



Pfaudler Glasteel® Pipe and Fittings

Data Sheet DS55-100-1



Introduction

Pfaudler's Glasteel Pipe and Fittings are lined with Pfaudler's latest glass formulation. Glass is applied to the metal and fired at high temperatures to fuse the glass to the steel substrate. The lining covers all interior surfaces and extends over the flanges to cover the gasket sealing areas. Pfaudler's pipe and fittings are easy to install. The convenience of rotating split flanges facilitates bolting in tight and hard to reach locations. Allow 1/4 inch per joint to compensate for the combined thickness of the glass coating on the flanges and the compressed sealing gaskets. Refer to Pfaudler's Instruction Manual IM55-100 for additional information.

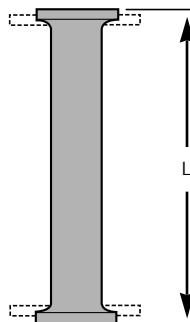
Standard Glasteel® Pipe

Glasteel pipe, ranging from 1 inch through 8 inches in diameter, is available from inventory. Larger diameter sizes are available on a custom basis. All pipe lengths are flanged and Pfaudler steel split flanges, Class 150 or Class 300 are available for connection with every length you purchase.

Pressure-Temperature Rating for Pipe

Standard Pipe with Class 150 Split Flanges					
Pipe Diameter	1½, 2, 4, 6, 8		3	10	12
Temp (°F)	Temp (°C)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)
450	232	185	185	150	150
400	204	200	200	150	150
350	177	205	205	150	150
300	149	210	210	150	150
250	121	212	210	150	150
200	93	215	210	150	150
150	66	225	210	150	150
10 to 100	-12 to 38	235	210	150	150
-20	-29	235	210	150	110

Standard Pipe with Class 300 Split Flanges			
Pipe Dia. (In.)	Temp (°F)	Temp (°C)	Pressure (psi)
1½	-20 to 450	-29 to 232	350
2	-20 to 450	-29 to 232	250
3	-20 to 450	-29 to 232	210
4	-20 to 450	-29 to 232	335
6	-20 to 450	-29 to 232	240
8	-20 to 450	-29 to 232	190
10	-20 to 450	-29 to 232	150
12	-20 to 450	-29 to 232	170



Pipe Overall Dimensions

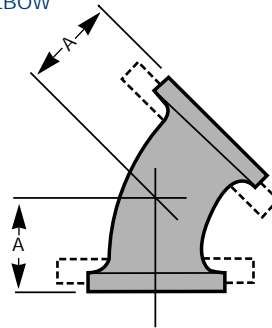
Flanged Pipe with Split Flanges

Nominal Diameter	Min.	Max.
1	4	20
1½	4	60
2	4	120
3	4	120
4	4	120
6	4	120
8	4	120

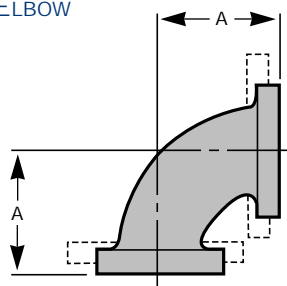
Elbows, Tees, Crosses and Instrument Tees
Class 150*

Nominal Diameter	"A"	Part No.		
45° Elbows				
1	1 ³ / ₄	3148762		
1 ¹ / ₂	2 ¹ / ₄	1502907		
2	2 ¹ / ₂	1502908		
3	3	1502909		
4	4	1502910		
6	5	1502911		
8	5 ¹ / ₂	1502912		
90° Elbows				
1	3 ¹ / ₂	3148765		
1 ¹ / ₂	4	1502900		
2	4 ¹ / ₂	1502901		
3	5 ¹ / ₂	1502902		
4	6 ¹ / ₂	1502903		
6	8	1502905		
8	9	1502906		
Tees				
1	3 ¹ / ₂	3148768		
1 ¹ / ₂	4	1502921		
2	4 ¹ / ₂	1502922		
3	5 ¹ / ₂	1502923		
4	6 ¹ / ₂	1502924		
6	8	1502925		
8	9	1502926		
Crosses				
1	3 ¹ / ₂	3148771		
1 ¹ / ₂	4	1502913		
2	4 ¹ / ₂	1502914		
3	5 ¹ / ₂	1502915		
4	6 ¹ / ₂	1502916		
6	8	1502917		
8	9	1502918		
Instrument Tees				
Pipe Size	Side Outlet	"A"	"B"	Part No.
1	1	3	3 ¹ / ₂	3148724
1 ¹ / ₂	1	3	4	3148725
2	1 ¹ / ₂	3	4 ¹ / ₂	3148726
3	1 ¹ / ₂	3	5 ¹ / ₂	3148727
4	1 ¹ / ₂	3	6 ¹ / ₂	3148728
6	1 ¹ / ₂	3	8	3148729
8	1 ¹ / ₂	3	9	3148730

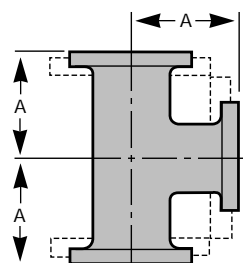
45° ELBOW



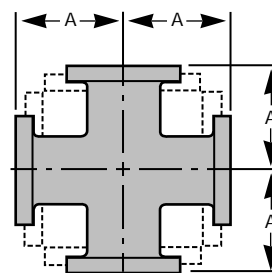
90° ELBOW



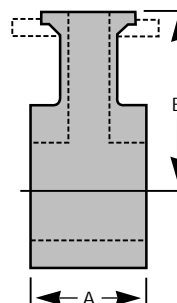
TEE



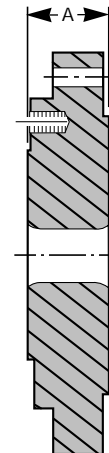
CROSS



INSTRUMENT TEE



Reducing Flanges
Class 150*

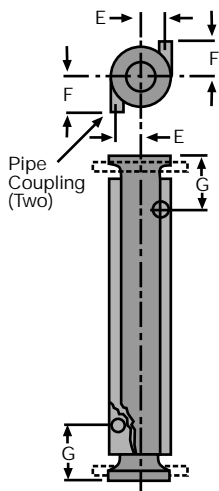


Nominal Diameter	"A"	Part No.
1 ¹ / ₂ x 1	1 ³ / ₈	3149306
2 x 1	1 ³ / ₈	3149307
2 x 1 ¹ / ₂	1 ³ / ₈	3149308
3 x 1	1 ³ / ₈	3149309
3 x 1 ¹ / ₂	1 ³ / ₈	3149310
3 x 2	1 ³ / ₄	3149311
4 x 1	1 ³ / ₄	3149312
4 x 1 ¹ / ₂	1 ³ / ₄	3149313
4 x 2	1 ³ / ₄	3149314
4 x 3	1 ³ / ₄	3149315
6 x 1	1 ³ / ₄	3149316
6 x 1 ¹ / ₂	1 ³ / ₄	3149317
6 x 2	1 ³ / ₄	3149318
6 x 3	1 ³ / ₄	3149319
6 x 4	1 ³ / ₄	3149320
8 x 1	1 ³ / ₄	3149321
8 x 1 ¹ / ₂	1 ³ / ₄	3149322
8 x 2	1 ³ / ₄	3149323
8 x 3	1 ³ / ₄	3149324
8 x 4	1 ³ / ₄	3149325
8 x 6	2 ¹ / ₈	3149326
10 x 4	1 ⁷ / ₈	3149327
10 x 6	2 ¹ / ₈	3149328

* Class 300 available on special order.
Note: Dimensions are in inches.

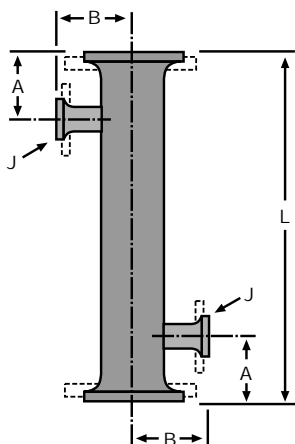
Jacketed Glasteel® Pipe

Jacketed Glasteel pipe, enclosed by an external carbon steel jacket, is widely used for heat-transfer applications. A full range of nominal diameters from 1½ inches through 8 inches are available and in lengths from two to ten feet. Some sizes are available from inventory; please contact us for availability.



Side Outlet Glasteel® Pipe

Side outlet nozzles can be added at either one or both ends of the pipe. This custom feature is available on pipe diameters 2 inches and greater. Openings at the same end must be 180° apart, and the maximum number of side openings per length of pipe is four.



Jacketed Glasteel® Pipe 150-psi Service

Nominal Diameter	(E)	(F)	(G)	Pipe Cplg (I.P.S.)	Max Jkt. Pres. @450° (psi)	Effec. Area 10 ft. Lgth. (sq. ft.)	Wt. 10 ft. Lgth. (lbs.)
1½	1 ³ / ₁₆	2 ³ / ₄	4 ⁹ / ₁₆	³ / ₄	225	3.76	76
2	1 ³ / ₁₆	3 ³ / ₁₆	4 ³ / ₄	1	200	4.90	82
3	1 ⁵ / ₈	4	4 ³ / ₄	1	150	7.40	146
4	2 ¹ / ₈	4 ¹ / ₄	5 ¹ / ₈	1 ¹ / ₄	150	9.79	239
6	2 ¹ / ₂	5	5 ³ / ₄	1 ¹ / ₂	150	14.87	365
8	3 ³ / ₁₆	5 ⁷ / ₈	5 ⁵ / ₁₆	1 ¹ / ₂	150	19.64	508

Side-Outlet Glasteel® Pipe 150-psi Service

Nozzle Size (J)							
Nominal Diameter	Min.		Max.		Number of Outlets Each End		
2	1½		1½		(1)		
3	1½		2		(1)		
4	1½		3		(1)		
6	1½		4		(2)*		
8	1½		6		(2)*		
* 2" nozzles or smaller							
Nominal Diameter	(A) Dimension-Min.					(A) Dimension-Max.	
	J-1½	J-2	J-3	J-4	J-6		
2						6	
3	5 ¹ / ₈	5 ⁵ / ₈				6	
4	5 ¹ / ₈	5 ⁵ / ₈	6			6	
6	5 ³ / ₈	5 ⁷ / ₈	6 ³ / ₈	7 ³ / ₈		8	
8	5 ¹ / ₂	6	6 ¹ / ₂	7 ¹ / ₂	8	8	
Nominal Diameter	(B) Dimension					(L) Dimension	
	J-1½	J-2	J-3	J-4	J-6	Min.	Max.
2	3½					6	120
3	4	4				18	120
4	4½	4½	4½			18	120
6	5½	5½	5½	5½		24	120
8	6½	6½	6½	6½	6½	24	120

Note: Dimensions are in inches.

Gaskets

Gaskets must be inserted between all glassed flanges. The use of Pfaudler series CR envelope gaskets for joining Glasteel pipe and fittings is strongly recommended to provide a tight seal without damage to the glass sealing surface.

Bolting

Pfaudler steel split flanges, with the appropriate pressure rating (Class 150 or 300), are available as standard connectors for our glass-lined pipe, elbows, tees, crosses and reducers. Reducing flanges, blind flanges and connecting flanges are drilled for ANSI bolting of the appropriate class.

Thermal Stress/ Shock Guidelines

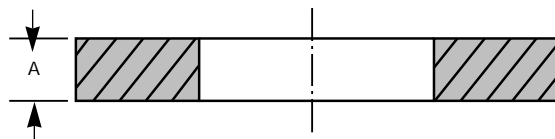
The glass used in Pfaudler Glasteel is scientifically compounded to produce maximum resistance to corrosion and abrasion.

CAUTION: *There are definite temperature limits above which damage can occur. Safe temperature differentials for glass-lined steel have been determined but vary with geometric configurations, operating conditions and other stress inducing influences. When the glass lining is at a temperature of 250°F or less, the maximum safe temperature differential for Glasteel pipe is 230°.*

Standards

Pipe	ASTM A- 106, Gr. B
Pipe Flanges	ASTM A-181-60
Split Flanges	ASTM A-181-60 or ASTM A-216 Gr. WCB
Steel Fittings:	
Reducers, elbows, tees, and crosses	ASTM A-234, Gr. WPB
Spacers	ASTM A-285-C or ASTM A-562
Reducing Flanges	ASTM A-516, Gr. 60
Blind Flanges	ASTM A-285-C

Spacers Class 150/300 Dual-Rated



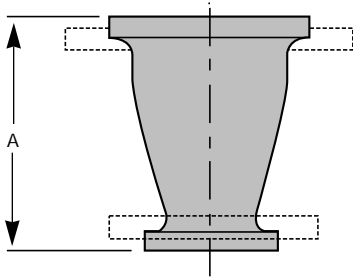
Nominal Diameter	"A"	Part No.
1	1/2	3153943
1	1	3153944
1	1 1/2	3153572
1	2	3153945
1	2 1/2	3153573
1	3	3153942
1 1/2	1/2	2108977
1 1/2	1	2108978
1 1/2	1 1/2	2108979
1 1/2	2	2108980
1 1/2	2 1/2	2108981
1 1/2	3	2108982
2	1/2	2108983
2	1	2108984
2	1 1/2	2108985
2	2	2108986
2	2 1/2	2108987
2	3	2108988
3	1/2	2108989
3	1	2108990
3	1 1/2	2108991
3	2	2108992
3	2 1/2	2108993
3	3	2108994

Nominal Diameter	"A"	Part No.
4	1/2	2108995
4	1	2108996
4	1 1/2	2108997
4	2	2108998
4	2 1/2	2108999
4	3	2109000
6	1/2	2109001
6	1	2109002
6	1 1/2	2109003
6	2	2109004
6	2 1/2	2109005
6	3	2109006
8	1/2	2109007
8	1	2109008
8	1 1/2	2109009
8	2	2109010
8	2 1/2	2109011
8	3	2109012

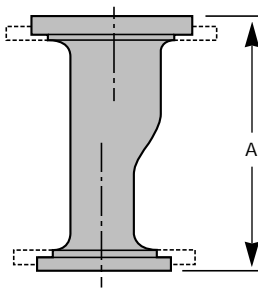
Note: Dimensions are in inches.

Reducers Class 150*

STRAIGHT REDUCER



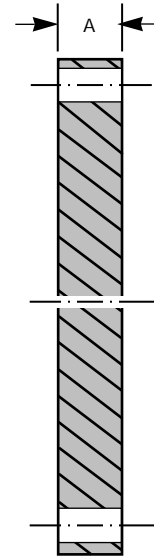
ECCENTRIC REDUCER



Nominal Size	"A"	Part No.
Straight Reducers		
1½ x 1	4½	-
2 x 1	5	1502927
2 x 1½	5	1502816
3 x 1½	6	1502817
3 x 2	6	1502818
4 x 2	7	1502819
4 x 3	7	1502820
6 x 2	9	1502814
6 x 3	9	1502813
6 x 4	9	1502812
8 x 4	11	1502821
8 x 6	11	1502822
10 x 6	12	1502823
10 x 8	12	1502824
12 x 6	14	1502825
12 x 8	14	1502826
12 x 10	14	1502827

Nominal Size	"A"	Part No.
Eccentric Reducers		
1½ x 1	4½	3148777
2 x 1	5	3148778
2 x 1½	5	3148779
3 x 1½	6	3148780
3 x 2	6	3148782
4 x 1½	7	3148781
4 x 2	7	3148783
4 x 3	7	3148785
6 x 2	9	3148784
6 x 3	9	3148786
6 x 4	9	3148787
8 x 4	11	3148788
8 x 6	11	3148789
10 x 6	12	3148790
10 x 8	12	3148792
12 x 6	14	3148791
12 x 8	14	3148793
12 x 10	14	3148794

Blind Flanges Class 150*



Nominal Size	"A"	Part No.
1	1¹⁄₁₆	3148774
1½	¾	1502931
2	¾	1502932
3	1	1502933
4	1	1502934
6	1	1502935
8	1¼	1502936
10	1¼	1502937
12	1¼	1502938

* Class 300 available on special order.
Note: Dimensions are in inches.

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