

TECHNICAL DATA SHEET · BUTT WELD FITTINGS

Butt Weld Elbow

45°, 90°, 180°, long and short radius, NPS ½–48, in A234 WPB, A403 WP304/WP316.

OEM MANUFACTURER

Butt weld elbows change the direction of a pipe run. Long-radius (1.5D) elbows are the default for low pressure drop; short-radius (1D) elbows fit where space is tight; 180° returns reverse the flow.

Specification

Product	Butt Weld Elbow
Supply	OEM manufacturer — formed and heat treated by Teshi Group, Howrah, India
Design standard	ASME B16.9
Types	90° and 45° long radius (1.5D), 90° short radius (1D), 3D and 5D bends, 180° returns
Size range	NPS ½" to 48" (DN 15–1200)
Wall thickness	Sch 5S, 10S, 10, 20, 40 (STD), 80 (XS), 120, 160, XXS — to match the pipe
Ends	Bevelled to ASME B16.25
Construction	Seamless; welded in larger sizes

Materials

Carbon steel	ASTM A234 WPB, ASTM A420 WPL6
Stainless steel	ASTM A403 WP304, ASTM A403 WP304L, ASTM A403 WP316, ASTM A403 WP316L
Alloy steel	ASTM A234 WP11 Cl.1, ASTM A234 WP22 Cl.1

Manufacturing

- Forming: hot mandrel forming of seamless elbows from pipe; pressing and seam welding of large-diameter elbows from plate.
- Heat treatment: normalising or stress relieving for carbon steel, normalising and tempering for alloy steel, solution annealing for stainless steel.
- Finishing: shot blasting or pickling and passivation, end bevelling to ASME B16.25, and coating with rust preventive (carbon and alloy steel).

Inspection and testing

- Chemical analysis and mechanical tests per heat and heat-treatment lot.
- 100% visual and dimensional inspection against ASME B16.9 tolerances.
- Radiography of weld seams on welded fittings when specified.
- Dye-penetrant or magnetic-particle examination of bevel ends and formed surfaces when specified.
- PMI on stainless and alloy steel; hardness and impact tests when specified.

Marking, documentation and packing

Marking	Marked to ASME B16.9 / MSS SP-25 by stamping or stencil: manufacturer's mark, size, schedule or wall thickness, material grade and heat number.
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Documentation	Mill test certificate to EN 10204 3.1 (3.2 with third-party inspection on request), dimensional inspection report, heat-treatment record where applicable, and NDT reports as specified. IBR Form III-C on request.
Packing	Rust-preventive coating on machined surfaces, plastic end / face protectors, and seaworthy wooden cases or pallets marked with PO line, size, heat number and quantity.

Typical applications

- Process, steam, oil and gas piping
- Boiler and power plant piping (IBR)
- Pipe racks and equipment connections

Ordering information

- Fitting type and angle or pattern
- Nominal size (both sizes for reducing fittings)
- Wall thickness or pipe schedule
- Material specification and grade
- Seamless or welded construction
- Supplementary requirements: NDT, NACE, IBR, third-party inspection
- Quantity and delivery point

Dimension charts

ASME B16.9 elbow dimensions; Pipe schedule chart — ASME B36.10M; Stainless steel pipe schedule chart — ASME B36.19M — www.teshigroup.com/dimensional-standards/

Reference information compiled from the published standard for convenience. It does not replace the current edition of the governing standard, which takes precedence. Verify critical dimensions and properties before design, purchase or fabrication. Teshi Engineers & Sales Promoters (P) Ltd accepts no liability for errors or omissions.

Teshi Group

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