SS BUTT-WELD ELBOW 90° SHORT RADIUS SCH 40S

90° Short Radius Butt-Weld Elbow · Stainless Steel 316/316L · ASTM A403 · ASME B16.9

BRAND: SW FLOW CONTROLS | SKU: SW-0323 | SIZE 1/2" TO 12" | SCH 40S



FIG. 1 | SS BUTT-WELD ELBOW 90° SHORT RADIUS SCH 40S

PRODUCT OVERVIEW

The SWBM SS Butt-Weld 90° Short Radius Elbow changes flow direction by 90° with a bend radius equal to the nominal size, for compact turns where space does not allow a long radius elbow. It is produced from stainless steel 316/316L to ASTM A403 Grade WP316/316L with a SCH 40S wall and dimensioned to ASME B16.9.

Ends are bevelled for full penetration butt welding to ASME B16.25, giving a permanent, leak tight joint with a smooth bore and no crevices. Wall thickness matches SCH 40S pipe to ASME B36.19M. Under ASME B16.9 a short radius elbow may be rated at 80% of the connecting seamless pipe of the same schedule and material.

Fitting type	**90° SR elbow, butt-weld**
Material	**Stainless steel 316/316L, ASTM A403**
Dimensional standard	**ASME B16.9**
Wall thickness	**SCH 40S, ASME B36.19M**
End connection	**Bevelled butt-weld, ASME B16.25**
Size range	**1/2" to 12" (DN15 to DN300)**

TECHNICAL SPECIFICATION

Material specification	**ASTM A403 / ASME SA403 WP316/316L**	Carbon	**0.030% max (316L)**
Dimensional standard	**ASME B16.9**	Chromium / Nickel	**16% to 18% / 10% to 14%**
Wall schedule	**SCH 40S to ASME B36.19M**	Molybdenum	**2.0% to 3.0%**
End preparation	**Bevel to ASME B16.25**	Tensile / yield	**485 / 170 MPa min (316L)**
Bevel angle	**37.5° ±2.5°**	Pressure rating	**80% of SCH 40S seamless pipe**
Geometry	**Short radius, R = 1.0 x NPS**	Surface finish	**Pickled and passivated**

FEATURES AND MATERIALS

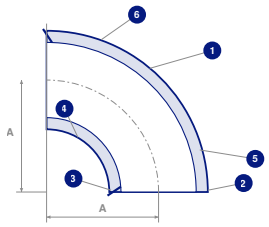


FIG. 2 | SECTION THROUGH ELBOW

#	FEATURE	MATERIAL / DETAIL
1	Body	Stainless steel, ASTM A403 WP316/316L
2	Weld end bevel	37.5° ±2.5° to ASME B16.25
3	Root face (land)	1.6 mm ±0.8 mm
4	Wall thickness	SCH 40S to ASME B36.19M
5	Surface finish	Pickled and passivated
6	Marking	Size, schedule, grade, heat no. (MSS SP-25)

One piece fitting, no assembled parts. Thin walls of 3 mm and under may be supplied square cut or slightly chamfered.

DIMENSIONS AND WEIGHTS

SIZE	DN	OD (MM)	WALL (MM)	A (MM)	R (MM)	WEIGHT (KG)
1/2"	15	21.3	2.77	Confirm	Confirm	Confirm
3/4"	20	26.7	2.87	Confirm	Confirm	Confirm
1"	25	33.4	3.38	25	25	0.10
1.1/4"	32	42.2	3.56	32	32	0.17
1.1/2"	40	48.3	3.68	38	38	0.25
2"	50	60.3	3.91	51	51	0.44
2.1/2"	65	73.0	5.16	64	64	0.88
3"	80	88.9	5.49	76	76	1.37
4"	100	114.3	6.02	102	102	2.62
5"	125	141.3	6.55	127	127	4.43
6"	150	168.3	7.11	152	152	6.88
8"	200	219.1	8.18	203	203	13.8
10"	250	273.0	9.27	254	254	24.5
12"	300	323.8	9.53	305	305	36.1

A = centre to end. R = bend radius (1.0 x NPS). OD and wall to ASME B36.19M SCH 40S; fitting dimensions to ASME B16.9. Weights are calculated estimates and not certified. Dimensions and weights are nominal and are given for guidance only. Certified drawings for the supplied make and size are issued on request. Short radius elbows below 1" are outside the ASME B16.9 table, dimensions confirmed on enquiry.

ORDERING INFORMATION

FIELD	OPTIONS
Product code	SW-0323
Size	1/2", 3/4", 1", 1.1/4", 1.1/2", 2", 2.1/2", 3", 4", 5", 6", 8", 10", 12"
Schedule	SCH 40S. Other schedules available under separate codes
Material	ASTM A403 WP316/316L. MTC to EN 10204 3.1 on request
Order example	**SW-0323 / 4" / SCH 40S / WP316L / BW**

Stock held in Dubai for fast despatch across the UAE and GCC. Contact our sales desk for pricing, availability, project quantities and certification requirements.

PRESSURE AND TEMPERATURE

Pressure rating	**Up to 80% of SCH 40S seamless pipe of the same material**
Basis	**ASME B16.9 rating clause**
Allowable stress	**115 MPa at -29°C to +38°C, 316L (ASME B31.3)**
Minimum temperature	**-196°C (austenitic stainless steel)**
Maximum temperature	**+454°C for 316L (ASME B31.3)**

Design pressure is calculated by the piping designer from the governing code (ASME B31.1, B31.3, B31.4 or B31.8) using the wall thickness, corrosion allowance and design temperature. Chloride stress corrosion cracking should be considered above +60°C in chloride bearing media. Confirm duty with SWBM before use outside these limits.

COMPLIANCE AND QUALITY

- Material to ASTM A403 / ASME SA403 WP316/316L
- Dimensions and tolerances to ASME B16.9
- Wall thickness to ASME B36.19M SCH 40S
- Weld end bevel to ASME B16.25
- Marking to MSS SP-25
- Solution annealed as required by ASTM A403
- Material test certificate EN 10204 3.1 on request

TYPICAL APPLICATIONS

- Chemical and petrochemical process lines
- Food, beverage and pharmaceutical plants
- Marine, offshore and desalination systems
- Water treatment and wastewater piping
- Oil and gas and corrosive media service
- Clean utility, steam and condensate lines

INSTALLATION AND OPERATION

- Clean the bevel and 25 mm either side to bright metal, using stainless steel tools only to avoid iron contamination
- Check bevel and root face for damage, re-dress to ASME B16.25 if required
- Align bores and set a root gap of 1.6 to 3.2 mm with even tack welds
- Weld the root by GTAW with argon back purge, to ASME Section IX qualified procedures
- Pickle and passivate weld zones after welding to restore corrosion resistance
- Carry out NDE and pressure testing to the governing piping code

COMPANY

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