



the pressure equipment safety authority

9410 - 20 Ave N.W.
Edmonton, Alberta, Canada T6N 0A4
Tel: (780) 437-9100 / Fax: (780) 437-7787

January 18, 2022

Attention: Hua Quanyong
JIAXING MT STAINLESS STEEL CO LTD
NO 18-10 BINHAI 9TH ROAD KONGGANG NEW
DISTRICT
YONGXING STREET LONGWAN DISTRICT
WENZHOU CITY, ZHE 325000

The design submission, tracking number 2022-00108, originally received on January 06, 2022 was surveyed and accepted for registration as follows:

CRN : 0A22036.2 **Accepted on:** January 18, 2022
Reg Type: NEW DESIGN **Expiry Date:** January 18, 2032
Drawing No. : PIPE FITTINGS, PRODUCT CATALOGUE Rev 2021.11.06
Fitting type: ELBOWS, TEES, REDUCERS, CAPS - 3/4"-24"

The registration is conditional on your compliance with the following notes:

- This registration is based on the understanding that pipe fittings are in full compliance with ASME B16.9 including size, thickness and material.

As indicated on AB-41 Statutory Declaration form and submitted documentation, the code of construction are B16.9 and other engineering analysis.

- It is our understanding that the fitting(s), included as the scope of this submission, that is(are) subject to the Safety Codes Act shall comply with the requirements of the indicated Standard or Code of Construction on the AB-41 Statutory Declaration as supported by the attached data which identifies the dimensions, materials of construction, press./temp. ratings and the basis for such ratings, and the identification marking of the fittings.
- This registration is valid only for fittings fabricated at the location(s) covered by the QC certificate attached to the accepted AB-41 Statutory Declaration form.
- This registration is valid only until the indicated expiry date and only if the Manufacturer maintains a valid quality management system approved by an acceptable third-party agency until that date.
- Should the approval of the quality management system lapse before the expiry date indicated above, this registration shall become void.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 ext 3369 or fax (780) 437-7787 or e-mail Radisavljevic@absa.ca.

Sincerely,

RADISAVLJEVIC, ZANA, P. Tech. (Eng.)
DOP Cert. No. D00003136

STATUTORY DECLARATION
Registration of Fittings
Single or Multiple Fitting Designs within one Fitting Category

I, Hua Yuan Yang, General manager
(name of applicant) (position title) (must be in a position of authority)
of Jaxing MT Stainless Steel Co., Ltd.
(name of manufacturer)
located at No.18-10, Binhai 9th Road, Konggang New District, Yongding Street, Longwan District,
Wenzhou City, Zhejiang Province, 325900, P.R.China
(plant address)

In this space, show facsimile of manufacturer's logo or trademark as it will appear on the fitting.

MISCO

do solemnly declare that the fittings listed hereunder, which are subject to the Safety Codes Act
(select only one)

- ☒ comply with the requirements of ASME B16.9-2018 which specifies the dimensions,
(title of recognized North American Standard)
materials of construction, pressure/temperature ratings and identification marking of the fittings, or
- ☐ are not covered by the provisions of a recognized North American standard and are therefore
manufactured to comply with _____ as supported by the
(title of code of construction or other applicable document)
attached data which identifies the dimensions, materials of construction, pressure/temperature ratings
and the basis for such ratings, and the identification marking of the fittings.

I further declare that the manufacture of these fittings is controlled by a quality control program which has been
verified as described in the below Table as being suitable for the manufacturing of these fittings to the stated
standard, regulation, code, guideline or other applicable document. The fittings covered by the declaration for
which I seek registration are as provided in the Supplementary Sheet(s) attached.

Quality Program Verification and Manufacturing Sites

A copy of the Quality Certificate from each manufacturing site must be included

Item #	Product Description, Model or Series	Quality Program	Scope of Certification	Expiry Date	Verifying Organization	Location(s) Plant Name and address
1.	Pipe fittings, including tees, elbows, pipe caps, and reducers	ISO 9001:2015	Production and processing of stainless steel pipe, pipe fittings and flanges	Sep.5, 2022	Lloyds Industrial Register	as same as mentioned on above. ISO 9001 Certificate No. ISA/HK/210902
2.						

In support of this application, the following information, calculations and/or test data are attached:

1. ISO 9001 Certificate; 2. Product Catalog; 3. Product List; 4. Design Proof Test Plan; 5. Mechanical Test Reports
6. Design Proof Test Report; 7. Notary Certificate

[Signature]
(Signature of the Declarer)

2021.11.10
(Date)

DECLARED before me at Wenzhou in the Zhejiang of P.R. China
(city) (province, territory, or state)

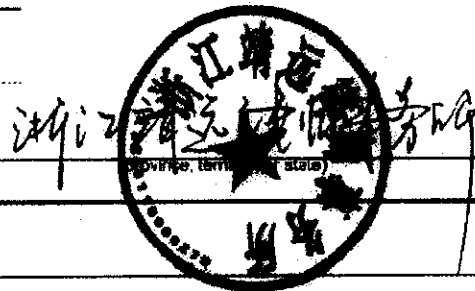
this 10 day of 11, 2021
(Month) (Year)

(print) [Signature]
(a Commissioner of Oaths or Notary Public)

(sign) [Signature]
(a Commissioner of Oaths or Notary Public)

(expiry date (mm/dd/yy))

Commissioner of Oaths / Notary Public in and for:



For ABSA Office Use Only:

NOTES:

To the best of my knowledge and belief, the application meets the requirements of the Safety Codes Act and CSA Standard B51, Part 1, Clause 4.2, and is accepted for registration in Category _____

CRN: _____

Registered Date: _____

Expiry Date: _____

Signature: _____
(Signature of the Administrator/SCO)

The information you provide is necessary only for the administration of the programs as required by the Alberta Safety Codes Act and Regulations in the Pressure Equipment Discipline

Table 1 Scope of Fitting Designs**

Item #	Primary Pressure Bearing / Retaining Component	Material of Construction	Port Connections and Size Range	MDMT	Rated Pressure		Pressure Class(es) / Schedule(s)	Design Code(s) of Construction	Reference Catalogue (pages) or Drawing(s)
					At Ambient Temperature	At Maximum Temperature			
1	Long Radius Elbow (90°)	ASTM A403 Gr WP304MP3 QAL Gr WP316/MP3 18L ASTM A790/A790M S31803	Butt weld ends NPS 3/4" to 24"	The STD Does not address low- temp service	Per system code of construction	Per system code of construction	Sch. 5 - 80	ASME B16.9	MS-LR202104-01 &MW- LR202104-01
1	Short Radius Elbow (90°)		Butt weld ends NPS 3/4" to 24"		Per system code of construction	Per system code of construction	Sch. 5 - 80	ASME B16.9	MS-SR202104-02 &MW- SR202104-02
1	Reducing & Straight Tee		Butt weld ends NPS 3/4" to 24"		Per system code of construction	Per system code of construction	Sch. 5 - 80	ASME B16.9	MS- CON202104-03 &MW- CON202104-03
1	Concentric & Eccentric Reducer		Butt weld ends NPS 3/4" to 24"		Per system code of construction	Per system code of construction	Sch. 5 - 80	ASME B16.9	MS- TE202104 04 &MW- TE202104-04
1	Cap		Butt weld ends NPS 3/4" to 24"		Per system code of construction	Per system code of construction	Sch. 5 - 80	ASME B16.9	MS-CAP202104-05 &MW- CAP202104-05

Table 2 Additional Scope Information

List/Attach Additional Detail and References (Product Configurations, Options, Illustrations, etc.)
Example:
Series X Options

** For additional alternatives of Table 1, refer to Form AB-41a, Guide for Completing Form AB-41

Tracking #: _____

PART 2 Design Proof Test Plan 爆破试验计划

2.1 Test Scope

This part gives a prototype test instruction for design proof test by ABS according to ASME B16.9.

The proof test shall be based on the computed burst pressure of the fitting and its connecting piping.

2.2 Test material

2.2.1 Representative Components.

As per ASME B16.9 2018 Ed. section 9, representative products covered in this type approval are selected and tested as table 2-2. Representative products were selected according to 2.2.1.1, 2.2.1.2, 2.2.1.3.

A factory-made segmented elbow that has a proof test on a geometrically similar 90-deg elbow need not be tested separately. Lap joint stub ends are exempt from proof testing because they are used in a flange assembly.

2.2.1.1 Size Range. One test fitting may be used to qualify similarly proportioned fittings with a size range from one-half to twice that for the tested fitting. The test of a non reducing fitting qualifies reducing fittings of the same pattern. The test of a reducing fitting qualifies reductions to smaller sizes.

2.2.1.2 Thickness Range. One test fitting may be used to qualify similarly proportioned fittings with *ZZ* ranges from one-half to three times that for the tested fitting.

2.2.1.3 Material Grades. The pressure retaining capacity of a geometrically identical fitting made of various grades of steel as listed in table 0-2-1 will be directly proportional to the tensile properties of the materials. Therefore, it is necessary to test only a single material in a representative fitting to prove the design of the fitting.

2.2.2 Other Components

Straight seamless or welded pipe whose calculated bursting strength is at least as great as the proof test pressure as calculated in para. 9.3 shall be welded to each end of the fitting to be tested. Pipe sections may have the nominal wall greater than the thickness indicated by the fitting markings. That greater thickness shall not exceed 1.5 times the fitting markings wall. Any internal misalignment greater than 1.5 mm (0.06 in.) shall be reduced by taper boring at a slope not over 1:3. Any other unequal wall welding preparation shall be in accordance with ASME B16.25. Length of pipe sections for closures shall be as follows:

- (a) Minimum length of pipe shall be one pipe O.D. for NPS 14 (DN 350) and smaller.
- (b) Minimum length of pipe shall be one-half pipe O.D. for NPS greater than 14 (DN 350).

2.3 Test Procedure

The test fluid shall be water or other liquid. Hydrostatic pressure shall be applied to the assembly. At least three specimen tests for each fitting, joint size, or configuration are recommended. The testing factor, f , based on the number of specimen tests performed in the table below is used in the computed test equations.

Number of Tests	Testing Factor, f
1	1.10
2	1.05
3	1.00

NOTE: Tests of geometrically identical fittings that meet the requirements specified in para. 9.4 may be combined to establish the test factor applied to a set of fittings.

The test shall be taken to rupture or held at or above the computed minimum proof pressure for a period of at least 3 min. The test is successful if for each of the tests, the fitting withstands without rupture a proof test pressure at least equal to the computed minimum.

$$P_T = \frac{2St}{D} f$$

where

D - specified outside diameter of pipe

f - testing factor from in-text table listed above

P_T - computed minimum proof test pressure for fitting

S - actual tensile strength of the test fitting, determined on a specimen representative of the test fitting, which shall meet the tensile strength requirements of the applicable material

t - nominal pipe wall thickness of the pipe that the fitting marking identifies

NOTE: Any dimensionally consistent system of units may be used.

Part 1 Design Calculation 设计计算

This section gives the instruction to calculate the internal design gage pressure(allowable working pressure) for seamless and welded pipe fittings.

1.1 Nominal Wall Thickness

The nominal wall thickness of straight section of steel pipe fitting shall be equal to or greater than t_m determined in accordance with the following equation. (see ASME B31.3 edition

2012 para.304.1.1)

$$\begin{array}{ccc} \Rightarrow & T=t+c & t=T-c \end{array}$$

Where:

T = nominal wall thickness satisfying requirements for pressure and allowances, in.(mm);

c= sum of the mechanical allowances (thread or groove depth) plus corrosion and erosion allowances. For threaded components, the nominal thread depth (dimension h of ASME B1.20.1, or equivalent) shall apply. For machined surfaces or grooves where the tolerance is not specified, the tolerance shall be assumed to be 0.5 mm (0.02 in.) in addition to the specified depth of the cut.

t =pressure design thickness, as calculated in accordance with para. 304.1.2 for internal pressure or as determined in accordance with para.304.1.3 for external pressure. For pipe fittings manufactured according to ASME B16.9, t shall be $\geq 87.5\%t_m$ (see ASME B16.9 Table 13 Tolerances Notes (2).

1.2 Straight Pipe Under Internal Pressure (As per ASME B31.3 para 304.1.2)

(a) For $t < D/6$, the internal pressure design thickness for straight pipe shall be not less than that calculated in accordance with either eq. (3a) :

$$\begin{array}{ccc} \Rightarrow & t = \frac{P \times D}{2(SEW + PY)} & P = \frac{2SEWt}{(D - 2Yt)} \end{array}$$

Where:

D = outside diameter of pipe as listed in tables of standards or specifications or as measured

d= inside diameter of pipe. For pressure design calculation, the inside diameter of the pipe is the maximum value allowable under the purchase specification.

E= quality factor from ASME B31.3, Table A-1B, E=1.0

P= internal design gage pressure

S= stress value for material from ASME B31.3, Table A-1

t = pressure design thickness, as calculated in accordance with para. 304.1.2 for internal pressure

T = minimum required thickness, including mechanical, corrosion, and erosion allowances, please refer to Annex A for specified T of each size.

W = weld joint strength reduction factor per para.302.3.5(e) W=1.0 at temperature of 510 °C and below.

Y = coefficient from Table 304.1.1, valid for t < D/6 for materials shown. The value of Y may interpolated for intermediate temperatures, Y=0.4. For t ≥ D/6,

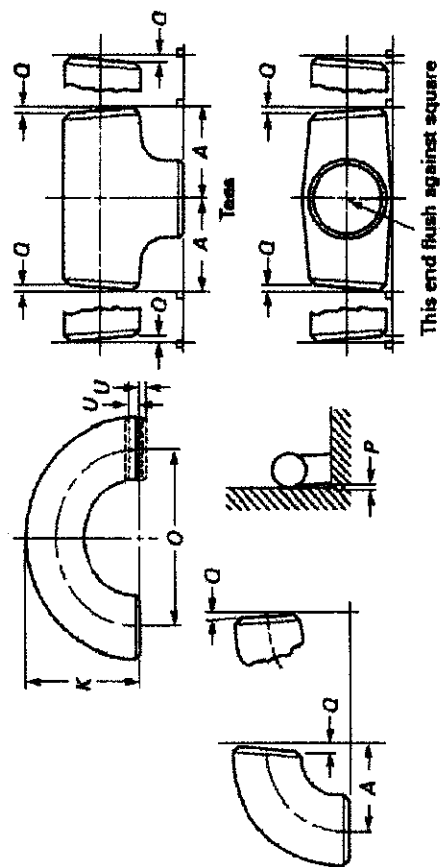
$$Y = \frac{d+2c}{D+d+2c}$$

1.3 Basic Allowable Stresses

Table 1-3-4-1 Basic Allowable Stresses in Tension for Metals (As per ASME B31.3, Table A-1)

Material	Product Form	Spec. No.	Type/Grade	UNS No.	Class/Condition/Temp.	P-No. (S)	Notes	Specified Min. Strength, ksi				Type/Grade	Spec. No.
								Min. Temp., °F (6)	Tensile	Yield	Min. Temp.		
Forgings and Fittings (2)													
18Cr-13Ni-3Mo	...	A182	F317L	S31703	...	≤ 5 thk.	8 (9)(21a)	-325	70	25	16.7	16.7	15.7
18Cr-8Ni	...	A182	F304L	S30403	...	...	8 (9)(21a)	-425	70	25	16.7	16.7	15.8
18Cr-8Ni	...	A403	WP304L	S30403	...	...	8 (32)(37)	-425	70	25	16.7	16.7	15.8
16Cr-12Ni-2Mo	...	A182	F316L	S31603	...	...	8 (9)(21a)	-425	70	25	16.7	16.7	15.7
16Cr-12Ni-2Mo	...	A403	WP316L	S31603	...	...	8 (32)(37)	-425	70	25	16.7	16.7	15.7
22Cr-5Ni-3Mo	...	A790	...	S31803	...	...	10H (25)	-60	90	65	30.0	28.9	27.8
Basic Allowable Stress, S, ksi (t), at Metal Temperature, °F													
500	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200
1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650	1,700	1,750	1,800	1,850	1,900
1,950	2,000	2,050	2,100	2,150	2,200	2,250	2,300	2,350	2,400	2,450	2,500	2,550	2,600
2,650	2,700	2,750	2,800	2,850	2,900	2,950	3,000	3,050	3,100	3,150	3,200	3,250	3,300
3,350	3,400	3,450	3,500	3,550	3,600	3,650	3,700	3,750	3,800	3,850	3,900	3,950	4,000
4,050	4,100	4,150	4,200	4,250	4,300	4,350	4,400	4,450	4,500	4,550	4,600	4,650	4,700
4,750	4,800	4,850	4,900	4,950	5,000	5,050	5,100	5,150	5,200	5,250	5,300	5,350	5,400
5,450	5,500	5,550	5,600	5,650	5,700	5,750	5,800	5,850	5,900	5,950	6,000	6,050	6,100
6,150	6,200	6,250	6,300	6,350	6,400	6,450	6,500	6,550	6,600	6,650	6,700	6,750	6,800
6,850	6,900	6,950	7,000	7,050	7,100	7,150	7,200	7,250	7,300	7,350	7,400	7,450	7,500
7,550	7,600	7,650	7,700	7,750	7,800	7,850	7,900	7,950	8,000	8,050	8,100	8,150	8,200
8,250	8,300	8,350	8,400	8,450	8,500	8,550	8,600	8,650	8,700	8,750	8,800	8,850	8,900
8,950	9,000	9,050	9,100	9,150	9,200	9,250	9,300	9,350	9,400	9,450	9,500	9,550	9,600
9,650	9,700	9,750	9,800	9,850	9,900	9,950	10,000	10,050	10,100	10,150	10,200	10,250	10,300
10,350	10,400	10,450	10,500	10,550	10,600	10,650	10,700	10,750	10,800	10,850	10,900	10,950	11,000
11,050	11,100	11,150	11,200	11,250	11,300	11,350	11,400	11,450	11,500	11,550	11,600	11,650	11,700
11,750	11,800	11,850	11,900	11,950	12,000	12,050	12,100	12,150	12,200	12,250	12,300	12,350	12,400
12,450	12,500	12,550	12,600	12,650	12,700	12,750	12,800	12,850	12,900	12,950	13,000	13,050	13,100
13,150	13,200	13,250	13,300	13,350	13,400	13,450	13,500	13,550	13,600	13,650	13,700	13,750	13,800
13,850	13,900	13,950	14,000	14,050	14,100	14,150	14,200	14,250	14,300	14,350	14,400	14,450	14,500
14,550	14,600	14,650	14,700	14,750	14,800	14,850	14,900	14,950	15,000	15,050	15,100	15,150	15,200
15,250	15,300	15,350	15,400	15,450	15,500	15,550	15,600	15,650	15,700	15,750	15,800	15,850	15,900
15,950	16,000	16,050	16,100	16,150	16,200	16,250	16,300	16,350	16,400	16,450	16,500	16,550	16,600
16,650	16,700	16,750	16,800	16,850	16,900	16,950	17,000	17,050	17,100	17,150	17,200	17,250	17,300
17,350	17,400	17,450	17,500	17,550	17,600	17,650	17,700	17,750	17,800	17,850	17,900	17,950	18,000
18,050	18,100	18,150	18,200	18,250	18,300	18,350	18,400	18,450	18,500	18,550	18,600	18,650	18,700
18,750	18,800	18,850	18,900	18,950	19,000	19,050	19,100	19,150	19,200	19,250	19,300	19,350	19,400
19,450	19,500	19,550	19,600	19,650	19,700	19,750	19,800	19,850	19,900	19,950	20,000	20,050	20,100
20,150	20,200	20,250	20,300	20,350	20,400	20,450	20,500	20,550	20,600	20,650	20,700	20,750	20,800
20,850	20,900	20,950	21,000	21,050	21,100	21,150	21,200	21,250	21,300	21,350	21,400	21,450	21,500
21,550	21,600	21,650	21,700	21,750	21,800	21,850	21,900	21,950	22,000	22,050	22,100	22,150	22,200
22,250	22,300	22,350	22,400	22,450	22,500	22,550	22,600	22,650	22,700	22,750	22,800	22,850	22,900
22,950	23,000	23,050	23,100	23,150	23,200	23,250	23,300	23,350	23,400	23,450	23,500	23,550	23,600
23,650	23,700	23,750	23,800	23,850	23,900	23,950	24,000	24,050	24,100	24,150	24,200	24,250	24,300
24,350	24,400	24,450	24,500	24,550	24,600	24,650	24,700	24,750	24,800	24,850	24,900	24,950	25,000
25,050	25,100	25,150	25,200	25,250	25,300	25,350	25,400	25,450	25,500	25,550	25,600	25,650	25,700
25,750	25,800	25,850	25,900	25,950	26,000	26,050	26,100	26,150	26,200	26,250	26,300	26,350	26,400
26,450	26,500	26,550	26,600	26,650	26,700	26,750	26,800	26,850	26,900	26,950	27,000	27,050	27,100
27,150	27,200	27,250	27,300	27,350	27,400	27,450	27,500	27,550	27,600	27,650	27,700	27,750	27,800
27,850	27,900	27,950	28,000	28,050	28,100	28,150	28,200	28,250	28,300	28,350	28,400	28,450	28,500
28,550	28,600	28,650	28,700	28,750	28,800	28,850	28,900	28,950	29,000	29,050	29,100	29,150	29,200
29,250	29,300	29,350	29,400	29,450	29,500	29,550	29,600	29,650	29,700	29,750	29,800	29,850	29,900
29,950	30,000	30,050	30,100	30,150	30,200	30,250	30,300	30,350	30,400	30,450	30,500	30,550	30,600
30,650	30,700	30,750	30,800	30,850	30,900	30,950	31,000	31,050	31,100	31,150	31,200	31,250	31,300
31,350	31,400	31,450	31,500	31,550	31,600	31,650	31,700	31,750	31,800	31,850	31,900	31,950	32,000
32,050	32,100	32,150	32,200	32,250	32,300	32,350	32,400	32,450	32,500	32,550	32,600	32,650	32,700
32,750	32,800	32,850	32,900	32,950	33,000	33,050	33,100	33,150	33,200	33,250	33,300	33,350	33,400
33,450	33,500	33,550	33,600	33,650	33,700	33,750	33,800	33,850	33,900	33,950	34,000	34,050	34,100
34,150	34,200	34,250	34,300	34,350	34,400	34,450	34,500	34,550	34,600	34,650	34,700	34,750	34,800
34,850	34,900	34,950	35,000	35,050	35,100	35,150	35,200	35,250	35,300	35,350	35,400	35,450	35,500
35,550	35,600	35,650	35,700	35,750	35,800	35,850	35,900	35,950	36,000	36,050	36,100	36,150	36,200
36,250	36,300	36,350	36,400	36,450	36,500	36,550	36,600	36,650	36,700	36,750	36,800	36,850	36,900
36,950	37,000	37,050	37,100	37,150	37,200	37,250	37,300	37,350	37,400	37,450	37,500	37,550	37,600
37,650	37,700	37,750	37,800	37,850	37,900	37,950	38,000	38,050	38,100	38,150	38,200	38,250	38,300
38,350	38,400	38,450	38,500	38,550	38,600	38,650	38,700	38,750	38,800	38,850	38,900	38,950	39,000
39,050	39,100	39,150	39,200	39,250	39,300	39,350	39,400	39,450	39,500	39,550	39,600	39,650	39,700
39,750	39,800	39,850	39,900	39,950	40,000	40,050	40,100	40,150	40,200	40,250	40,300	40,350	40,400
40,450	40,500	40,550	40,600	40,650	40,700	40,750	40,800	40,850	40,900	40,950	41,000	41,050	41,100
41,150	41,200	41,250	41,300	41,350	41,400	41,450	41,500	41,550	41,600	41,650	41,700	41,750	41,800
41,850	41,900	41,950	42,000	42,050	42,100	42,150	42,200	42,250	42,300	42,350	42,400	42,450	42,500
42,550	42,600	42,650	42,700	42,750	42,800	42,850	42,900	42,950	43,000	43,050	43,100	43,150	43,200
43,250	43,300	43,350	43,400	43,450	43,500	43,550	43,600	43,650	43,700	43,750	43,800	43,850	43,900
43,950	44,000	44,050	44,100	44,150	44,200	44,250	44,300	44,350	44,400	44,450	44,500	44,550	44,600
44,650	44,700	44,750	44,800	44,850	44,900	44,950	45,000	45,050	45,100	45,150	45,200	45,250	45,300
45,350	45,400	45,450	45,500	45,550	45,600	45,650	45,700	45,750	45,800	45,850	45,900	45,950	46,000
46,050	46,100	46,150	46,200	46,250	46,300	46,350	46,400	46,450	46,500	46,550	46,600	46,650	46,700
46,750	46,800	46,850	46,900	46,950	47,000	47,050	47,100	47,150	47,200	47,250	47,300	47,350	47,400
47,450	47,500	47,550	47,600	47,650	47,700	47,750	47,800	47,850	47,900	47,950	48,000	48,050	48,100
48,150	48,200	48,250	48,300	48,350	48,400	48,450	48,500	48,550	48,600	48,650	48,700	48,750	48,800
48,850	48,900	48,950	49,000	49,050	49,100	49,150	49,200	49,250	49,300	49,350	49,400	49,450	49,500
49,550	49,600	49,650	49,700	49,750	49,800	49,850	49,900	49,950	50,000	50,050	50,100	50,150	50,200
50,250	50,300	50,350	50,400	50,450	50,500	50,550	50,600	50,650	50,700	50,750	50,800	50,850	50,900
50,950	51,000	51,050	51,100	51,150	51,200	51,250	51,300	51,350	51,400	51,450	51,500	51,55	

Table 1-5-13 Tolerances



Nominal Pipe Size (NPS)	All Fittings [Notes (1) and (2)]		Center-to-End Dimensions				Overall		180-deg Returns			
	DN	Outside Diameter at Bevel, <i>D</i> [Notes (3) and (4)]	Inside Diameter at End [Notes (3) and (5)]	90-deg and 45-deg Long and Short Radius Elbows and Tees, <i>A, B, C, M</i>		30 Radius Elbows, <i>A, B</i>	Overall Length of Reducers and Lap Joint Stub Ends, <i>r, H</i>	Overall Length of Caps, <i>E</i>	Center-to- Center Dimension, <i>O</i>	Back-to- Face Dimension, <i>K</i>	Alignment of Ends, <i>U</i>	
1/2 to 2 1/2 3 to 3 1/2 4	15-65 80-90 100	+1.6, -0.8 1.6 1.6	0.8 1.6 1.6	2 2 2	3 3 3	2 2 2	3 3 3	6 6 6	6 6 6	1 1 1		
5 to 8	125-200	+2.4, -1.6	1.6	2	3	2	6	6	6	1		
10 to 18	250-450	+4.0, -3.2	3.2	2	3	2	6	10	6	2		
20 to 24	500-600	+6.4, -4.8	4.8	2	3	2	6	10	6	2		
26 to 30	650-750	+6.4, -4.8	4.8	3	6	5	10	...	...	...		
32 to 48	800-1 200	+6.4, -4.8	4.8	5	6	5	10	...	...	...		

Nominal Pipe Size (NPS)	Lap Joint Stub Ends [Note (6)]				Angularity Tolerances		
	DN	Outside Diameter of Lap, G	Fillet Radius of Lap, R	Lap Thickness	Nominal Pipe Size (NPS)	DM	Off Angle, Q
							Off Plane, P
1/2 to 2 1/2	15-65	+0, -1	+0, -1	+1.6, -0	1/2 to 4	15-100	1
3 to 3 1/2	80-90	+0, -1	+0, -1	+1.6, -0	5 to 8	125-200	2
4	100	+0, -1	+0, -2	+1.6, -0	10 to 12	250-300	3
5 to 8	125-200	+0, -1	+0, -2	+1.6, -0	14 to 16	350-400	3
10 to 18	250-450	+0, -2	+0, -2	+3.2, -0	18 to 24	450-600	4
20 to 24	500-600	+0, -2	+0, -2	+3.2, -0	26 to 30	650-750	5
26 to 30	650-750	...	...	...	32 to 42	800-1 050	5
32 to 48	800-1 200	...	...	...	44 to 48	1 100-1 200	5

GENERAL NOTES:

(a) All dimensions are in millimeters.

(b) Tolerances are equal plus and minus except as noted.

NOTES:

(1) The inside diameter and the nominal wall thicknesses at ends are to be specified by the purchaser.

(2) A minimum wall thickness of 87.5% applies unless the purchaser specifies a different wall thickness tolerance. See Fig. 1-5-1, Note (1)(a).

(3) Out-of-round is the sum of absolute values of plus and minus tolerances.

(4) This tolerance may not apply in localized areas of formed fittings where increased wall thickness is required to meet design requirements.

(5) Unless otherwise specified by the purchaser, these tolerances apply to the nominal inside diameter, which equals the difference between the nominal outside diameter and twice the nominal wall thickness.

Annex A: The dimensions table

Table A.1(refer to ASME36.19M)

26.7	20	2.11	0.079	3.91	0.146
33.4	25	2.77	0.083	4.55	0.136
42.2	32	2.77	0.086	4.85	0.115
48.3	40	2.77	0.057	5.08	0.105
60.3	50	2.77	0.048	5.54	0.092
73.0	65	3.05	0.042	7.01	0.098
88.9	80	3.05	0.034	7.62	0.086
101.8	90	3.05	0.030	8.08	0.080
114.3	100	3.05	0.027	8.56	0.075
141.3	125	3.40	0.024	9.53	0.087
168.3	150	3.40	0.020	10.97	0.065
219.1	200	3.76	0.017	12.70	0.058
273.0	250	4.19	0.015	12.70	0.047
323.8	300	4.57	0.014	12.70	0.039
365.8	350	4.78	0.013	12.70	0.036
408.4	400	4.78	0.012	12.70	0.031
457	450	4.78	0.010	12.70	0.028
508	500	5.54	0.011	12.70	0.025
559	550	5.54	0.010	/	/
610	600	6.35	0.010	12.70	0.021

Table A.2(refer to ASME36.10M)

28.7	20	1.65	0.06	/	/	2.87	0.11	3.91	0.146	3.91	0.148	/	/	5.58	0.208
33.4	25	1.65	0.05	/	/	3.38	0.10	4.55	0.136	4.55	0.136	/	/	6.35	0.190
42.2	32	1.65	0.04	/	/	3.56	0.08	4.85	0.115	4.85	0.115	/	/	6.35	0.150
48.3	40	1.65	0.03	/	/	3.88	0.08	5.08	0.105	5.08	0.105	/	/	7.14	0.148
60.3	50	1.65	0.03	/	/	3.91	0.08	5.54	0.092	5.54	0.092	/	/	8.74	0.145
73.0	65	2.11	0.03	/	/	5.16	0.07	7.01	0.096	7.01	0.096	/	/	9.53	0.131
88.9	80	2.11	0.02	/	/	5.49	0.06	7.62	0.086	7.62	0.086	/	/	11.13	0.125
101.8	90	2.11	0.02	/	/	5.74	0.06	8.08	0.080	8.08	0.080	/	/	/	/
114.3	100	2.11	0.02	/	/	6.02	0.05	8.56	0.075	8.56	0.075	11.13	0.097	13.49	0.118
141.3	125	2.77	0.02	/	/	6.55	0.05	9.53	0.067	9.53	0.067	12.70	0.090	15.88	0.112
168.3	150	2.77	0.02	/	/	7.11	0.04	10.97	0.065	10.97	0.065	14.27	0.085	/	/
219.1	200	2.77	0.01	6.35	0.028	8.18	0.04	12.70	0.058	12.70	0.058	/	/	/	/
273.0	250	3.40	0.01	6.35	0.023	9.27	0.03	12.70	0.047	15.09	0.055	/	/	/	/
323.6	300	3.96	0.01	6.35	0.020	9.53	0.03	12.70	0.039	17.48	0.054	/	/	/	/
355.6	350	3.96	0.01	7.92	0.022	9.53	0.03	12.70	0.038	19.05	0.054	/	/	/	/
408.4	400	4.19	0.01	7.92	0.019	9.53	0.02	12.70	0.031	21.44	0.053	/	/	/	/
457	450	4.19	0.01	7.92	0.017	9.53	0.02	12.70	0.028	23.83	0.052	/	/	/	/
506	500	4.78	0.01	9.53	0.019	9.53	0.02	12.70	0.025	26.19	0.052	/	/	/	/
558	550	5.54	0.01	9.53	0.017	9.53	0.02	12.70	0.023	28.58	0.051	/	/	/	/
610	600	6.35	0.01	9.53	0.016	9.53	0.02	12.70	0.021	30.96	0.051	/	/	/	/