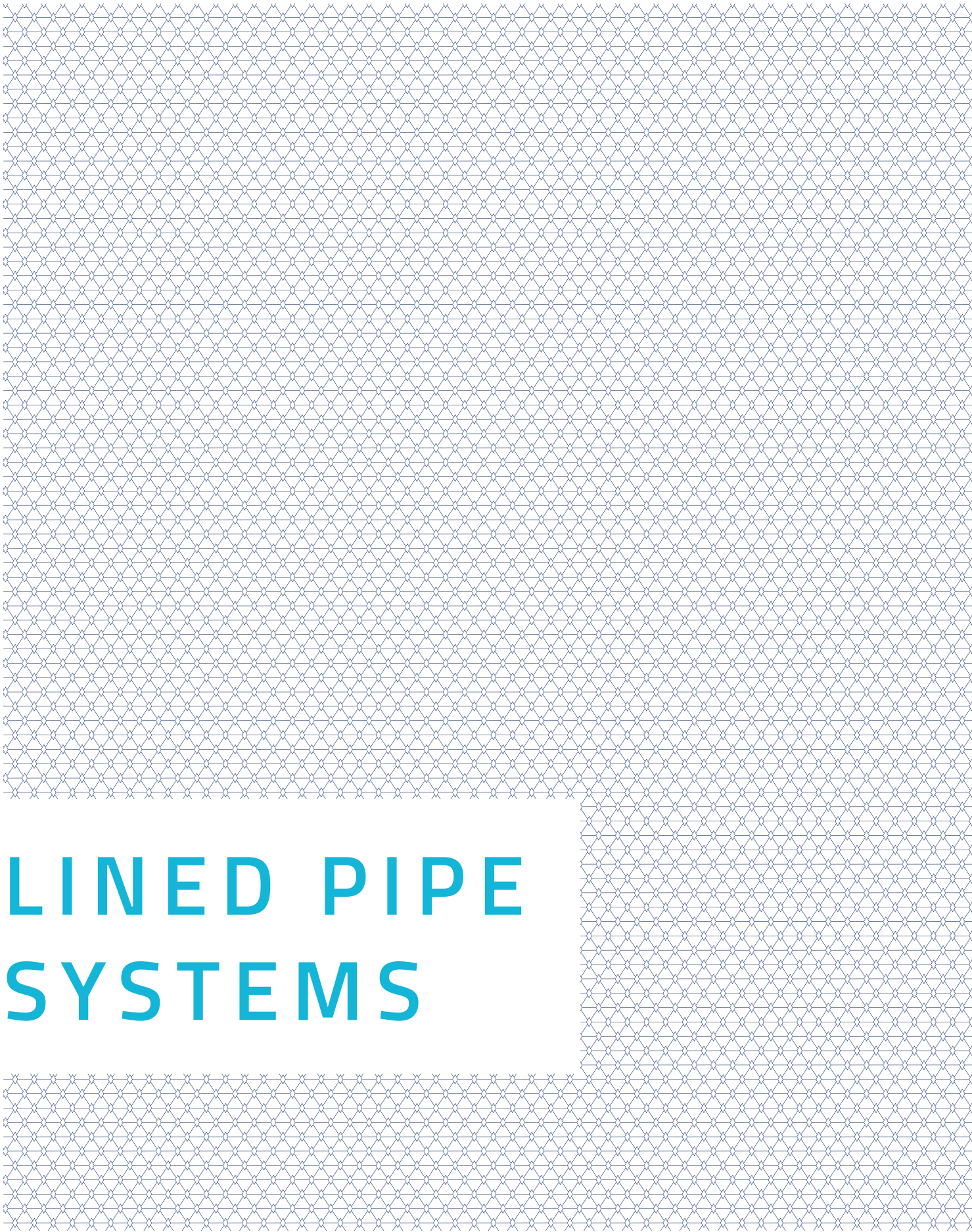


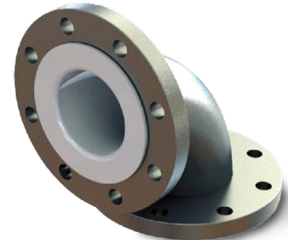
FLUOROPLASTIC LINING







LINED PIPE SYSTEMS



The lining is a method by applying some material on the surface to prevent rusting and has characteristic Protective or Decorative.

To meet demands from the chemical processing industry such as biochemical, pharmaceutical, petrochemical, fertilizer, and chemical industries for corrosions – resistant application.

The PTFE Plastic we can use have some unique properties, they are chemically inert having near-universal corrosion resistance which we specifically use to convey the most corrosive and toxic chemical processing in every critical industry process.

PTFE has the best coefficient of friction for all solids – Giving excellent non-stick properties keeping pressure drops to a minimum and preventing blockages of viscous lines, etc. It is also used in high purity applications and exotic materials such as Hastelloy.

LINING MATERIAL SPECIFICATION

	Property	Unit	ASTM Standard	PTFE
Mechanical	Specific Gravity	-	D792	2.14~2.2
	Tensile Strength	Kgf/cm ²	D638	280~350
	Elongation at Break	%	D638	200~400
	Compression Strength	Kgf/cm ²	D695	120
	Impact Strength	Kgfc/cm	D256A	16.3
	Rocks Well Hardness	-	D785	-
	Shore Hardness	-	D2440	D50~55
	Bending Elasticity	-	D790	5.6
	Tensile Elasticity	10 ³ kgf/cm	D638	4.1~5.6
	MIT Flex Life	Cycles	D2176	>1.000.000
	Coefficient of Friction (Static)	-	D1894	0.02
	Coefficient of Friction (Dynamic)	7 kgf/cm ² 3m/min	D1894	0.1
Thermal	Melting Point	°C	D1894	0.02
	Thermal Conductivity	10 ⁻⁴ cal/cm ² . sec/°C	C117	6.0
	Specific Heat	Cal/°C/g	-	0.25
	Linear Expansion	10 ⁻⁴ /°C	D696	10
	Deformation Under Load			
	18.5 Kgf/Cm2	°C	D648	55
	4.6 Kgf/Cm2	°C	D648	121
	Oxygen Index	%	D2683	>95
	Flame Rating	-	UL-94	V-0
	Max. Temp. (Continuously)	°C	-	260
	Dielectric Constant	-	D150/1MHz	2.1
	Dissipation Factor	-	D150/1MHz	0.0001
	Volume Resistivity	Ohm-cm	D257	>10 ¹⁸
	Surface Resistivity	Ohm/cm2	D257	>10 ¹⁸
	Arc Resistivity	Sec	D495	>300
Chemical Resistant from 20 - 120 °C Application	Chlorin (Cl2)	Most - Liquid	-	Good
	Hydrochloric Acid (HCl)	5% - 36% Aqueos	-	Good
	Nitric Acid (HNO3)	Aqueos	-	Good
	Sulfuric Acid (H2SO4)	40% - 98% Aqueos	-	Good

Modified PTFE	FEP	PFA	ETFE	PVDF	PVDF Flex	ECTFE
2.16~2.19	2.13~2.17	2.12-2.17	1.75-1.78	1.70	1.78	1.68~1.69
280~350	250~350	250-350	350-440	460	317-387	490
200~400	275~380	300	80-300	50-250	300-400	200~300
120	-	170	680-980	500	422-598	-
16.3	-	-	16.3-38.1	-	-	-
-	-	-	R77-83	-	-	-
D58	D55	D60	D75-77	D70	D75	55
-	-	6.7-7.0	20.4-25.3	14	-	-
-	-	-	13.4-15	8.4	-	16.8
-	50.000~	-	-	-	-	-
-	-	0.04	0.20-0.40	0.60	0.26	-
0.18	-	0.2	0.39	0.40	0.10.26	-
-	-	0.04	0.20-0.40	0.60	1.0-1.25	220~245
6.0	-	6.0	2.4-3.0	1.2	0.28-0.36	3.8
0.25	-	0.25	0.33	0.46-0.47	14	8
12	-	12	7-14	12.5	-	-
-	-	47	87-115	74	-	-
-	-	74	149	104	-	-
-	>95	>95	44	30	-	-
V-0	V-0	V-0	V-0	V-0	V-0	-
260	220-230	260	150	130-150	130-150	165~180
2.1	2.03	2.1	7.5	7.5	7.5-10.5	-
0.00007	0.0004	0.0001	0.15	0.15	0.02-0.05	-
-	-	>10 ¹⁸	>10 ¹⁴	1.5x10 ¹⁶	2 x 10 ¹⁴	-
-	-	>10 ¹⁷	>10 ¹³	>10 ¹⁴	>10 ¹⁴	-
-	-	>180	-	75	75	-
-	-	Good	-	max 80	-	max 60
-	-	Good	-	max 80	-	max 60
-	-	Good	-	max 100	-	max 40
-	-	Good	-	max 80	-	max 80



STANDARDS OF CONSTRUCTION

Pipe & Fitting

The carbon steel pipe and wrought fittings shall be welded or seamless steel, Schedule 40 or 80, except Schedule 30 pipe may be used in 8, 10, and 12-inch nominal size. Schedule 20 or standard wall may be used in nominal sizes 12-inch and larger.

Table Specification Coverage

Code Name	Material	ANSI Class	Nominal Pipe Size		Temperature Range
			(inch)	(mm)	(°C)
ETFE	Ethylene Tetrafluoroethylene Copolymer	150/300	1 to 10	25 to 254	-29 to 149
PFA	Perfluoro (Alkoxyalkane) Copolymer	150/300	1/2 to 12	13 to 305	-29 to 260
PVDF	Poly (Vinylidene Fluoride)	150/300	1 to 10	25 to 254	-18 to 135
PVDF	Poly (Vinylidene Fluoride) Copolymer	150/300	1 to 10	25 to 254	-29 to 135
PTFE	Polytetrafluoroethylene	150/300	1/2 to 24	13 to 610	-29 to 260

Plastic Liner

The pipe and fitting liners shall have minimum wall thickness and thickness according to the table below:

Pipe Size (inch)	Liner Material Thickness			
	PTFE	PVDF	PFA	PVDC
1	3.05	2.54	2.54	2.39
1½	3.05	2.54	2.54	2.39
2	3.05	2.54	2.54	2.39
2½	3.05	2.54	2.54	2.39
3	3.05	2.54	2.54	2.39
4	3.05	2.54	2.54	2.39
6	3.18	2.54	2.54	2.39
8	3.18	2.54	2.54	2.39
10	3.18	2.54	2.54	-
12	3.18	-	-	-
14	3.18	-	-	-
16	3.18	-	-	-
18	3.18	-	-	-
20	3.81	-	-	-
24	3.81	-	-	-

Lining Flare Diameter

- The outside diameter of the flange or the full face of the lap-joint stub end shall not be less than the diameter specified in the table below
- The flared portion of the lining shall be concentric with the flared portion of the pipe within 1.6 mm

NPS (inch)	Minimum Flare Diameter (mm)
½	31.8
¾	39.7
1	47.6
1½	68.3
2	87.3
3	117.5
4	150.8
6	203.2
8	255.6
10	311.2
12	365.1
14	393.7
16	450.9
18	514.4
20	565.2
24	666.8

Standard

Plastic Liner Standard:

- ASTM F1545 – “Standard Specification for Plastic-Lined Ferrous Metal Pipe, Fittings, and Flanges”

Pipeline Dimension Standard:

- ASTM A53 – “Standard Spec. for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless”

Acceptance Criteria

Processing

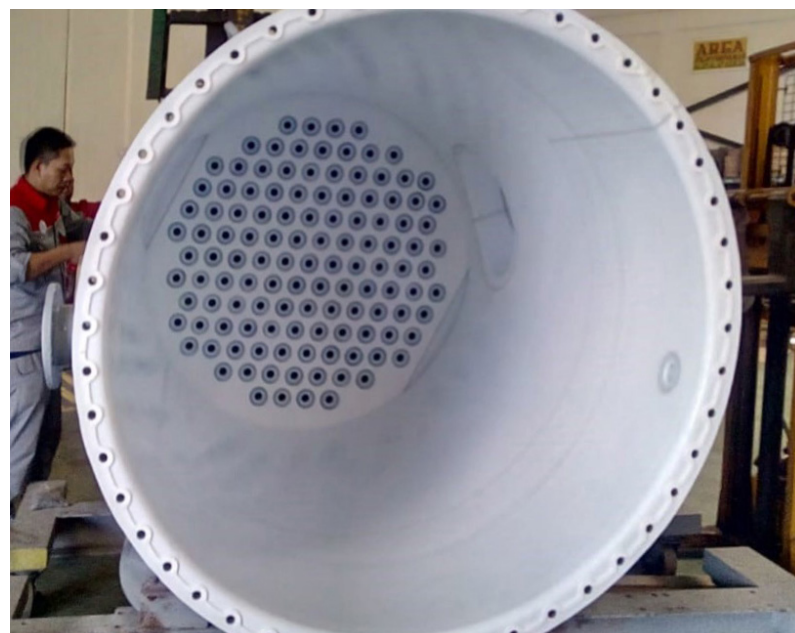
- Pipe and fittings shall show no evidence of pinholes, porosity, or cracks when inspected
- The linings shall fit snugly, inside the pipe and fitting housings
- Any bulges or other obvious indications of poor contact with the housing shall be cause for rejection
- The gasket seating surface of the lining will be free of surface defects that could impair sealing effectiveness
- Scratches, dents, nicks, or tool marks on the surface will not be deeper than 10% of the face thickness

Surface Finish

The inner surface of the pipe must be clean and free of any mold, rust, scale, or protrusion that may affect the performance of the lining. The outside surface of all lined pipe and fittings, other than stainless steel, shall be coated with a corrosion-resistant primer over a properly prepared surface.

Welding

All metal welding should be done by welders or welding operators by using welding procedures that meet the requirements of ASME Boiler and Pressure Vessel Code (Section IX).





INSPECTION TEST

Hydrostatic Pressure Test

- Internal test pressure shall be 250 psi (1.7 MPa) minimum for Class 125 (0.9-MPa) components
- Internal test pressure shall be 425 psi (2.9 MPa) minimum for Class 150 (1.0-MPa) and Class 300 (2.1- MPa) components
- Conduct the test at ambient temperature
- Completely fill the pipe and fitting with clean water and bleed the system free of all air prior to the application of pressure
- Reach full test pressure within 1 min and maintain for a further 3 min. Observe the pressure gage throughout the test for any evidence of leakage, which shall be cause for rejection

Electrostatic Test (Pin Hole Test)

- Conduct the test with a nondestructive high-voltage tester at an output voltage of 10 kV
- A visible or audible spark, or both, that occurs at the probe when electrical contact is made with the housing because of a defect in the liner shall be cause for rejection



STANDARD OF CONSTRUCTION

Liner Material

PTFE is used in a variety of applications and industries where excellent impact resistance, high tensile strength, low moisture absorption, chemical and corrosion resistance properties are required:

- Met FDA/USDA food handling guidelines (natural color)
- Light-Weight
- Non-toxic
- No Moisture absorption
- Non-Staining
- Chemical-and Corrosion-resistant
- High Tensile Strength
- Thermoforming Performance

Application

- Heavy duty chain guides
- Secondary containment
- Thermoformed material handling devices
- Orthotic and prosthetic devices
- Tanks
- Water Storage

ANSI LINED PIPES

(CLASS 150)

Housing Materials

Pipe: made from A53
grade B,
1" to 8" (sch. 40),
10" to 12" (sch 30)

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

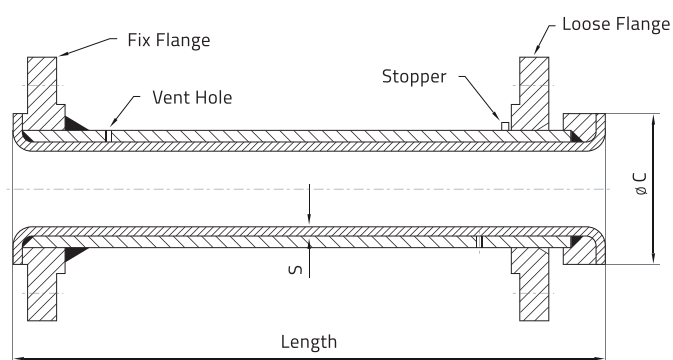
Lining and Testing

As per ASTM
F1545(2009)

Painting Std

Two layers of epoxy
red oxide

For size 14" and above available
upon request. We can also offer
Lined Pipes in Stainless Steel
material.



PTFE

As per ASTM D 4895

Size	C (mm)	Min Lining Thickness (mm)	Min Length (mm)	Max Length (mm)	Manufacturing Process	Lining Material	Housing Material	Vacum Rating (inch Hg/*F)
1"	50.8	3.05	100	6000	Paste Extrusion	PTFE	Fabricated Steel	FV/450
		3.05						
1.5"	73	3.05	100	6000				
		3.2						
2"	92.1	3.05	120	6000				
		3.8						
3"	127	3.05	120	6000				
		4						
4"	157.2	3.05	135	6000				
		4						
6"	216	4.5	150	3000				
		5		6000				
		7.2						
8"	270	4.5	170	6000				FV/212
		5						FV/390
		7.8						FV/450
10"	324	5	185	3000				FV/212
		7						FV/212
		7.8						FV/450
12"	381	5	220	3000				FV/212
		6.8						FV/212
		10.4						FV/450

EQUAL CROSS

(CLASS 150)

Housing Materials

FAB STEEL: made from A234
grd WPB CS Seamless

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

PTFE

As per ASTM D4894

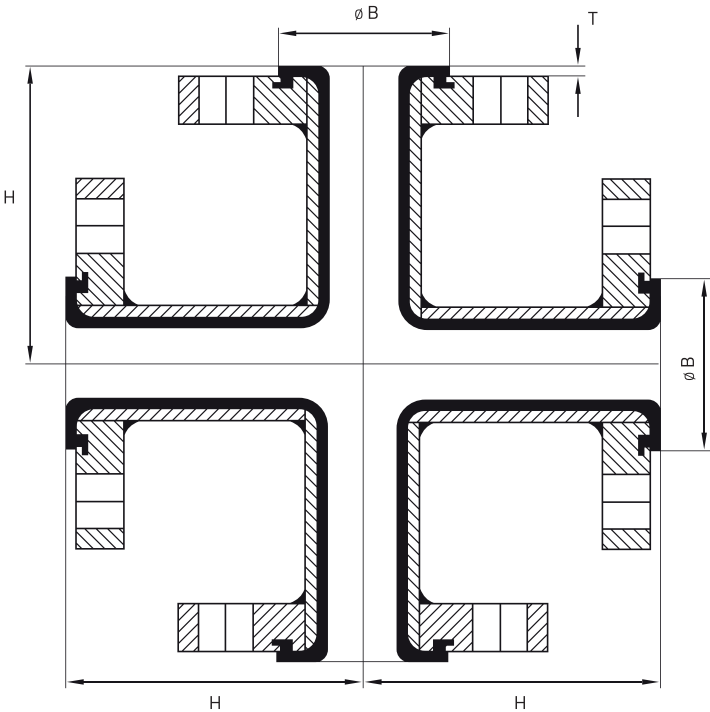
Lining and Testing

As per ASTM F1545(2009)

Painting Std

Two layers of epoxy
red oxide.

For size 14" and above available upon
request. We can also offer Equal Cross in
Stainless Steel material.



Size (inch)	B (mm)	H (mm)	T (mm)	Lining Material	Housing Material	Flanges	Vacuum Rating (inch Hg/*F)
1"	48	89	3.3	PTFE	Fabricated Steel	F	FV/212
1.5"	69	102	3.8				
2"	88	114	4.0				
3"	118	140	4.0				
4"	151	165	4.0				
6"	204	203	7.0				
8"	256	229	8.0				FV/RT
10"	312	279	8.0				
12"	376	305	10.8				No Vacuum*

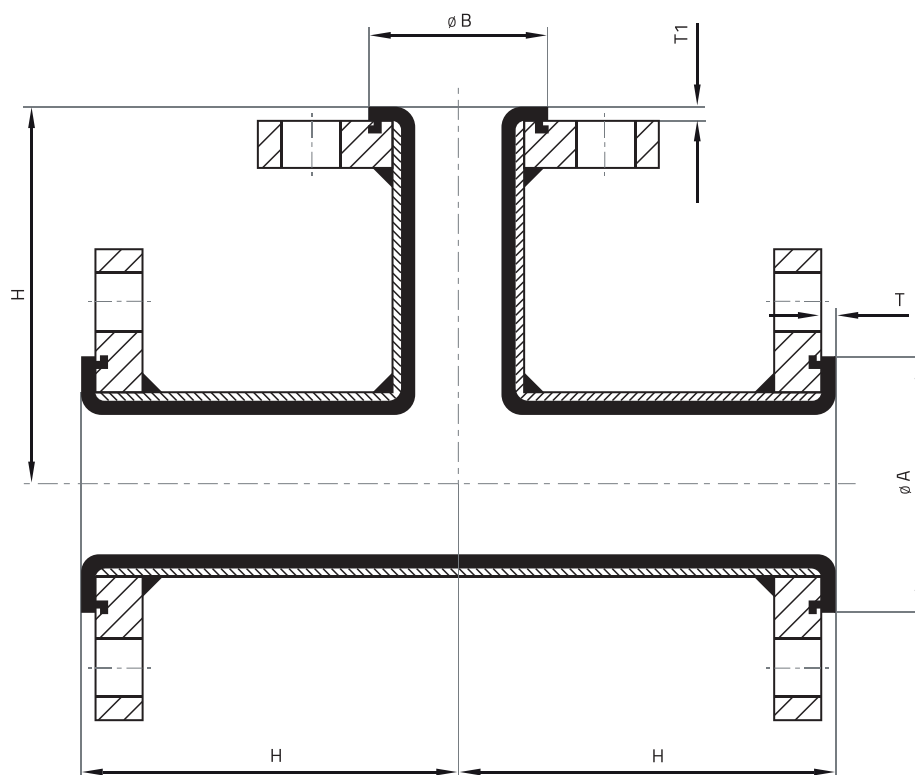
F - Fixed Flanges

R - Rotating Flange

* Under testing-contact us

REDUCING TEE

(CLASS 150)



Housing Materials

FAB STEEL: made from A234 grd WPB CS Seamless, pipe ASTM A 106 Gr.B

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

PTFE

As per ASTM D D4894

Lining and Testing

As per ASTM ASTM F1545(2009)

Painting Std

Two layers of epoxy red oxide

For size 14" and Above available upon request. We can also offer Reducing Tee in Stainless Steel material.

Size	Ordering Codes	A (mm)	B (mm)	H mm	T (mm)	T1 (mm)	Lining Material	Housing Material	Flange	Vacuum Rating (inch Hg/*F)
1.5x1	LPS-1011-1.5X1	69	48	102	3.8	3.3	PTFE	Fabricated	F	FV/450
2x1	LPS-1011-2X1	88	48	114	4	3.3		Steel		
2x1.5	LPS-1011-2X1.5		69			3.8				
3x1	LPS-1011-3X1	118	48	140		3.3				
3x1.5	LPS-1011-3X1.5		69			3.8				
3x2	LPS-1011-3X2		88			4				
4x1	LPS-1011-4X1	151	48	165		3.3				
4x1.5	LPS-1011-4X1.5		69			3.8				
4x2	LPS-1011-4X2		88			4				
4x3	LPS-1011-4X3		118			4				
6x1	LPS-1011-6X1	204	49	203	7	3.3				
6x1.5	LPS-1011-6X1.5		69			3.8				
6x2	LPS-1011-6X2		88			4				
6x3	LPS-1011-6X3		118			5				
6x4	LPS-1011-6X4		151			6				
8x1	LPS-1011-8X1	255	48	229	8	3.3				FV/212
8x1.5	LPS-1011-8X1.5		69			3.8				
8x2	LPS-1011-8X2		88			4				
8x3	LPS-1011-8X3		118			5				
8x4	LPS-1011-8X4		151			6				
8x6	LPS-1011-8X6		204			7				
10x1	LPS-1011-10X1	312	48	279	8	3.3				No Vacuum*
10x1.5	LPS-1011-10X1.5		69			3.8				
10x2	LPS-1011-10X2		88			4				
10x3	LPS-1011-10X3		118			5				
10x4	LPS-1011-10X4		151			6				
10x6	LPS-1011-10X6		204			7				
10x8	LPS-1011-10X8		256			8				
12x1	LPS-1011-12X1	376	48	305	10.8	3.3				
12x1.5	LPS-1011-12X1.5		69			3.8				
12x2	LPS-1011-12X2		88			4				
12x3	LPS-1011-12X3		118			5				
12x4	LPS-1011-12X4		151			6				
12x6	LPS-1011-12X6		204			7				
12x8	LPS-1011-12X8		256			8				
12x10	LPS-1011-12X10		312			8				

* Under testing-contact us

SHORT STACK TEE

(CLASS 150)

Housing Materials

DI Casted ASTM A395

Dimension

As per ANSI B 16.5#150

PFA

As per ASTM D3307

Lining and Testing

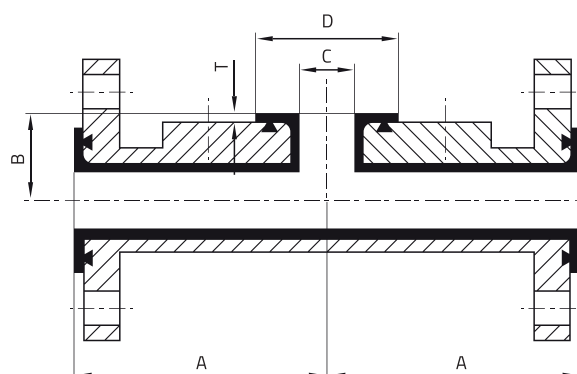
As per ASTM

F1545(2009)

Painting Std

Two layers of epoxy red oxide.

For size 14" and above available upon request. We can also offer Short Stack Tee in Stainless Steel material.



Size (inch)	C (inch)	D (inch)	A (inch)	B (inch)	T (inch)	Stack Bolt Holes	Run Bolt Holes	Lining Material	Housing Material	Vacuum Rating (inch O Hg/F)
1"	0.787	2.000	3.5	1.19	0.13	1/2-13*	1/2-13	PFA	DI CASTED	No Vacuum***
1.5"	1.310	2.874	4.0	1.46	0.15	1/2-13*	1/2-13			
2"	1.747	3.622	4.5	1.69	0.16	5/8-11*	3/4			
3"	2.747	5.000	5.5	2.19	0.16	5/8-11*	3/4			
4"	3.708	6.181	6.5	2.69	0.16	5/8-11*	3/4			
6"	5.516	8.504	8.0	3.69	0.28	3/4-10**	7/8			
8"	7.283	10.394	9.0	4.94	0.31	3/4-10**	7/8			
10"	9.272	12.559	11.0	6.00	0.31	7/8-9**	1			
12"	10.992	14.921	12.0	7.03	0.39	7/8-9**	1			

* All bolts are tapped

** 4 holes closest to the centerline are tapped. The other bolt holes are bored smooth

*** Under testing-contact us

INSTRUMENT - TEES

(CLASS 150)

Housing Materials

FAB STEEL: made from
A234 grd WPB CS

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

PFA

As per ASTM D3307

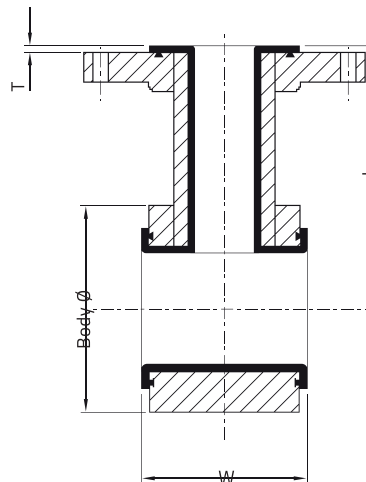
Lining and Testing

As per ASTM
F1545(2009)

Painting Std

Two layers of epoxy
red oxide.

For size 14" and above available
upon request. We can also offer
Instrument Tees in Stainless Steel
material.



Size (inch)	Body Ø (mm)	L (mm)	W (mm)	T (mm)	Lining Material	Housing Material	Vacuum Rating (inch Hg/*F)
1"x1"	66.7	89	51.2	3.3	PTFE	Fabricated Steel	FV/450
1.5"x1"	85.7	102					
2"x1"	104.7	114					
3"x1"	136.5	140					
4"x1"	174.6	165					
6"x1"	222.3	203					
8"x1"	279.4	229					
10"x1"	339.7	279					FV/212
12"x1"	409.8	305					No Vacuum*
2"x1.5"	104.7	114	76.6	3.3			FV/450
3"x1.5"	136.5	140					
4"x1.5"	174.6	165					
6"x1.5"	222.3	203					
8"x1.5"	279.4	229					
10"x1.5"	339.7	279					FV/212
12"x1.5"	409.8	305					No Vacuum*
3"x2"	136.5	140	100	3.3			FV/450
4"x2"	174.6	165					
6"x2"	222.3	203					
8"x2"	279.4	229					FV/212
10"x2"	339.7	279					No Vacuum*
12"x2"	409.8	305					

* Under testing-contact us

ECCENTRIC REDUCER

(CLASS 150)

Housing Materials

FAB STEEL: made from
A234 grd WPB CS

Seamless Flange
Materials

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

PTFE

As per ASTM D4894,95

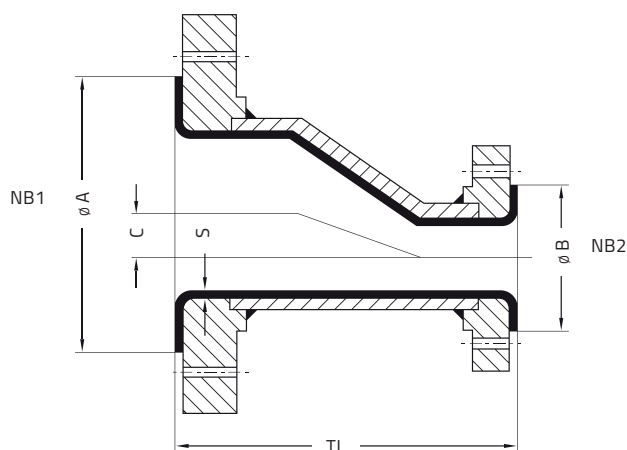
Lining and Testing

As per ASTM
F1545(2009)

Painting Std

Two layers of epoxy
red oxide.

For size 14" and above available
upon request. We can also offer
Eccentric Reducer in Stainless
Steel material.



Size NB1 x NB2 (inch)	A (mm)	B (mm)	C (mm)	Max Liner Thick "s" (mm)	TL (mm)	Lining Material	Housing Material	Flange	Vacuum Rating (inch Hg/*F)
1.5"x 1"	73	51	6	3.5	114	PTFE	Fabricated Steel	F	FV / 450
2"x 1"	88	48	12.2	4	127	PTFE	Fabricated Steel	F	
2"x 1.5"	92	73	6	4.3	127	PTFE	Fabricated Steel	F	
3"x 1"	118	48	25	5	152	PTFE	Fabricated Steel	F	
3"x 1.5"	118	69	18.3	5	152	PTFE	Fabricated Steel	F	
3"x 2"	127	92	14	4.4	152	PTFE	Fabricated Steel	F	
4"x 2"	151	88	25	6	178	PTFE	Fabricated Steel	F	
4"x 3"	157	127	13	4.4	178	PTFE	Fabricated Steel	F	
6"x 3"	204	118	35.2	7	229	PTFE	Fabricated Steel	F	FV / 212
6"x 4"	216	157	27	5.5	229	PTFE	Fabricated Steel	F	
8"x 4"	256	151	46.4	8	279	PTFE	Fabricated Steel	F	No Vacuum*
8"x 6"	270	216	25	6	279	PTFE	Fabricated Steel	F	
10"x 6"	312	204	52	6	305	PTFE	Fabricated Steel	F	
10"x 8"	324	270	27	7.5	305	PTFE	Fabricated Steel	F	
12"x 8"	381	270	52	7.5	356	PTFE	Fabricated Steel	F	
12"x 10"	381	324	25	7.5	356	PTFE	Fabricated Steel	F	

F - Fixed Flanges

R - Rotating Flange

* Under testing-contact us

REDUCING FLANGES

(CLASS 150)

STYLE A

Flange Materials

Ductile Iron ASTM A395
/ Carbon Steel

Dimension

As per ANSI B 16.5#150

PTFE

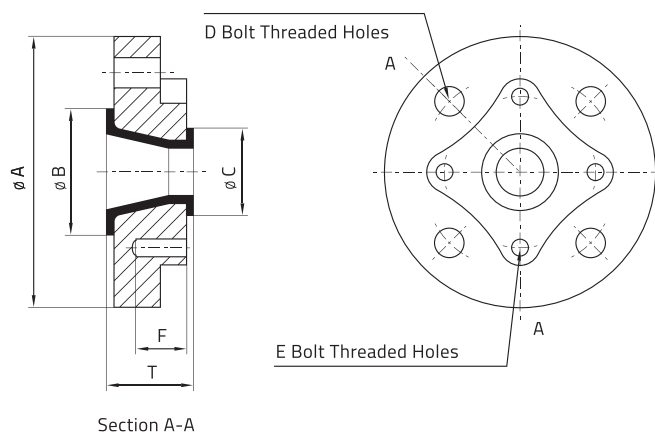
As per ASTM D4894

Lining and Testing

As per ASTM

F1545(2009)

For size 12" and above
available upon request.



Size (inch)	A (mm)	B (mm)	C (mm)	D Bolts Holes			E Bolts Holes			F (mm)	T (mm)	Lining Material	Vacuum Rating (inch 0 Hg/F)
				NO (mm)	Size (inch)	Bolt Circle Diameter (inch)	NO (mm)	Size (inch)	Bolt Circle Diameter (inch)				
1"x0.5"	108	51	35	4	5/8	79.4	4	1/2-13	60.3	22	34.7	PTFE	FV/450
1"x0.75"	108	51	43	4	5/8	79.4	4	1/2-13	69.8	22	34.7		
1.5"x1"	127	73	51	4	5/8	98.4	4	1/2-13	79.4	22	39.7		
2"x1"	152.4	92	51	4	3/4	120.7	4	1/2-13	79.4	22	39.7		
2"x1.5"	152.4	92	73	4	3/4	120.7	4	1/2-13	98.4	22	40.2		
3"x2"	190.5	127	92	4	3/4	152.4	4	5/8-11	120.7	22	44.5		
4"x3"	228.6	157	127	8	3/4	190.4	4	5/8-11	152.4	22	44.5		
6"x4"	279.4	216	157	8	7/8	241.3	8	5/8-11	190.5	22	47.7		FV/212
8"x6"	343	270	216	8	7/8	298.5	8	3/4-10	241.3	28.6	50.8		No Vacuum*
10"x6"	406.4	323.8	216	12	1	362	8	3/4-10	241.3	25.4	60		No Vacuum*

F - Fixed Flanges

R - Rotating Flange

* Under testing-contact us

REDUCING FLANGES

(CLASS 150)

STYLE B

Flange Materials

Ductile Iron ASTM A395
/ Carbon Steel

Dimension

As per ANSI B 16.5#150

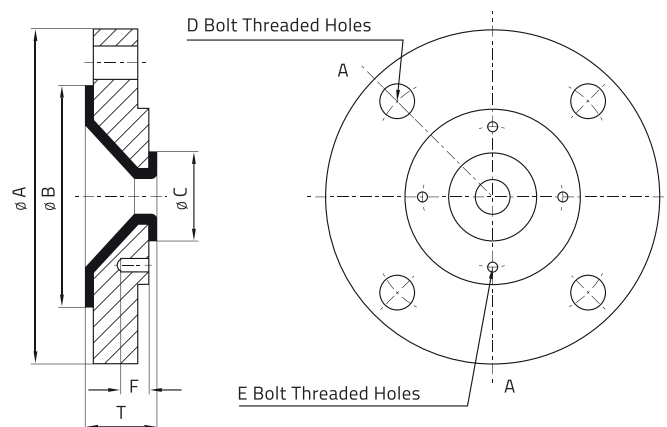
PTFE

As per ASTM D4894

As per ASTM

F1545(2009)

For size 10" and above available upon request. We can also offer Reducing Flanges in Stainless Steel material.



Lining and Testing

Size (inch)	A (mm)	B (mm)	C (mm)	D Bolts Holes			E Bolts Holes			F (mm)	T (mm)	Lining Material	Vacuum Rating (inch O Hg/F)
				NO (mm)	Size (inch)	Bolt Circle Diameter (inch)	NO (mm)	Size (inch)	Bolt Circle Diameter (inch)				
3"x1"	190.5	127	51	4	3/4	152.4	4	1/2-13	79.4	22	41.3	PTFE	FV/450
3"x1.5"	190.5	127	73	4	3/4	152.4	4	1/2-13	98.4	22	41.3		
4"x1"	228.6	157	51	8	3/4	190.5	4	1/2-13	79.4	22	47.7		
4"x1.5"	228.6	157	73	8	3/4	190.5	4	1/2-13	98.4	22	47.7		
4"x2"	228.6	157	92	8	3/4	190.5	4	5/8-11	120.6	22	47.7		
6"x2"	279.4	216	92	8	7/8	241.3	4	5/8-11	120.6	22	47.7		
6"x3"	279.4	216	127	8	7/8	241.3	4	5/8-11	152.4	22	44.5		
8"x4"	343	270	157	8	7/8	298.5	8	5/8-11	190.5	22	50.8		FV/212

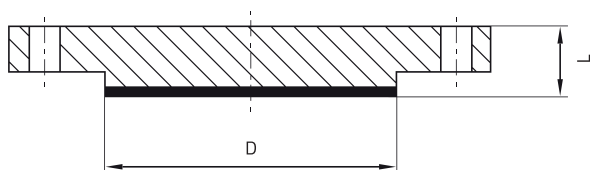
F - Fixed Flanges

R - Rotating Flange

* Under testing-contact us

BLIND FLANGES

(CLASS 150)



Flange Materials

Forged Steel Flange
As per A105

Dimension

As per ANSI B 16.5#150

PTFE

As per ASTM D4895

Lining and Testing

As per ASTM
F1545(2009)

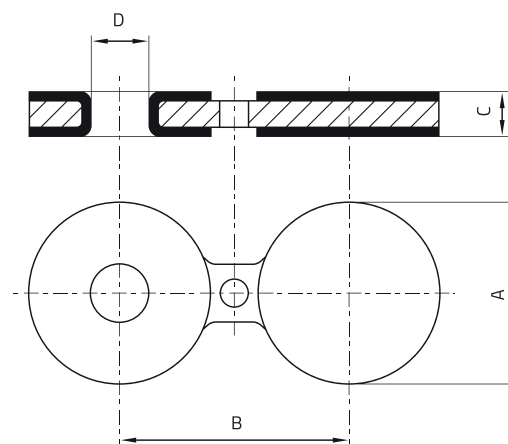
Painting Std

Two layers of epoxy
red oxide.

Size (inch)	D (mm)	L (mm)	Lining Material
0.5"	35	14	PTFE
1"	51	17	
1.5"	73	21	
2"	92	22	
3"	127	27	
4"	157	27	
6"	216	29	
8"	270	33	
10"	324	35	
12"	381	37	

SPECTACLE BLIND

(CLASS 150)



Flange Materials

Forged Steel Flange
As per A105, also
supplied in ASTM A 516,
grade 70 normalized
carbon steel

Dimension

As per ANSI B 16.48#150

PTFE

As per ASTM D4895

Lining and Testing

As per ASTM
F1545(2009)

Painting Std

Two layers of epoxy
red oxide.

Size (inch)	A (mm)	B (mm)	C (mm)	D (mm)	Lining Material
1"	2.50	3.12	0.38	0.79	PTFE
1.5"	3.35	3.88	0.51	1.64	
2"	4.00	4.75	0.53	2.10	
2.5"	4.75	5.50	0.53	2.60	
3"	5.25	6.00	0.56	3.19	
4"	6.75	7.50	0.69	4.19	
6"	8.62	9.50	0.89	6.23	
8"	10.88	11.75	0.89	8.23	
10"	13.25	14.25	1.17	10.20	
12"	16.00	17.00	1.30	12.20	

CONTINUOUSLY LINED PTFE DIP PIPE

(CLASS 150)

Housing Materials

FAB STEEL: made from ASTM

A106

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

PTFE

As per ASTM D4895

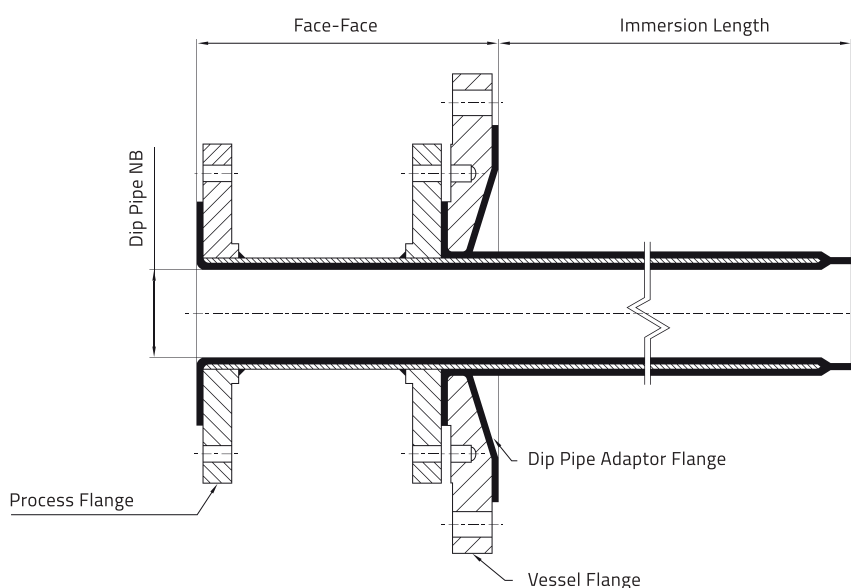
Lining and Testing

As per ASTM F1545(2009)

Painting Std

Primer Zink Silicate

Top Coat Polyurethane



Size (inch)	Ordering Codes	Face to Face (mm)	Maximum Immersion (m)	PTFE Liner Thickness (mm)	Vessel Flange Range (inch)
1"	LPS-1008-1	150	5.5	3.1	1.5" - 24"
1.5"	LPS-1008-1.5	150	5.5	3.2	2" - 24"
2"	LPS-1008-2	150	5.5	3.8	3" - 24"
3"	LPS-1008-3	150	5.5	4.0	4" - 24"
4"	LPS-1008-4	150	5.5	4.0	6" - 24"
6"	LPS-1008-6	150	5.5	5.0	8" - 24"
8"	LPS-1008-8	150	5.5	5.0	10" - 24"
10"	LPS-1008-10	150	2.5	7.0	12" - 24"
12"	LPS-1008-12	150	2.5	7.0	14" - 24"

Dip pipes have a wide array of uses. Typically they are used to charge a reactor below the liquid level to extract samples from the reactor as part of sampling systems or to drain liquid from a vessel without the need for a side or bottom outlet.

Dip pipes are manufactured from a carbon steel fabricated construction with a continuously lined paste extrusion PTFE liner. Having all wetted parts in PTFE gives excellent corrosion resistance.

45 DEGREE EQUAL LATERAL TEE

(CLASS 150)

Housing Materials

FAB STEEL: made from
seamless Pipe ASTM
A53 Gr.B, Sch 40

Flange Materials

As per A105

Dimension

As per ANSI B 16.5#150

PFA

As per ASTM D 3307

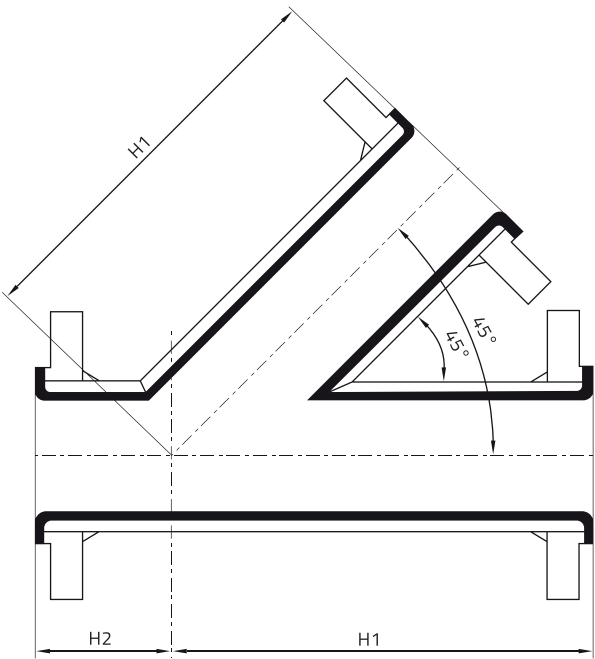
Lining and Testing

As per ASTM F1545(2009)

Painting Std

Two layers of epoxy
red oxide.

For size 6" and above available upon
request. We can also offer Lateral Tee in
Stainless Steel material.



Size (inch)	Body O (mm)	L (mm)	W (mm)	T (mm)	Lining Material	Housing Material	Flanges	Vacuum Rating (inch Hg/*F)
1"	51	44	4	Molding	PFA	Fabricated Steel	F	No Vacuum*
1.5"	73	51	4.5					
2"	92	64	4.8					
3"	127	76	6.5					
4"	157	76	9					
6"	216	89	9.5					

F - Fixed Flanges

R - Rotating Flange

* Under testing-contact us



SUCCESS KEY FOR PTFE SHEET LINING

ADHESIVE SELECTION

The type of adhesives must be properly selected for the joining component. The selected adhesives should be:

- Having high bonding strength
- Chemically resistance
- Low shrinkage during cure
- Cured at room temperature

HOT GAS WELDING

is a technique that consists of using a stream of hot gas to soften both filler rod and parent metal. The filler rod becomes tacky on its surface when suitably softened and the same applies to the surface of the material to be welded. The tacky surfaces bond together under the pressure of the shoe.

SURFACE LINING PROCESS

APPLICATION STEPS

The Lining should be applied in accordance with the specific Application Guidelines and or product Technical Datasheet, as provided by the lining product manufacturer. How the lining is applied will determine whether the lining delivers the performance and earning expected potential.



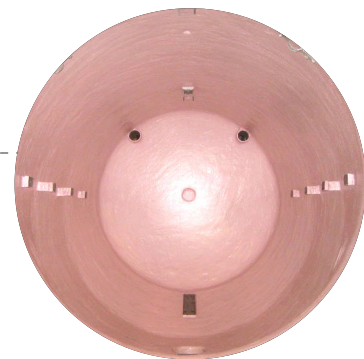
Tank and Sheet Preparation

Surface preparation of metal parts is done by using the sandblasting process to find the required surface roughness so that the adhesive can adhere properly.



Adhesive Application

The process of gluing adhesive to a metal surface. Application of this adhesive is done several times, to get the thickness according to the standard.



Full Adhesive Condition

In this process, the metal surface will be attached with PTFE Sheet or Tube.



Spark & Pin Hole Test

Pin hole test by providing an electric current of 10 to 15 kV. Leaks will be detected if there is a spark.



Welding Process

Welding process using gas welding. The connecting media uses PVDF wire material which is a derivative material from PTFE.



Lining Process

PTFE installation process using:
a. PTFE Tube for pipelining
b. PTFE Sheet for tank lining

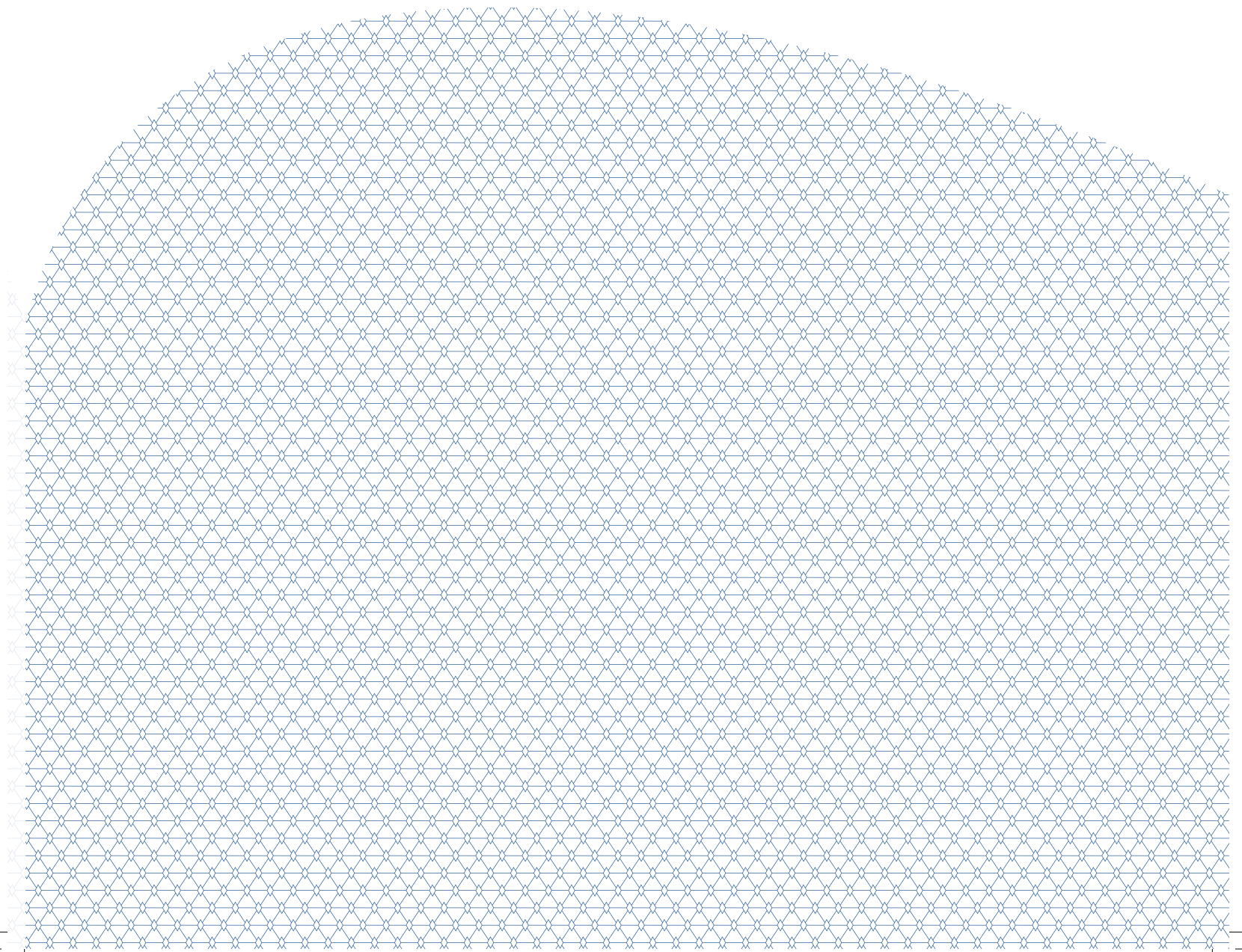
NOTES

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