

TOLERANCES	SPECIFICATIONS & DIMENSIONS																																																																													
<p><b>ALL FITTINGS</b> Wall Thickness of fittings at any point shall not be less than 87 1/2" of the nominal thickness.</p> <p><b>The Outside Diameter of fittings at beginning of bevel :</b> For sizes up to &amp; including 2.1/2"..... + 1/16"-1/32" For sizes 3" &amp; 4"..... + 1/16"-1/16" For sizes 5" to 8"..... + 3/32"-1/16" For sizes 10" to 18"..... + 5/32"-1/8" For sizes 20" to 24"..... + 1/4"-3/16"</p> <p><b>Inside Diameter of fittings at welding ends :</b> For sizes up to &amp; including 2.1/2"..... ± 1/32" For sizes 3" &amp; 8"..... ± 1/16" For sizes 10" to 18"..... ± 1/8" For sizes 20" to 24"..... ± 3/16" For size 30"..... ± 1/8"</p> <p><b>90° ELBOW, 45° ELBOW and TEE</b> Center-to-End of bevel : For Sizes up to and including 8"..... ± 1/16" For sizes 10" to 24"..... ± 3/32" For size 30"..... ± 1/8"</p> <p><b>REDUCERS (Concentric and Eccentric)</b> End-to-End : For sizes up to and including 8"..... ± 1/16" For sizes 10" to 24"..... ± 3/32" For sizes 30"..... ± 3/8"</p> <p><b>Dimensional Tolerances : Lap Joint</b></p> <table border="0"> <tr> <td>1. Thickness :</td> <td></td> <td>-12.1/2%</td> </tr> <tr> <td>2. End to End :</td> <td>1/2" to 8"</td> <td>±1/16"</td> </tr> <tr> <td>3. O.D :</td> <td>1/2" TO 8"</td> <td>-1/32"</td> </tr> <tr> <td>4. Radius of Lap :</td> <td>1/2" to 3.1/2 4" to 8"</td> <td>-1/32" - 1/16"</td> </tr> <tr> <td>5. Thickness of Lap :</td> <td>1/2" to 8"</td> <td>+ 1/16"-0</td> </tr> </table>	1. Thickness :		-12.1/2%	2. End to End :	1/2" to 8"	±1/16"	3. O.D :	1/2" TO 8"	-1/32"	4. Radius of Lap :	1/2" to 3.1/2 4" to 8"	-1/32" - 1/16"	5. Thickness of Lap :	1/2" to 8"	+ 1/16"-0	<p><b>A) WELDING FITTINGS :</b> Material Specification 1) ASTM A-234-Covers Carbon and Alloy Steel Material Grades. 2) ASTM A-403 covers Stainless Steel grades 3) ASTM A-420 covers Carbon and Alloy Steel grades for Low Temperature Service</p> <p><b>B) WELDING FITTINGS :</b> Dimensional Specification 1) ANSI B-16.9-This standard establishes dimensions, tolerances, pressure ratings, marking and bevel requirement of steel Butt - welding fitting from 1" to 24" 2) ANSI B-16.28-wrought steel Butt - Welding short Radius Elbows and Returns.</p> <p><b>C) FORGED STEEL FITTINGS, SOCKET WELDING AND THREADED, FORGED FLANGES Material Specification</b> 1) ASTM A-105 - Covers materials, manufacturing methods, Heat Treatment, etc., for Forged Steel Socket - Weld / Screwed Fittings &amp; carbon Steel Flanges used in High Temperature Service. 2) ASTM A-181 - Covers the materials, manufacturing methods, etc., for general service Carbon Steel grades. 3) ASTM A-182 - Covers materials, Heat Treatment, etc., for alloy and Stainless Steel Flanges used in High Temperature service.</p> <p><b>D) FORGED STEEL FITTINGS &amp; FLANGES</b> Dimensional Specification 1) ANSI B-16.11 -Establishes Dimensions, Tolerance, Pressure ratings, marking for Forged Steel Fittings, Socket - welding &amp; Threaded. 2) ANSI B-16.5 - Established Dimensions Tolerances, Pressure Ratings, Marking and Bevel requirements of Forged Steel Flanges from 1/2" to 24"</p> <p><b>High Temp. Service Fitting Confirming to ASTM A234 Gr. WPB Chemical Analysis</b></p> <table border="1"> <thead> <tr> <th>C%</th> <th>Mn%</th> <th>P%</th> <th>S%</th> <th>Si%</th> </tr> </thead> <tbody> <tr> <td>0.30 Max</td> <td>0.29-1.06</td> <td>0.050 Max</td> <td>0.050 Max</td> <td>0.10 Min</td> </tr> </tbody> </table> <p><b>Mechanical Properties</b></p> <table border="1"> <thead> <tr> <th>Tensile Strength Mpa.</th> <th>Yield Strength Mpa.</th> <th>Elongation</th> </tr> </thead> <tbody> <tr> <td>415 Min.</td> <td>240 Min.</td> <td>23-36</td> </tr> </tbody> </table>	C%	Mn%	P%	S%	Si%	0.30 Max	0.29-1.06	0.050 Max	0.050 Max	0.10 Min	Tensile Strength Mpa.	Yield Strength Mpa.	Elongation	415 Min.	240 Min.	23-36																																														
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