referenced Marking Requirements in Sections 12 to 18.

8.2 Size designation for products designed with a single nominal bore shall consist of numerals comprising the nominal pipe size (NPS) of the connecting ends. The word "nominal" indicates the numerical identification associated with pipe sizes and may not correspond to the valve, pipe, or fitting inside diameter. For applications where marking in metric or SI notation is required, the equivalent metric numerical size, as defined in Table 3, shall be given, preceded by "DN" (Diameter Nominal).

8.3 Products having internal elements which are the equivalent of one pipe size or more different than the end size may have dual markings unless specified otherwise in a product standard, or as indicated in Sections 8.3.1 and 8.3.2. Unless these exceptions exist, the first number shall indicate the connecting end pipe size and the second the minimum bore diameter or the pipe size corresponding to the closure size, for example, NPS 6 x 4, NPS 4 x 2-1/2, NPS 30 x 24.

TABLE 3 Size Identification — Nominal Diameter

Customary NPS	Metric DN	Customary NPS	Metric DN
1/8	3	18	450
1/4	6	20	500
3/8	10	22	550
1/2	15	24	600
3/4	20	26	650
1	25	28	700
1 1/4	32	30	750
1 1/2	40	32	800
2	50	36	900
2 1/2	65	40	1000
3	80	42	1050
4	100	48	1200
5	125 ⁽¹⁾	52	1300
6	150	54	1350
7	175 ⁽¹⁾	60	1500
8	200	64	1600
9	225 ⁽¹⁾	72	1800
10	250	80	2000
12	300	88	2200
14	350	96	2400
16	400	104	2600

Supplementary Information

⁽¹⁾ Use of these sizes should be avoided for new design and construction.

8.3.1 For valves, at the manufacturer's option, triple marking size designation may be employed. If triple size designation is used, the first number shall indicate the connecting end size at one end, the second the minimum bore diameter or pipe size corresponding to the closure size and the third shall indicate the connecting end size at the other end. For example, 24 x 20 x 30 marking on a valve designates an NPS 24 connection, an NPS 20 nominal center section and an NPS 30 connection.

8.3.2 Fittings with multiple outlets may be designated at the manufacturer's option in a "run x run x outlet" size method. For example, 30 x 30 x 24 marking on a fitting designates a product with NPS 30 end connections and an NPS 24 connection between.

9. IDENTIFICATION OF THREADED ENDS

9.1 Fittings, flanges and valve bodies whose connecting ends are threaded, other than American National Standard Pipe Thread or American National Standard Hose Thread, shall be marked to indicate the type of thread. The style of marking may be the manufacturer's own symbol provided that confusion with standard symbols is avoided. The marking to designate threaded ends may be a tag or other manufacturer's mark permanently attached or applied to the valve or valve body. Fittings having left-hand threads shall be marked with the letters "LH" on the outside wall of the appropriate opening.

9.2 Marking of products having ends threaded for API casing, tubing or drill pipe shall include the following:

- a) Size
- b) The letters API
- c) The thread type symbol as listed in Table 4

TABLE 4

Examples of Thread Type Symbols

Casing (short round thread)	CSG
Casing (long round thread)	LCSG
Casing (buttress thread)	BCSG
Casing (extreme-line)	XCSG
Line pipe	LP
Tubing (non-upset)	TBG
Tubing (external-upset)	UP TBG

9.3 Marking of products using other pipe threads shall include the following:

- a) Nominal pipe, tubing, drill pipe or casing size
- b) Outside diameter or upset diameter of pipe, tubing, drill pipe or casing
- c) Name of thread
- d) Number of threads per inch.

(Example)

6-5/8 - 7 DBX CSG 10

(note: DBX = Diamond B, 10 threads)

10. RING-JOINT FACING IDENTIFICATION

10.1 All connecting end flanges having standard ring-joint grooves manufactured in accordance with API 6A shall be marked with the letter "R" and the corresponding ring groove number.

11. PERMISSIBLE OMISSION OF MARKINGS

11.1 The manufacturer's name, trademark, or symbol shall be shown on all products marked in accordance with this Standard Practice, unless size or shape do not permit.

11.2 When shape or size does not permit inclusion of all the required markings, body and /or identification plate markings, as appropriate to the product and material, may be omitted in the following order. When omitting markings, size is least important and shall be the first to be omitted and material designation is most important and shall be the last to be omitted.

- a) Size
- b) Thread identification (See Section 9.1)
- c) Valve trim identification
- d) Melt identification
- e) Rating designation
- f) Material designation

12. MARKING REQUIREMENTS FOR FLANGES, FLANGED FITTINGS, AND FLANGED UNIONS

12.1 *Gray Iron Flanges* Markings shall be as follows (See Section 11 for permissible omission of markings):

12.1.1 Gray iron flanges, Class 25 (ASME B16.1).

(Example)

Manufacturer's name or trademark..... AB CO
 Rating designation25

12.1.2 Gray iron flanges (ASTM A 126 Class B), Class 125 and 250 (ASME B16.1) NPS 12 and below.

(Example)

Manufacturer's name or trademark....AB CO
 Supplemental rating/material designation125B or 125
 (Ref. Section 12.2 and ASME B 16.1).....B

12.1.3 Gray iron flanges, Class 125 and 250 (ASME B16.1) NPS 14 and above.

(Example)

Manufacturer's name or trademark..... AB CO

12.1.4 Gray iron flanges, Class 800 (ASME B16.1).

(Example)

Manufacturer's name or trademark.....AB CO

12.2 **Gray Iron Flanged Fittings** Markings shall be as follows:

- a) Manufacturer’s name or trademark
- b) Rating designation
- c) Supplemental material designation is required by ASME B16.1 for NPS 12 and below.
- d) Gray iron flanged fittings rated in accordance with ASME B 16.1 shall have rating markings as listed in Table 5.

**TABLE 5
ASME B16.1 Rating Markings**

Rating Class	Nominal Pipe Sizes	Numerals
25	All	25
125	1 to 12 14 to 24 30 to 48	125 100 50
250	1 to 12 14 to 24 30 to 48	250 200 100
800	All	800

12.2.1 Gray iron fittings, Class 25 (ASME B16.1) All sizes.

(Example)

Manufacturer’s name or trademark.....AB CO
Rating designation 25

12.2.2 Gray iron flanged fittings, Class 125 and 250 (ASME B16.1) NPS 12 and below.

(Example)

Manufacturer’s name or trademark..... AB CO
Supplemental rating/material designation125B or 125 (Ref. ASME B16.1)..... B

12.2.3 Gray iron flanged fittings, Class 125 and 250 (ASME B16.1) NPS 14 and above.

(Example)

Manufacturer’s name or trademark. AB CO
Rating designation appropriate to class and size of fitting. 25, 50, 100 or 200

12.2.4 Gray iron flanged fittings, Class 800 (ASME B16.1) All Sizes.

(Example)

Manufacturer’s name or trademark. AB CO
Rating designation 800

12.3 **Gray Iron Flanged Unions** Class 125 and Class 250 shall be marked as follows:

(Example)

Manufacturer’s name or trademark. AB CO

12.4 **Bronze Flanges and Flanged Unions**

Markings shall be as follows:

Manufacturer’s name or trademark. AB CO

12.4.1 Bronze flanges (ASME B16.24) Classes 150 and 300.

(Example)

Manufacturer’s name or trademark. AB CO

12.4.2 Brass or bronze flanged unions Class 150

(Example)

Manufacturer’s name or trademark. AB CO

12.5 **Bronze, Brass, and Non-Ferrous Flanged Fittings** Markings shall be as follows:

- a) Manufacturer’s name or trademark
- b) The numerals 150 or 300, depending on the pressure class. (For other cases, refer to Section 4).
- c) Size

12.5.1 Bronze flanged fittings (ASME B16.24) Class 150 and 300.

(Example)

Manufacturer’s name or trademark AB CO
Service designation appropriate to pressure class.150 or 300
Size2

12.5.2 Forged or wrought non-ferrous materials flange.

(Example)

Manufacturer’s name or trademark. AB CO
Material designation. (See Notes ^(a) and ^(b))
Rating designation150
Size.2

Notes:

^(a) When made of a listed ASTM material, show ASTM Specification number and grade, Example: B 148 Alloy C 95200.

^(b) When a tradename is the only available identification, it shall be spelled out.

12.6 Ductile Iron Flanges and Flanged Fittings

Markings shall be as follows:

- a) Manufacturer's name or trademark
- b) Nominal rating (e.g. 150, 300)
- c) "Ductile" ("DI" where space is limited)
- d) Size (may be omitted from reducing flanges and reducing flanged fittings).

12.6.1 Ductile Iron. An NPS 6 ductile iron (ASTM A 395) fitting made to the same dimensions as a Class 150 steel fitting (ASME B16.5).

(Example)

Manufacturer's name or trademark AB CO
 Material designation Ductile or DI
 Rating designation. 150

12.7 Steel Flanges, Flanged Fittings, and Flanged Unions Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Material Designation. Cast steel flanges and flanged fittings shall be marked with the ASTM specification grade identification symbol and the melt number or melt identification and may also be marked with the word "STEEL". Forged flanges and forged or fabricated flanged fittings shall be marked with the ASTM specification number and grade identification symbol. When more than one material or grade of materials is used, each shall be identified. A manufacturer may supplement the standard material designations with his trade designation for the grade of steel, but confusion with standard symbols must be avoided.
- c) Rating designation
- d) Temperature. Temperature markings are not normally required on flanges and flanged fittings, but if marked, the temperature shall be shown with the corresponding limiting pressure for the material.

- e) Size. The nominal pipe size shall be given, but may be omitted from reducing flanges and reducing flanged fittings.
- f) Ring-joint flange ring number, when applicable.
- g) Melt identity (when specified).

12.7.1 An NPS 4 Class 150 cast carbon steel (ASTM A 216 WCB) fitting, conforming to ASME B16.5 dimensions.

(Example)

Manufacturer's name or trademark . . . AB CO
 Conformance to ASME B16.5 B16
 Material designation WCB
 Rating designation. 150
 Size 4
 Melt identification (See Section 6)000

12.7.2 An NPS 8 Class 150 cast 1-1/4% chromium molybdenum steel (ASTM A 217 WC6) flanged fitting with ring joint facing, conforming to ASME B16.5 dimensions.

(Example)

Manufacturer's name or trademark . . . AB CO
 Conformance to ASME B16.5 B16
 Material designation. WC6
 Rating designation 150
 Size 8
 Ring joint number. R50
 Melt identification (See Section 6)000

12.7.3 An NPS 2 ANSI Class 300 cast 18% chromium 8% nickel molybdenum stainless steel (ASTM A 351 Grade CF8M) fitting, conforming to ASME B16.5 dimensions.

(Example)

Manufacturer's name or trademark . . . AB CO
 Conformance to ASME B16.5 B16
 Material designation.CF8M
 Rating designation. 300
 Size 2
 Melt identification (See Section 6)000

12.7.4 An NPS 4 Class 150 cast carbon steel (ASTM A 216 WCB) flange, conforming to ASME B16.5 dimensions.

(Example)

Manufacturer's name or trademark AB CO
 Conformance to ASME B16.5 B16
 Material designation WCB
 Rating designation 150
 Size 4
 Melt identification (See Section 6). 000

12.7.5 An NPS 6 Class 1500 forged alloy steel (ASTM A 182 Grade F1) flange with ring-joint flange facing, conforming to ASME B16.5 dimensions.

(Example)

Manufacturer's name or trademark AB CO
 Conformance to ASME B16.5. B16
 Material designation A 182 F1
 Rating designation 1500
 Size. 6
 Ring joint number. R46
 Melt identification (See Section 6). 000

12.7.6 An NPS 3 carbon steel, 2000 psi rated flanged union for ambient temperatures or carbon steel, 6000 psi rated flanged union for ambient temperatures.

(Example)

Manufacturer's name or trademark AB CO
 Material designation STEEL
 Rating designation appropriate to pressure class 2000 CWP or 6000 CWP
 Size. 3

13. **MARKING REQUIREMENTS FOR THREADED FITTINGS AND UNION NUTS**

13.1 *Threaded Gray Iron Fittings* Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Rating designation, with the exception that rating description is not required on Class 125 gray iron fittings or gray iron drainage fittings.

- c) Materials markings are not required on gray iron threaded fittings except that alloy cast threaded fittings shall be marked with a word or symbol that will properly identify the material. The manufacturer's own symbol may be used provided confusion with standard symbol is avoided.

13.1.1 Gray Iron, Class 125 (ASME B16.4) or gray iron drainage (ASME B16.12)

(Example)

Manufacturer's name or trademark. AB CO

13.1.2 Gray Iron, Class 250 (ASME B16.4)

(Example)

Manufacturer's name or trademark. AB CO
 Rating design 250

13.2 ***Bronze and Brass Threaded Fittings and Union Nuts*** Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Rating designation. Rating designation is not required on Class 125 cast bronze threaded fittings. Class 250 fittings will be marked "250".

c) Size, when part has space

13.2.1 Bronze, Class 125 (ASME B16.15)

(Example)

Manufacturer's name or trademark. AB CO

13.2.2 Bronze, Class 250 (ASME B16.15)

(Example)

Manufacturer's name or trademark. AB CO
 Rating designation. 250

13.2.3 Brass or bronze, Class 125 union, or brass or bronze, Class 250 union.

(Example)

Manufacturer's name or trademark. AB CO
 Rating designation (Class 250 only). 250

13.2.4 An NPS 3 Brass or Bronze, Class 300 union

(Example)

Manufacturer's name or trademark . . . AB CO
 Rating designation 300
 Size 3

13.3 Non-Ferrous Alloys Threaded Fittings
 Markings other than for brass or bronze fittings shall be marked as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Rating designation
- c) Material designation

Ni-Cu 505 fitting to ASME B16.15, Class 250 dimensions:

(Example)

Manufacturer's name or trademark . . . AB CO
 Rating designation. 250
 Material designation. Monel 505

13.4 Ductile Iron Class 300 Threaded Fittings and Threaded Unions Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Material designation. When shape and size permits, ductile iron nuts shall be marked with the word "Ductile". When size and shape restrictions do not permit marking of the complete word, the letters "DI" shall be substituted.
- c) Rating designation. Class 300 ductile iron threaded fittings and threaded union nuts shall be marked with the numerals "300" designating the nominal service rating. When heavier patterns are used to cast ductile iron fittings rated otherwise, they shall be marked with the numerals designating the maximum cold working pressure in psi supplemented by the letters "CWP".

13.4.1 Ductile iron, Class 300 threaded fitting or threaded union nut.

(Example)

Manufacturer's name or trademark . . . AB CO
 Material designation DUCTILE or DI
 Service designation 300

13.5 Malleable Iron Threaded Fittings and Threaded Unions Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Material designation. Class 150 malleable iron threaded fitting and Classes 150, 250 and 300 malleable iron threaded unions do not require material marking.
- c) Rating designation. Classes 150, 250, and 300 malleable iron unions and Class 300 malleable iron threaded fittings shall be marked with their respective numerals to designate their nominal rating. At the manufacturer's option, the numerals designating the cold working pressure supplemented by the letters "CWP", may be added.
- d) Size. Size markings are not required on Class 150 malleable iron threaded fittings.

13.5.1 Malleable Iron, ASME B16.3 Class 150 fitting

(Example)

Manufacturer's name or trademark . . . AB CO

13.5.2 Malleable Iron, ASME B16.3 Class 300 fitting, NPS 1-1/2

(Example)

Manufacturer's name or trademark . . . AB CO
 Material designation MI
 Rating designation. 300
 Size 1-1/2

13.5.3 Malleable Iron, Class 150, 250, and 300 (ASME B16.39) union, NPS 2

(Example)

Manufacturer's name or trademark. AB CO
 Service designation appropriate to pressure class. 150, 250, or 300
 Size. 2

13.6 *Ferrous Threaded Plugs, Bushings, and Locknuts* Markings shall include manufacturer's name or trademark.

13.6.1 Ferrous plugs, bushings, and nuts (ASME B16.14)

(Example)

Manufacturer's name or trademark. AB CO

13.7 *Steel Threaded Fittings and Unions* Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Material designation. Threaded fittings made of carbon steel, or forged or barstock carbon steel, or alloy cast steel, or forged or barstock alloy steel shall be marked with the word "STEEL", or the grade identification-symbols designated in ASTM, AISI, or MSS specifications. Austenitic stainless steel threaded fittings may carry only the grade identification symbols.
- c) Rating designation. Cast steel, forged steel, and barstock steel threaded fittings shall be marked with the pressure class or with the numerals designating the cold working pressure in psi supplemented by the letters "CWP". Forged steel and barstock fittings shall be marked with numerals comprising the pressure class designation tabulated in ASME B16.11. When the nominal rating is other than the specified ASME or MSS standards, the numerals comprising the maximum pressure in psi, supplemented by one or more of the standard symbols identifying the class of service, shall be used.
- d) Melt identification (See Section 6)
- e) Size

13.7.1 An NPS 3 cast steel threaded fitting designed for 1000 psi ambient temperature service.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation. STEEL
 Rating designation. 1000 CWP
 Size 3

13.7.2 An NPS 1-1/4 carbon steel (ASTM A 105) threaded fitting to ASME B16-11 pressure class designation 3000.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation A 105, B16 or WPB
 Rating designation 3000
 Size. 1-1/4

13.7.3 An NPS 3/4 alloy steel (ASTM A 182 Grade F1) threaded fitting to ASME B16.11 pressure class designation 6000.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation. F1, B16 or WP1
 Rating designation 6000
 Size 3/4

13.7.4 An NPS 1 Class 3000 forged alloy steel (ASTM A 182 F304) fitting.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation. F304 or WP304
 Rating designation. 3000
 Size. 1
 Melt identity (when specified). 000

13.7.5 An NPS 3 carbon steel, Class 300 union with bronze seats, recommended by the manufacturer for 300 psi at 550°F.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation. STEEL
 Service designation 300 at 550F
 Size 3

13.7.6 An NPS 2 MSS SP-83 forged carbon steel union with socket welding ends or threaded ends, Class 3000, marked on nut and ends.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation A 105
 Conformance marking SP83
 Rating designation (on nut only) 3000
 Melt identification 000
 Size (on nut only). 2

13.7.7 An NPS 3 MSS SP-114 cast corrosion resistant (ASTM A 351 CF8M) threaded elbow, Class 150.

(Example)

Manufacturer's name or trademark. . . AB CO
 Material designation.A 105
 Conformance marking.SP-114
 Rating designation3000
 Size.3

14. **MARKING REQUIREMENTS FOR WELDING AND SOLDER JOINT FITTINGS AND UNIONS**

14.1 ***Steel Butt-Welding and Socket-Welding Fittings and Union Nuts*** Markings shall be as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Material designation. Forged carbon and alloy steel socket-welding end fittings and unions shall be marked with the grade identification symbols designated in ASTM, or the specification numbers designated in AISI or MSS specifications. Austenitic stainless steel socket-welding end fittings and unions may carry only the grade identification-symbols. Butt-welding fittings conforming to the requirements of ASTM specifications A 234, A 403 (excepting light-wall fittings manufactured to MSS SP-43), A 420, B 361, B 363 and B 366 shall use marking symbols consisting of the prefix "WP" added to the ASTM-specified grade identification-symbol.
Examples: WPB, WP304, WPL6, WP6061, WPT1.

If the fittings are of welded construction, the material marking will be supplemented with the suffix letter "W". MSS SP-75 high test wrought welding fittings have grade identification consisting of the letters "HY" and the numerals comprising the minimum specified yield strength in thousands of pounds per square inch (ksi).

Example: WPHY-52

MSS SP-43 corrosion resistant schedule 5S and 10S welding fittings have the grade identification prefixed by the letters "CR" rather than the "WP" which designates ASME B16.9 conformance.

Example: CR304

c) Rating designation. Socket-welding end products shall be marked with the numerals comprising the pressure class designation as tabulated in ASME B16.11. Butt-welding end products that carry ratings the same as the pipe with which they are intended to be used, shall be marked with the pipe-schedule number or the pipe nominal wall-thickness designation.

d) Size

e) Melt identity (when specified)

14.1.1 An NPS 4 carbon steel butt-welding fitting matching a Schedule 40 wall-thickness, made from ASTM A 234 material, and conforming to ASME B16.9.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation A 234 WPB or WPB
 Pipe schedule no. or
 pipe wall designation. SCH 40 or STD
 Size 4
 Melt identification. 000

14.1.2 An NPS 1-1/4 forged or barstock carbon steel (ASTM A 105) socket-welding fitting to ASME B16.11, pressure class designation 3000.

(Example)

Manufacturer's name or trademark. AB CO
 Material designation A 105, B 16 or WPB
 Rating designation 3000
 Size. 1-1/4

14.1.3 An NPS 3/4 forged or barstock alloy steel (ASTM A 182 Grade F1) socket-welding fitting conforming to ASME B16.11, pressure class designation 6000.

(Example)

Manufacturer's name or trademark AB CO
 Material designation F1, B16 or WP1
 Rating designation 6000
 Size 3/4

14.1.4 Butt-welding end fittings (ASTM A 403) for NPS 1 Schedule 40 pipe.

(Example)

Manufacturer's name or trademark AB CO
 Rating designation SCH 40
 Material designation WP304 W
 Size 1
 Melt identity (when specified) 000

14.1.5 Butt-welding end fittings (ASTM A 234) for NPS 1 Standard weight pipe.

(Example)

Manufacturer's name or trademark AB CO
 Rating designation STD
 Material designation WPB or A 234 WPB
 Size 1
 Melt Identity (when specified) 000

14.2 **Solder Joint Fittings** Markings shall be as follows:

- a) Manufacturer's name or trademark
- b) Material designation. Material markings are not required on cast copper alloy solder-joint fittings, flanges, unions, or on wrought copper solder-joint products.
- c) Rating designation: Rating designation markings are not required on cast copper alloy solder-joint products for pressure systems. Cast copper alloy or wrought copper solder-joint drainage products shall be marked "DWV" to signify drainage waste-vent. Cast bronze or wrought copper solder-joint drainage fittings designed for dry vents only shall be marked "VENT ONLY".

14.2.1 Cast copper alloy solder-joint pressure fittings (ASME B16.18) and wrought copper and copper alloy solder-joint pressure fittings (ASME B16.22).

(Example)

Manufacturer's name or trademark AB CO

14.2.2 Wrought copper pressure fittings MSS SP-104.

(Example)

Manufacturer's name or trademark AB CO

14.2.3 Cast copper alloy solder-joint drainage fittings (ASME B16.23), wrought copper and

wrought copper alloy solder-joint drainage fittings (ASME B16.29).

(Example)

Manufacturer's name or trademark AB CO
 Rating designation DWV
 When fitting is designed for dry vents.
 VENT ONLY

15. MARKING REQUIREMENTS FOR NON-FERROUS VALVES

15.1 **Brass, Bronze, and Non-Ferrous Body Valves** Markings shall be placed on the body as follows (See Section 11 for permissible omission of markings):

- a) Manufacturer's name or trademark
- b) Rating designation
- c) Material designation, when required (Refer to Section 5.3)
- (d) Size

15.1.1 An NPS 2 bronze valve of ASTM B 61 recommended by the manufacturer for 200 psi steam.

(Example)

Manufacturer's name or trademark AB CO
 Rating designation 200
 Size 2

15.1.2 An NPS 3/4 nickel-copper valve recommended by the manufacturer for 300 psi steam at a temperature of 750°F.

(Example)

Manufacturer's name or trademark AB CO
 Material designation NI CU
 Rating designation 300 at 750F
 Size 3/4

15.1.3 An NPS 1-1/4 ASTM B 61 bronze valve recommended by the manufacturer for 1000 psi cold fluid service.

(Example)

Manufacturer's name or trademark AB CO
 Rating designation 1000 CWP or 1000 WOG
 Size 1-1/4

16. **MARKING REQUIREMENTS FOR GRAY IRON VALVES**

16.1 *Gray Iron Valves* The following markings shall be cast on the body of the valve, or shown on a plate permanently attached to the valve. Cast markings obliterated during manufacturing may be replaced by engraving or stamping at the manufacturer's option. Marking by welding is prohibited on gray iron valves. (See Section 11 for permissible omission of markings).

- a) Manufacturer's name or trademark
- b) Rating designation. Gray iron valves rated at elevated temperature service in accordance with ASME, MSS, or other recognized standards shall be marked on the body with numerals indicating the pressure class (e.g., 125 or 250) for NPS 12 and smaller, and the maximum saturated steam rating for NPS 14 and larger. At the manufacturer's option, the ambient temperature rating may be added to the body in all valve sizes, followed by the letters "CWP" or other designation permitted by Section 4.1.3. Gray iron valves rated for ambient temperature service only, shall be marked on the body with numerals indicating the rated pressure followed by the letters "CWP" or other designation permitted by Section 4.1.3.
- c) Material designation. Gray iron valves made to the specifications of ASTM A 126 Class B or C are not usually marked with material designation symbols. Other alloys of gray iron shall be marked with the appropriate ASTM class and grade. Malleable iron body castings will be marked with "MI".
- d) Size

16.1.1 An NPS 6 Class 125 gray iron valve recommended by the manufacturer for 125 psi steam.

(Example)

Manufacturer's name or trademark. . . AB CO
 Service designation 125
 Size 6

16.1.2 An NPS 12 gray iron valve recommended by the manufacturer for 800 psi ambient temperature fluid service.

(Example)

Manufacturer's name or trademark AB CO
 Service designation 800 CWP
 Size 12

16.1.3 An NPS 2 malleable iron valve recommended by the manufacturer for 250 psi steam.

(Example)

Manufacturer's name or trademark. . . . AB CO
 Material designation MI
 Service designation 250
 Size 2

16.1.4 An NPS 1-1/2 malleable iron valve recommended by the manufacturer for 1000 psi ambient temperature fluid service.

(Example)

Manufacturer's name or trademark. . . . AB CO
 Material designation MI
 Service designation 1000 CWP
 Size 1-1/2

17. **MARKING REQUIREMENTS FOR DUCTILE IRON VALVES**

17.1 *Ductile Iron Valves* The following markings shall be cast, stamped, or engraved on the body of the valve, or shown on a plate permanently attached to the valve. Cast markings obliterated during manufacturing may be replaced by stamped or engraved plates, stamping, or engraving at the manufacturer's option. No marking by welding shall be permitted on ductile iron valves. Where stamping is used on the pressure retaining parts of the valve, see Section 2.3.

- a) Manufacturer's name or trademark
- b) Material designation: Ductile iron valves shall be marked with the word "Ductile" or "DI". At the manufacturer's option, the ASTM number or grade may be added.
- c) Rating designation, including on an identification plate with any special limitations as maximum temperature required by valve construction.

- d) Size
- e) Valve trim, when appropriate, on nameplate.

17.2 On products of small size or those having a shape which will not permit all required markings, the markings may be omitted in accordance with Section 11.

17.3 **Example:**

17.3.1 Ductile Iron. An NPS 6 Class 150 ductile iron valve (ASTM A 395) with 13% chromium trim.

	Identification Plate Marking	Body Marking
Manufacturer's name or trademark	AB CO	AB CO
Body material designation	A 395	Ductile or DI
Valve Trim Identification:		
Stem	Stem CR 13	
Disc	Disc CR 13	
Seat	Seat CR 13	
Rating designation....	220 at 100°F / 95 at 650°F Max.	150
Size	6	6

17.3.2 Ductile Iron. An NPS 6 Class 150 ductile iron valve (ASTM A 395) with 13% chromium trim produced for an API 6D application.

	Identification Plate Marking	Body Marking
Manufacturer's name or trademark	AB CO	AB CO
Body material designation	A 395	Ductile or DI
Valve Trim Identification:		
Stem	Stem CR 13	
Disc	Disc CR 13	
Seat	Seat CR 13	
Rating designation	150 at 650°F Max.	150
Size	6	6

18. **MARKING REQUIREMENTS FOR STEEL VALVES**

18.1 **Body Markings** The following markings shall be cast, stamped, forged, or engraved on the body of the valve, or on a permanently attached marked plate⁽¹⁾. (See Section 11 for permissible omission of markings). Markings that are obliterated during manufacture may be replaced by weld deposition, stamping, engraving, or permanently attached marked plates, at the option of the manufacturer.

⁽¹⁾ The permanently attached marked plate on the body should not be confused with the Identification Plate in Section 18.2. The permanently attached plate is for the purpose of showing body markings.

- a) Manufacturer's name or trademark
- b) Material designation
- c) Rating designation
- d) Melt identification (See Section 6)
- e) Nominal pipe size
- f) Thread identification, when required (See Section 9)
- g) Ring joint identification number, when applicable
- h) Additional markings are permitted (See Section 2.7)

18.2 **Identification Plate Markings** The following markings shall be shown on permanently attached identification plates. (See Section 11 for permissible omission of markings).

- a) Manufacturer's name or trademark
- b) Body material designation ^(a)
- c) Rating designation — the appropriate pressure rating class
- d) Service limitation — the valve rating at 100°F including any special limitations such as maximum pressure, pressure differential, and/or temperature limits due to valve construction features such as packing and seats
- e) Valve trim identification (See Section 7)
- f) Additional markings are permitted (See Sections 2.6 and 2.7)

18.3 **Notes Regarding Examples** The marking requirements for steel valves are more complex than those for any other product groups in this Standard Practice. The examples that follow are therefore grouped to show typical, acceptable markings for valves produced in accordance with:

- a) ASME B16.34 (See Section 18.4)
- b) Other standards (See Section 18.5)

The examples are intended to illustrate acceptable marking practices. They are not intended to imply that they are the only acceptable markings under this Standard Practice, nor are they intended as an endorsement or approval of acceptable limits for the example materials.

The examples list the marking sequence of Sections 18.1 and 18.2. The actual sequence and positioning of the actual markings on an actual product is at the option of the manufacturer.

18.4 **Examples** The following examples conform to ASME B16.34.

18.4.1 An NPS 6, ASME B16.34 Class 150, cast carbon steel (ASTM A 216 WCB) gate valve, where a manufacturer elects to limit the valve body to, e.g. 800°F.

Note:

^(a) These required markings, if shown on the body, need not be duplicated on the identification plate.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	WCB	WCB
Rating designation.....	150	150
Service limitation.....		285 at 100F 800F Max.
Melt identification.....	.000	
Trim identification (stem-disc-seat).....		CR13 – CR13 – NICU
Size.....	6	6
Conformance marking.....		B 16.34

18.4.2 An NPS 3/4 ASME B16.34 Class 300, forged, carbon steel (ASTM A 105) ball valve, with stainless steel and TFE trim.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	A 105	A 105
Rating designation.....	300	300
Service limitation.....		740 at 100F
		Seats: 200 at 350F Max.
Trim identification (stem-ball-seats).....		316 – 316 – TFE
Size.....		3/4
Conformance marking.....		B16.34

18.4.3 An NPS 8, ASME B16.34 Class 600, cast chromium-molybdenum steel (ASTM A 217 WC6) globe valve, with ring-joint flange facing suitable for the full pressure-temperature rating in B16.34.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	WC6	WC6
Rating designation.....	600	600
Service limitation.....		1500 at 100F
Melt identification.....	.000	
Trim identification (stem-disc-seat).....		CR13 – CR13 – CR13
Size.....	8	8
Conformance marking....R49 (on edge of pipe flanges)		B16.34

18.4.4 An NPS 4, ASME B 16.34 Class 900, forged chromium-molybdenum steel (ASTM A 182 F11) plug valve, with temperature limited to 350°F.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	F11	F11
Rating designation.....	900	900
Service limitation.....		2250 at 100F 350F Max.
Trim identification (plug).....		Plug CR13
Size.....	4	4
Conformance marking.....		B16.34

18.4.5 An NPS 8, ASME B16.34 Class 600, cast carbon steel (ASTM A 352 LCB) globe valve for low temperature service with TFE trim limited to 300°F.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....LCB	LCB
Rating designation.....600	600
Service limitation.....	1390 at -50/100F
	Seats: 300F Max.
Melt identification.....000	
Trim identification (stem-disc-seats).....	18 – NICU – TFE
Size.....8	8
Conformance marking.....	B16.34

18.4.6 An NPS 24, ASME B16.34 Class 150, fabricated steel gate valve, with stainless steel lining (ASTM A 240 T316) and carbon steel (ASTM A 515 Gr60) exterior structure with flanges, hardfaced seats where manufacturer elects to limit valve to 800°F.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....A 515-60	A 515 Gr 60 A 240 T316 Lining
Rating designation.....150	150
Service limitation.....	235 at 100F 800F Max.
Trim identification (stem-disc-seats).....	18-8SMO – 18-8SMO-HF
Size.....24	24
Conformance marking.....	B16.34

Note: Material designation may also be shown as – Lining A-240 T316 Body/Flanges A-515 Gr60

18.4.7 An NPS 4, ASME B16.34 Class 150, cast chromium-nickel molybdenum stainless steel (ASTM A 351 CF8M) gate valve with a carbon content less than 0.04% and with trim material same as body.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....CF8M	CF8M
Rating designation.....150	150
Service limitation.....	275 at 100F 1000F Max.
Melt identification.....000	
Trim identification.....	
Size.....4	4
Conformance marking.....	B16.34

18.4.8 An NPS 20, ASME B16.34 Standard Class 1500, cast chromium-molybdenum steel (ASTM A 217 WC6) gate valve, with ends flared to match NPS 24 pipe.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....WC6	WC6
Rating designation.....1500	1500
Service limitation.....	3750 at 100F
Melt identification.....000	
Trim identification (stem-disc-seats).....	CR13 – HF – HF
Size.....24x20x24	24x20x24
Additional marking.....	Made in U.S.A.
Conformance marking.....	B16.34

18.4.9 An NPS 12, ASME B16.34 Intermediate Rating Standard Class, cast chromium-molybdenum steel (ASTM A 217 C 12) check valve for 2200 psi at 1000°F service.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....C12	C12
Rating designation.....2600	2600
Service limitation.....	6500 at 100F 2200 at 1000F
Melt identification.....000	
Trim identification (disc-seat).....	HF – HF
Size.....12	12
Conformance marking.....	B16.34 SPL

18.4.10 An NPS 14, ASME B16.34 Special Class 1500, cast carbon steel (ASTM A 216 WCC) globe valve where manufacturer limits valve to 800°F.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....WCC	WCC
Rating designation.....1500	1500
Service limitation.....	3750 at 100F 800F Max.
Melt identification.....000	
Trim identification (stem-disc-seat).....	CR13 – HF – HF
Size.....14	14
Conformance marking.....	B16.34 SPL

18.4.11 An NPS 8, ASME B16.34 Intermediate Rating Special Class, forged chromium-molybdenum steel (ASTM A 182 F22) check valve for 2000 psi at 1000°F service.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....A 182 F22	A 182 F22
Rating designation.....1845	1845
Service limitation.....	4615 at 100°F 2000 at 1000F
Trim identification (disc-seat).....	HF – HF
Size.....8	8
Conformance marking.....	B16.34 SPL

18.4.12 An NPS 16, ASME B 16.34 Standard Class 2500, cast carbon steel (ASTM A 216 WCB) gate valve with markings in metric (SI) units.

<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....AB CO	AB CO
Material designation.....WCB	WCB
Rating designation.....2500	2500
Service limitation.....	425 bar at 38C
Melt identification.....000	
Trim identification (stem-disc-seat).....	CR13 – HF – HF
Size.....16	NPS 16 (DN 400)
Conformance marking.....	B16.34 Made in U.S.A.

18.5 Examples of marking practices conforming to standards other than the ASME B16.34, considering various material and application factors:

18.5.1 An NPS 2, 720 psi at 1350°F rated, cast chromium-nickel-molybdenum stainless steel (ASTM A 351 CF8M) check valve.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	CF8M	CF8M
Rating designation.....	720 at 1350F	720 at 1350F
Melt identification.....	000	
Trim identification.....		Disc 18-8SMO – Seat INT
Size.....	2	2

18.5.2 An NPS 6, 500 psi at 500°F rated, cast chromium-nickel-molybdenum-copper stainless steel (ASTM A 351 CN7M) gate valve, with integral trim.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	CN7M	CN7M
Rating designation.....	500 at 500F	500 at 500F
Melt identification.....	000	
Trim identification (stem-disc-seats).....		(not required – see Section 7.1)
Size.....	6	6
Special identification.....		Patent XXXX

18.5.3 An NPS 8, 150 psi rated, cast carbon steel (ASTM A 216 WCB) butterfly valve, with elastometric seat and seals rated to 200°F max. and 150 psig max.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	WCB	WCB
Rating designation.....	150 at 100F	150 at 100F
Service limitation.....		150 at 200F Max.
Melt identification.....	000	
Trim identification (stem-disc-seats).....		T304 – BRZ – Buna-N
Size.....	8	8
Special identification.....		Seals-Viton

18.5.4 An NPS 16, 150 CWP rated, fabricated carbon steel (ASTM A 515 Gr60) flanged end gate valve where manufacturer limits valve to 50 psig at 800°F.

	<u>BODY</u>	<u>IDENTIFICATION PLATE</u>
Manufacturer's name or trademark.....	AB CO	AB CO
Material designation.....	A 515-60	A 515-60
Rating designation.....	150 at 100F	150 at 100F
Service limitation.....		50 at 800F Max.
Trim identification (stem-disc-seats).....		T316 – T316 – T316
Size.....	16	16

18.5.5 An NPS 24, ASME Section III Subsection NB Class 600, cast chromium-nickel-molybdenum steel (ASME SA-351 CF8M) welding end gate valve, for service as a Nuclear Class 1 Component conforming to the requirements of ASME Boiler and Pressure Vessel Code, Section III. Consult applicable code for marking requirements.

ANNEX A

Referenced Standards and Applicable Dates

This Annex is an integral part of this Standard Practice and is placed after the main text for convenience.

Standard Name or Description

ASME, ANSI /ASME, ANSI, ASME / ANSI

B16.1 – 2005	Gray Iron Pipe Flanges and Flanged Fittings
B16.3 – 1998	Malleable Iron Threaded Fittings
B16.4 – 1998	Gray Iron Threaded Fittings
B16.5 – 2003	Pipe Flanges and Flanged Fittings
B16.9 – 2003	Factory-Made Wrought Butt Welding Fittings
B16.11 – 2005	Forged Steel Fittings, Socket-Welding and Threaded
B16.12 – 1998	Cast Iron Threaded Drainage Fittings
B16.14 – 1991	Ferrous Pipe Plugs, Bushing and Locknuts with Pipe Threads
B16.15 – 1985 (R 94)	Cast Bronze Threaded Fittings
B16.18 – 2001 (R 05)	Cast Copper Alloy Solder-Joint Pressure Fittings
B16.22 – 2001 (R 05)	Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings
B16.23 – 2002	Cast Copper Alloy Solder Joint Drainage Fittings-DWV
B16.24 – 2001	Cast Copper Alloy Pipe Flanges and Flanged Fittings
B16.29 – 2001	Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings-DWV
B16-34 – 2004	Valves – Flanged, Threaded and Welding End
B16.39 – 1998	Malleable Iron Threaded Pipe Unions

API

SPEC-6A – 2004	Specification for Wellhead and Christmas Tree Equipment
SPEC-6D – 2002	Specification for Pipeline Valves

ASTM

Standard Specification for:

A 105/A 105M-05	Carbon Steel Forgings for Piping Applications
A 126-04	Gray Iron Castings for Valves, Flanges, and Pipe Fittings
A 182/A 182M-06	Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
A 216/A 216M-04	Steel Castings, Carbon, Suitable for Fusion Welding for High-Temperature Service
A 217/A 217M-04	Steel Castings, Martensitic Stainless and Alloy, for Pressure-Containing Parts, Suitable for High-Temperature Service
A 234/A 234M-06a	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High-Temperature Service
A 240/A 240M-06b	Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
A 351/A 351M-06	Castings, Austenitic, Austenitic-Ferritic (Duplex), for Pressure-Containing Parts
A 352/A 352M-06	Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service
A 395/A 395M-99e1	Ferritic Ductile Iron for Pressure-Retaining Castings for Use at Elevated Temperatures
A 403/A 403M-06	Wrought Austenitic Stainless Steel Piping Fittings
A 420/A 420M-06	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service
A 515/A 515M-03	Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
B 61-02	Steam or Valve Bronze Castings
B 62-02	Composition Bronze or Ounce Metal Castings
B 148-97 (2003)e1	Aluminum-Bronze Sand Castings
B 361-02	Factory-Made Wrought Aluminum and Aluminum-Alloy Welding Fittings
B 363-06a	Seamless and Welded Unalloyed Titanium and Titanium Alloy Welding Fittings
B 366-04be1	Factory-Made Wrought Nickel and Nickel Alloy Welding Fittings
B 584-06	Copper Alloy Sand Castings for General Applications

ANNEX A**Referenced Standards and Applicable Dates**
(continued)**MSS**

SP-43-1991 (R 2001)	Wrought Stainless Steel Butt-Welding Fittings
SP-44-2006	Steel Pipeline Flanges
SP-75-2004	Specification for High-Test, Wrought Butt-Welding Fittings
SP-83-2006	Class 3000 Steel Pipe Unions Socket Welding and Threaded
SP-104-2003	Wrought Copper Solder Joint Pressure Fittings
SP-114-2001	Corrosion Resistant Pipe Fittings Threaded and Socket Welding Class 150 and 1000

Publications of the following organizations appear in the above list:

ANSI	American National Standards Institute, Inc. 25 West 43 rd Street 4 th Floor New York, NY 10035
API	American Petroleum Institute 1220 L Street, NW Washington, DC 20005
ASME	ASME International Three Park Avenue New York, NY 10016-5990
ASTM	ASTM International 100 Bar Harbor Drive West Conshohocken, PA 19428-2959
MSS	Manufacturer's Standardization Society of the Valve and Fittings Industry, Inc. 127 Park Street, NE Vienna, VA 22180-4602

List of MSS Standard Practices (Price List Available Upon Request)

Number	
SP-6-2007	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings
SP-9-2008	Spot Facing for Bronze, Iron and Steel Flanges
SP-25-2008	Standard Marking System for Valves, Fittings, Flanges and Unions
SP-42-2004	Class 150 Corrosion Resistant Gate, Globe, Angle and Check Valves with Flanged and Butt Weld Ends
SP-43-2008	Wrought and Fabricated Butt-Welding Fittings for Low Pressure, Corrosion Resistant Applications
SP-44-2006	Steel Pipeline Flanges
SP-45-2003	(R 08) Bypass and Drain Connections
SP-51-2007	Class 150LW Corrosion Resistant Flanges and Cast Flanged Fittings
SP-53-1999	(R 07) Quality Standard for Steel Castings and Forgings for Valves, Flanges and Fittings and Other Piping Components - Magnetic Particle Examination Method
SP-54-1999	(R 07) Quality Standard for Steel Castings for Valves, Flanges, and Fittings and Other Piping Components - Radiographic Examination Method
SP-55-2006	Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components - Visual Method for Evaluation of Surface Irregularities
SP-58-2002	Pipe Hangers and Supports - Materials, Design and Manufacture
SP-60-2004	Connecting Flange Joint Between Tapping Sleeves and Tapping Valves
SP-61-2003	Pressure Testing of Steel Valves
SP-65-2008	High Pressure Chemical Industry Flanges and Threaded Stubs for Use with Lens Gaskets
SP-67-2002a	Butterfly Valves
SP-68-1997	(R 04) High Pressure Butterfly Valves with Offset Design
SP-69-2003	Pipe Hangers and Supports - Selection and Application (ANSI/MSS Edition)
SP-70-2006	Gray Iron Gate Valves, Flanged and Threaded Ends
SP-71-2005	Gray Iron Swing Check Valves, Flanged and Threaded Ends
SP-72-1999	Ball Valves with Flanged or Butt-welding Ends for General Service
SP-75-2004	Specification for High Test Wrought Butt Welding Fittings
SP-77-1995	(R 00) Guidelines for Pipe Support Contractual Relationships
SP-78-2005a	Gray Iron Plug Valves, Flanged and Threaded Ends
SP-79-2004	Socket-Welding Reducer Inserts
SP-80-2008	Bronze Gate, Globe, Angle and Check Valves
SP-81-2006a	Stainless Steel, Bonnetless, Flanged, Knife Gate Valves
SP-83-2006	Class 3000 Steel Pipe Unions, Socket-Welding and Threaded
SP-85-2002	Gray Iron Globe & Angle Valves, Flanged and Threaded Ends
SP-86-2002	Guidelines for Metric Data in Standards for Valves, Flanges, Fittings and Actuators
SP-88-1993	(R 01) Diaphragm Valves
SP-89-2003	Pipe Hangers and Supports - Fabrication and Installation Practices
SP-90-2000	Guidelines on Terminology for Pipe Hangers and Supports
SP-91-1992	(R 96) Guidelines for Manual Operation of Valves
SP-92-1999	MSS Valve User Guide
SP-93-1999	(R 04) Quality Standard for Steel Castings and Forgings for Valves, Flanges, and Fittings and Other Piping Components - Liquid Penetrant Examination Method
SP-94-1999	(R 04) Quality Std for Ferritic and Martensitic Steel Castings for Valves, Flanges, and Fittings and Other Piping Components - Ultrasonic Examination Method
SP-95-2006	Swage(d) Nipples and Bull Plugs
SP-96-2001	(R 05) Guidelines on Terminology for Valves and Fittings
SP-97-2006	Integrally Reinforced Forged Branch Outlet Fittings - Socket Welding, Threaded and Buttwelding Ends
SP-98-2001	(R 05) Protective Coatings for the Interior of Valves, Hydrants, and Fittings
SP-99-1994	(R 05) Instrument Valves
SP-100-2002	Qualification Requirements for Elastomer Diaphragms for Nuclear Service Diaphragm Valves
SP-101-1989	(R 01) Part-Turn Valve Actuator Attachment - Flange and Driving Component Dimensions and Performance Characteristics
SP-102-1989	(R 01) Multi-Turn Valve Actuator Attachment - Flange and Driving Component Dimensions and Performance Characteristics
SP-104-2003	Wrought Copper Solder Joint Pressure Fittings
SP-105-1996	(R 05) Instrument Valves for Code Applications
SP-106-2003	Cast Copper Alloy Flanges and Flanged Fittings, Class 125, 150 and 300
SP-108-2002	Resilient-Seated Cast-Iron Eccentric Plug Valves
SP-109-1997	(R 06) Welded Fabricated Copper Solder Joint Pressure Fittings
SP-110-1996	Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends
SP-111-2001	(R 05) Gray-Iron and Ductile-Iron Tapping Sleeves
SP-112-1999	(R 04) Quality Standard for Evaluation of Cast Surface Finishes -Visual and Tactile Method. This SP must be sold with a 10-surface, three Dimensional Cast Surface Comparator, which is a necessary part of the Standard. Additional Comparators may be sold separately.
SP-113-2001	(R 07) Connecting Joint between Tapping Machines and Tapping Valves
SP-114-2007	Corrosion Resistant Pipe Fittings Threaded and Socket Welding, Class 150 and 1000
SP-115-2006	Excess Flow Valves, 1 1/4 NPS and Smaller, for Fuel Gas Service
SP-116-2003	Service Line Valves and Fittings for Drinking Water Systems
SP-117-2006	Bellows Seals for Globe and Gate Valves
SP-118-2007	Compact Steel Globe & Check Valves - Flanged, Flangeless, Threaded & Welding Ends (Chemical & Petroleum Refinery Service)
SP-119-2003	Factory-Made Belled End Socket Welding Fittings
SP-120-2006	Flexible Graphite Packing System for Rising Stem Steel Valves (Design Requirements)
SP-121-2006	Qualification Testing Methods for Stem Packing for Rising Stem Steel Valves
SP-122-2005	Plastic Industrial Ball Valves
SP-123-1998	(R 06) Non-Ferrous Threaded and Solder-Joint Unions for Use with Copper Water Tube
SP-124-2001	Fabricated Tapping Sleeves
SP-125-2000	Gray Iron and Ductile Iron In-Line, Spring-Loaded, Center-Guided Check Valves
SP-126-2007	Steel In-Line Spring-Assisted Center Guided Check Valves
SP-127-2001	Bracing for Piping Systems Seismic-Wind-Dynamic Design, Selection, Application
SP-128-2006	Ductile Iron Gate Valves
SP-129-2003	(R 07) Copper-Nickel Socket-Welding Fittings and Unions
SP-130-2003	Bellows Seals for Instrument Valves
SP-131-2004	Metallic Manually Operated Gas Distribution Valves
SP-132-2004	Compression Packing Systems for Instrument Valves
SP-133-2005	Excess Flow Valves for Low Pressure Fuel Gas Appliances
SP-134-2006a	Valves for Cryogenic Service Including Requirements for Body/Bonnet Extensions
SP-135-2006	High Pressure Steel Knife Gate Valves
SP-136-2007	Ductile Iron Swing Check Valves
SP-137-2007	Quality Standard for Positive Material Identification of Metal Valves, Flanges, Fittings, and Other Piping Components
(R-YEAR)	Indicates year standard reaffirmed without substantive changes

A large number of former MSS Practices have been approved by the ANSI or ANSI Standards, published by others. In order to maintain a single source of authoritative information, the MSS withdraws its Standard Practices in such cases.

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