

Secondo gli standard:

According to:

- ASME B31.3 - PROCESS PIPING

# Tes lateral

Lateral tees



# Design calculation for lateral tees

According to ASME B31.3

Lateral tee 4" x 4" STD ASTM A234 WPB-W  
 Lateral tee 4" x 3" STD ASTM A234 WPB-W  
 Lateral tee 4" x 2" STD ASTM A234 WPB-W  
 Ref. para. 304.3.3 fig. 304.3.3

## 1) DESIGN DATA

Design Pressure  
 Design Temperature  
 Design Factor  
 Allowable Stress at Design Temperature  
 Corrosion Allowance  
 Weld joint strenght reduction factor

## 2) MATERIAL DATA

Joint Factor  
 Sin of "Smaller angle between axes of branch and run" ( $\beta = 45^\circ$ )

## 3) DIMENSIONAL DATA

Outside Diameter of the Run  
 Wall Thickness at Bevel of the Run  
 Outside Diameter of the Branch  
 Wall Thickness at Bevel of the Branch  
 Minimum Required Thickness of Run  
 Minimum Required Thickness of Branch  
 Inside Diameter of Welded Outlet  
 Half Width of Reinforcement Zone  
 Minimum Thickness of Reinforcement ring

## 4) CALCULATION

Minimum Required Thickness of the Run  
 Minimum Required Thickness of the Branch  
 Height of the Reinforcement Zone  
 Required Area  
 Reinforcement Area 2  
 Reinforcement Area 3  
 Reinforcement Area 4  
 Total Reinforcement Area

			4"X 4" STD ASTM A234 WPB-W	4"X 3" STD ASTM A234 WPB-W	4"X 2" STD ASTM A234 WPB-W
<b>P</b>	MPa	=	0,83	0,83	0,83
<b>T</b>	°F	=	372	372	372
<b>Y</b>		=	0,4	0,4	0,4
<b>S</b>	N/mm <sup>2</sup>	=	148,9	148,9	148,9
<b>C</b>	mm	=	1,27	1,27	1,27
<b>W</b>		=	1	1	1
<b>E</b>		=	1	1	1
<b>sin β</b>		=	0,707	0,707	0,707
<b>Dh</b>	mm	=	114,3	114,3	114,3
<b>WT1</b>	mm	=	6,02	6,02	6,02
<b>Db</b>	mm	=	114,3	88,9	60,3
<b>WT2</b>	mm	=	6,02	5,49	3,91
<b>Th</b>	mm	=	5,27	5,27	5,27
<b>Tb</b>	mm	=	5,27	4,80	3,42
<b>d1</b>	mm	=	150,35	115,76	79,20
<b>d2</b>	mm	=	114,3	114,3	79,20
<b>Tr</b>	mm	=	0	0	0
<b>th</b>	mm	=	0,32	0,32	0,32
<b>tb</b>	mm	=	0,32	0,25	0,17
<b>L4</b>	mm	=	10,00	8,83	5,38
<b>A1</b>	mm <sup>2</sup>	=	61,793777	47,574814	32,550148
<b>A2</b>	mm <sup>2</sup>	=	288,11	415,51	291,63
<b>A3</b>	mm <sup>2</sup>	=	104,16	81,95	30,23
<b>A4</b>	mm <sup>2</sup>	=			
<b>TA</b>	mm <sup>2</sup>	=	392,28 (> A1)	497,46 (> A1)	321,86 (> A1)

t. A1 of ASME B31.3  
 acc. to par. 302.3.5(e)

C included  
 C included

(pad)  
 = P Dh / (2\*(SEW + PY))  
 = P Db / (2\*(SEW + PY))

= 2.5 (Tb - c) + Tr  
 = Required Area  
 = Reinf. Area  
 = Reinf. Area  
 not considered  
 = A2 + A3 + A4

**REINFORCEMENT PAD NOT REQUIRED**

# Tes lateral

## Lateral tees

Item: Lateral tee 4" x 4" SCH 80 mach.ed to STD  
Material: fabricated from Seamless Pipe ASTM A106 Gr.B  
ASME B31.3 - 2010  
Appl. Std. ANSI / ASME B16.25 - 2007



weld 100% RT (ASME V)  
without added reinforcement



