

Standards - tube, pipe and fittings

Standards make it possible for designers to easily specify a well-defined material for a given application – chemical composition, size, properties, etc. The standards define the production route, what tests shall be performed, how the testing shall be carried out and how the results shall be reported.

A brief description of common standards is given below.

ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
MSS	Manufacturer's Standardisation Society
NACE	National Association of Chemical Engineers (The Corrosion Society)
ISO	International Organisation for Standardisation
EN	Europäische Norm, i.e. European standard
DIN	Deutsches Institut für Normung
PED	Pressure Equipment Directive
VdTüV	Vereinigung der Technischen Ueberwachungsvereine
BS	British Standard
UNS	Unified Numbering System
AS	Australian Standard

ASME

B16.47	Large diameter flanges 26" to 60" NB
B16.5	Pipe flanges and flanged fittings as per ASTM
B16.9	Factory-made wrought butt welding fittings as per ASTM such as 90 / 180 deg long radius and short radius elbows tees, crosses, reducing fittings, caps and stub ends short length
B16.11	Forged fittings, socket-welding and threaded as per ASTM
B16.25	Butt welding ends
B16.28	Wrought steel butt welding short radius elbows and returns as per ASTM
B36.10	Welded and seamless wrought steel pipe
B36.19	Stainless steel pipe

ASTM/ASME

A182	Stainless steel forged flanges, fittings and valves
A213	Seamless ferritic and austenitic alloy steel boiler, superheater and heat exchanger tubes.
A249	Welded austenitic steel boiler, superheater, and heat exchanger tubes

ASTM/ASME (cont.)

A262	Intergranular corrosion tests
A268	Seamless and welded ferritic and martensitic stainless steel tubing for general service
A269	Seamless and welded austenitic stainless steel tubing for general service
A312	Welded pipes without filler metal and seamless pipes for general applications
A358	Electric fusion welded austenitic chromium-nickel alloy steel pipe for high temperature service
A403	Wrought austenitic stainless steel fittings
A409	Welded large diameter austenitic steel pipe for corrosive or high temperature service
A511	Seamless stainless steel mechanical tubing
A554	Welded stainless steel mechanical tubing
A632	Seamless and welded austenitic stainless steel tubing (small diameter) for general service
A731	Seamless and welded ferritic and martensitic stainless steel pipe
A789	Seamless and welded ferritic/austenitic stainless steel tubing for general service

Standards - tube, pipe and fittings

ASTM/ASME (cont.)

A790	Seamless and welded ferritic/austenitic stainless steel pipe
A815	Wrought ferritic, ferritic/austenitic and martensitic stainless steel fittings
A928	Ferritic/austenitic (duplex) stainless steel pipe electric fusion welded with addition of filler metal
A999	Standard specification for alloy and stainless steel pipe
A1016	General requirements for ferritic alloy steel, austenitic alloy steel, and stainless steel tubes
B366	Factory-made wrought nickel and nickel alloy fittings

AS

AS 1528.1	Tubes stainless steel for the food industry
AS 1528.2	Screwed couplings stainless steel for the food industry
AS 1528.3	Butt weld stainless steel tube fittings for the food industry
AS 2129	Table flanges (derived from British Standard BS10 - 1962, withdrawn 1970)
AS4087	Metallic flanges for waterworks purposes

BS

3799	Steel pipe fittings, screwed and socket-welding
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DIN

2501	Flange dimensions PN6 - 320
2527	Blind Flanges PN 6 - 100
2576	Plain welding flanges PN 10
2605	Elbows
2615	Tees
2616	Reducers
2617	Caps
2632	Welding neck flanges PN 10
2633	Welding neck flanges PN 16
2635	Welding neck flanges PN 40

2642	Collar rings and flanges PN 10
17457	Welded round austenitic stainless steel tubes
17458	Seamless steel tubes for pressure purposes – technical delivery conditions

EN

1092-1	PN based flanges and their joints
10204	Types of inspection documents
10217-7	Welded steel tubes for pressure purposes – technical delivery conditions
10216-5	Seamless steel tubes for pressure purposes – technical delivery conditions

ISO

1127	Dimensions, tolerances and weights of stainless steel tubes
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MSS

SP-25	Standard marking system for ASTM fittings, flanges, unions and valves
SP-43	Wrought stainless steel butt-welding fittings
SP-83	Class 3000 steel pipe unions, socket welding and threaded
SP-97	Integrally reinforced forged branch outlet fittings – socket-welding, threaded and butt welding ends

NACE

MR0175	Standard Material Requirements. Metals for sulfide stress cracking and stress corrosion cracking resistance in sour oilfield environments
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PED

97/23/EC	In force since 29th May 2002. PED refers to EN standards. Many times however it is also requested for ASME products. Therefore we buy ASME products from PED approved producers.
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