



STEEL PIPES



BS EN 10255 : 2004 / BS 1387 Welded/ Seamless Steel Pipe

Description	The pipes are manufactured by longitudinally welded or a seamless (heavy gauge type "C") process. Unless otherwise specified, the pipes are supplied bare with plain ends and without any protection on both ends. Steel pipes are available in Black pipes, Primer Coated pipes and hot dip Galvanised pipes			
Applications	For ordinary conveyance of steam, gas, air, water etc			
Identification Marking	Light tubes-Brown Medium tubes-Blue Heavy tubes-Red			
Chemical Composition	Carbon, C % 0.20 max	Manganese, Mn % 1.40 max	Phosphorus, P % 0.035 max	Sulphur, S % 0.030 max
Mechanical Properties	Tensile strength (MPa) Upper Yield strength (MPa) Elongation min. %			
Tolerances on Dimensions, Weight and Length	Outside diameter and weight : As shown in table on following page Wall thickness : Medium and Heavy $\pm 10\%$ for welded tubes, $\pm 12.5\%$ for seamless tubes Length : $+150$ mm -50 mm			
Leak Tightness Test	The test can either be a hydrostatic test at a minimum of 50 bar (700 psi) or an electromagnetic test			

JIS G 3452 Carbon Steel pipes for ordinary piping

Description	This Japanese Industrial Standard specifies the carbon steel pipes used for the pipings for conveying steam, water, oil, gas air etc Steel pipe are available in Black pipes, Primer coated pipes and hot dip Galvanised pipes Grade SGP	
Chemical Composition	Phosphorus, P % 0.040 max.	Sulphur, S % 0.040 max.
Mechanical Properties	Tensile strength N/mm ² Elongation %	290min. 30 %
Tolerances on Dimensions and Weight	Outside diameter and Weight : As shown in table on following page Wall thickness : + Not specified -12.5%	
Leak Tightness Test	Hydraulic test pressure of 25 bar	

BS EN 10255 : 2004 / BS 1387 Welded/Seamless Black & Galvanised Steel Pipe

Grade	Nominal Size		Outside Diameter		Wall Thickness	Weight Plain End
	in	mm	Min.	Max.		
Light Class "A"	1/2	15	21.00	21.40	2.0	0.94
	3/4	20	26.40	26.90	2.3	1.38
	1	25	33.20	33.80	2.6	1.98
	1 1/4	32	41.90	42.50	2.6	2.54
	1 1/2	40	47.80	48.40	2.9	3.23
	2	50	59.60	60.20	2.9	4.08
	2 1/2	65	75.20	76.00	3.2	5.71
	3	80	87.90	88.70	3.2	6.72
	4	100	113.00	113.90	3.6	9.75
Medium Class "B"	1/2	15	21.00	21.80	2.6	1.21
	3/4	20	26.50	27.30	2.6	1.56
	1	25	33.30	34.20	3.2	2.41
	1 1/4	32	42.00	42.90	3.2	3.10
	1 1/2	40	47.90	48.80	3.2	3.56
	2	50	59.70	60.80	3.6	5.03
	2 1/2	65	75.30	76.60	3.6	6.42
	3	80	88.00	89.50	4.0	8.36
	4	100	113.10	115.00	4.5	12.20
	5	125	138.50	140.80	5.0	16.60
	6	150	163.90	166.50	5.0	19.80
Heavy Class "C"	1/2	15	21.00	21.80	3.2	1.44
	3/4	20	26.50	27.30	3.2	1.87
	1	25	33.30	34.20	4.0	2.93
	1 1/4	32	42.00	42.90	4.0	3.79
	1 1/2	40	47.90	48.80	4.0	4.37
	2	50	59.70	60.80	4.5	6.19
	2 1/2	65	75.30	76.60	4.5	7.93
	3	80	88.00	89.50	5.0	10.30
	4	100	113.10	115.00	5.4	14.50
	5	125	138.50	140.80	5.4	17.90
	6	150	163.90	166.50	5.4	21.30

JIS G 3452 Black & Galvanised Steel Pipe

Designation of Pipe		Outside Diameter		Wall Thickness		Plain End Weight	
in	mm	in	mm	in	mm	kg/ft	kg/m
8	200	8.516	216.3	0.228	5.8	9.174	30.1
9	225	9.520	241.8	0.244	6.2	10.973	36.0
10	250	10.528	267.4	0.260	6.6	12.924	42.4
12	300	12.539	318.5	0.272	6.9	16.154	53.0
14	350	14.000	355.6	0.311	7.9	20.635	67.7
16	400	16.000	406.4	0.311	7.9	23.652	77.6

API Seamless Carbon Steel Pipe SCH 40 5L/A106/A53 Gr. B

Seamless Process	The seamless process is a process of hot steel forming a tubular product without a welded seam.		
Applications	Seamless Carbon steel pipe nominal wall pipe for high-temperature service, and similar forming operations.		
Wall Thickness	Tolerances for Wall Thickness : ±12.5%		
Weight	Tolerances for weight : +10% - 3.5%		
Chemical Composition	Grade A	Grade B	
	Carbon, max. %	0.25	0.25
	Manganese, %	0.27 - 0.93	0.29 - 1.06
	Phosphorous, max %	0.035	0.035
	Sulphur, max %	0.035	0.035
	Silicon, min. %	0.10	0.10
	Nickel, max. %	0.40	0.40
	Chromium, max %	0.40	0.40
	Copper, max. %	0.40	0.40
	Molybdenum, max. %	0.15	0.15
	Vanadium, max. %	0.08	0.08
Mechanical Tests	Tensile Strength (MPa)	330	415
	Yield Strength (MPa)	205	240
	Elongation min. %	28%	22%
	Flattening test - Normal pipe size 2" and larger.		
	Bending test - Normal pipe size 2" and under.		
Hydrostatic Testing	Hydrostatic testing are tested up to test pressure of 2500 psi for pipe sizes up to 80mm and larger sizes are shown in table. Pressure is maintained for not less than 5 seconds.		

API Seamless Carbon Steel Pipe SCH 40 5L/A106/A53 Gr. B

Nominal Size		Outside Diameter		Wall Thickness			Weight			Test Pressure			
										Grade A		Grade B	
in	mm	in	mm	in	mm	sch. No.	lbs/ft	kg/m	kg/ft	psi	kg/cm ²	psi	kg/cm ²
1/2	15	0.840	21.3	0.109 0.147	2.77 3.73	40 (STD) 80 (XS)	0.85 1.09	1.26 1.62	0.39 0.49	700 850	49 60	700 850	49 60
3/4	20	1.050	26.7	0.113 0.154	2.87 3.91	40 (STD) 80 (XS)	1.13 1.47	1.68 2.19	0.51 0.67	700 850	49 60	700 850	49 60
1	25	1.315	33.4	0.133 0.179	3.38 4.55	40 (STD) 80 (XS)	1.68 2.17	2.50 3.23	0.76 0.99	700 850	49 60	700 850	49 60
1 1/4	32	1.660	42.2	0.140 0.191	3.56 4.85	40 (STD) 80 (XS)	2.27 3.00	3.38 4.46	1.03 1.36	1200 1800	83 124	1300 1900	90 131
1 1/2	40	1.900	48.3	0.145 0.200	3.68 5.08	40 (STD) 80 (XS)	2.72 3.63	4.05 5.40	1.23 1.65	1200 1800	83 124	1300 1900	90 131
2	50	2.375	60.3	0.154 0.218	3.91 5.54	40 (STD) 80 (XS)	3.65 5.02	5.43 7.47	1.66 2.28	2300 2500	162 176	2500 2500	176 176
2 1/2	65	2.875	73.0	0.203 0.276	5.16 7.01	40 (STD) 80 (XS)	5.79 7.66	8.62 11.40	2.63 3.48	2500 2500	176 176	2500 2500	176 176
3	80	3.500	88.9	0.216 0.300	5.49 7.62	40 (STD) 80 (XS)	7.58 10.25	11.28 15.25	3.44 4.65	2200 2500	155 176	2500 2500	176 176
4	100	4.500	114.3	0.237 0.337	6.02 8.56	40 (STD) 80 (XS)	10.79 14.98	16.06 22.29	4.90 6.80	1900 2700	134 190	2200 2800	155 197
5	125	5.563	141.3	0.258 0.375	6.55 9.53	40 (STD) 80 (XS)	14.62 20.78	21.76 30.92	6.64 9.43	1700 2400	120 169	1900 2800	134 197
6	150	6.625	168.3	0.280 0.432	7.11 10.97	40 (STD) 80 (XS)	18.97 28.57	28.23 42.52	8.61 12.97	1500 2300	105 162	1800 2700	127 190
8	200	8.625	219.1	0.250	6.35	20	22.36	33.28	10.15	1000	70	1200	84
				0.277	7.04	30	24.70	36.76	11.21	1200	84	1300	91
				0.322	8.18	40 (STD)	28.55	42.49	12.96	1300	91	1600	112
				0.406	10.31	60	35.66	53.07	16.19	1700	120	2000	141
				0.500	12.7	80 (XS)	43.39	64.57	19.70	2100	148	2400	169
10	250	10.750	273.0	0.250	6.35	20	28.04	41.73	12.73	850	60	1000	70
				0.307	7.80	30	34.24	50.95	15.54	1000	70	1200	84
				0.365	9.27	40 (STD)	40.48	60.24	18.38	1200	84	1400	98
				0.500	12.7	60 (XS)	54.74	81.46	24.85	1700	120	2000	141
12	300	12.750	323.8	0.250	6.35	20	33.38	49.67	15.15	700	49	800	56
				0.330	8.38	30	43.77	65.14	19.87	950	67	1100	77
				0.375	9.53	(STD)	49.56	73.75	22.50	1100	77	1200	84
				0.406	10.31	40	53.56	79.70	24.32	1100	77	1300	91
				0.500	12.70	XS	65.42	97.36	29.70	1400	98	1600	112
14	350	14.000	355.6	0.250	6.35	10	36.71	54.63	16.67	650	46	750	53
				0.312	7.92	20	45.68	67.98	20.74	800	56	950	67
				0.375	9.53	30 (STD)	54.57	81.21	24.77	950	67	1100	77
				0.438	11.12	40	63.37	94.30	28.77	1100	77	1300	91
				0.500	12.70	XS	72.09	107.28	32.73	1300	91	1500	105
16	400	16.000	406.4	0.250	6.35	10	42.05	62.58	19.09	550	39	650	46
				0.312	7.92	20	52.36	77.92	23.77	700	49	800	56
				0.375	9.53	30 (STD)	62.58	93.13	28	850	60	1000	70
				0.500	12.70	40 (XS)	82.77	123.18	37.58	1100	77	1300	91

ABOUT US :

Since 1994, Pipelink - Beckham Pte Ltd has been an established sole distributor & stockist for premium quality and reputable brand of steel pipe, pipe fittings and water tank providing for fire sprinkler, plumbing and gas systems.

Pipelink - Beckham Pte Ltd has gained good reputation as a reliable and trustworthy supplier of

- Steel pipes
- Malleable iron fittings
- Welding fittings
- Grooved coupling & fittings
- Pipe hangers
- Pipe clamps
- Steel sockets
- Flanges
- Vortex inhibitor
- Water tank level indicator
- Valves
- Sealing tape
- GRP water tank
- Pressed steel tank
- Pressed stainless steel tanks



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Certificate No.: AJA02/4407 Reg No 059

PL/3/2012



PSB Singapore

TEST CERTIFICATE

This Certificate is issued to:

Pipelink-Beckham Pte Ltd
24 Defu Lane 6
Singapore 539377

FOR

Product : Black Steel and Galvanized Steel Pipes with Plain End
Brand/Model : SSH / Class Heavy
Detail : Nominal size (mm): 25, 32, 40, 50, 65, 80, 100 and 150
Specification : BS EN 10255 : 2004+A1 : 2007
Test Report : 7191219760-MEC19-CYW, 7191171300-MEC17-CYW;
7191121178-MEC15-CYW; 7191070545-MEC13-01-
CYW; 7191070545-CHM13-KPF-02; 7191070545-
CHM13-03-LSM; 7191017650-MEC11-1A-CYW;
7191017650-MEC11-1B-CYW; 7191017650-CHM11-02-
MCY; 7191017650-CHM11-03-LSM
Date of Test Report : 09 SEP 2019, 26 SEP 2017, 09 SEP 2015, 04 OCT 2013,
02 OCT 2013, 14 OCT 2013, 17 OCT 2011, 17 OCT
2011, 14 OCT 2011, 06 OCT 2013

Summary

A sample of product submitted was tested and was found to comply with the test requirements of the above standard(s).

A handwritten signature in blue ink, appearing to read "Vice President (MEC)".

Vice President (MEC)

TÜV SÜD PSB Pte Ltd

Certification No.: Date of Original Issue: Date of Last Revision: Date of Expiry:

03799

04 Oct 2017

25 Sept 2019

03 Oct 2021

This Certificate is part of a full report and should be read in conjunction with it. This Certificate remains the property of TÜV SÜD PSB Pte Ltd and shall be returned upon request. The use of this Certificate is subjected to the terms and conditions of the Test Certification Scheme.

Note: This Certificate is issued pursuant to the terms set out overleaf.



MALLEABLE IRON PIPE FITTINGS







GENERAL INFORMATION

1. PRODUCT STANDARD AND APPLICATION RANGE

Galvanized and Black Malleable Iron Pipe Standard Specification :

Class : 150 LBS and 300 LBS

STANDARD	
Design	ANSI/ASME B16.3 ANSI/ASME B16.14 ANSI/ASME B16.39
Material	ASTM A 197
Threads	ANSI/ASME B1.20.1
Zinc Coating	ASTM A 153
Reinforcement	Banded

Mechanical Properties of Blackheart Malleable Cast Iron

Tensile Strength (min)	Elongation (min)	Yield Strength
275 Mpa	5 %	200 Mpa

Pressure – Temperature Ratings For Class 150

Temperature (° C)	Pressure (Bar)
29 to 66	20.7
100	17.5
125	15.2
150	12.8
175	10.5



Pressure – Temperature Ratings For Class 300

Temperature (°C)	Pressure (Bar)		
	Sizes : 1/4 - 1"	Sizes : 1 1/4 - 2	Sizes : 2 1/2 – 3
-29 to 66	137.9	103.4	69.0
100	119.6	90.5	61.5
125	106.4	81.1	56.1
150	93.1	71.8	50.7
175	79.9	62.5	45.2
200	66.6	53.1	39.8
225	53.4	43.8	34.3
250	40.1	34.5	28.9
275	26.9	25.2	23.4
288	20.7	20.7	20.7

Coating :

Galvanized	Hot Dip Zinc Coating (min) 0.0034 inch / 80 µm/ 571 gr / m ² .
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MALLEABLE FITTING

Compression test with heat treatment



NON-MALLEABLE FITTING

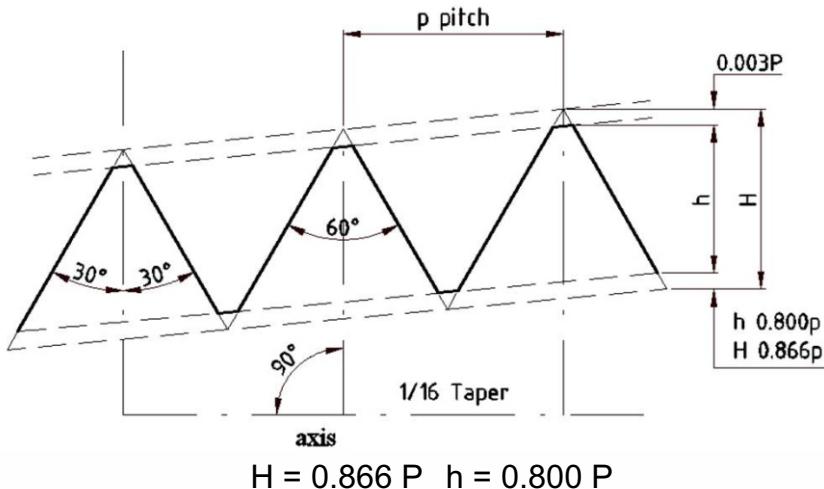
Compression test without heat treatment



Member of the FM Global Group

2.BASIC DIMENSIONS FOR AMERICAN STANDARD THREADS

This information is selected from the ASME B1.20.1, table 7



Taper Thread (NPT)

Dimension, in inch

Designation of threads size	Outside Diameter of Pipe	Number of thread in inch	Pitch	Height (depth) of thread	Hand tight Engagement		Effective Thread (length)	Tolerance on position of gauge plane	
					Length	Diameter		On External thread	On Internal thread
Inch	D		P	h				Turns of thread	
1/8	0.405	27.0	0.03704	0.02963	0.1615	0.37360	0.2639	± 1	± 1
1/4	0.540	18.0	0.05556	0.04444	0.2278	0.49163	0.4018	± 1	± 1
3/8	0.675	18.0	0.05556	0.04444	0.2400	0.62701	0.4078	± 1	± 1
1/2	0.840	14.0	0.07143	0.05714	0.3200	0.77843	0.5337	± 1	± 1
3/4	1.050	14.0	0.07143	0.05714	0.3390	0.98887	0.5457	± 1	± 1
1	1.315	11.5	0.08696	0.06957	0.4000	1.23863	0.6828	± 1	± 1
11/4	1.660	11.5	0.08696	0.06957	0.4200	1.58338	0.7068	± 1	± 1
11/2	1.900	11.5	0.08696	0.06957	0.4200	1.82234	0.7235	± 1	± 1
2	2.375	11.5	0.08696	0.06957	0.4360	2.29627	0.7565	± 1	± 1
21/2	2.875	8.0	0.12500	0.10000	0.6820	2.76216	1.1375	± 1	± 1
3	3.500	8.0	0.12500	0.10000	0.7660	3.38850	1.2000	± 1	± 1
31/2	4.000	8.0	0.12500	0.10000	0.8210	3.88881	1.2500	± 1	± 1
4	4.500	8.0	0.12500	0.10000	0.8440	4.38712	1.3000	± 1	± 1
5	5.563	8.0	0.12500	0.10000	0.9370	5.44929	1.4063	± 1	± 1
6	8.625	8.0	0.12500	0.10000	0.9580	6.50597	1.5125	± 1	± 1



MALLEABLE IRON PIPE FITTINGS



FIG NO. 3
(Elbows 90)
Page. 5



FIG NO. 4
(Red Elbows 90)
Page. 6



FIG NO. 6
(Elbows 45)
Page. 7



FIG NO. 7B
(Street Elbows 90)
Page. 8



FIG NO. -
(Street Elbows 45)
Page. 9



FIG NO. 13
(Tees)
Page. 9 - 10



FIG NO. 14
(Red Tees)
Page. 11-13



FIG NO. 19A
(Crosses)
Page. 14



FIG NO. 21A
(Caps)
Page. 14 - 15



FIG NO. 24B
(Couplings)
Page. 16



FIG NO. 26
(Red Couplings)
Page. 17



FIG NO. 29
(Locknuts)
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FIG NO. 32
(Nipples)
Page. 18



FIG NO. 30
(Bushings)
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FIG NO. 31A
(Square Head Plugs)
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FIG NO. 31B
(Slotted Head Plugs)
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FIG NO.35B
(Union Brass)
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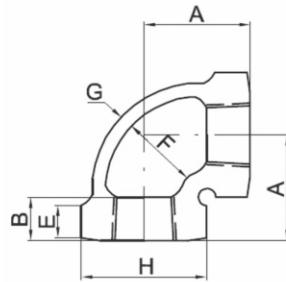


FIG NO. 35C
(Union Non Brass)
Page. 23



FLOOR FLANGE

Fig No. 3 - ELBOWS 90° BANDED (BL 90)



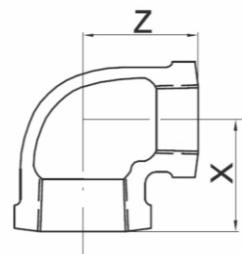
Dimension of Class 150 - (in Inch)

SIZE	A	B (min)	E (min)	F		G	H (min)
				Min	Max		
1/4"	0,81	0,32	0,21	0,54	0,58	0,09	0,84
3/8"	0,95	0,36	0,23	0,67	0,72	0,10	1,01
1/2"	1,12	0,43	0,25	0,84	0,90	0,10	1,20
3/4"	1,31	0,50	0,27	1,05	1,11	0,12	1,46
1"	1,50	0,58	0,30	1,31	1,38	0,13	1,77
1 1/4"	1,75	0,67	0,34	1,66	1,73	0,14	2,15
1 1/2"	1,94	0,70	0,37	1,90	1,97	0,15	2,43
2"	2,25	0,75	0,42	2,37	2,44	0,17	2,96
2 1/2"	2,70	0,92	0,48	2,87	2,97	0,21	3,59
3"	3,08	0,98	0,55	3,50	3,60	0,23	4,28
3 1/2"	3,42	1,03	0,60	4,00	4,10	0,25	4,84
4"	3,79	1,08	0,66	4,50	4,60	0,26	5,40
5"	4,50	1,18	0,78	5,56	5,56	0,30	6,58
6"	5,13	1,28	0,90	6,62	6,72	0,34	7,77

Dimension of Class 300 - (in Inch)

SIZE	A	B (min)	E (min)	F		G	H (min)
				Min	Max		
1/2"	1,25	0,57	0,50	0,84	0,90	0,16	1,34
3/4"	1,44	0,64	0,56	1,05	1,11	0,18	1,63
1"	1,63	0,75	0,62	1,31	1,38	0,20	1,95
1 1/4"	1,94	0,84	0,69	1,66	1,73	0,22	2,39
1 1/2"	2,13	0,87	0,75	1,90	1,97	0,24	2,68
2"	2,50	1,00	0,84	2,37	2,44	0,26	3,28

Fig No. 4 - REDUCING ELBOWS 90° BANDED (BRL)

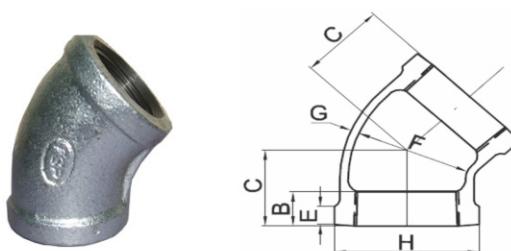


Dimension of Class 150 - (in Inch)

SIZE	X	Z
1/4 X 1/8"	0,74	0,76
3/8 X 1/4"	0,88	0,90
3/8 X 1/8"	0,81	0,85
1/2 X 3/8"	1,04	1,03
1/2 X 1/4"	0,97	0,98
3/4 X 1/2"	1,20	1,22
3/4 X 3/8"	1,12	1,13
3/4 X 1/4"	1,05	1,08
1 X 3/4"	1,37	1,45
1 X 1/2"	1,26	1,36
1 X 3/8"	1,18	1,27
1 1/4 X 1"	1,58	1,67
1 1/4 X 3/4"	1,45	1,62
1 1/4 X 1/2"	1,34	1,53
1 1/2 X 1 1/4"	1,82	1,88
1 1/2 X 1"	1,65	1,80
1 1/2 X 3/4"	1,52	1,75
2 X 1 1/2"	2,02	2,16
2 X 1 1/4"	1,90	2,10
2 X 1"	1,73	2,02
2 X 3/4"	1,60	1,97
2 1/2 X 2"	2,39	2,60
2 1/2 X 1 1/2"	2,16	2,51
3 X 2 1/2"	2,83	2,99
3 X 2"	2,52	2,89
4 X 3"	3,30	3,60

Note : For dimensions not given, see the dimensions table of Elbow

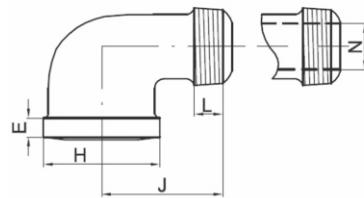
Fig No. 6 - ELBOWS 45° BANDED (BL 45)



SIZE	C	B (min)	E (min)	F		G	H (min)
				Min	Max		
1/4"	0,73	0,32	0,21	0,54	0,58	0,09	0,84
3/8"	0,80	0,36	0,23	0,67	0,72	0,10	1,01
1/2"	0,88	0,43	0,25	0,84	0,90	0,10	1,20
3/4"	0,98	0,50	0,27	1,05	1,11	0,12	1,46
1"	1,12	0,58	0,30	1,31	1,38	0,13	1,77
1 1/4 "	1,29	0,67	0,34	1,66	1,73	0,14	2,15
1 1/2"	1,43	0,70	0,37	1,90	1,97	0,15	2,43
2"	1,68	0,75	0,42	2,37	2,44	0,17	2,96
2 1/2"	1,95	0,92	0,48	2,87	2,97	0,21	3,59
3"	2,17	0,98	0,55	3,50	3,60	0,23	4,28
3 1/2"	2,39	1,03	0,60	4,00	4,10	0,25	4,84
4"	2,61	1,08	0,66	4,50	4,60	0,26	5,40
5"	3,05	1,18	0,78	5,56	5,66	0,30	6,58
6"	3,46	1,28	0,90	6,62	6,72	0,34	7,77

SIZE	C	B (min)	E (min)	F		G	H (min)
				Min	Max		
1/2"	1,00	0,57	0,50	0,84	0,90	0,16	1,34
3/4"	1,13	0,64	0,56	1,05	1,11	0,18	1,63
1"	1,31	0,75	0,62	1,31	1,38	0,20	1,95
1 1/4 "	1,50	0,84	0,69	1,66	1,73	0,22	2,39
1 1/2"	1,69	0,87	0,75	1,90	1,97	0,24	2,68
2"	2,00	1,00	0,84	2,37	2,44	0,26	3,28

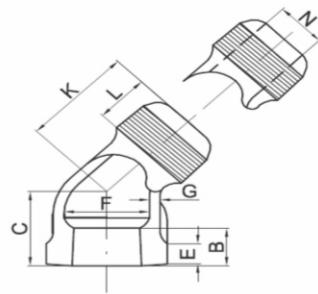
Fig No. 7B - STREET ELBOWS 90° BANDED (BSL 90)



Dimension of Class 150 - (in Inch)						
SIZE	A	E (min)	H (min)	J	L (min)	N
1/8"	0,69	0,20	0,69	1,00	0,26	0,20
1/4"	0,81	0,21	0,84	1,19	0,40	0,26
3/8"	0,95	0,23	1,01	1,44	0,41	0,37
1/2"	1,12	0,25	1,20	1,63	0,53	0,51
3/4"	1,31	0,27	1,46	1,89	0,55	0,69
1 "	1,50	0,30	1,77	2,14	0,68	0,91
1 1/4"	1,75	0,34	2,15	2,45	0,71	1,19
1 1/2"	1,94	0,37	2,43	2,69	0,72	1,39
2 "	2,25	0,42	2,96	3,26	0,76	1,79
2 1/2"	2,70	0,48	3,59	3,86	1,14	2,20
1 "	1,50	0,30	1,77	2,14	0,68	0,91
1 1/4"	1,75	0,34	2,15	2,45	0,71	1,19
1 1/2"	1,94	0,37	2,43	2,69	0,72	1,39
2 "	2,25	0,42	2,96	3,26	0,76	1,79

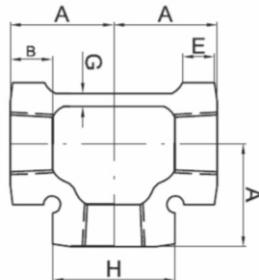
Dimension of Class 300 - (in Inch)					
SIZE	A	H (min)	J	L (min)	N
1/2"	1,25	1,34	2,00	0,53	0,49
3/4"	1,44	1,63	2,19	0,55	0,67
1 "	1,63	1,95	2,56	0,68	0,88
1 1/4"	1,94	2,39	2,88	0,71	1,16
1 1/2"	2,13	2,68	3,13	0,72	1,35
2 "	2,50	3,28	3,69	0,76	1,75

STREET ELBOWS 45° BANDED (BSL 45)

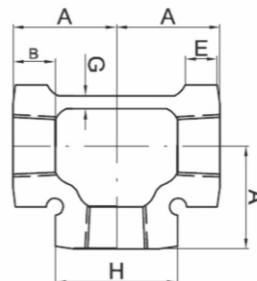


SIZE	C	B (min)	E (min)	F		G	K	L (min)	N
				Min	Max				
1/4"	0.73	0.32	0.21	0.54	0.58	0.09	0.94	0.40	0.26
3/8"	0.80	0.36	0.23	0.67	0.72	0.10	1.03	0.41	0.37
1/2"	0.88	0.43	0.25	0.84	0.90	0.10	1.15	0.53	0.51
3/4"	0.98	0.50	0.27	1.05	1.11	0.12	1.29	0.55	0.69
1"	1.12	0.58	0.30	1.31	1.38	0.13	1.47	0.68	0.91
1 1/4"	1.29	0.67	0.34	1.66	1.73	0.14	1.71	0.71	1.19
1 1/2"	1.43	0.70	0.37	1.90	1.97	0.15	1.88	0.72	1.39
2"	1.68	0.75	0.42	2.37	2.44	0.17	2.22	0.76	1.79
2 1/2"	1.95	0.92	0.48	2.87	2.97	0.21	2.57	1.14	2.20
3"	2.17	0.98	0.55	3.50	3.60	0.23	3.00	1.20	2.78
4"	2.61	1.08	0.66	4.50	4.60	0.26	3.70	1.30	3.70
5"	-	1.18	0.78	5.56	5.66	0.30	-	1.41	4.69
6"	-	1.28	0.90	6.62	0.34	0.34	-	1.51	5.67

Fig No. 13 - TEES BANDED (BT)



Dimension of Class 150 - (in Inch)					
SIZE	A	B (min)	E (min)	G	H (min)
1/8"	0.69	0.25	0.20	0.09	0.69
1/4"	0.81	0.32	0.21	0.09	0.84
3/8"	0.95	0.36	0.23	0.10	1.01
1/2"	1.12	0.43	0.25	0.10	1.20
3/4"	1.31	0.50	0.27	0.12	1.46
1"	1.50	0.58	0.30	0.13	1.77

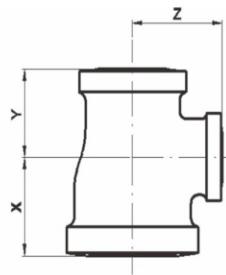
Fig No. 13 - TEES BANDED (BT)

Dimension of Class 150 - (in Inch)

SIZE	A	B (min)	E (min)	G	H (min)
1 1/4"	1.75	0.67	0.34	0.14	2.15
1 1/2"	1.94	0.70	0.37	0.15	2.43
2"	2.25	0.75	0.42	0.17	2.96
2 1/2"	2.70	0.92	0.48	0.21	3.59
3"	3.08	0.98	0.55	0.23	4.28
3 1/2"	3.42	1.03	0.60	0.25	4.84
4"	3.79	1.08	0.66	0.26	5.40
5"	4.50	1.18	0.78	0.30	6.58
6"	5.13	1.28	0.90	0.34	7.77

Dimension of Class 300 - (in Inch)

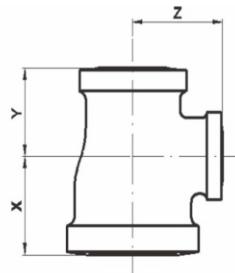
SIZE	A	B (min)	E (min)	G	H (min)
1/2"	1.25	0.57	0.50	0.16	1.34
3/4"	1.44	0.64	0.56	0.18	1.63
1"	1.63	0.75	0.62	0.20	1.95
1 1/4"	1.94	0.84	0.69	0.22	2.39
1 1/2"	2.13	0.87	0.75	0.24	2.68
2"	2.50	1.00	0.84	0.26	3.28

Fig No. 14 - REDUCING TEES BANDED (BRT)



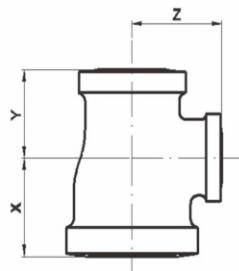
Dimension of Class 150 - (in Inch)							
SIZE	X	Y	Z	SIZE	X	Y	Z
1/4 X 1/4 X 1/8"	0.74	0.74	0.76	1 X 1 X 1/2"	1.26	1.26	1.36
1/8 X 1/8 X 1/4"	0.76	0.76	0.74	1 X 1 X 3/8"	1.18	1.18	1.27
3/8 X 3/8 X 1/4"	0.88	0.88	0.90	1 X 1 X 1/4"	1.11	1.11	1.22
3/8 X 3/8 X 1/8 "	0.81	0.81	0.85	1 X 3/4 X 1"	1.50	1.45	1.50
3/8X 1/4 X 3/8"	0.95	0.90	0.95	1 X 3/4 X 3/4"	1.37	1.31	1.45
3/8 X 1/4 X 1/4"	0.88	0.81	0.90	1 X 3/4 X 1/2"	1.26	1.20	1.36
1/4 X 1/4 X 3/8"	0.90	0.90	0.88	1 X 1/2 X 1"	1.50	1.36	1.50
1/2 X 1/2 X 3/8"	1.04	1.04	1.03	1 X 1/2 X 3/4"	1.37	1.22	1.45
1/2 X 1/2 X 1/4"	0.97	0.97	0.98	1 X 1/2 X 1/2"	1.26	1.12	1.36
1/2 X 3/8 X 1/2"	1.12	1.03	1.12	3/4 X 3/4 X 1"	1.45	1.45	1.37
1/2 X 3/8 X 3/8"	1.04	0.95	1.03	1/2 X 1/2 X 1"	1.36	1.36	1.26
1/2 X 1/4 X 1/2"	1.12	0.98	1.12	1 1/4 X 1 1/4 X 1"	1.58	1.58	1.67
3/8 X 3/8 X 1/2"	1.03	1.03	1.04	1 1/4 X 1 1/4 X 3/4"	1.45	1.45	1.62
3/4 X 3/4 X 1/2"	1.20	1.20	1.22	1 1/4 X 1 1/4 X 1/2"	1.34	1.34	1.53
3/4 X 3/4 X 3/8"	1.12	1.12	1.13	1 1/4 X 1 1/4 X 3/8"	1.26	1.26	1.44
3/4 X 3/4 X 1/4"	1.05	1.05	1.08	1 1/4 X 1 X 1 1/4"	1.75	1.67	1.75
3/4 X 1/2 X 3/4"	1.31	1.22	1.31	1 1/4 X 1 X 1"	1.58	1.50	1.67
3/4 X 1/2 X 1/2"	1.20	1.12	1.22	1 1/4 X 1 X 3/4"	1.45	1.37	1.62
3/4 X 1/2 X 3/8"	1.12	1.04	1.13	1 1/4 X 1 X 1/2"	1.34	1.26	1.53
3/4 X 3/8 X 3/4"	1.31	1.13	1.31	1 1/4 X 3/4 X 1 1/4"	1.75	1.62	1.75
3/4 X 3/8 X 3/8"	1.12	0.95	1.13	1 1/4 X 3/4 X 1"	1.58	1.45	1.67
3/4 X 1/4 X 3/4"	1.31	1.08	1.31	1 1/4 X 3/4 X 3/4"	1.45	1.31	1.62
1/2 X 1/2 X 3/4"	1.22	1.22	1.20	1 1/4 X 1/2 X 1 1/4"	1.75	1.53	1.75
1 X 1 X 3/4"	1.37	1.37	1.45	1 1/4 X 1/2 X 1"	1.58	1.36	1.67

Fig No. 14 - REDUCING TEES BANDED (BRT)



Dimension of Class 150 - (in Inch)							
SIZE	X	Y	Z	SIZE	X	Y	Z
1 X 1 X 1 1/4"	1.67	1.67	1.58	2 X 1 1/2 X 1 1/2"	2.02	1.94	2.16
3/4 X 3/4 X 1 1/4"	1.62	1.62	1.45	2 X 1 1/2 X 1 1/4"	1.90	1.82	2.10
1 1/2 X 1 1/2 X 1 3/4"	1.82	1.82	1.88	2 X 1 1/2 X 1"	1.73	1.65	2.02
1 1/2 X 1 1/2 X 1"	1.65	1.65	1.80	2 X 1 1/4 X 2"	2.25	2.10	2.25
1 1/2 X 1 1/2 X 3/4"	1.52	1.52	1.75	2 X 1 1/4 X 1 1/2"	2.02	1.88	2.16
1 1/2 X 1 1/2 X 1/2"	1.41	1.41	1.66	2 X 1 1/4 X 1 1/4"	1.90	1.75	2.10
1 1/2 X 1 1/4 X 1 1/2"	1.94	1.88	1.94	2 X 1 X 2"	2.25	2.02	2.25
1 1/2 X 1 1/4 X 1 1/4"	1.82	1.75	1.88	2 X 1 X 1 1/2"	2.02	1.80	2.16
1 1/2 X 1 1/4 X 1"	1.65	1.58	1.80	2 X 3/4 X 2"	2.25	1.97	2.25
1 1/2 X 1 1/4 X 3/4"	1.52	1.45	1.75	2 X 1/2 X 2"	2.25	1.88	2.25
1 1/2 X 1 1/4 X 1/2"	1.41	1.34	1.66	1 1/2 X 1 1/2 X 2"	2.16	2.16	2.02
1 1/2 X 1 X 1 1/2"	1.94	1.80	1.94	1 1/4 X 1 1/4 X 2"	2.10	2.10	1.90
1 1/2 X 1 X 1 1/4"	1.82	1.67	1.88	1 X 1 X 2"	2.02	2.02	1.73
1 1/2 X 1 X 1"	1.65	1.50	1.80	2 1/2 X 2 1/2 X 2"	2.39	2.39	2.60
1 1/2 X 3/4 X 1 1/2"	1.94	1.75	1.94	2 1/2 X 2 1/2 X 1 1/2"	2.16	2.16	2.51
1 1/2 X 1/2 X 1 1/2"	1.94	1.66	1.94	2 1/2 X 2 1/2 X 1 1/4"	2.04	2.04	2.45
1 1/4 X 1 1/4 X 1 1/2"	1.88	1.88	1.82	2 1/2 X 2 1/2 X 1"	1.87	1.87	2.37
1 X 1 X 1 1/2"	1.80	1.80	1.65	2 1/2 X 2 1/2 X 3/4"	1.74	1.74	2.32
2 X 2 X 1 1/2"	2.02	2.02	2.16	2 1/2 X 2 X 2 1/2"	2.70	2.60	2.70
2 X 2 X 1 1/4"	1.90	1.90	2.10	2 1/2 X 2 X 2"	2.39	2.25	2.60
2 X 2 X 1"	1.73	1.73	2.02	2 1/2 X 1 1/2 X 2 1/2"	2.70	2.51	2.70
2 X 2 X 3/4"	1.60	1.60	1.97	2 1/2 X 1 1/2 X 2"	2.39	2.16	2.60
2 X 2 X 1/2"	1.49	1.49	1.88	2 X 2 X 2 1/2"	2.60	2.60	2.39
2 X 1 1/2 X 2"	2.25	2.16	2.25	3 X 3 X 2 1/2"	2.83	2.83	2.99

Fig No. 14 - REDUCING TEES BANDED (BRT)

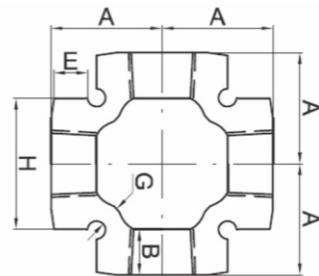


Dimension of Class 150 - (in Inch)							
SIZE	X	Y	Z	SIZE	X	Y	Z
3 X 3 X 2"	2.52	2.52	2.89	4 X 4 X 3"	3.30	3.30	3.60
3 X 3 X 1 1/2"	2.29	2.29	2.80	4 X 4 X 2 1/2"	3.05	3.05	3.51
3 X 3 X 1 1/4"	2.17	2.17	2.74	4 X 4 X 2"	2.74	2.74	3.41
3 X 3 X 1"	2.00	2.00	2.66	4 X 4 X 1 1/2"	2.51	2.51	3.32
3 X 3 X 3/4"	1.87	1.87	2.61	4 X 3 X 4"	3.79	3.60	3.79
3 X 2 1/2 X 3"	3.08	2.99	3.08	3 X 3 X 4"	3.60	3.60	3.30
3 X 2 1/2 X 2 1/2"	2.83	2.70	2.99				
3 X 2 1/2 X 2"	2.52	2.39	2.89				
3 X 2 X 3"	3.08	2.89	3.08				
3 X 2 X 2"	2.52	2.25	2.89				
2 1/2 X 2 1/2 X 3"	2.99	2.99	2.83				

Dimension of Class 300 - (in Inch)							
SIZE	X	Y	Z	SIZE	X	Y	Z
3/4 X 3/4 X 1/2"	1.31	1.31	1.38	1 1/2 X 1 1/2 X 1"	1.81	1.81	2.00
1 X 1 X 1/2"	1.44	1.44	1.50	1 1/2 X 1 1/2 X 1 1/4"	2.00	2.00	2.06
1 X 1 X 3/4"	1.50	1.50	1.56	2 X 2 X 1 1/2"	1.75	1.75	2.06
1 1/4 X 1 1/4 X 1/2"	1.50	1.50	1.69	2 X 2 X 3/4"	1.81	1.81	2.13
1 1/4 X 1 1/4 X 3/4"	1.63	1.63	1.75	2 X 2 X 1"	2.00	2.00	2.25
1 1/4 X 1 1/4 X 1"	1.75	1.75	1.81	2 X 2 X 1 1/4"	2.13	2.13	2.31
1 1/2 X 1 1/2 X 1/2"	1.63	1.63	1.81	2 X 2 X 1 1/2"	2.25	2.25	2.38
1 1/2 X 1 1/2 X 3/4"	1.69	1.69	1.88				

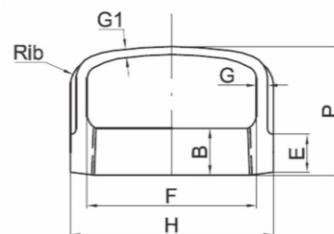
Note : For dimensions not given, see the dimensions table of Tees

Fig No. 19A - CROSSES (BCR)



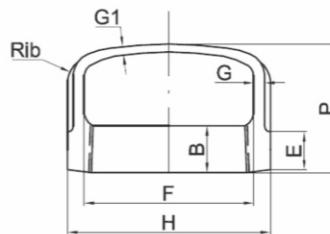
Dimension of Class 150 - (in Inch)					
SIZE	A	B (min)	E (min)	G	H (min)
1/4"	0.81	0.32	0.21	0.09	0.84
3/8"	0.95	0.36	0.23	0.10	1.01
1/2"	1.12	0.43	0.25	0.10	1.20
3/4"	1.31	0.50	0.27	0.12	1.46
1"	1.50	0.58	0.30	0.13	1.77
1 1/4"	1.75	0.67	0.34	0.14	2.15
1 1/2"	1.94	0.70	0.37	0.15	2.43
2"	2.25	0.75	0.42	0.17	2.96
2 1/2"	2.70	0.92	0.48	0.21	3.59
3"	3.08	0.98	0.55	0.23	4.28
3 1/2"	3.42	1.03	0.60	0.25	4.84
4"	3.79	1.08	0.66	0.26	5.40
5"	4.50	1.18	0.78	0.30	6.58
6"	5.13	1.28	0.90	0.34	7.77

Fig No. 21A - ROUND CAPS BANDED (RC)



SIZE	B (min)	E (min)	F		G	H (min)	P (min)	Ribs	G1
			Min	Max					
1/4"	0.32	0.21	0.54	0.58	0.09	0.84	0.63	-	-
3/8"	0.36	0.23	0.67	0.72	0.10	1.01	0.74	-	-
1/2"	0.43	0.25	0.84	0.90	0.10	1.20	0.87	0.10	-
3/4"	0.50	0.27	1.05	1.11	0.12	1.46	0.97	0.12	0.13
1"	0.58	0.30	1.31	1.38	0.13	1.77	1.16	0.13	0.15

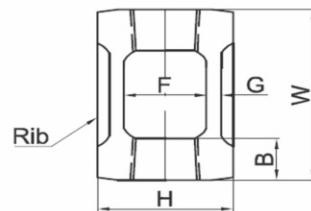
Fig No. 21A - ROUND CAPS BANDED (RC)



SIZE	B (min)	E (min)	F		G	H (min)	P (min)	Ribs	G1
			Min	Max					
1¼"	0.67	0.34	1.66	1.73	0.14	2.15	1.28	0.14	0.17
1½"	0.70	0.37	1.90	1.97	0.15	2.43	1.33	0.15	0.19
2"	0.75	0.42	2.37	2.44	0.17	2.46	1.45	0.17	0.22
2½"	0.92	0.48	2.87	2.97	0.21	3.59	1.70	0.21	0.25
3"	0.98	0.55	3.50	3.60	0.23	4.28	1.80	0.23	0.29
3½"	1.03	0.60	4.00	4.10	0.25	4.84	1.90	0.25	0.30
4"	1.08	0.66	4.50	4.60	0.26	5.40	2.08	0.26	0.36
5"	1.18	0.78	5.56	5.66	0.30	6.58	2.32	0.30	-
6"	1.28	0.90	6.62	6.72	0.34	7.77	2.55	0.34	-

Dimension of Class 300 - (in Inch)								
SIZE	B (min)	E (min)	F		G	H (min)	P (min)	G1
			Min	Max				
1/2"	0.57	0.50	0.84	0.90	0.16	1.34	0.98	0.20
3/4"	0.64	0.56	1.05	1.11	0.18	1.63	1.08	0.23
1"	0.75	0.62	1.31	1.38	0.20	1.95	1.26	0.25
1¼"	0.84	0.69	1.66	1.73	0.22	2.39	1.38	0.28
1½"	0.87	0.75	1.90	1.97	0.24	2.68	1.43	0.30
2"	1.00	0.84	2.37	2.44	0.26	3.28	1.68	0.33
2½"	1.17	0.94	2.87	2.97	0.31	3.86	2.06	0.39
3"	1.23	1.00	3.50	3.60	0.35	4.62	2.17	0.44

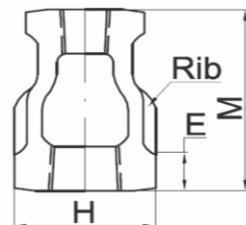
Fig No. 24B - COUPLINGS BANDED (BS)



Dimension of Class 150 - (in Inch)							
SIZE	B (min)	F		G	H (min)	Ribs	W
		Min	Max				
1/8"	0.25	0.4	0.43	0.09	0.69	0.09	0.96
1/4"	0.32	0.54	0.58	0.09	0.84	0.09	1.06
3/8"	0.36	0.67	0.72	0.10	1.01	0.10	1.16
1/2"	0.43	0.84	0.90	0.10	1.20	0.10	1.34
3/4"	0.50	1.05	1.11	0.12	1.46	0.12	1.52
1"	0.58	1.31	1.38	0.13	1.77	0.13	1.67
1 1/4"	0.67	1.66	1.73	0.14	2.15	0.14	1.93
1 1/2"	0.70	1.90	1.97	0.15	2.43	0.15	2.15
2"	0.75	2.37	2.44	0.17	2.96	0.17	2.53
2 1/2"	0.92	2.87	2.97	0.21	3.59	0.21	2.88
3"	0.98	3.50	3.60	0.23	4.28	0.23	3.18
4"	1.08	4.50	4.60	0.26	5.40	0.26	3.69

Dimension of Class 300 - (in Inch)							
SIZE	B (min)	F		G	H (min)	Ribs	W
		Min	Max				
1/2"	0.57	0.84	0.90	0.16	1.34	0.16	1.87
3/4"	0.64	1.05	1.11	0.18	1.63	0.18	2.12
1"	0.75	1.31	1.38	0.20	1.95	0.20	2.37
1 1/4"	0.84	1.66	1.73	0.22	2.39	0.22	2.87
1 1/2"	0.87	1.90	1.97	0.24	2.68	0.24	2.87
2"	1.00	2.37	2.44	0.26	3.28	0.26	3.62

Fig No. 26 - REDUCING COUPLINGS BANDED (BRS)

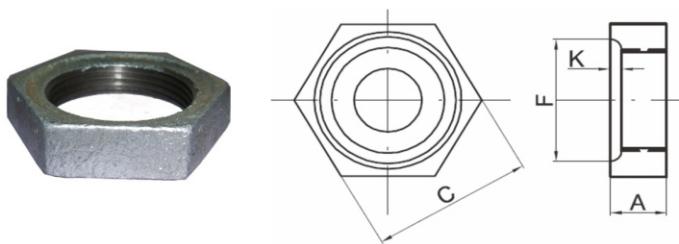


Dimension of Class 150 - (in Inch)				
SIZE	E (min)	H (min)	Ribs	M
1/4"	0.21	0.84	0.09	1.00
3/8"	0.23	1.01	0.10	1.13
1/2"	0.25	1.20	0.10	1.25
3/4"	0.27	1.46	0.12	1.44
1"	0.30	1.77	0.13	1.69
1 1/4"	0.34	2.15	0.14	2.06
1 1/2"	0.37	2.43	0.15	2.31
2"	0.42	2.96	0.17	2.81
2 1/2"	0.48	3.59	0.21	3.25
3"	0.55	4.28	0.23	3.69
4"	0.66	5.40	0.26	4.38

Dimension of Class 300 - (in Inch)				
SIZE	E (min)	H (min)	Ribs	M
1/4"	0.38	0.93	0.14	1.69
3/8"	0.44	1.12	0.15	1.44
1/2"	0.50	1.34	0.16	1.69
3/4"	0.56	1.63	0.18	1.75
1"	0.62	1.95	0.20	2
1 1/4"	0.69	2.39	0.22	2.38
1 1/2"	0.75	2.68	0.24	2.69
2"	0.84	3.28	0.26	3.19

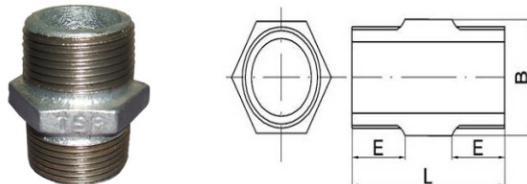
Note : For dimensions not given, see the dimensions table of Sockets

Fig No. 29 - LOCKNUTS (LN)



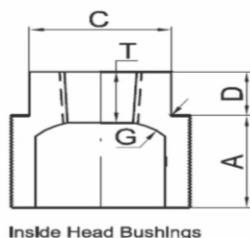
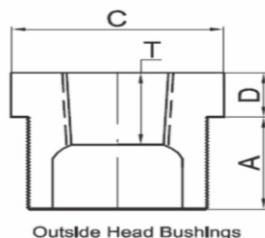
Dimension of Class 150 - (in Inch)				
SIZE	A (min)	C (min)	F (min)	K
1/4"	0.25	0.84	0.66	0.06
3/8"	0.28	1.00	0.77	0.06
1/2"	0.31	1.18	0.97	0.06
3/4"	0.34	1.43	1.23	0.06
1 "	0.38	1.75	1.50	0.06
1 1/4"	0.42	2.10	1.86	0.06
1 1/2"	0.47	2.35	2.12	0.06
2 "	0.53	2.88	2.63	0.09
2 1/2"	0.59	3.50	3.18	0.09
3 "	0.67	4.27	3.84	0.09
3 1/2"	0.73	4.84	4.38	0.13
4 "	0.80	5.38	5.00	0.13

Fig No. 32 - NIPPLES (N)

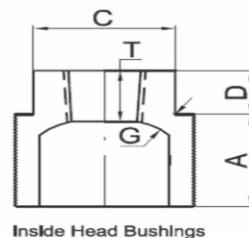
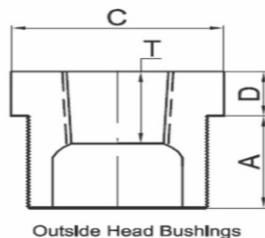


Dimension of Class 150 - (in Inch)				
SIZE	E	N	L	FEATURE
1/2"	0,63	0,51	1,65	OCTAGON
3/4"	0,71	0,71	1,85	OCTAGON
1 "	0,79	0,94	2,05	OCTAGON
1 1/4"	0,87	1,26	2,20	OCTAGON
1 1/2"	0,91	1,46	2,36	OCTAGON
2 "	0,98	1,89	2,60	DECAGON

NOTE : REFERENCE STANDARD JIS B.2301

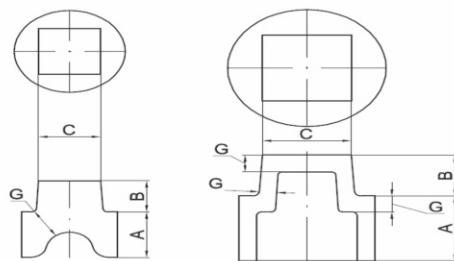
Fig No. 30 - BUSHINGS (HB)

SIZE	A (min)	T (min)	D (min)	C (min)		G
				Outside	Inside	
1/4 X 1/8"	0.44	0.26	0.14	0.64	-	-
3/8 X 1/4"	0.48	0.40	0.16	0.68	-	-
3/8 X 1/8"	0.48	0.25	0.16	0.68	-	-
1/2 X 3/8"	0.56	0.41	0.19	0.87	-	-
1/2 X 1/4"	0.56	0.32	0.19	0.87	-	-
1/2 X 1/8"	0.56	0.25	0.19	0.87	-	-
3/4 X 1/2"	0.63	0.53	0.22	1.15	-	-
3/4 X 3/8"	0.63	0.36	0.22	1.15	-	-
3/4 X 1/4"	0.63	0.32	0.22	1.15	-	-
3/4 X 1/8"	0.63	0.25	0.22	1.15	-	-
1 X 3/4"	0.75	0.50	0.25	1.42	-	-
1 X 1/2"	0.75	0.43	0.25	1.42	-	-
1 X 3/8"	0.75	0.36	0.30	-	1.12	-
1 X 1/4"	0.75	0.32	0.30	-	1.12	-
1 X 1/8"	0.75	0.25	0.30	-	1.12	-
1 1/4 X 1"	0.80	0.58	0.28	1.76	-	-
1 1/4 X 3/4"	0.80	0.50	0.28	1.76	-	-
1 1/4 X 1/2"	0.80	0.43	0.24	-	1.34	0.18
1 1/4 X 3/8"	0.80	0.36	0.34	-	1.12	0.18
1 1/4 X 1/4"	0.80	0.32	0.34	-	1.12	0.18
1 1/2 X 1 1/4"	0.83	0.77	0.31	2.00	-	-
1 1/2 X 1"	0.83	0.58	0.31	2.00	-	-
1 1/2 X 3/4"	0.83	0.50	0.37	-	1.63	0.20
1 1/2 X 1/2"	0.83	0.43	0.37	-	1.34	0.20
1 1/2 X 3/8"	0.83	0.36	0.37	-	1.12	0.20
1 1/2 X 1/4"	0.83	0.32	0.37	-	1.12	0.20
2 X 1 1/2"	0.88	0.70	0.34	2.48	-	-
2 X 1 1/4"	0.88	0.67	0.34	2.48	-	-
2 X 1"	0.88	0.58	0.41	-	1.95	0.22

Fig No. 30 - BUSHINGS (HB)

SIZE	A (min)	T (min)	D (min)	C (min)		G
				Outside	Inside	
2 X 3/4"	0.88	0.50	0.41	-	1.63	0.22
2 X 1/2"	0.88	0.43	0.41	-	1.34	0.22
2 X 3/8"	0.88	0.36	0.41	-	1.12	0.22
2 X 1/4"	0.88	0.32	0.41	-	1.12	0.22
2 1/2 X 2"	1.07	0.75	0.37	2.98	-	-
2 1/2 X 1 1/2"	1.07	0.70	0.44	2.68	-	-
2 1/2 X 1 1/4"	1.07	0.67	0.44	-	2.39	0.24
2 1/2 X 1"	1.07	0.58	0.44	-	1.95	0.24
2 1/2 X 3/4"	1.07	0.50	0.44	-	1.63	0.24
2 1/2 X 1/2"	1.07	0.43	0.44	-	1.34	0.24
3 X 2 1/2"	1.13	0.92	0.40	3.86	-	-
3 X 2"	1.13	0.75	0.48	3.28	-	-
3 X 1 1/2"	1.13	0.70	0.48	-	2.68	0.26
3 X 1 1/4"	1.13	0.67	0.48	-	2.39	0.26
3 X 1"	1.13	0.58	0.48	-	1.95	0.26
3 X 3/4"	1.13	0.50	0.48	-	1.63	0.26
3 X 1/2"	1.13	0.43	0.48	-	1.34	0.26
4 X 3"	1.22	0.98	0.50	4.62	-	-
4 X 2 1/2"	1.22	0.92	0.60	-	3.86	0.31
4 X 2"	1.22	0.75	0.60	-	3.28	0.31
4 X 1 1/2"	1.22	0.70	0.60	-	2.68	0.31
4 X 1 1/4"	1.22	0.67	0.60	-	2.39	0.31
4 X 1"	1.22	0.58	0.60	-	1.95	0.31
6 X 5"	1.40	1.18	0.63	7.05	-	-
6 X 4"	1.40	1.08	0.75	-	5.79	0.43
6 X 3"	1.40	0.98	0.75	-	4.62	0.43
6 X 2 1/2"	1.40	0.92	0.75	-	3.86	0.43
6 X 2"	1.40	0.75	0.75	-	3.28	0.43

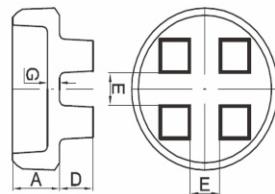
Fig No. 31A - SQUARE HEAD PLUGS (P SQUARE)



Dimension of Class 150 - (in Inch)

SIZE	A (min)	B (min)	C	G
1/4"	0.44	0.28	3/8	-
3/8"	0.48	0.31	7/16	-
1/2"	0.56	0.38	9/16	0.16
3/4"	0.63	0.44	5/8	0.18
1"	0.75	0.50	13/16	0.20
1 1/4"	0.80	0.56	15/16	0.22
1 1/2"	0.83	0.62	1-1/8	0.24
2"	0.88	0.68	1-5/16	0.26
2 1/2"	1.07	0.74	1-1/2	0.29
3"	1.13	0.80	1-1 1/16	0.31

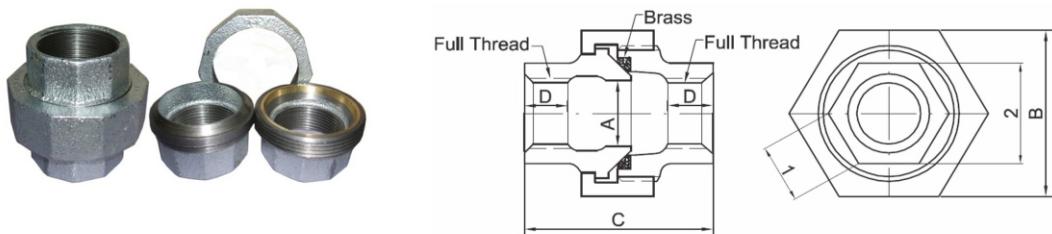
Fig No. 31B - SLOTTED HEAD PLUGS (P SLOTTED)



Dimension of Class 150 - (in Inch)

SIZE	A (min)	D (min)	E (min)	G
4"	1.22	1.00	0.88	0.37
5"	1.31	1.00	0.88	0.46
6"	1.40	1.25	1.25	0.52
8"	1.57	1.38	1.50	0.66

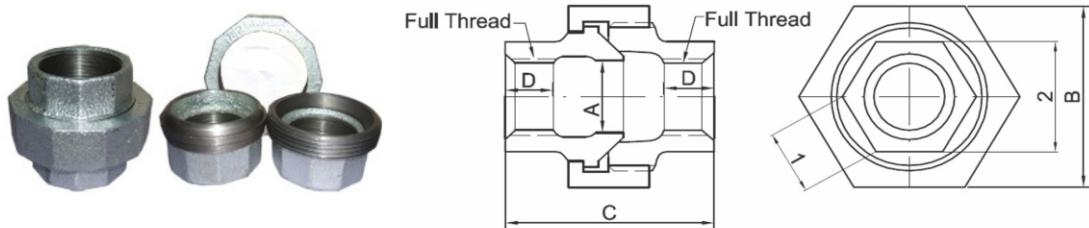
Fig No. 35B - UNIONS FEMALE CONICAL JOINT BRASS TO IRON SEAT (CU BRASS)



Dimension of Class 150 - (in Inch)							
SIZE	A (min)	B (min)	C (min)	D (min)	1	2	FEATURE
1/4"	0.36	1.10	1.44	0.40	0.41	0.72	HEXAGON
3/8"	0.52	1.26	1.61	0.41	0.51	0.88	HEXAGON
1/2"	0.61	1.45	1.72	0.53	0.44	1.07	OCTAGON
3/4"	0.80	1.71	1.94	0.55	0.53	1.27	OCTAGON
1"	1.00	2.07	2.06	0.68	0.64	1.56	OCTAGON
1 1/4"	1.31	2.50	2.26	0.71	0.63	1.92	DECAGON
1 1/2"	1.55	2.82	2.41	0.72	0.71	2.20	DECAGON
2"	2.03	3.41	2.75	0.76	0.88	2.72	DECAGON
2 1/2"	2.38	4.12	3.22	1.14	1.07	3.30	DECAGON
3"	3.00	4.75	3.50	1.20	1.28	3.90	DECAGON
4"	4.03	6.00	3.85	1.30	1.62	5.00	DECAGON

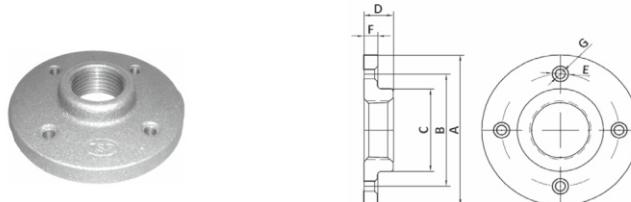
Dimension of Class 300 - (in Inch)							
SIZE	A (min)	B (min)	C (min)	D (min)	1	2	FEATURE
1/4"	0.30	1.34	1.56	0.43	0.43	0.43	HEXAGON
3/8"	0.41	1.50	1.71	0.47	0.54	0.97	HEXAGON
1/2"	0.53	1.75	1.81	0.57	0.45	1.09	OCTAGON
3/4"	0.75	2.15	2.13	0.65	0.55	1.33	OCTAGON
1"	0.94	2.48	2.30	0.75	0.56	1.72	DECAGON
1 1/4"	1.28	3.01	2.66	0.85	0.67	2.06	DECAGON
1 1/2"	1.50	3.29	2.85	0.87	0.74	2.26	DECAGON
2"	1.93	3.96	3.23	1.00	0.93	2.85	DECAGON
2 1/2"	2.32	4.72	3.31	1.16	1.13	3.46	DECAGON
3"	2.89	5.37	4.11	1.22	1.29	3.98	DECAGON

Fig No. 35C - UNION FEMALE CONICAL JOINT IRON TO IRON SEAT (CU)



Dimension of Class 150 - (in Inch)							
SIZE	A (min)	B (min)	C (min)	D (min)	1	2	FEATURE
1/4"	0.36	1.10	1.44	0.40	0,41	0,72	HEXAGON
3/8"	0.52	1.26	1.61	0.41	0,51	0,88	HEXAGON
1/2"	0.61	1.45	1.72	0.53	0,44	1,07	OCTAGON
3/4"	0.80	1.71	1.94	0.55	0,53	1,27	OCTAGON
1"	1.00	2.07	2.06	0.68	0,64	1,56	OCTAGON
1 1/4"	1.31	2.50	2.26	0.71	0,63	1,92	DECAGON
1 1/2"	1.55	2.82	2.41	0.72	0,71	2,20	DECAGON
2"	2.03	3.41	2.75	0.76	0,88	2,72	DECAGON
2 1/2"	2.38	4.12	3.22	1.14	1,07	3,30	DECAGON
3"	3.00	4.75	3.50	1.20	1,28	3,90	DECAGON
4"	4.03	6.00	3.85	1.30	1,62	5,00	DECAGON

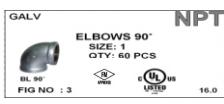
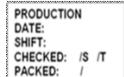
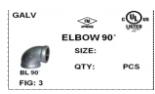
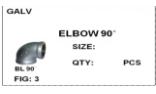
FLOOR FLANGES



Dimension of Class 150 - (in Inch)							
SIZE	A	B	C	D	E	F	G
1/2"	3.48	2.50	1.12	0.51	0.39	0.28	0.26
3/4"	3.48	2.50	1.38	0.59	0.39	0.28	0.26
1"	4.02	3.00	1.79	0.71	0.41	0.35	0.26
1 1/4"	4.02	3.00	2.20	0.75	0.41	0.35	0.26
1 1/2"	4.49	3.50	2.30	0.85	0.59	0.37	0.31
2"	5.49	4.25	2.81	0.98	0.59	0.39	0.31



PACKAGING STANDARD

Name	Master Carton	Inner Carton	Linner & Layar Carton	
STANDARD CARTON	 MADE IN INDONESIA	 MADE IN INDONESIA		
L X WX H	325x255x234 mm	240x152x209 mm	310x245x220 mm	310x240 mm
L X WX H		240x104x209 mm		
L X WX H		155x119x209 mm		
JUMBO CARTON				
L X WX H		486x315x234 mm	470x300x220 mm	470x300 mm
STICKER				
STICKER OF MASTER CARTON		 NPT  IDENTIFICATION OF PRODUCT		
STICKER OF INNER CARTON		 		
NOTE : STICKER FOR GALVANIZED : YELLOW STICKER FOR BLACK : WHITE				

NOTE :



PT. TRI SINAR PURNAMA

Factory :

JI. Moch Ichsan RT 001 / RW 001

Kel. Wates, Kec. Ngaliyan, Semarang 50188 Indonesia

Tel. +62 24 7628224 Fax. +62 24 7628223

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www.trisip.com



PSB Singapore

TEST CERTIFICATE

This Certificate is issued to

Pipelink-Beckham Pte Ltd
24, Defu Lane 6
Singapore 539377

FOR

Product: Galvanised Malleable Iron Pipe Fittings

Brand/Model: TSP

Detail: Tee – $\frac{1}{2}$ " (15mm), 1" (25mm), 2 $\frac{1}{2}$ " (65mm)
Elbow – $\frac{3}{4}$ " (20mm), 1 $\frac{1}{4}$ " (32mm) , 1 $\frac{1}{2}$ " (40mm), 3" (80mm)
Socket – 2" (50mm)

Specification: BS 143 and 1256 : 2000

Test Report: S08MEC00976CYW, S08MEC00976-02-EKH,
7191026902-MEC12-CYW, 7191078966-MEC14-01-CYW,
7191078966-CHM14-KPF-02, 7191078966-CHM14-03-LSM,
7191130617-MEC16-CYW, 7191181344-CHM18-YMG,
7191230959-MEC20-CYW

Date of Test Report : 26 Feb 2008, 06 Mar 2008, 16 Mar 2009, 21 Feb 2012
20 Jan 2014, 29 Jan 2014, 21 Jan 2014, 28 Jan 2016,
16 Mar 2018, 05 Mar 2018, 10 Feb 2020

Summary

A sample of product submitted was tested and was found to comply with the test requirements of the above standard(s).

Vice President (MEC)
TÜV SÜD PSB Pte Ltd

Certificate No:
02093

Date of Original Issue:
10 Mar 2008

Date of Last Revision:
02 Mar 2020

Date of Expiry:
09 Mar 2022

This Certificate is part of a full report and should be read in conjunction with it. This Certificate remains the property of TÜV SÜD PSB Pte Ltd and shall be returned upon request. The use of this Certificate is subjected to the terms and conditions of the Test Certification Scheme.

Note: This Certificate is issued pursuant to the terms set out overleaf.



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GST Reg. No: M2-0128731-6
Co. Reg. No : 199407689Z

"TSP" Class 300 lbs Malleable Iron pipe fittings projects reference

Project	Year
Global Switch	2017
Outram Community Hospital	2018
Mandai Camp 2	2018
China Mobile International Data Centre	2018
Thorium Phase 3	2019
Changi Air Base East	2019
AMK Nursing Home	2019
SGC	2019
Gali Batu	2019
NHB	2020
13 International Business Park	2020
IMDC Data Centre	2020
TSS	2020
Serangoon North Ave 6	2020
SMRT	2020
PSA Tuas	2020
Rack Centre	2020
Sungei Gedong Camp 205A	2020
Linde	2020
Singtel Jurong East	2020