

Fittings



Your Reliable Brand



FITTINGS

Technical Catalog

BSP
Medium Pressure NPT Class 150
High Pressure NPT Class 300
TUPYPRES®

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Malleable Iron

Definition

Malleable Cast Iron is the cast iron which has in its microstructure, in the crude casting state, carbon in a totally combined manner and which after thermal malleabilization treatment can have annealing graphite (compact), ferrite, perlite or microstructure of hardening and tempering, without a significant presence of eutectic carbides.

Properties

The main properties of the material used in the TUPY fittings are specified by the Brazilian Technical Standards Association (ABNT), among which the following stand out:

- Mechanical Resistance • Resistance to Corrosion • Resistance to Wear

Applications

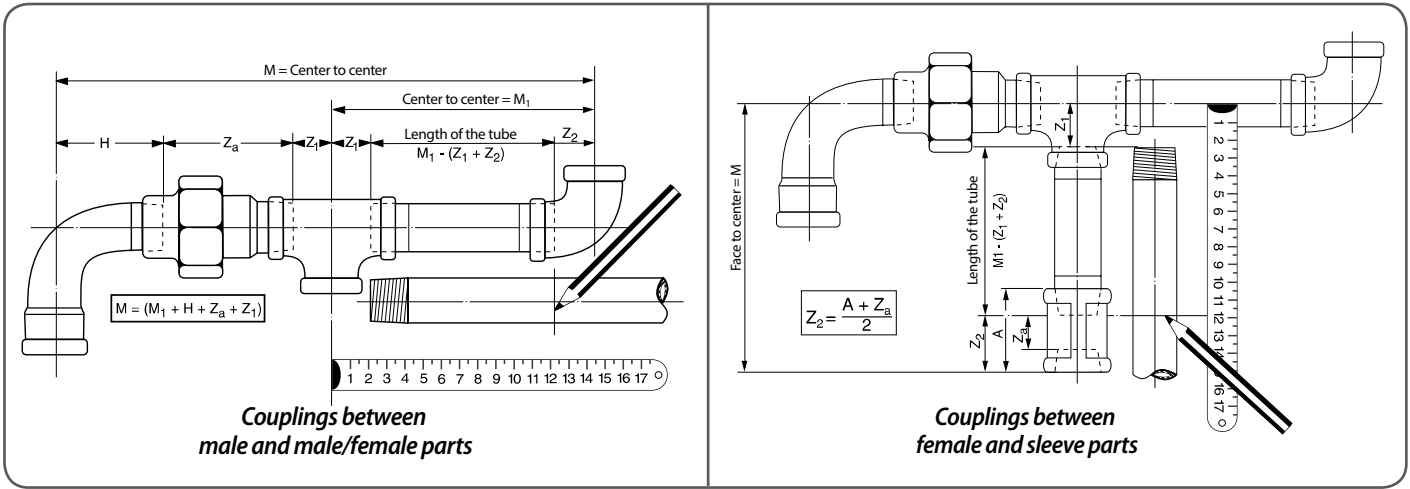
Malleable, or wrought, iron is a material used in practically all industrial fields. Its use is indispensable in manufacturing parts with complex shapes, subject to the most varied works, where it has an excellent performance for all the life of the machine or equipment of which it is a part. Malleable iron, with properties of proven worth, is foreseen for parts of the automotive, electro-electronic, railroad, etc. industry, which undergo extremely severe conditions of use. TUPY S.A., one of the largest suppliers of these parts, uses the same material for manufacturing its line of fittings.

Assemblies with TUPY Fittings

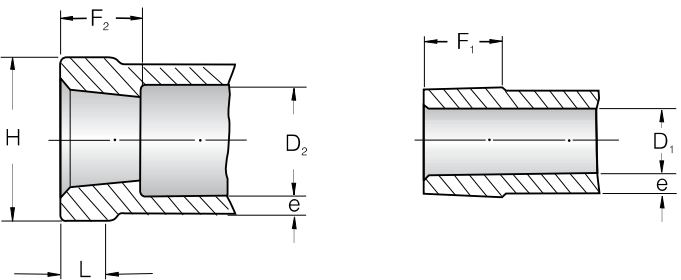
Standard method for determining the distance from center to center and length of the pipe.

Measure -Z-

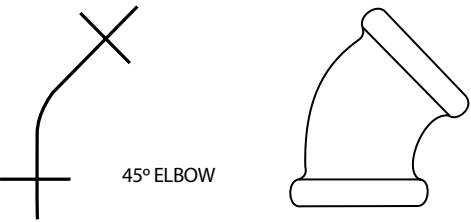
To obtain it, just reduce from the length appearing in the figures (fittings) of this catalog the length of the threads in the table below. In the fittings with an external thread (male), measure Z is equal to the length appearing in these figures.



Length of Threads of Fittings in (mm)					
Nominal Diameter	BSP	Medium NPT		High NPT	
	F1=F2	F1(min)	F2(min)	F1(min)	F2(min)
1/4	11,0	10,2	8,1	10,2	10,9
3/8	11,5	10,4	9,1	10,4	11,9
1/2	15,0	13,5	10,9	13,5	14,5
3/4	16,5	14,0	12,7	14,0	16,3
1	19,0	17,3	14,7	17,3	19,1
1 1/4	21,5	18,0	17,0	18,0	21,3
1 1/2	21,5	18,3	17,8	18,3	22,1
2	26,0	19,3	19,1	19,3	25,4
2 1/2	30,5	29,0	23,4	29,0	29,7
3	33,5	30,5	24,9	30,5	31,2
4	39,5	33,0	27,4	33,0	33,7
6	43,5	38,4	32,5	38,4	39,0

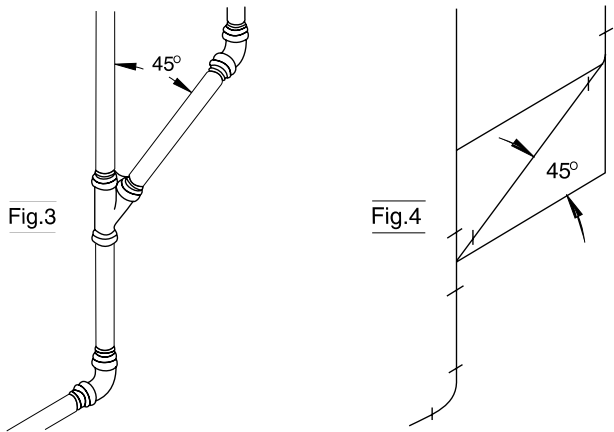
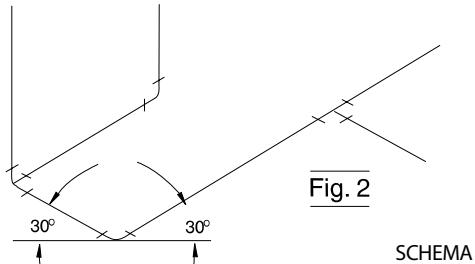
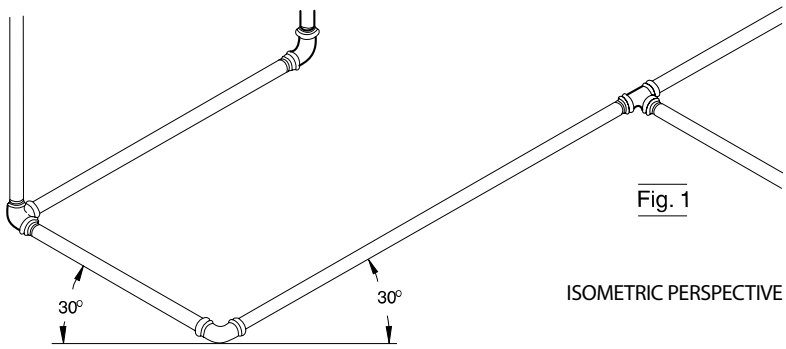


Schemata and Symbols



To facilitate and speed up the representation and reading of hydraulic systems, symbols are used to represent the various components.

The isometric perspective is the manner of representing in drawing:
- the piping which allows the advanced localization of the parts required
- the dimensions of pipes and quantity of material.
In the isometric drawings the representation of vertical pipes is executed by vertical lines and the horizontal pipes are represented by lines inclined at 30° to the horizontal, as shown in fig. 1 and 2.



The pipes outside the horizontal or vertical are represented by lines at an inclination differing from 30°, the actual angle of pipe inclination having to be marked in the drawing (fig. 3 and 4).

In the isometric drawings it is impossible to represent and locate all the accessories and splices (threads, welds, flanges, etc.) of the piping. Pre-assembly is an installation technique which allows the cutting and threading of pipes and the specification of fittings and other accessories. It is advisable to assemble the parts of the circuit in the workshop, where there are more resources, and then take them to the installation site. These facilities are only achieved through preparing an isometric plan.

TupyCAD

It is a complete library of hydraulic graphic symbols composed of all the TUPY BSP and NPT fittings, to operate in AutoCAD™ hydraulic projects.

Request your cd-rom by email engaplic@tupy.com.br



Graphic Symbols for Hydraulic Diagrams

DENOMINATION	SYMBOL	STANDARD
Reducing Bushing		ANSI
Plug		ANSI
Elbow		ANSI
Elbow (turned downwards)		ANSI
Elbow (turned upwards)		ANSI
Reducing Elbow (the Nos indicate the gauges)		ANSI
45° Elbow		ANSI
Male-Female Elbow		ANSI
Elbow with side outlet (outlet downwards)		ANSI
Elbow with side outlet (outlet upwards)		ANSI
Cross		ANSI
Reducing Cross (Elbow with side outlet)		ANSI
Female Bend		ANSI
Male-Female Bend		RECOM. TUPY
Male Bend		RECOM. TUPY
45° Male-Female Bend		RECOM. TUPY
Transposition Bend		ANSI
Return Bend		RECOM. TUPY
Sleeve		RECOM. TUPY
Concentric Reducing Sleeve		ANSI
Eccentric Reducing Sleeve		ANSI
Double Nipple		RECOM. TUPY
Cap		ANSI
Tee		ANSI

DENOMINATION	SYMBOL	STANDARD
Tee (with outlet downwards)		ANSI
Tee (with outlet upwards)		ANSI
45° Tee		RECOM. TUPY
Reducing Tee (the Nos indicate the gauges)		ANSI
Double Bend Tee		ANSI
Union with Flat Seat		DIN
Union with Lon Conic Iron Seat		RECOM. TUPY
Union with Bronze Conic Seat		RECOM. TUPY
Union with MF Lon Conic Iron Seat		RECOM. TUPY
Expansion Joint		ANSI
Joint Connecting in Pipe		ANSI
Angle Valve		DIN
Angle Float Valve		DIN
Angle Retaining Valve		ANSI
Angle Slide Valve (elevation)		ANSI
Angle Slide Valve (plant)		ANSI
Angle Globe Valve (elevation)		ANSI
Angle Globe Valve (plant)		ANSI
Angle Valve with Hose Connection		ANSI
Slide Valve		ANSI
Retaining Clapper Válve		DIN
Slide Valve with Hose Connection		ANSI
Globe Valve		ANSI
Globe Valve Operated by Motor		ANSI

Graphic Symbols for Hydraulic Diagrams

DENOMINATION	SYMBOL	STANDARD
Globe Valve with Hose Connection		ANSI
Safety Valve		ANSI
Safety Valve with Diaph. & Load for Spring		DIN
Safety Valve with Counterweight		DIN
Retaining Valve		ANSI
Foot Retaining Valve		DIN
Straight Passage Retaining Valve		ANSI
Diaphragm Valve		ANSI
Control Valve with Opening for Pressure		ANSI
Control Valve with Closing for Pressure		ANSI
Clapper Valve		DIN
Foot Clapper Valve		DIN
Slide Valve Operated by Motor		ANSI
Valve Operated by Motor		ANSI
Hydraulic Operated Valve		ANSI
Electrical Operated Valve		ANSI
Pneumatic Operate Valve		ANSI
Solenoid Operated Valve		ANSI
Float Valve		DIN
Float Operated Valve		ANSI
Needle Valve		ISA
Relief or Safety Valve		ISA
Piston Operated Valve		ISA
3-way Valves		ISA

DENOMINATION	SYMBOL	STANDARD
Auxiliary Valve		ANSI
Auxiliary Pressure Valve		ANSI
Blocking Valve		ANSI
Control Valve		ANSI
Discharge Valve		DIN
Instantaneous Opening Valve		ANSI
Valve with Male Thread		ANSI
Change Valve		DIN
Valve Usually Closed		ISA
Discharge Valve		DIN
Pressure Reducing Valve		DIN
Quick Closing Valve		ANSI
Flow Valve with Connection for Hose		DIN
Current Operated Valve		ISA
Line or "Y" Filter		DIN
Tap		DIN
Angle Tap		DIN
3-way Tap		DIN
Valve with Male Thread		ANSI
Gas Meter		DIN
Hydrometer		DIN

Graphic Symbols for Hydraulic Diagrams

DENOMINATION	SYMBOL	STANDARD
Filter		DIN
Drain		ANSI
Ejector		ISA
Siphon		ANSI
Discharge Funnel (exhaust)		DIN
Passage with Inspection Window		DIN
Sprinkler Hose		DIN
Condensation Water Collector		DIN
Condensation Water Conductor		DIN
Pressure Container (boiler)		DIN
Open Tank		DIN
Fixed Point		DIN
Pneumatic Flow Direction		ANSI
Hydraulic Flow Direction		ANSI
Lines in Transposition		ANSI
Junction Line		ANSI
Flexible Line		ANSI

DENOMINATION	SYMBOL	STANDARD
Piping		DIN
Piping with Insulation		DIN
Piping with Insulation		DIN
Hydrant		DIN
Underground Hydrant on the Pipe		DIN
Underground Hydrant Touching		DIN
Underground Hydrant Next to Pipe		DIN
Hydrant Above Ground On Pipe		DIN
Hydrant Above Ground Touching Pipe		DIN
Hydrant Above Ground Next to Pipe		DIN
Garden Hydrant On Pipe		DIN
Garden Hydrant Touching Pipe		DIN
Garden Hydrant Next to Pipe		DIN
Pressure Gauge		DIN
Thermometer		DIN
Counterweight		DIN
Float		DIN

Graphic Symbols for Hydraulic Diagrams

DENOMINATION	SYMBOL	STANDARD
Fitting for Hose		ISA
Fountain		DIN
Start of Process or System		ISA
End of Process or System		ISA
Liquid Flow		ISA
Gas Flow		ISA
Temperature		ISA
Pressure		ISA
Steam Purger		ISA
Purger		ISA
Ground Connection		DIN
Hydraulic Injector		DIN

DENOMINATION	SYMBOL	STANDARD
Breather		DIN
Discharge with Gate		DIN
Cleaning Box		DIN
Sand Collector		DIN
Sieve		ISA
Exhaust		DIN
Gas Lamp		DIN
Centrifugal Pump		ISA
Alternative Pump		ISA
Compressor		ISA
Furnace		ISA

Equivalence of Loss of Load of TUPY BSP Fittings
in Meters of Galvanized Steel Pipes

NOMINAL DIAMETER	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
	0,23	0,35	0,47	0,70	0,94	1,17	1,41	1,88	2,35	2,82	3,76	4,70	5,64
	0,22	0,33	0,44	0,67	0,89	1,11	1,33	1,78	2,23	2,68			
		0,16	0,22	0,32	0,43	0,54	0,65	0,86	1,08	1,30	1,73	2,16	2,59
		0,61	0,81	1,22	1,63	2,03	2,44	3,25					
			0,27	0,41	0,55	0,68	0,82	1,04	1,37	1,64	2,18		
	0,16	0,24	0,32	0,48	0,64	0,79	0,95	1,27	1,59	1,91	2,54		
		0,25	0,34	0,50	0,67	0,84	1,01	1,35	1,68	2,02	2,69		4,04
	0,10	0,15	0,20	0,30	0,41	0,51	0,61	0,81	1,02	1,22			
			0,43	0,65	0,86	1,08	1,30	1,73					
	0,04	0,06	0,08	0,12	0,17	0,21	0,25	0,33	0,41	0,50	0,66	0,83	0,99
	0,34	0,51	0,69	1,03	1,37	1,71	2,06	2,74	3,43	4,11	5,49	6,86	8,23
	0,42	0,62	0,83	1,25	1,66	2,08	2,50	3,33	4,16	4,99	6,65	8,32	9,98
			0,09	0,13	0,18	0,22	0,27	0,36	0,44	0,55	0,73		
			0,44	0,66	0,88	1,10	1,31	1,75	2,19	2,70	3,51		
	0,05	0,08	0,10	0,15	0,20	0,25	0,30	0,41	0,49	0,59			
	0,34	0,50	0,67	1,01	1,35	1,68	2,02	2,69	3,36	4,02			
			0,28										
			0,30										
	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,02	0,03
	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01		

Special Conventions

DENOMINATION	REPRESENTATION
Piping with Varying Level	
Piping with Varying Level	
Vertical Branch Downwards	
Vertical Branch Upwards	
Horizontal Branch Upwards	

DENOMINATION	REPRESENTATION
Horizontal Branch Downwards	
Vertical Pipe Upwards	
Vertical Pipe Downwards	
Anchoring	

NOMINAL DIAMETER	1/2 - 1/2	1/2 - 1	1/2 - 1 1/2	3/4 - 3/4	3/4 - 1	3/4 - 1 1/2	1 - 1 1/2
	1,17	0,96	0,93	1,06	1,03	1,23	1,57

Values based upon tests made by the Department of Hydraulics and Sanitation of the Engineering School of São Carlos (SP).
Note: Valid only in conducting water at ambient temperature.

Equivalence of Loss of Load of TUPY BSP Fittings
in Meters of Galvanized Steel Pipes

NOMINAL DIAMETER	3/8 x 1/4	1/2 x 1/4	1/2 x 3/8	3/4 x 1/4	3/4 x 3/8	3/4 x 1/2	1 x 3/8	1 x 1/2	1 x 3/4	1 1/4 x 1/2	1 1/4 x 3/4	1 1/4 x 1	1 1/2 x 1/2	1 1/2 x 3/4	1 1/2 x 1	1 1/2 x 1 1/4
	2 x 1/2	2 x 3/4	2 x 1	2 x 1 1/4	2 x 1 1/2	2 1/2 x 1	2 1/2 x 1 1/4	2 1/2 x 1 1/2	2 1/2 x 2	3 x 1	3 x 1 1/4	3 x 1 1/2	3 x 2	3 x 2 1/2	4 x 2	4 x 3
	0,05	0,06	0,07		0,09	0,10		0,11	0,14	0,13	0,14	0,17		0,15	0,17	0,21
	0,31	0,30	0,49		0,49	0,59	0,44	0,68	0,95	0,40	0,56	0,71	0,31	0,53	0,79	1,22
	0,10	0,16	0,14	0,22	0,23	0,24		0,24	0,24	0,24	0,22	0,19	0,29	0,26	0,24	0,20
	0,24		0,45		0,45	0,59		0,49	0,84		0,50	0,55		0,65	0,73	0,86
	0,32	0,20	0,21		0,20	0,27		0,23	0,19		0,32	0,34		0,36	0,29	
	0,11	0,18	0,18		0,26	0,32	0,30	0,32	0,29	0,33	0,43	0,16		0,53	0,27	0,12
	0,26	0,24	0,30		0,24	0,44		0,41	0,41	0,28	0,34	0,41		0,37	0,34	0,27

Values based upon tests made by the Department of Hydraulics and Sanitation of the Engineering School of São Carlos (SP).
Note: Valid only in conducting water at ambient temperature.

Loss of Load in Galvanized Steel Pipes

Loss of load in Galvanized Steel Pipes																						
1/2		3/4		1		1 1/4		1 1/2		2		2 1/2		3		4		5		6		
SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	SPEED	LOOS	
0,321	2,10	0,366	1,90																	227	1	
0,641	7,40	0,549	4,10	0,342	1,26															454	2	
0,964	15,80	0,735	7,00	0,454	2,14	0,262	0,57	0,192	0,26											681	3	
1,248	27,00	0,918	10,50	0,567	3,25	0,326	0,84	0,241	0,40											908	4	
1,604	41,00	0,918	10,50	0,567	3,25	0,326	0,84	0,241	0,40											908	4	
3,209	147,00	1,836	38,00	1,134	11,70	0,653	3,05	0,479	1,43	0,311	0,50	0,198	0,17	0,137	0,07					2270	10	
		2,751	80,00	1,708	25,00	0,976	6,50	0,720	3,00	0,622	1,82	0,399	0,61	0,277	0,25					3405	15	
		3,669	136,00	2,269	42,00	1,308	11,10	0,961	5,20	0,622	1,82	0,399	0,61	0,277	0,25					4540	20	
				2,837	64,00	1,635	16,60	1,202	7,80	0,778	2,73	0,497	0,92	0,344	0,38					5675	25	
				3,400	89,00	1,961	23,50	1,440	11,00	0,933	3,84	0,598	1,29	0,414	0,54					6810	30	
				3,971	119,00	2,290	31,20	1,681	14,70	1,089	5,10	0,698	1,72	0,485	0,71					7945	35	
				4,538	152,00	2,617	40,00	1,922	18,80	1,244	6,60	0,796	2,20	0,555	0,91	0,311	0,22			9080	40	
						2,943	50,00	2,159	23,20	1,403	8,20	0,896	2,80	0,625	1,15	0,357	0,28			10215	45	
						3,269	60,00	2,400	28,40	1,560	9,90	0,997	3,32	0,692	1,38	0,390	0,34			11350	50	
						4,578	113,00	3,361	53,00	2,181	18,40	1,396	6,21	0,970	2,57	0,546	0,63	0,347	0,21	15890	70	
								3,560	60,00	2,336	20,90	1,527	7,10	1,036	3,05	0,585	0,73	0,372	0,24	17025	75	
						4,800	102,00	4,800	102,00	3,114	35,80	1,994	12,00	1,384	4,96	0,777	1,22	0,497	0,41	22740	100	
						5,761	143,00			3,736	50,00	2,390	16,80	1,661	7,00	0,933	1,71	0,597	0,58	27240	120	
										3,889	54,00	2,487	18,20	1,728	7,60	0,972	1,86	0,622	0,64	28375	125	
										4,673	76,00	2,988	25,50	2,073	10,50	1,170	2,55	0,740	0,88	34050	150	
										5,444	102,00	3,445	38,80	2,420	14,00	1,356	3,44	0,872	1,18	39725	175	
										6,222	129,00	3,985	43,10	2,768	17,80	1,558	4,40	0,997	1,48	45400	200	
												4,485	54,30	3,109	22,30	1,759	5,45	1,119	1,86	51075	225	
												4,469	66,00	3,451	27,20	1,951	6,72	1,244	2,24	56750	250	
														3,735	31,30	2,103	7,70	1,347	2,60	61290	270	
														3,811	32,50	2,143	7,99	1,372	2,72	62425	275	
														4,153	38,00	2,335	9,30	1,494	3,14	68100	300	
														2,713	2,32	1,743	4,19	1,213	1,75	79450	350	
														3,112	16,00	1,993	5,40	1,384	2,21	90800	400	
														3,505	19,80	2,240	6,70	1,561	2,65	102150	450	
														3,688	22,40	2,347	7,22	1,673	2,90	106690	470	
														3,719	22,96	2,365	7,42	1,692	2,95	107825	475	
														3,892	24,00	2,490	8,12	1,707	3,30	113500	500	
																2,740	9,60	1,878	3,93	124850	550	
																2,987	11,30	2,048	4,70	136200	600	
																3,237	13,20	2,219	5,40	147550	650	
																3,489	15,10	2,390	6,20	158900	700	
																3,737	17,20	2,591	7,00	170250	750	
																		2,768	8,00	181600	800	
																		2,920	8,95	192950	850	
																		3,134	10,11	204300	900	
																		3,267	10,80	215650	950	
																					227000	1000
																					3450	12,04
																					3627	13,30
																					3810	14,31
																					3947	15,60

Equivalence between Nominal Diameters

US Standard System (in)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
Metric System (mm)	8	10	15	20	25	32	40	50	65	80	100	125	150

Conversions

To Convert from	To	Multiply by
kgf/cm²	lbf/in²	14,223197
kgf/cm²	bar	0,980665
kgf/cm²	MPa	0,0980665
kgf/cm²	atm	0,967842
kgf/cm²	w.c.a.	10,0
kgf/cm²	N/mm²	0,0980665
lbf/pol²	kgf/cm²	0,07030768
lbf/pol²	bar	0,06894414
lbf/pol²	MPa	0,00689441
lbf/pol²	atm	0,0680492
lbf/pol²	w.c.a.	0,7030768
lbf/pol²	N/mm²	0,00689441
bar	kgf/cm²	1,0197162
bar	lbf/in²	14,5044963
bar	MPa	0,1
bar	atm	0,9869304
bar	w.c.a.	10,197162
bar	N/mm²	0,1
MPa	kgf/cm²	10,197162
MPa	lbf/in²	145,044963
MPa	bar	10,0
MPa	atm	9,869304
MPa	w.c.a.	101,97162
MPa	N/mm²	1,0

To Convert from	To	Multiply by
atm	kgf/cm²	1,033226
atm	lbf/in²	14,695257
atm	bar	1,0132427
atm	MPa	0,10132427
atm	w.c.a.	10,33226
atm	mmHg	760,0
atm	N/mm²	0,10132427
w.c.a.	kgf/cm²	0,1
w.c.a.	lbf/in²	1,4223197
w.c.a.	bar	0,0980665
w.c.a.	MPa	0,00980665
w.c.a.	atm	0,0967842
w.c.a.	N/mm²	0,00980665
mmHg	atm	0,00131579
N/mm²	kgf/cm²	10,197162
N/mm²	lbf/in²	145,044963
N/mm²	bar	10,0
N/mm²	MPa	1,0
N/mm²	atm	9,869304
N/mm²	w.c.a.	101,97162

Note: Approximate values

w.c.a. = water column meter (mH₂O)

atm = atmosphere

Mpa = Mega Pascal

N/mm² = Newton per square millimeter

lbf/in² = psi = pound force per square inch

mmHg = mercury millimeter (torr)

kgf/cm² = kilogram force per square centimeter

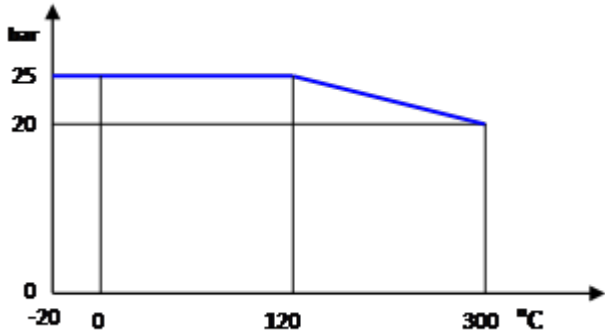
FITTINGS

BSP

PRESSURE TABLE

Service Pressures in Conducting Fluids (As per ABNT NBR 6943, ISO 49 and EN 10242)					Test Pressure
Temperature		-20 to 120°C	Between 120° to 300°C	Up to 300°C	Ambient
Pressure	lbf/in² (psi)	360	Interpolated Value*	290	1.450
	(bar)	25		20	100
Nominal Diameter		¼ a 6			

*1 bar = 1,019716 kgf/cm² or 14,50377 psi



MANUFACTURING STANDARDS

The **TUPY** BSP fittings are produced in compliance with the specifications of standards ABNT NBR 6943, ISO 49 and EN 10242 and TUPY specifications. We point out that, depending upon the figure, some diameters may appear in one standard and not in another one.

MATERIAL

The **TUPY** BSP fittings are produced in black malleable iron, in compliance with standards ABNT NBR 6590, ISO 5922 and EN 1562.

THREAD

The sealing threads of the **TUPY** BSP fittings are produced in compliance with the specifications of standards ABNT NBR NM ISO 7-1 and the coupling threads as per ABNT NBR 8133 and ISO 228. Other thread types can be made to order.

INSPECTION

The **TUPY** BSP fittings are inspected so as to ensure the specifications of standards ABNT NBR 6943, ISO 49 and EN 10242.

MARCAS

The **TUPY** BSP fittings, when the dimensions allow, have recorded on them the brand **TUPY**® or  and/or the identification of nominal diameter.

SURFACE PROTECTION

The **TUPY** BSP fittings are produced with a black finishing (non-toxic oil) or hot-dip galvanizing, as per ABNT NBR 6323, ISO 49 and EN 10242. Other special coatings (Epoxy paints, cataphoretic, hybrid, double galvanizing, etc.) can be furnished upon inquiry.

APPLICATIONS

The **TUPY** BSP fittings are applied for conducting water, gas, steam, oil and other hydraulic applications in general.

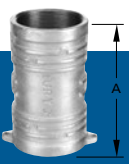
NOTE

TUPY S.A. reserves the right to introduce in its product lines the alterations which it deems appropriate.

The weights (g) appear in this price list are subject to alteration without prior notice.

For your safety demand that the fittings acquired are in compliance with the said standards and that tightness tests are executed before final use of the networks installed.





250

ADAPTOR FOR
CONCRETE WATER-
RESERVOIR 150mm

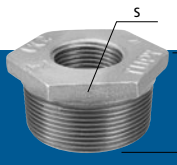
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
2	50	150		1107
2½	65	150		1461
3	80	150		1880
4	100	150		2933



250a

ADAPTORS FOR
CONCRETE WATER-
RESERVOIR 200mm

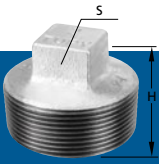
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
2	50	200		1425
2½	65	200		1790
3	80	200		2411
4	100	200		3860



241

REDUCING BUSH

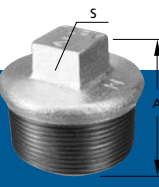
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S (max)	Galv. g
¾ x ¼	10 x 8	20	19	17
½ x ¼	15 x 8	24	22	35
½ x ¾	15 x 10	24	22	27
¾ x ¼	20 x 8	26	30	72
¾ x ¾	20 x 10	26	30	63
¾ x ½	20 x 15	26	30	50
1 x ¾	25 x 10	29	36	107
1 x ½	25 x 15	29	36	102
1 x ¾	25 x 20	29	36	86
1¼ x ½	32 x 15	31	46	200
1¼ x ¾	32 x 20	31	46	183
1¼ x 1	32 x 25	31	46	146
1½ x ½	40 x 15	31	50	261
1½ x ¾	40 x 20	31	50	236
1½ x 1	40 x 25	31	50	201
1½ x 1¼	40 x 32	31	50	124
2 x ½	50 x 15	35	65	412
2 x ¾	50 x 20	35	65	405
2 x 1	50 x 25	35	65	416
2 x 1¼	50 x 32	35	65	352
2 x 1½	50 x 40	35	65	288
2½ x 1	65 x 25	40	80	622
2½ x 1¼	65 x 32	40	80	644
2½ x 1½	65 x 40	40	80	604
2½ x 2	65 x 50	40	80	500
3 x 1½	80 x 40	44	95	921
3 x 2	80 x 50	44	95	969
3 x 2½	80 x 65	44	95	642
4 x 2	100 x 50	51	120	1711
4 x 2½	100 x 65	51	120	1752
4 x 3	100 x 80	51	120	1484
5 x 4	125 x 100	57	145	2049
6 x 4	150 x 100	58	175	3809
6 x 5	150 x 125	58	175	2765



291

PLUG, PLAIN

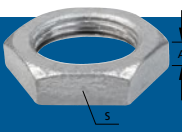
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	H	S (max)	Galv. g
¼	8	20	8	12
¾	10	20	10	22
½	15	24	11	36
¾	20	27	17	55
1	25	30	19	83
1¼	32	35	22	138
1½	40	36	22	161
2	50	45	27	303
2½	65	51	32	538
3	80	57	36	769
4	100	71	41	1548



290

PLUGS, BEADED

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S (max)	Galv. g
¼	8	27,5	8	22
¾	10	28	10	37
½	15	33,5	11	48
¾	20	36,5	17	87
1	25	41,5	19	148
1¼	32	46	22	212
1½	40	48	22	264
2	50	56	27	429
2½	65	63	32	707
3	80	68	36	1059



312

BACKNUT, RECESSED

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S	Galv. g
¾	10	8	27	23
½	15	9	32	30
¾	20	10	36	36
1	25	11	46	65
1¼	32	12	55	99
1½	40	13	60	110
2	50	14	75	174
2½	65	17	95	355
3	80	20	105	413



90

ELBOW

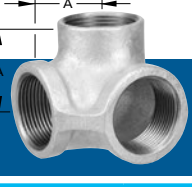
Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
¼	8	21	37
¾	10	25	70
½	15	28	90
¾	20	33	138
1	25	38	215
1¼	32	45	328
1½	40	50	471
2	50	58	714
2½	65	69	1138
3	80	78	1730
4	100	96	2875
5	125	115	4630
6	150	131	8157



120

45° ELBOW

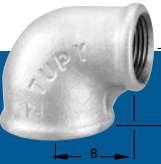
Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
¾	10	20	52
½	15	22	72
¾	20	25	111
1	25	28	165
1¼	32	33	269
1½	40	36	390
2	50	43	511
2½	65	50	905
3	80	55	1155
4	100	66	1966
5	125	80	3715
6	150	85	5905



221

SIDE OUTLET ELBOW

Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
½	15	28	137
¾	20	33	210
1	25	38	333
1¼	32	45	526
1½	40	50	691
2	50	58	1074



90R

ELBOW REDUCING

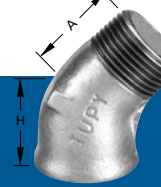
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	B	Galv. g
¾ x ¼	10 x 8	23	23	48
½ x ¼	15 x 8	25	25	82
½ x ¾	15 x 10	26	26	80
¾ x ¾	20 x 10	28	28	129
¾ x ½	20 x 15	30	31	118
1 x ½	25 x 15	32	34	146
1 x ¾	25 x 20	35	36	180
1¼ x ¾	32 x 20	36	41	263
1¼ x 1	32 x 25	40	42	280
1½ x ¾	40 x 20	39	44	306
1½ x 1	40 x 25	42	46	370
1½ x 1¼	40 x 32	46	48	428
2 x 1½	50 x 40	52	55	624
2½ x 2	65 x 50	61	66	1006



92

ELBOW

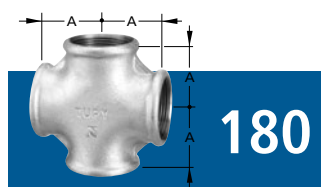
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	H	Galv. g
¼	8	21	28	43
¾	10	25	32	61
½	15	28	37	107
¾	20	33	43	148
1	25	38	52	240
1¼	32	45	60	365
1½	40	50	65	494
2	50	58	74	736
2½	65	69	88	1200
3	80	78	98	1750
4	100	96	118	2883



121

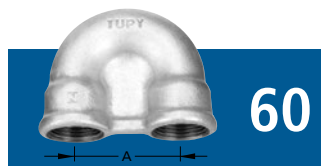
45° ELBOW

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	H	Galv. g
¾	10	25	20	44
½	15	28	22	65
¾	20	32	25	102
1	25	37	28	164



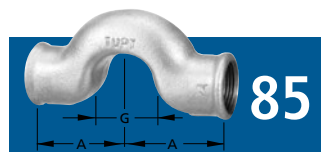
180 CROSSER

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¼	8	21		75
¾	10	25		108
½	15	28		172
¾	20	33		235
1	25	38		391
1¼	32	45		618
1½	40	50		799
2	50	58		1143
2½	65	69		1973
3	80	78		2699
4	100	97		4980



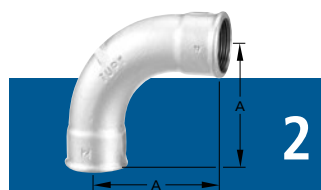
60 RETURN BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
½	15	38		176
¾	20	50		318
1	25	64		547
1¼	32	76		878
1½	40	89		1267
2	50	102		1854



85 CROSSOVER

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	G	A	Galv. g
½ - ½	15 - 15	15	46	174
½ - 1	15 - 25	25	54	244
¾ - ¾	20 - 20	20	56	299
¾ - 1	20 - 25	25	59	337



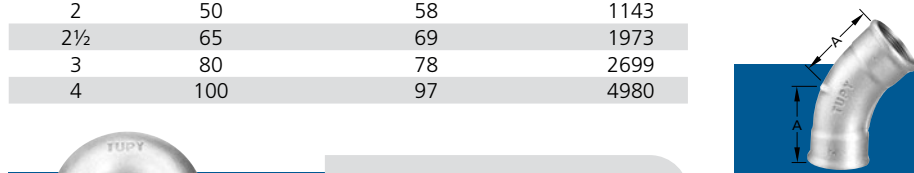
2 LONG SWEEP BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¾	10	48		105
½	15	55		151
¾	20	69		255
1	25	85		459
1¼	32	105		726
1½	40	116		890
2	50	140		1619
2½	65	176		2434
3	80	205		4183
4	100	260		6558



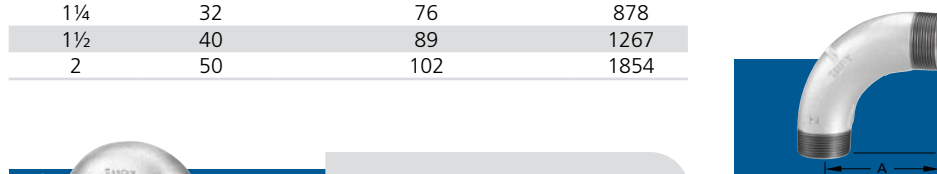
2a SHORT BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
½	15	45		132
¾	20	50		225
1	25	63		324
1¼	32	76		664
1½	40	85		684
2	50	102		1212



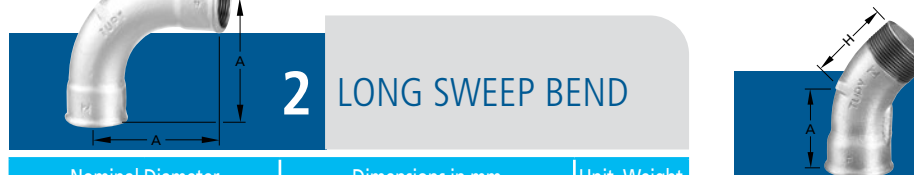
41 45° LONG SWEEP BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
½	15	36		115
¾	20	43		186
1	25	51		298
1¼	32	64		512
1½	40	68		712
2	50	81		1183



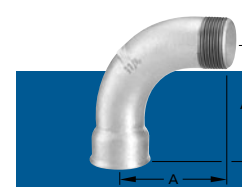
3 LONG SWEEP BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¾	10	42		66
½	15	48		104
¾	20	60		178
1	25	75		352
1¼	32	95		581
1½	40	105		734
2	50	130		1370
2½	65	165		2221
3	80	190		3118
4	100	245		5562
6	150	290		14336



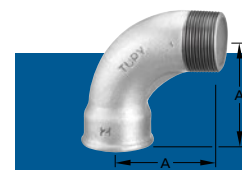
40 45° LONG SWEEP BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	H	Galv. g
¾	10	30	24	62
½	15	36	30	108
¾	20	43	36	182
1	25	51	42	273
1¼	32	64	54	423
1½	40	68	58	537
2	50	81	70	982
2½	65	99	86	1322
3	80	113	100	2073



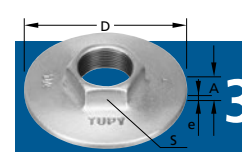
1 LONG SWEEP BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	H	Galv. g
¼	8	40	36	51
¾	10	48	42	101
½	15	55	48	129
¾	20	69	60	211
1	25	85	75	363
1¼	32	105	95	639
1½	40	116	105	800
2	50	140	130	1336
2½	65	176	165	2215
3	80	205	190	3132
4	100	260	245	5737



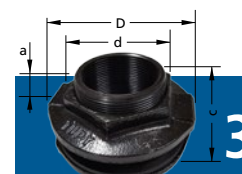
1a SHORT BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
½	15	45		109
¾	20	50		170
1	25	63		325
1¼	32	76		564
1½	40	85		666
2	50	102		975



321 FLANGE

Nominal Diameter		Dimensions in mm				Unit. Weight
Inch	mm	D	A	e	S	Galv. g
¼	8	70	11	5	18	137
¾	10	75	11	5	22	162
½	15	80	15	5	26	187
¾	20	90	16	5	32	262
1	25	100	19	6	39	350
1¼	32	120	21	6	49	553
1½	40	130	21	7	55	674
2	50	140	26	8	69	929
2½	65	160	30	9	84	1353
3	80	190	33	10	98	1954
4	100	210	39	11	124	2807
5	125	240	43,5	12	152	4190
6	150	265	43	13	177	4785



350 FLANGE FOR WATER-RESERVOIR

Nominal Diameter		Dimensions in mm				Unit. Weight
Inch	mm	a	C	D	d* - Ø"	Galv. g
½"	15	12	32	49	26,4 - ¾"	162
¾"	20	15	34	60	33,2 - 1"	282
1"	25	16	40	70	41,9 - 1 ¼"	409
1 ¼"	32	19	45	82	50,8 - 1 5/8"	587
1 ½"	40	21	49	94	56,7 - 1 7/8"	856
2"	50	24	58	117	70,5 - 2 3/8"	1086
2 ½"	65	27	66	134	87,9 - 3"	1305



270 SOCKET

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¼	8	27		31
¾	10	30		41
½	15	36		62
¾	20	39		104
1	25	45		164
1¼	32	50		231
1½	40	55		286
2	50	65		431
2½	65	74		712
3	80	80		1113
4	100	94		1672
5	125	109		3015
6	150	120		4747



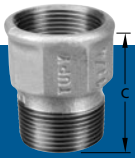
271 SOCKET LEFT/RIGHT THREAD

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¾	10	30		43
½	15	36		65
¾	20	39		109
1	25	45		166
1¼	32	50		233
1½	40	55		294
2	50	65		430



240 SOCKET REDUCING

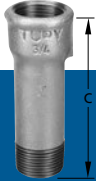
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¾ x ¼	10 x 8	30		37
½ x ¼	15 x 8	36		58
½ x ¾	15 x 10	36		65
¾ x ¾	20 x 10	39		95
¾ x ½	20 x 15	39		95
1 x ¾	25 x 10	45		129
1 x ½	25 x 15	45		123
1 x ¾	25 x 20	45		142
1¼ x ½	32 x 15	50		213
1¼ x ¾	32 x 20	50		208
1¼ x 1	32 x 25	50		229
1½ x ¾	40 x 20	55		284
1½ x 1	40 x 25	55		256
1½ x 1¼	40 x 32	55		260
2 x 1	50 x 25	65		373
2 x 1¼	50 x 32	65		401
2 x 1½	50 x 40	65		405
2½ x 1¼	65 x 32	74		602
2½ x 1½	65 x 40	74		579
2½ x 2	65 x 50	74		620
3 x 1½	80 x 40	80		795
3 x 2	80 x 50	80		912
3 x 2½	80 x 65	80		870
4 x 2	100 x 50	94		1535
4 x 2½	100 x 65	94		1595
4 x 3	100 x 80	94		1687



529a

EXTENSION SOCKET

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	C		Galv. g
½	15	43		66
¾	20	48		102
1	25	55		165
1¼	32	60		247



526

EXTENSION TUBE

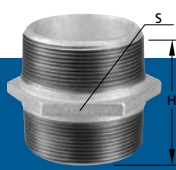
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	C		Galv. g
½ - 60	15 - 60	60		84
¾ - 70	20 - 70	70		139
¾ - 90	20 - 90	90		168



246

SOCKET REDUCING

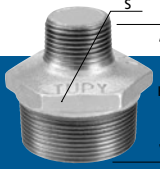
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¾ x ¼	10 x 8	35		36
½ x ¼	15 x 8	43		61
½ x ¾	15 x 10	43		60
¾ x ¾	20 x 10	48		91
¾ x ½	20 x 15	48		90
1 x ½	25 x 15	55		137
1 x ¾	25 x 20	55		149
1¼ x ¾	32 x 20	60		220
1¼ x 1	32 x 25	60		224
1½ x 1	40 x 25	63		287
1½ x 1¼	40 x 32	63		271
2 x 1	50 x 25	70		371
2 x 1¼	50 x 32	70		391
2 x 1½	50 x 40	70		405



280

HEXAGON NIPPLE

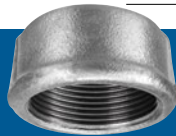
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	H	S (max)	Galv. g
¼	8	36	19	31
¾	10	38	22	40
½	15	44	27	68
¾	20	47	32	108
1	25	53	41	178
1¼	32	57	50	256
1½	40	59	55	332
2	50	68	70	585
2½	65	75	85	953
3	80	83	100	946
4	100	95	130	1888
5	125	114	150	3192
6	150	110	180	3930



245

HEXAGON NIPPLE REDUCING

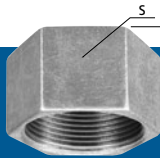
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	H	S (max)	Galv. g
¾ x ¼	10 x 8	38	19	33
½ x ¼	15 x 8	44	22	46
½ x ¾	15 x 10	44	22	51
¾ x ¾	20 x 10	47	30	83
¾ x ½	20 x 15	47	30	94
1 x ½	25 x 15	56	36	141
1 x ¾	25 x 20	53	36	149
1¼ x ¾	32 x 20	57	46	191
1¼ x 1	32 x 25	57	46	209
1½ x ¾	40 x 20	59	50	215
1½ x 1	40 x 25	59	50	246
1½ x 1¼	40 x 32	59	50	256
2 x 1	50 x 25	68	65	434
2 x 1¼	50 x 32	68	65	368
2 x 1½	50 x 40	68	65	422
2½ x 2	65 x 50	75	80	661
3 x 2	80 x 50	83	95	912
3 x 2½	80 x 65	83	95	923



301

CAP, ROUND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¼	8	18		20
¾	10	18		28
½	15	23		54
¾	20	25		87
1	25	29		107
1¼	32	31		172
1½	40	31		231
2	50	38		323
2½	65	42		557
3	80	46		812
4	100	56		1349



300

CAP

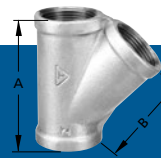
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	H	S	Galv. g
½	15	23	26	59
¾	20	25,5	32	91
1	25	29	39	147
1¼	32	31	48	220
1½	40	31	54	264
2	50	38	66	417
2½	65	42	84	771
3	80	46	96	1029
4	100	56	123	1592
6	150	63	179	3803



130

TEE

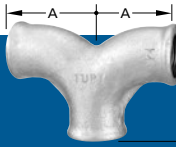
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¼	8	21		70
¾	10	25		87
½	15	28		138
¾	20	33		212
1	25	38		326
1¼	32	45		464
1½	40	50		588
2	50	58		902
2½	65	69		1587
3	80	78		2065
4	100	96		4182
5	125	115		6051
6	150	131		10740



165

45° TEE

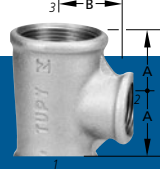
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	B	Galv. g
½	15	59	43	150
¾	20	70	52	239
1	25	83	61	403
1¼	32	100	74	591
1½	40	111	83	776
2	50	131	100	1292
2½	65	161	123	1784
3	80	184	145	2903
4	100	228	182	5020



132

TWIN ELBOW

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
½	15	45		194
¾	20	50		289

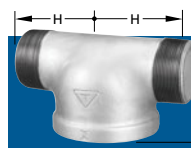


130R

TEE REDUCING

Nominal Diameter			Dimensions in mm			Unit. Weight
Inch	mm		B	A		Galv. g
1	2	3				
¾ x ¼ x ¾	10 x 8 x 10		23	23		71
½ x ¼ x ½	15 x 8 x 15		24	24		96
½ x ¾ x ½	15 x 10 x 15		26	26		129
¾ x ¾ x ¾	20 x 10 x 20		28	28		168
¾ x ½ x ¾	20 x 15 x 20		31	30		181
1 x ¾ x 1	25 x 10 x 25		32	30		203
1 x ½ x 1	25 x 15 x 25		34	32		233
1 x ¾ x 1	25 x 20 x 25		36	35		252
1¼ x ½ x 1¼	32 x 15 x 32		38	34		307
1¼ x ¾ x 1¼	32 x 20 x 32		41	36		328
1¼ x 1 x 1¼	32 x 25 x 32		42	40		371
1½ x ½ x 1½	40 x 15 x 40		42	36		390
1½ x ¾ x 1½	40 x 20 x 40		44	38		405
1½ x 1 x 1½	40 x 25 x 40		46	42		451
1½ x 1¼ x 1½	40 x 32 x 40		48	46		556
2 x ½ x 2	50 x 15 x 50		48	38		545
2 x ¾ x 2	50 x 20 x 50		50	40		589
2 x 1 x 2	50 x 25 x 50		52	44		667
2 x 1¼ x 2	50 x 32 x 50		54	48		729
2 x 1½ x 2	50 x 40 x 50		55	52		793
2½ x 1 x 2½	65 x 25 x 65		60	47		933
2½ x 1¼ x 2½	65 x 32 x 65		62	52		1176
2½ x 1½ x 2½	65 x 40 x 65		63	55		1257
2½ x 2 x 2½	65 x 50 x 65		66	61		1473
3 x 1 x 3	80 x 25 x 80		67	51		1276
3 x 1¼ x 3	80 x 32 x 80		70	55		1228
3 x 1½ x 3	80 x 40 x 80		71	58		1509
3 x 2 x 3	80 x 50 x 80		73	64		1716
3 x 2½ x 3	80 x 65 x 80		76	72		1931
4 x 2 x 4	100 x 50 x 100		86	70		2347
4 x 2½ x 4	100 x 65 x 100		90	78		2692
4 x 3 x 4	100 x 80 x 100		92	84		3307
¾ x 1 x ¾	20 x 25 x 20		35	36		270

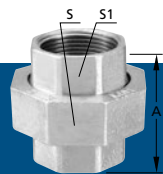
		B	C	A	
¾ x ½ x ½	20 x 15 x 15	31	28	30	179
1¼ x ½ x 1	32 x 15 x 25	38	32	34	284
1¼ x 1 x 1	32 x 25 x 25	42	38	40	320
1½ x ½ x 1¼	40 x 15 x 32	42	34	36	376
1½ x 1 x 1¼	40 x 25 x 32	46	40	42	460
2 x 1 x 1½	50 x 25 x 40	52	42	44	535
1¼ x 1¼ x 1	32 x 32 x 25	42	34	36	415



138

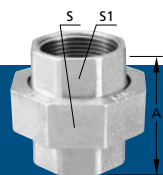
TEE FOR HYDRANT

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	H	Galv. g
4 x 2½	100 x 65	78	105	2560



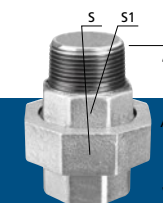
342 UNION, BRASS TAPER SEAT

Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	A	S (max)	S1	Galv. g
¼	8	42	27	17	104
¾	10	45	32	20	133
½	15	48	41	25	196
¾	20	52	50	32	293
1	25	58	55	39	363
1¼	32	65	70	49	635
1½	40	70	75	55	766
2	50	78	90	69	1211
2½	65	85	110	85	1761
3	80	95	130	98	2643
4	100	110	150	124	3680
5	125	122	183	149	5524
6	150	132	226	179	10132



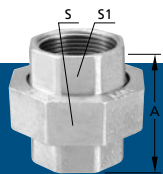
340 UNION, TAPER SEAT

Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	A	S (max)	S1	Galv. g
¼	8	42	27	17	96
¾	10	45	32	20	125
½	15	48	41	25	172
¾	20	52	50	32	272
1	25	58	55	39	365
1¼	32	65	70	49	619
1½	40	70	75	55	751
2	50	78	90	69	1136
2½	65	85	110	85	1776
3	80	95	130	98	2607
4	100	110	150	124	3494



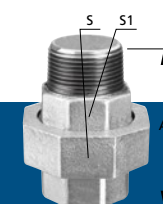
341 UNION, TAPER SEAT

Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	A	S (max)	S1	Galv. g
¾	10	58	32	20	148
½	15	66	41	25	211
¾	20	72	50	32	333
1	25	80	55	39	458
1¼	32	90	70	49	793
1½	40	95	75	55	935
2	50	106	90	69	1423
2½	65	118	110	85	2581
3	80	130	130	98	2961
4	100	150	150	124	4069



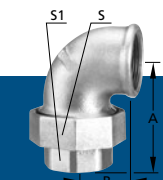
330 UNION, FLAT SEAT

Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	A	S (max)	S1	Galv. g
¼	8	42	27	17	96
¾	10	45	32	20	92
½	15	48	41	25	178
¾	20	52	50	32	286
1	25	58	55	39	375
1¼	32	65	70	49	597
1½	40	70	75	55	699
2	50	78	90	69	1099
2½	65	85	110	85	1754
3	80	95	130	98	2555
4	100	110	150	124	3325



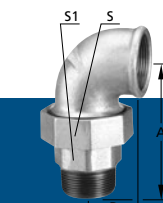
331 UNION, FLAT SEAT

Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	A	S (max)	S1	Galv. g
¾	10	58	32	20	104
½	15	66	41	25	202
¾	20	72	50	32	344
1	25	80	55	39	464
1¼	32	90	70	49	751
1½	40	95	75	55	895
2	50	106	90	69	1372



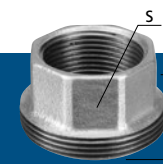
96 UNION ELBOW, TAPER SEAT

Nominal Diameter		Dimensions in mm					Unit. Weight
Inch	mm	A	B	S (max)	S1	Galv. g	
½	15	58	28	41	25	233	
¾	20	62	33	50	32	349	
1	25	72	38	55	39	497	
1¼	32	82	45	70	49	820	
1½	40	90	50	75	55,5	1016	
2	50	100	58	90	69	1492	
2½	65	127,5	69	110	85	2488	
3	80	144	78	130	98	3652	



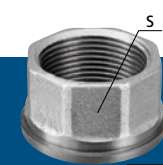
98 UNION ELBOW, TAPER SEAT

Nominal Diameter		Dimensions in mm					Unit. Weight
Inch	mm	A	B	S (max)	S1	Galv. g	
½	15	76	28	41	25	274	
¾	20	82	33	50	32	405	
1	25	94	38	55	39	582	
1¼	32	107	45	70	49	910	
1½	40	115	50	75	55,5	1218	
2	50	128	58	90	69	1788	
2½	65	160	69	110	85	2892	
3	80	179	78	130	98	4380	



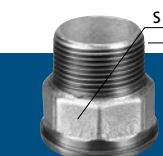
370 UNION BUSH

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S	Galv. g
¾	10	23,0	20	37
½	15	24,5	25	54
¾	20	26,5	32	100
1	25	29,0	39	141
1¼	32	32,5	49	255
1½	40	35,0	55,5	236
2	50	39,5	69	419
2½	65	44,0	85	713
3	80	48,5	98	844
4	100	55,5	124	1376



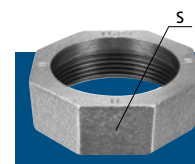
372 UNION END

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S	Galv. g
¼	8	19,5	17	22
¾	10	21,0	20	26
½	15	22,0	25	41
¾	20	23,5	32	80
1	25	27,0	39	99
1¼	32	30,5	44	191
1½	40	33,0	55,5	232
2	50	36,5	69	414
2½	65	39,0	85	577
3	80	44,0	98	849
4	100	52,0	124	1276



371 UNION END

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S	Galv. g
¾	10	34	20	46
½	15	41	25	61
¾	20	44	32	118
1	25	49,5	39	188
1¼	32	56	49	293
1½	40	59,5	55,5	388
2	50	65,5	69	630



374 UNION NUT

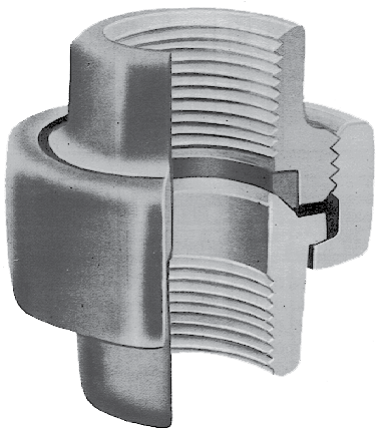
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	S (max)	Galv. g
¼	8	16	32	42
¾	10	17	36	58
½	15	18	41	78
¾	20	20	50	114
1	25	22	55	135
1¼	32	24	70	233
1½	40	25	75	239
2	50	27	90	303
2½	65	30	110	464
3	80	31	130	862
4	100	34	150	919

Advantages of the TUPY Unions

- 1
- 2
- 3
- IDEAL GEOMETRY** - The sealing occurs through perfect localization of a spherical zone with an extra wide cone seat.

BRONZE SEAT - A high quality bronze ring ensures the perfect fitting of the contact areas.

DURABILITY - The TUPY unions can be installed and reinstalled, time after time, with absolute safety against leakages. These features are ensured by the ideal shape of the seat and the care dedicated to their manufacture.



- 4
- 5
- 6
- RIGIDITY** - The unit, once mounted, is practically unbreakable as its components were ingeniously planned.

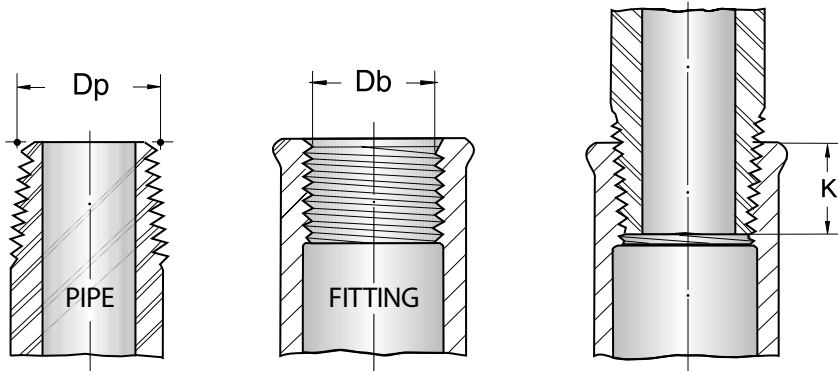
RESISTANCE - Each component of the union withstands the forces of the piping, vibrations and abuses in applying tools, as they are made of iron; superior quality malleable iron.

PERFORMANCE - The free passage, without pockets or protuberances, allows a uniform flow, avoiding harmful deposits.

Among the extremely wide and varied line of fittings, TUPY S.A. also makes available to the consumer market seven different types of Union.

- UNIONS WITH FLAT SEAT
 - UNIONS WITH MF FLAT SEAT
 - UNIONS WITH IRON CONIC SEAT
 - UNIONS WITH MF IRON CONIC SEAT
- UNIONS WITH BRONZE/IRON CONIC SEAT
 - ELBOW UNIONS WITH IRON CONIC SEAT
 - ELBOW UNIONS WITH MF IRON CONIC SEAT

Identification of Nominal Diameters from Actual BSP Thread Dp and Db Diameters

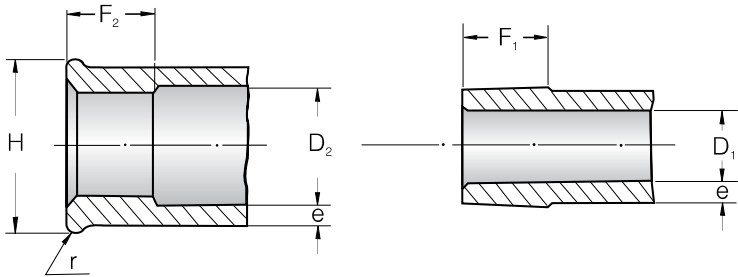


Dimensions in mm

NOMINAL	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6
Dp	12,8	16,3	20,4	25,9	32,6	41,1	47,0	58,6	74,1	86,6	111,4	162,0
Db	11,5	15,0	18,6	24,1	30,3	39,0	44,9	56,7	72,2	84,9	110,1	160,9
K	9,7	10,1	13,2	14,5	16,8	19,1	19,1	23,4	26,7	29,8	035,8	1040,1

K = Useful Thread Length

Dimensions of BSP Fittings

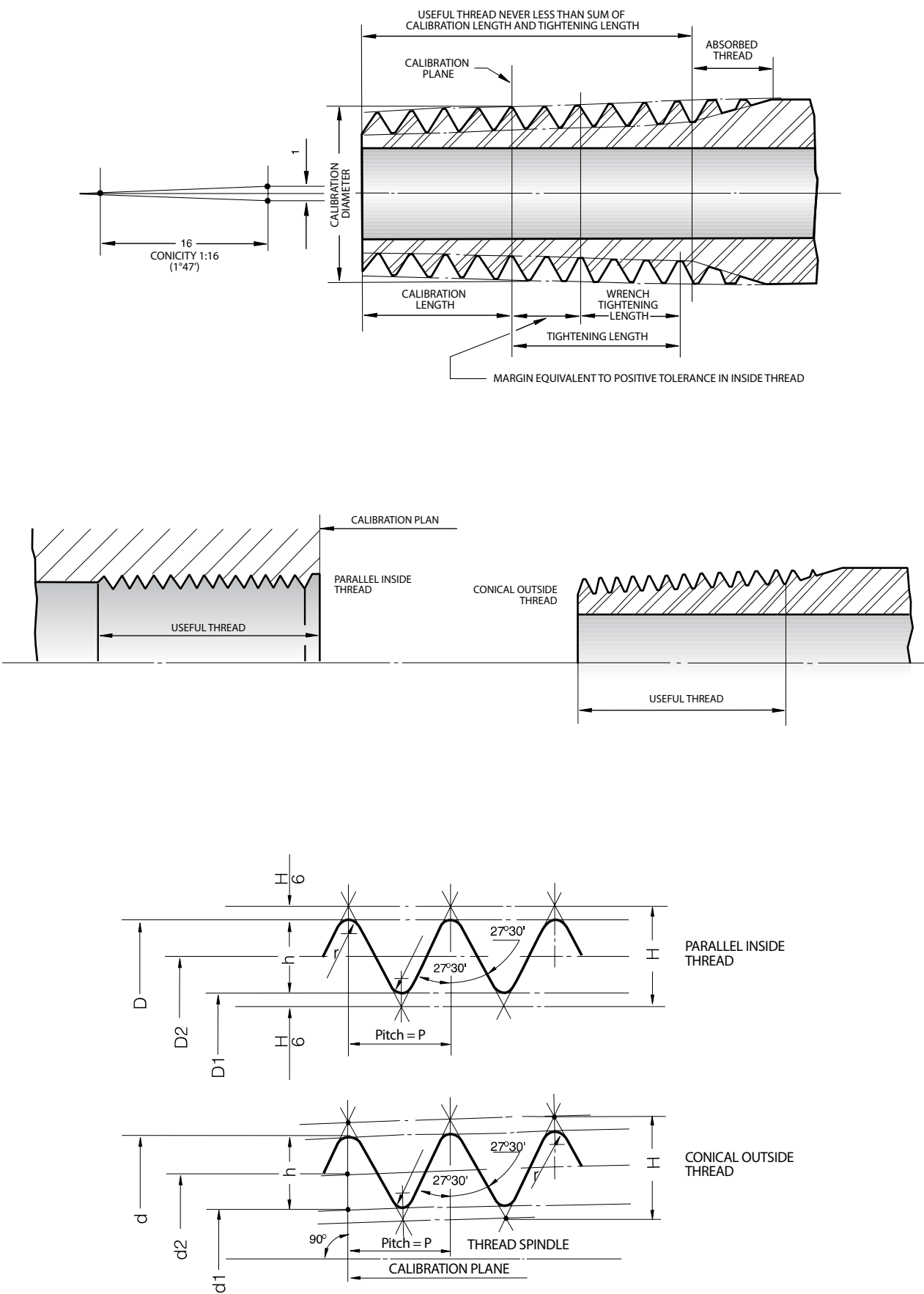


Dimensions in mm

NOMINAL DIAMETER	F ₁	F ₂	D ₁	D ₂	E	r	H
8 (1/4)	11,0	9,7	7,6	11,6	2,0	2,0	19,8
10 (3/8)	11,5	10,1	10,9	15,4	2,0	2,0	23,8
15 (1/2)	15,0	13,2	14,8	19,6	2,0	2,5	28,6
20 (3/4)	16,5	14,5	19,4	25,0	2,2	2,5	34,8
25 (1)	19,0	16,8	25,4	31,4	2,4	3,0	42,6
32 (1 1/4)	21,5	19,1	33,5	40,4	2,8	3,0	52,0
40 (1 1/2)	21,5	19,1	39,0	46,2	3,0	3,5	58,6
50 (2)	26,0	23,4	50,2	58,2	3,2	3,5	71,6
65 (2 1/2)	30,5	26,7	65,3	73,8	3,4	4,0	88,0
80 (3)	33,5	29,8	76,8	86,6	3,8	4,0	102,4
100 (4)	39,5	35,8	99,6	111,8	4,4	4,5	130,6
125 (5)	43,6	40,1	122,8	137,2	5,2	4,5	160
150 (6)	43,6	40,1	146,2	162,6	6,0	6,0	188,4

BSP Thread for Pipes (Whitworth gas)

As per ABNT NBR NM ISO 7-1



Thread Table BSP (Whitworth gas)

As per ABNT NBR NM ISO 7-1

Thread Table BSP (Whitworth gas)
As per ABNT NBR NM ISO 7-1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Designation	Qty. Of fillets per 25,4 (mm)	Pitch	Fillet height	Diameter in Calibration plane (basic)			Length & tolerance of calibration of outside thread					Position of calibration plane in inside thread	Minimum length of useful thread at end of pipe (B)			Tightening length		
				Greater	Side	Less	Basic	Separation + or - T½		Maximum	Minimum		For length of calibration					
								≡	Turns									
															(mm)		(mm)	
(DN)	Z	P (mm)	h (mm)	d = D (mm)	d ₂ = D ₂ (mm)	d ₁ = D ₁ (mm)	(mm)	Turns	(mm)	Turns	≡	Basic (mm)	Maximum (mm)	Minimum (mm)		≈ (mm)		Turns
⅛	28	0,907	0,581	7,723	7,142	6,561	4,0	0,9	1	4,9	3,1	1,1	1¼	6,5	7,4	5,6	2,5	2¾
⅜	28	0,907	0,581	9,728	9,147	8,566	4,0	0,9	1	4,9	3,1	1,1	1¼	6,5	7,4	5,6	2,5	2¾
½	19	1,337	0,856	13,157	12,301	11,445	6,0	1,3	1	7,3	4,7	1,7	1¼	9,7	11,0	8,4	3,7	2¾
¾	19	1,337	0,856	16,662	15,806	14,950	6,4	1,3	1	7,7	5,1	1,7	1¼	10,1	11,4	8,8	3,7	2¾
1	14	1,814	1,162	20,955	19,793	18,631	8,2	1,8	1	10,0	6,4	2,3	1¼	13,2	15,0	11,4	5,0	2¾
1¼	14	1,814	1,162	26,441	25,279	24,117	9,5	1,8	1	11,3	7,7	2,3	1¼	14,5	16,3	12,7	5,0	2¾
1½	11	2,309	1,479	33,249	31,770	30,291	10,4	2,3	1	12,7	8,1	2,9	1¼	16,8	19,1	14,5	6,4	2¾
2	11	2,309	1,479	41,910	40,431	38,952	12,5	2,3	1	15,0	10,4	2,9	1¼	19,1	21,4	16,8	6,4	2¾
2½	11	2,309	1,479	47,803	46,324	44,845	12,7	2,3	1	15,0	10,4	2,9	1¼	19,1	21,4	16,8	6,4	2¾
3	11	2,309	1,479	59,614	58,135	56,656	15,9	2,3	1	18,2	13,6	2,9	1¼	23,4	25,7	21,1	7,5	3¼
4	11	2,309	1,479	75,184	73,705	72,226	17,5	3,5	1½	21,0	14,0	3,5	1½	26,7	30,2	23,2	9,2	4
5	11	2,309	1,479	87,884	86,405	84,926	20,6	3,5	1½	24,1	17,1	3,5	1½	29,8	33,3	26,3	9,2	4
6	11	2,309	1,479	113,030	111,551	110,072	25,4	3,5	1½	28,9	21,9	3,5	1½	35,8	39,3	32,3	10,4	4½
7	11	2,309	1,479	138,430	136,951	135,472	28,6	3,5	1½	32,1	25,1	3,5	1½	40,1	43,6	36,6	11,5	5
8	11	2,309	1,479	163,830	162,351	160,872	28,6	3,5	1½	32,1	25,1	3,5	1½	40,1	43,6	36,6	11,5	5

(A) The separations in the parallel thread diameters shall be 1/16 of the values of column 13.

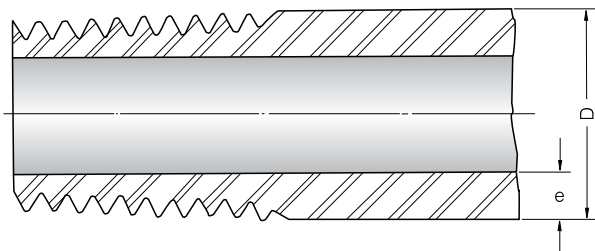
(B) The design of parts with an inside thread shall allow the fitting of pipe spigots for the lengths given in column 16; the length of the useful thread shall not be less than 80% of the values of column 17.

BSP Thread Conduction Pipes

Carbon Steel Pipes for Thread Whitworth Gas
for ordinary uses in Conducting Fluids
ABNT NBR 5580

With or without Seam - Galvanized or Black

- THREAD** : BSP as per ABNT NBR NM ISO 7-1
- CLASS** : The specification foresees 3 classes:
HEAVY (P)
MEDIUM (M)
LIGHT (L)
- MATERIAL** : Carbon steel
- TEMPERATURE** : Advised up to 200°C
- BENDING** : They are not suited to being bent or forming coils.
- TOLERANCES** : In the wall thickness of pipes of classes Light, Medium and Heavy variances are allowed for lack (-) which do not exceed 12.5%.
- ZINC LAYER** : The weight of the zinc coating shall be equal to or greater than 450 g/m² (63 microns).
- HYDROSTATIC PRESSURE** : The hydrostatic pressure test foreseen is 50 kgf/cm². Pipes above 2" shall be struck near the two ends with a hammer of approximately 1kg.
- DIMENSIONS** : See tables on following page.



NOTE:

TUPY S.A. does not manufacture carbon steel pipes.
The data concerning these pipes was placed in
this catalog merely for informative purposes.

Pipe Dimensions Table
As per ABNT NBR 5580

Dimensions of steel pipes, of class Heavy (P), with and without seam (similar EN 10255)						
Outside Diameter (mm)	Nominal Diameter		Outside Diameter D (mm)		Wall Thickness e (mm)	Theoretic Mass of Black Pipe (kg/m)
	(mm)	(in)	maximum	minimum		
10,2	6	1/8	10,6	9,8	2,65	0,49
13,5	8	1/4	14,0	13,2	3,00	0,77
17,2	10	3/8	17,5	16,7	3,00	1,05
21,3	15	1/2	21,8	21,0	3,00	1,35
26,9	20	3/4	27,3	26,5	3,00	1,76
33,7	25	1	34,2	33,3	3,75	2,77
42,4	32	1 1/4	42,9	42,0	3,75	3,57
48,3	40	1 1/2	48,8	47,9	3,75	4,12
60,3	50	2	60,8	59,7	4,50	6,19
76,1	65	2 1/2	76,6	75,3	4,50	7,95
88,9	80	3	89,5	88,0	4,50	9,37
101,6	90	3 1/2	102,1	100,4	5,00	11,91
114,3	100	4	115,0	113,1	5,60	15,01
139,7	125	5	140,8	138,5	5,60	18,52
165,1	150	6	166,5	163,9	5,60	22,03

Dimensions of steel pipes, of class Medium (M), with and without seam (similar EN 10255)						
Outside Diameter (mm)	Nominal Diameter		Outside Diameter D (mm)		Wall Thickness e (mm)	Theoretic Mass of Black Pipe (kg/m)
	(mm)	(in)	maximum	minimum		
10,2	6	1/8	10,6	9,8	2,00	0,40
13,5	8	1/4	14,0	13,2	2,25	0,62
17,2	10	3/8	17,5	16,7	2,25	0,83
21,3	15	1/2	21,8	21,0	2,65	1,21
26,9	20	3/4	27,3	26,5	2,65	1,59
33,7	25	1	34,2	33,3	3,35	2,27
42,4	32	1 1/4	42,9	42,0	3,35	2,92
48,3	40	1 1/2	48,8	47,9	3,35	3,71
60,3	50	2	60,8	59,7	3,75	4,71
76,1	65	2 1/2	76,6	75,3	3,75	6,69
88,9	80	3	89,5	88,0	4,05	7,87
101,6	90	3 1/2	102,1	100,4	4,25	10,20
114,3	100	4	115,0	113,1	4,50	12,18
139,7	125	5	140,8	138,5	5,00	16,61
165,1	150	6	166,5	163,9	5,30	20,89

Dimensions of steel pipes, of class Light (L), with and without seam (similar EN 10255)						
Outside Diameter (mm)	Nominal Diameter		Outside Diameter D (mm)		Wall Thickness e (mm)	Theoretic Mass of Black Pipe (kg/m)
	(mm)	(in)	maximum	minimum		
10,2	6	1/8	10,4	9,7	1,80	0,37
13,5	8	1/4	13,9	13,2	2,00	0,56
17,2	10	3/8	17,4	16,7	2,00	0,75
21,3	15	1/2	21,7	21,0	2,25	1,05
26,9	20	3/4	27,1	26,4	2,25	1,36
33,7	25	1	34,0	33,2	2,65	2,03
42,4	32	1 1/4	42,7	41,9	2,65	2,63
48,3	40	1 1/2	48,6	47,8	3,00	3,35
60,3	50	2	60,7	59,6	3,00	4,24
76,1	65	2 1/2	76,3	75,2	3,35	6,01
88,9	80	3	89,4	87,9	3,35	7,07
101,6	90	3 1/2	101,8	100,3	3,35	9,05
114,3	100	4	114,9	113,0	3,75	10,22

NPT Fittings - MEDIUM PRESSURE for applications up to 300 lb at ambient temperature.

PRESSURE TABLE

	Maximum Service Pressures (As per ASME B 16.3)	Maximum Service Pressures for Union (As per ASME B 16.39)	Maximum Service Pressures (As per ABNT NBR 6925)
Temperature °C	Nominal Diameter	Nominal Diameter	Nominal Diameter
	¼ a 6	¼ a 4	¼ a 6
	lb (psi)	lb (psi)	MPa
-29 a 66	300	300	2,1
93	265	265	1,8
121	225	225	1,5
149	185	185	1,3
177	150	150	1,0
204	-	110	0,7
232	-	75	0,5

Note: 1 bar ≅ 14,5 psi • 1 bar ≅ 1 kgf/cm² • 1 bar = 0,1 MPa • 1 psi = 1 lbf/in²

MANUFACTURING STANDARDS

The TUPY NPT-Medium Pressure fittings are produced in compliance with the specifications of standards ABNT NBR 6925 and ASME B 16.3, except for the Reducing Bushings and Plugs which obey standard ASME B 16.14 and unions ASME B 16.39. We point out that, depending upon the figure, certain diameters may appear in one standard but not in another one.

MATERIAL

The TUPY NPT-Medium Pressure fittings are produced in compliance with standards ABNT NBR 6590 and ASTM A-197M in black malleable iron.

THREAD

The sealing threads of the TUPY NPT-Medium Pressure fittings are produced in compliance with the specifications of standards ABNT NBR 12912 and ANSI B 1.20.1. (conic outside and inside thread). Other types produced upon inquiry.

INSPECTION

The TUPY NPT-Medium Pressure fittings are inspected so as to ensure the specifications of standards ABNT NBR 6925, ASME B 16.3, ASME B 16.14 and ASME B 16.39.

BRANDS

- The TUPY NPT - Medium Pressure fittings when the dimensions allow, are identified as follows:
- TUPY® Brand (except in the rated diameters of ¾ x ¼ to ¾ x ½ in the Reduction Bushings and ¼ and ¾ in the Plugs).
 - The nominal diameter.
 - The monogram MI (Malleable Iron) except in the Reducing Bushings and Plugs.
 - The number 150 (Indicative of class), except in the Reducing Bushings and Plugs.
 - The name BRAZIL (Indicative of producing country).
 - The monogram NPT (National Pipe Taper), only in the Reducing Bushings and Plugs
 - The monogram © (Underwriters Laboratories Inc.)

SURFACE PROTECTION

The TUPY NPT-Medium Pressure fittings are produced with black finishing (non-toxic oil) or hot-dip galvanizing, as per ABNT NBR 6323 and ASTM A-153. Other special coatings (Epoxy paints, cataphoretic, hybrid, double galvanizing, etc.) can be furnished upon inquiry.

APPLICATIONS

The TUPY NPT-Medium Pressure fittings are applied for conducting liquids, gases and vapors.

NOTE

TUPY S.A. reserves the right to introduce in its product lines the alterations which it deems appropriate. The weights (g) appear in this price list are subject to alteration without prior notice. For your safety demand that the fittings acquired are in compliance with the said standards and that tightness tests are executed before final use of the networks installed.





Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	D (min)	S (min)	Galv. g
3⁄8 x 1⁄4	10 x 8	16,3	17,3	16
1⁄2 x 1⁄4	15 x 8	19	22,1	36
1⁄2 x 3⁄8	15 x 10	19	22,1	26
3⁄4 x 3⁄8	20 x 10	21,6	29,2	63
3⁄4 x 1⁄2	20 x 15	21,6	29,2	50
1 x 1⁄2	25 x 15	25,5	36,1	107
1 x 3⁄4	25 x 20	25,5	36,1	84
1 1⁄4 x 1⁄2	32 x 15	31	34	160
1 1⁄4 x 3⁄4	32 x 20	27,4	44,7	178
1 1⁄4 x 1	32 x 25	27,4	44,7	145
1 1⁄2 x 3⁄4	40 x 20	30,5	41,4	211
1 1⁄2 x 1	40 x 25	29	50,8	232
1 1⁄2 x 1 1⁄4	40 x 32	29	50,8	151
2 x 1	50 x 25	32,8	49,5	338
2 x 1 1⁄4	50 x 32	31	63	376
2 x 1 1⁄2	50 x 40	31	63	324
2 1⁄2 x 1 1⁄2	65 x 40	38,4	68,1	581
2 1⁄2 x 2	65 x 50	36,6	75,7	475
3 x 2	80 x 50	40,9	83,3	866
3 x 2 1⁄2	80 x 65	38,9	98	815
4 x 2 1⁄2	100 x 65	46,2	98	1421
4 x 3	100 x 80	43,7	117,3	1461
6 x 4	150 x 100	60	147,1	3595



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	B	S	Galv. g
1⁄4	8	20	9,5	16
3⁄8	10	21	11	26
1⁄2	15	26	14,3	50
3⁄4	20	28	16	72
1	25	34	20,7	135
1 1⁄4	32	36	23,8	197
1 1⁄2	40	38	28,6	270
2	50	42	33,4	438
2 1⁄2	65	54	38	768
3	80	58	43	1127
4	100	66	50	2152
6	150	76	70	5355



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	Galv. g	
1⁄2	15	28,5	130	
3⁄4	20	33,3	204	
1	25	38,1	308	
1 1⁄4	32	44,5	486	
1 1⁄2	40	49,3	618	
2	50	57,2	948	
2 1⁄2	65	68,6	1822	
3	80	78,2	2496	
4	100	96,3	4452	



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	C	Galv. g	
1⁄2	15	22,4	133	
3⁄4	20	24,9	189	
1	25	28,5	296	
1 1⁄4	32	32,8	440	
1 1⁄2	40	36,3	585	
2	50	42,7	892	



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	X	Z	Galv. g
3⁄4 x 1⁄2	20 x 15	30,5	31	166
1 x 1⁄2	25 x 15	32	34,5	218
1 x 3⁄4	25 x 20	34,8	36,8	263
1 1⁄4 x 1⁄2	32 x 15	34	39	306
1 1⁄4 x 3⁄4	32 x 20	36,8	41,2	350
1 1⁄4 x 1	32 x 25	40,1	42,4	417
1 1⁄2 x 3⁄4	40 x 20	38,6	44,5	420
1 1⁄2 x 1	40 x 25	41,9	45,7	490
1 1⁄2 x 1 1⁄4	40 x 32	46,2	47,8	561
2 x 3⁄4	50 x 20	40,6	50,2	540
2 x 1	50 x 25	43,9	51,3	650
2 x 1 1⁄4	50 x 32	48,3	53,3	720
2 x 1 1⁄2	50 x 40	51,3	54,9	780



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	J	Galv. g
1⁄4	8	20,6	30,2	43
3⁄8	10	24,1	36,6	75
1⁄2	15	28,5	41,2	117
3⁄4	20	33,3	48	175
1	25	38,1	54,4	316
1 1⁄4	32	44,5	62,2	460
1 1⁄2	40	49,3	68,3	632
2	50	57,2	82,8	999



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	C	K	Galv. g
1⁄2	15	22,4	29,2	100
3⁄4	20	24,9	32,8	148
1	25	28,5	37,3	238
1 1⁄4	32	32,8	43,5	372
1 1⁄2	40	36,3	48	510
2	50	42,7	56,5	840



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	Galv. g	
1⁄4	10	20,6	87	
1⁄2	15	28,5	229	
3⁄4	20	33,3	358	
1	25	38,1	520	
1 1⁄4	32	44,5	780	
1 1⁄2	40	49,3	1023	
2	50	57,2	1260	



Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	D	A	e	Galv. g
1⁄2	15	89	15	6	189
3⁄4	20	89	16	6	286
1	25	101,6	18	6,5	340
1 1⁄4	32	101,6	20	6,5	421
1 1⁄2	40	114,3	22,5	7	575
2	50	139,7	26	9	895



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	W	Galv. g	
1⁄4	10	26,9	49	
1⁄2	15	34	91	
3⁄4	20	38,6	156	
1	25	42,4	226	
1 1⁄4	32	49	352	
1 1⁄2	40	54,6	448	
2	50	64,3	737	



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	M	Galv. g	
3⁄4 x 1⁄2	20 x 15	36,6	125	
1 x 1⁄2	25 x 15	42,9	195	
1 x 3⁄4	25 x 20	42,9	193	
1 1⁄4 x 1⁄2	32 x 15	52,3	245	
1 1⁄4 x 3⁄4	32 x 20	52,3	290	
1 1⁄4 x 1	32 x 25	52,3	329	
1 1⁄2 x 1⁄2	40 x 15	58,7	350	
1 1⁄2 x 3⁄4	40 x 20	58,7	380	
1 1⁄2 x 1	40 x 25	58,7	430	
1 1⁄2 x 1 1⁄4	40 x 32	58,7	435	
2 x 1⁄2	50 x 15	71,4	550	
2 x 3⁄4	50 x 20	71,4	563	
2 x 1	50 x 25	71,4	599	
2 x 1 1⁄4	50 x 32	71,4	640	
2 x 1 1⁄2	50 x 40	71,4	698	



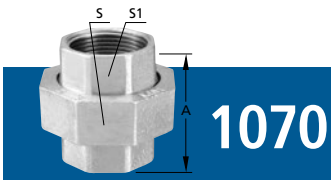
Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	P (min)	Galv. g	
3⁄4	20	24,6	91	
1	25	29,5	184	
1 1⁄4	32	32,5	275	
1 1⁄2	40	33,8	377	
2	50	36,8	622	



Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	Galv. g	
1⁄4	10	20,6	73	
1⁄2	15	28,5	163	
3⁄4	20	33,3	280	
1	25	38,1	447	
1 1⁄4	32	44,5	706	
1 1⁄2	40	49,3	900	
2	50	57,2	1320	
2 1⁄2	65	68,6	2362	
3	80	78,2	3316	
4	100	96,3	5585	



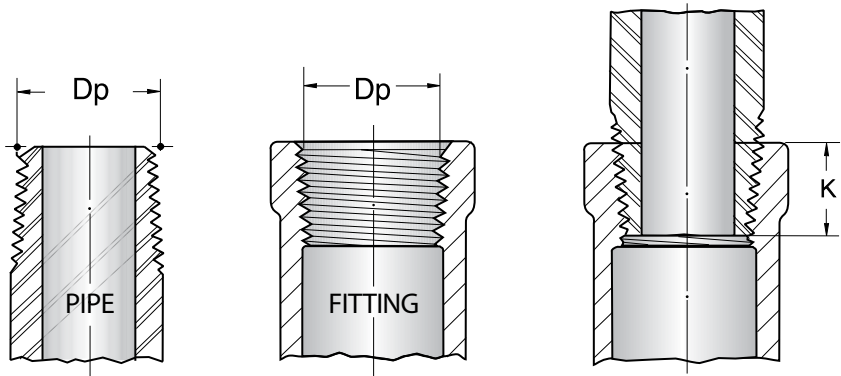
Nominal Diameter			Dimensions in mm			Unit. Weight
Inch		mm	Z	X	Galv. g	
1	2	3	1	2	3	
¾ x ¾ x ½	20 x 20 x 15		30,5	31	132	
1 x 1 x ½	25 x 25 x 15		32	34,5	354	
1 x 1 x ¾	25 x 25 x 20		34,8	36,8	395	
1¼ x 1¼ x ½	32 x 32 x 15		38	34	467	
1¼ x 1¼ x ¾	32 x 32 x 20		36,8	41,2	527	
1¼ x 1¼ x 1	32 x 32 x 25		40,1	42,4	581	
1½ x 1½ x ½	40 x 40 x 15		42,2	35,8	585	
1½ x 1½ x ¾	40 x 40 x 20		44,5	38,6	649	
1½ x 1½ x 1	40 x 40 x 25		41,9	45,7	714	
1½ x 1½ x 1¼	40 x 40 x 32		46,2	47,8	768	
2 x 2 x ½	50 x 50 x 15		47,8	37,9	830	
2 x 2 x ¾	50 x 50 x 20		50,2	40,6	889	
2 x 2 x 1	50 x 50 x 25		51,3	43,9	978	
2 x 2 x 1¼	50 x 50 x 32		48,3	53,3	1078	
2 x 2 x 1½	50 x 50 x 40		51,3	54,9	1140	
½ x ½ x ¾	15 x 15 x 20		30,5	31,0	210	
½ x ½ x 1	15 x 15 x 25		32	34,6	260	
¾ x ¾ x 1	20 x 20 x 25		34,8	36,8	340	
¾ x ¾ x 1¼	20 x 20 x 32		36,8	41,1	410	
1 x 1 x 1¼	25 x 25 x 32		40,1	42,4	510	
1 x 1 x 1½	25 x 25 x 40		41,9	45,7	564	
1 x 1 x 2	25 x 25 x 50		46,2	47,8	765	
1¼ x 1¼ x 1½	32 x 32 x 40		48,9	51,3	730	
1¼ x 1¼ x 2	32 x 32 x 50		48,3	53,3	860	
1½ x 1½ x 2	40 x 40 x 50		51,3	54,9	993	



1070 UNION, SINGLE BRASS SEAT

Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	A	S (max)	S1	Galv. g
¼	8	36,5	28	16,6	88
⅜	10	41	32	20,1	115
½	15	43,5	37	25,4	177
¾	20	49,5	43,5	31,6	283
1	25	52,5	52,5	38,5	376
1¼	32	57,5	63,5	48,5	623
1½	40	61	71,5	55	740
2	50	70	86,5	68,5	1224
2½	65	82	104,5	84,5	2063
3	80	89	129,5	97,5	2776
4	100	98	152,5	123,5	4058

Identification of Nominal Diameters from Actual Medium Pressure NPT Thread Dp and Db Diameters

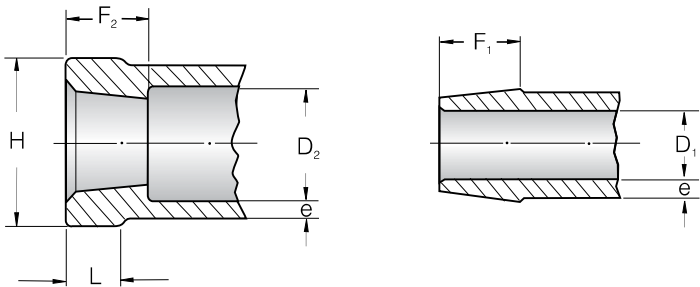


Dimensions in mm

NOMINAL	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	6
Dp	13,3	16,7	20,7	26,0	32,6	41,3	47,4	59,4	71,6	87,4	112,6	166,3
Db	11,4	14,8	18,3	23,7	29,7	38,5	44,5	56,6	67,6	83,5	108,9	162,7
K	10,2	10,4	13,6	13,9	17,3	18,0	18,4	19,2	28,9	30,5	33,0	038,4

K = Useful Thread Length

Dimensions of Medium Pressure NPT Fittings



Dimensions in mm

NOMINAL DIAMETER	F ₁ (min.)	F ₂ (min.)	D ₁ (max.)	D ₂ (min.)	e	L (min.)	H (min.)
¼	10,2	8,1	6,6	13,7	2,4	5,5	21,4
⅜	10,4	9,1	9,4	17,1	2,5	5,8	25,8
½	13,5	10,9	13,0	21,3	2,7	6,3	30,4
¾	14,0	12,7	17,5	26,7	3,1	6,9	37,0
1	17,3	14,7	23,1	33,4	3,4	7,7	45,0
1¼	18,0	17,0	30,2	42,2	3,7	8,7	54,7
1½	18,3	17,8	35,3	48,3	3,9	9,3	61,6
2	19,3	19,1	45,5	60,3	4,4	10,7	75,3
2½	29,0	23,4	55,9	73,0	5,3	12,1	91,2
3	30,5	24,9	70,6	88,9	5,9	13,9	108,8
4	33,0	27,4	94,0	114,4	6,7	16,8	137,2
6	38,4	32,5	144,0	168,3	8,5	22,9	197,3

NPT - HIGH PRESSURE fittings for applications up to
2.000 lb at ambient temperature.

PRESSURE TABLE

	Maximum Service Pressures (As per ABNT NBR 6925 and ASME B 16.3)			Maximum Service Pressures for Union (As per ABNT NBR 6925 and ASME B 16.39)
Temperature °C	Nominal Diameter			Nominal Diameter
	1/4 a 1	1/4 a 2	2 1/2 a 6	1/4 a 4
	lb (psi)	lb (psi)	lb (psi)	lb (psi)
-29 a 66	2.000	1.500	1.000	600
93	1.785	1.350	910	550
121	1.575	1.200	825	505
149	1.360	1.050	735	460
177	1.150	900	650	415
204	935	750	560	370
232	725	600	475	325
260	510	450	450	280
288	300	300	300	230

Note: 1 bar ≅ 14,5 psi • 1 bar ≅ 1 kgf/cm² • 1 bar = 0,1 MPa • 1 psi = 1 lbf/in²

MANUFACTURING STANDARDS

The TUPY NPT-High Pressure fittings are manufactured in compliance with the specifications of standards ABNT NBR 6925 and ASME B 16.3, except the unions which are in compliance with the specifications of ASME B 16.39.
We point out that, depending upon the figure, certain diameters may appear in one standard but not in another one.

MATERIAL

The TUPY NPT-High Pressure fittings are produced in compliance with standards ABNT NBR 6590 and ASTM A 197 in black malleable iron.

THREAD

The sealing threads of the TUPY NPT-High Pressure fittings are produced in compliance with the specifications of standards ABNT NBR 12912 and ANSI B 1.20.1. (conic outside and inside thread). Other types are produced upon inquiry.

INSPECTION

The TUPY NPT-High Pressure fittings are inspected so as to ensure the specifications of standards ABNT NBR 6925, ASME B 16.3 and ASME B 16.39.

BRANDS

The TUPY NPT-High Pressure fittings, when the dimensions allow, have the following identification recorded on them:

- Brand TUPY®.
- The nominal diameter.
- The monogram MI (Malleable Iron)
- The monogram WOG (water, oil and gas).
- The number 300 (Indicative of the class).
- The number 2000 or 1500 or 1000 or 500 (indicative of the service pressure in psi, in the range from -29 to 66°C).
- The name BRAZIL (Indicative of producing country).
- The monogram ® (Underwriters Laboratories Inc.)

SURFACE PROTECTION

The TUPY NPT-High Pressure fittings are produced with black finishing (non-toxic oil) or hot-dip galvanizing, as per ABNT NBR 6323 and ASTM A-153. Other special coatings (Epoxy paints, cataphoretic, hybrid, double galvanizing, etc.) can be furnished upon inquiry.

APPLICATIONS

The TUPY NPT-High P ressure fittings are applied for conducting liquids, gases and vapors.

NOTE

TUPY S.A. reserves the right to introduce in its product lines the alterations which it deems appropriate.
The weights (g) appear in this price list are subject to alteration without prior notice.
For your safety demand that the fittings acquired are in compliance with the said standards and that tightness tests are executed before final use of the networks installed.





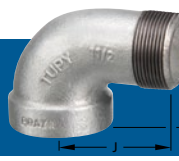
2015 ELBOW

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¼	8	23,9		92
¾	10	26,9		132
½	15	31,8		217
¾	20	36,6		339
1	25	41,4		515
1¼	32	49,3		842
1½	40	54,1		1081
2	50	63,5		1842
2½	65	74,7		2745
3	80	85,9		4182
4	100	114		8415
6	150	159		18165



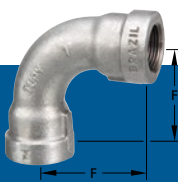
2025 45° ELBOW

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	C		Galv. g
¼	8	20,6		85
¾	10	22,4		133
½	15	25,4		211
¾	20	28,7		299
1	25	33,3		454
1¼	32	38,1		718
1½	40	42,9		1042
2	50	50,8		1517
2½	65	57,2		2363
3	80	63,5		3588
4	100	72		5956
6	150	90		13070



2030 ELBOW

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	J	Galv. g
¾	10	26,9	41,4	118
½	15	31,8	50,8	181
¾	20	36,6	55,6	291
1	25	41,4	65	463
1¼	32	49,3	73,2	692
1½	40	54,1	79,5	928
2	50	63,5	93,7	1570
2½	65	74,7	114,3	2616
3	80	85,9	130,3	3915



2033 LONG SWEEP BEND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	F		Galv. g
½	15	55		341
¾	20	69		542
1	25	85		849
1¼	32	105		1383
1½	40	116		1808
2	50	140		2854
2½	65	176		4976
3	80	205		7842
4	100	260		14505



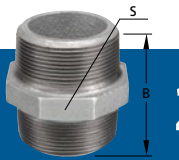
2045 SOCKET

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	W		Galv. g
¼	8	35,1		75
¾	10	41,4		119
½	15	47,8		193
¾	20	54,1		303
1	25	60,5		533
1¼	32	73,2		701
1½	40	73,2		859
2	50	92,2		1446
2½	65	104,9		2276
3	80	104,9		3131
4	100	120		5346
6	150	150		12075



2050R SOCKET REDUCING

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	W		Galv. g
½ x ¼	15 x 8	42,9		132
½ x ¾	15 x 10	42,9		147
¾ x ¾	20 x 10	44,5		189
¾ x ½	20 x 15	44,5		216
1 x ½	25 x 15	50,8		306
1 x ¾	25 x 20	50,8		332
1¼ x ¾	32 x 20	60,5		484
1¼ x 1	32 x 25	60,5		535
1½ x 1	40 x 25	68,3		670
1½ x 1¼	40 x 32	68,3		748
2 x 1¼	50 x 32	81		1119
2 x 1½	50 x 40	81		1173
2½ x 1½	65 x 40	93,7		1662
2½ x 2	65 x 50	93,7		1858
3 x 2	80 x 50	103,1		2496
3 x 2½	80 x 65	103,1		2836
4 x 2½	100 x 65	117		4000
4 x 3	100 x 80	117		4402
6 x 4	150 x 100	137		9470



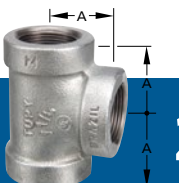
2001 HEXAGON NIPPLE

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	B	S	Galv. g
¼	8	41	19	39
¾	10	42	22	56
½	15	53	27	96
¾	20	53	32	130
1	25	64	41	255
1¼	32	65	50	371
1½	40	67	55	504
2	50	70	70	774
2½	65	100	85	1392
3	80	102	100	2110
4	100	110	130	3511
6	150	125	180	7345



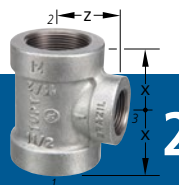
2055 CAP, ROUND

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	P (min)		Galv. g
¼	8	19,8		44
¾	10	21,1		70
½	15	24,9		109
¾	20	27,4		172
1	25	32		280
1¼	32	35,1		421
1½	40	36,3		527
2	50	42,7		880
2½	65	52,3		1396
3	80	55,1		2189
4	100	61,2		3247
6	150	69		7815



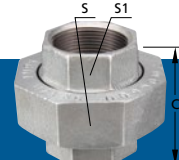
2060 TEE

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A		Galv. g
¼	8	23,9		119
¾	10	26,9		185
½	15	31,8		309
¾	20	36,6		460
1	25	41,4		779
1¼	32	49,3		1102
1½	40	54,1		1462
2	50	63,5		2472
2½	65	74,7		3690
3	80	85,9		5464
4	100	114		10485
6	150	159		25195



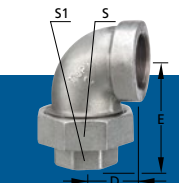
2065R TEE REDUCING

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	X	Z	Galv. g
1 2 3	1 2 3			
½ x ½ x ¼	15 x 15 x 8	28	29	236
½ x ½ x ¾	15 x 15 x 10	30,2	30,2	259
¾ x ¾ x ¾	20 x 20 x 10	30	34	344
¾ x ¾ x ½	20 x 20 x 15	33,3	35,1	388
1 x 1 x ½	25 x 25 x 15	36,6	38,1	559
1 x 1 x ¾	25 x 25 x 20	38,1	39,6	597
1¼ x 1¼ x ¾	32 x 32 x 20	41,4	44,5	876
1¼ x 1¼ x 1	32 x 32 x 25	44,5	46	956
1½ x 1½ x 1	40 x 40 x 25	46	50,8	1150
1½ x 1½ x 1¼	40 x 40 x 32	50,8	52,3	1345
2 x 2 x 1¼	50 x 50 x 32	54,1	58,7	1855
2 x 2 x 1½	50 x 50 x 40	57,2	60,5	1988
2½ x 2½ x 1½	65 x 65 x 40	62	66,8	2837
2½ x 2½ x 2	65 x 65 x 50	68,3	70	3269
3 x 3 x 2	80 x 80 x 50	71,4	79,5	4294
3 x 3 x 2½	80 x 80 x 65	77,7	84,1	4840
4 x 4 x 2½	100 x 100 x 65	86	97	7462
4 x 4 x 3	100 x 100 x 80	92	100	7904
6 x 6 x 4	150 x 150 x 100	112	125,4	16920



2070 UNION, SINGLE BRASS SEAT

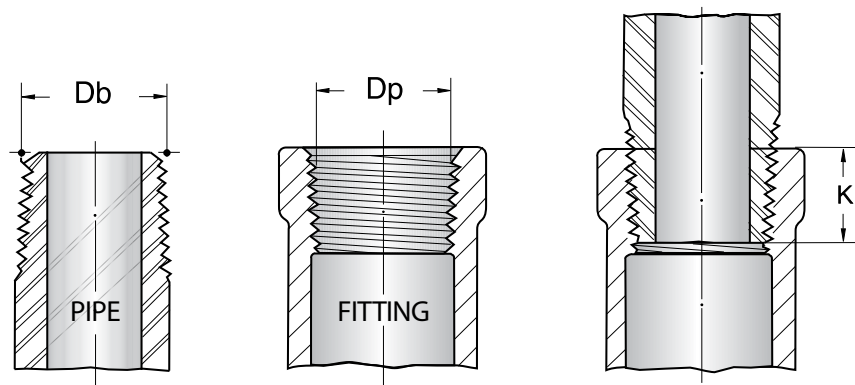
Nominal Diameter		Dimensions in mm			Unit. Weight
Inch	mm	C	S	S1	Galv. g
¼	8	39,5	34	19	144
¾	10	43,5	38	23	204
½	15	46	44,5	27	281
¾	20	54	54,5	34	523
1	25	58,5	63	41	645
1¼	32	67,5	76,5	50	941
1½	40	72,5	83,5	57	1375
2	50	82	100,5	70	1897
2½	65	84,5	120	85	3142
3	80	104	136,5	104	4471
4	100	113,5	178	132	8481



2075 UNION ELBOW, SINGLE BRASS SEAT

Nominal Diameter		Dimensions in mm				Unit. Weight
Inch	mm	E	D	S	S1	Galv. g
½	15	62	32	47	27	427
¾	20	73	37	59	34	731
1	25	81	42	65	41	968
1¼	32	94	49	77	50	1489
1½	40	100	54	89	57	2045
2	50	114	64	103	70	2955

Identification of Nominal Diameters from Actual High Pressure NPT Thread Dp and Db Diameters

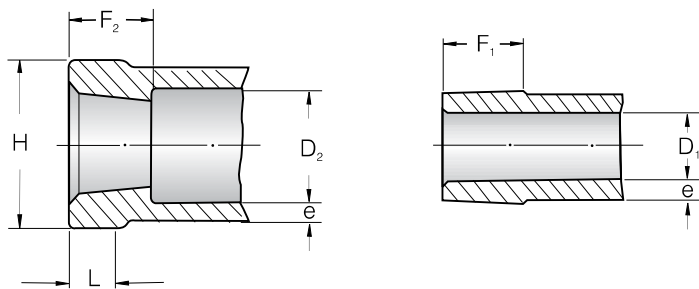


Dimensions in mm

NOMINAL	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6
Dp	13,3	16,7	20,7	26,0	32,6	41,3	47,4	59,4	71,6	87,4	112,6	166,3
Db	11,4	14,8	18,3	23,7	29,7	38,5	44,5	56,6	67,6	83,5	108,9	162,7
K	10,2	10,4	13,6	13,9	17,3	18,0	18,4	19,2	28,9	30,5	33,0	038,4

K = Useful Thread Length

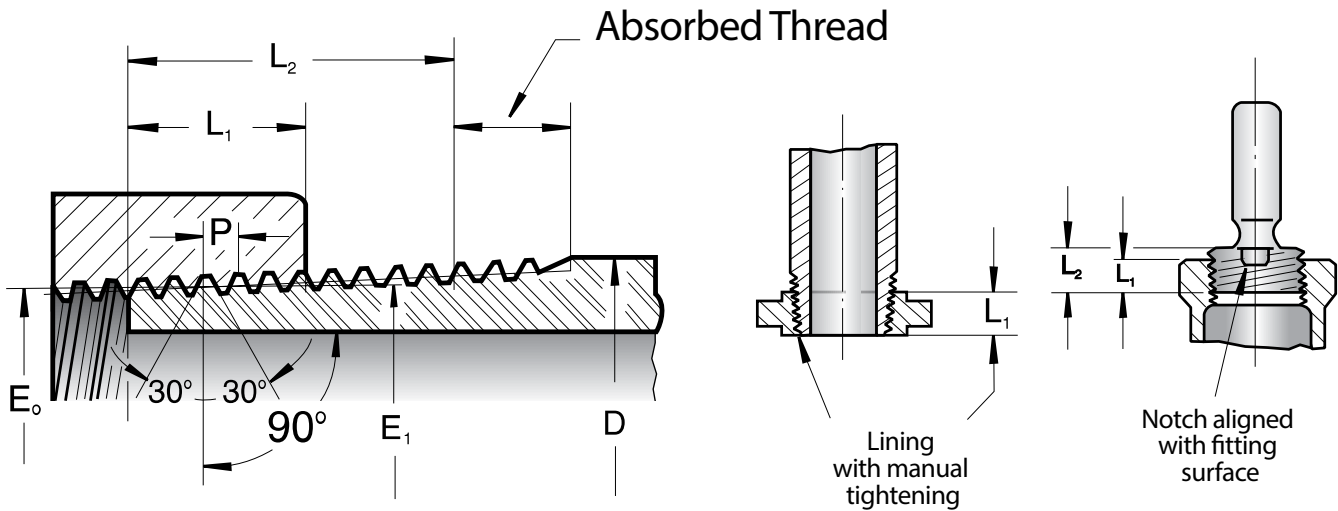
Basic Dimensions of High Pressure NPT Fittings



Dimensions in mm

NOMINAL DIAMETER	F ₁ (min.)	F ₂ (min.)	D ₁ (max.)	D ₂ (min.)	e	L (min.)	H (min.)
1/4	10,2	10,9	6,6	13,7	3,6	9,7	23,6
3/8	10,4	11,9	9,1	17,1	3,8	11,2	28,5
1/2	13,5	14,5	12,5	21,3	4,1	12,7	34,0
3/4	14,0	16,3	17,0	26,7	4,6	14,2	41,4
1	17,3	19,1	22,4	33,4	5,1	15,8	49,5
1 1/4	18,0	21,3	29,5	42,2	5,6	17,5	60,7
1 1/2	18,3	22,1	34,3	48,3	6,1	19,1	68,1
2	19,3	25,4	44,5	60,3	6,6	21,3	83,3
2 1/2	29,0	29,7	54,9	73,0	7,9	23,9	98,0
3	30,5	31,2	67,8	88,9	8,9	25,4	117,3
4	33,0	33,7	88,0	114,0	10,8	28,0	145,4
6	38,4	39,0	141,0	172,0	12,5	32,0	211,2

NPT Thread for Pipes As per ANSI B 1.20.1 and ABNT NBR 12912



Tolerance in Product:

One turn more or less related to the notch of the cap calibrator, or surface of the ring calibrator.
Beveled parts, notch aligned with bevel bottom.

NOMINAL DIAMETER OF PIPE	EFFECTIVE DIAMETER (SIDES) AT THREAD TIP E ₀ (mm)	MANUAL TIGHTENING			OUTSIDE DIAMETER OF PIPE D (mm)	OUTSIDE USEFUL THREAD		PITCH P (mm)	HEIGHT OF THREAD FILLET (mm)	NUMBER OF FILLETS PER INCH (25,4 mm)
		LENGTH L ₁ *		DIAM. E ₁ *		LENGTH L ₂ **				
		(mm)	WIRES			(mm)	(mm)			
⅛	9,233	4,102	4,36	9,489	10,287	6,703	7,12	0,940	0,753	27
¼	12,126	5,786	4,10	12,487	13,716	10,206	7,23	1,411	1,129	18
⅜	15,545	6,096	4,32	15,926	17,145	10,358	7,34	1,411	1,129	18
½	19,264	8,128	4,48	19,772	21,336	13,556	7,47	1,814	1,451	14
¾	24,579	8,611	4,75	25,117	26,670	13,861	7,64	1,814	1,451	14
1	30,826	10,160	4,60	31,461	33,401	17,343	7,85	2,209	1,767	11,5
1¼	39,551	10,668	4,83	40,218	42,164	17,953	8,13	2,209	1,767	11,5
1½	45,621	10,668	4,83	46,287	48,260	18,377	8,32	2,209	1,767	11,5
2	57,633	11,074	5,01	58,325	60,325	19,215	8,70	2,209	1,767	11,5
2½	69,076	17,323	5,46	70,159	73,025	28,893	9,10	3,175	2,540	8
3	84,852	19,456	6,13	86,068	88,900	30,480	9,60	3,175	2,540	8
3½	97,473	20,853	6,57	98,776	101,600	31,750	10,00	3,175	2,540	8
4	110,093	21,438	6,75	111,433	114,300	33,020	10,40	3,175	2,540	8
5	136,925	23,800	7,50	138,412	141,300	35,720	11,25	3,175	2,540	8
6	163,731	24,333	7,66	165,252	168,275	38,418	12 10	3,175	2,540	8

Note.: The values in millimeters are the result of the conversion and rounding of the original dimensions in inches.

* Also diameter of sides in notch of cap calibrator.

** Also length of cap calibrator.

+ Also length of ring calibrator and length of tip up to notch of cap calibrator.

Conducting Pipes with NPT Thread

Carbon Steel Pipes with quality requirements for conducting Fluids ABNT NBR 5590

With or Without Thread – Galvanized or Black

THREAD: NPT as per ANSI B 1.20.1 and ABNT NBR 12912

CLASS: The following classes are considered in this specification:

- NORMAL (N)
- REINFORCED (R)
- DOUBLY REINFORCED (DR)

MATERIAL: Carbon steel

TEMPERATURE : Advised up to 200°C

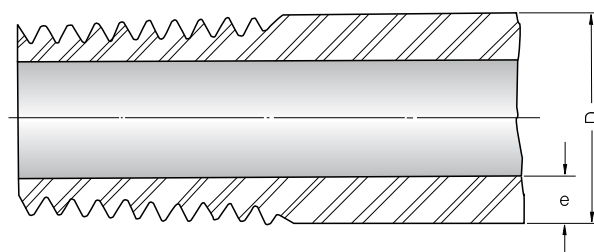
TOLERANCES: Of wall thickness: up to at least (-) 12,5%.
Of outside diameter: up to 1½ { + 0,4mm
 - 0,8mm

Greater $2'' \pm 0,01D$

ZINC LAYER

Minimum average weight of two ends	Minimum weight at any end
≥ 550 g/m ² (77 microns)	≥ 490 g/m ² (68 microns)

DIMENSIONS: See table on following page.



NOTE:

TUPY S.A. does not manufacture carbon steel pipes.
The data concerning these pipes was placed
in this catalog merely for informative purposes.

Table of Pipe Dimensions

NORMAL CLASS PIPES ABNT NBR 5587 (SIMILAR ASTM A 53)

Nominal Diameter		Outside Diameter (D)	Class	Series (Schedule)	Wall Thickness (e)		Massa por Metro	
					With Seam mm	Without Seam mm	With Seam kg/m	Without Seam kg/m
6	⅛	10,29	N	40	1,70	1,72	0,36	0,36
8	¼	13,72	N	40	2,25	2,24	0,63	0,63
10	⅜	17,25	N	40	2,36	2,31	0,86	0,85
15	½	21,34	N	40	2,80	2,77	1,28	1,27
20	¾	26,67	N	40	2,80	2,87	1,65	1,68
25	1	33,40	N	40	3,35	3,38	2,48	2,50
32	1¼	42,16	N	40	3,55	3,56	3,38	3,39
40	1½	48,26	N	40	3,75	3,68	4,12	4,05
50	2	60,32	N	40	4,00	3,91	5,56	5,44
65	2½	73,03	N	40	5,30	5,16	8,85	8,64
80	3	88,90	N	40	5,60	5,49	11,50	11,29
90	3½	101,60	N	40	5,60	5,74	13,26	13,57
100	4	114,30	N	40	6,00	6,02	16,02	16,07
125	5	141,30	N	40	6,70	6,55	22,24	21,77
150	6	168,28	N	40	7,10	7,11	28,22	28,26

REINFORCED CLASS PIPES NBR 5587 (SIMILAR ASTM A 53)

Nominal Diameter		Outside Diameter (D)	Class	Series (Schedule)	Wall Thickness (e)		Massa por Metro	
					With Seam mm	Without Seam mm	With Seam kg/m	Without Seam kg/m
6	1/8	10,29	R	80	2,36	2,41	0,46	0,47
8	1/4	13,72	R	80	3,00	3,02	0,79	0,80
10	3/8	17,25	R	80	3,15	3,20	1,09	1,10
15	1/2	21,34	R	80	3,75	3,73	1,63	1,62
20	3/4	26,67	R	80	4,00	3,91	2,24	2,19
25	1	33,40	R	80	4,50	4,55	3,21	3,24
32	1 1/4	42,16	R	80	5,00	4,85	4,58	4,46
40	1 1/2	48,26	R	80	5,00	5,08	5,33	5,41
50	2	60,32	R	80	5,60	5,54	7,56	7,48
65	2 1/2	73,03	R	80	7,10	7,01	11,54	11,41
80	3	89,90	R	80	7,50	7,62	15,24	15,46
90	3 1/2	101,60	R	80	8,00	8,08	18,47	18,63
100	4	114,30	R	80	8,50	8,56	22,18	22,32
125	5	141,30	R	80	9,50	9,53	30,88	30,97
150	6	168,28	R	80	11,20	10,97	43,38	42,56

DOUBLY REINFORCED CLASS PIPES ABNT NBR 5587 (SIMILAR ASTM A 53)

CROATIAN STANDARD EN ISO 15911-1:2015 (EN ISO 15911-1:2015)								
Nominal Diameter		Outside Diameter (D)	Class	Series	Wall Thickness (e)		Massa por Metro	
mm	in				mm	(Schedule)	With Seam mm	Without Seam mm
15	½	21,34	DR	-	7,50	7,47	2,56	2,55
20	¾	26,67	DR	-	8,00	7,82	3,68	3,64
25	1	33,40	DR	-	9,00	9,09	5,42	5,45
32	1¼	42,16	DR	-	9,50	9,70	7,65	7,76
40	1½	48,26	DR	-	10,00	10,16	9,43	9,55
50	2	60,32	DR	-	11,20	11,07	13,57	13,44
65	2½	73,03	DR	-	14,00	14,02	20,38	20,41
80	3	88,90	DR	-	15,00	15,24	27,34	27,68
100	4	114,30	DR	-	17,00	17,12	40,79	41,03
125	5	141,30	DR	-	19,00	19,05	57,30	57,43
150	6	168,28	DR	-	22,40	21,95	80,58	79,21

Note: These tables only refer to the pipes most used. But in standard ABNT NBR 5587, the scope is greater.

1 - PRODUCT

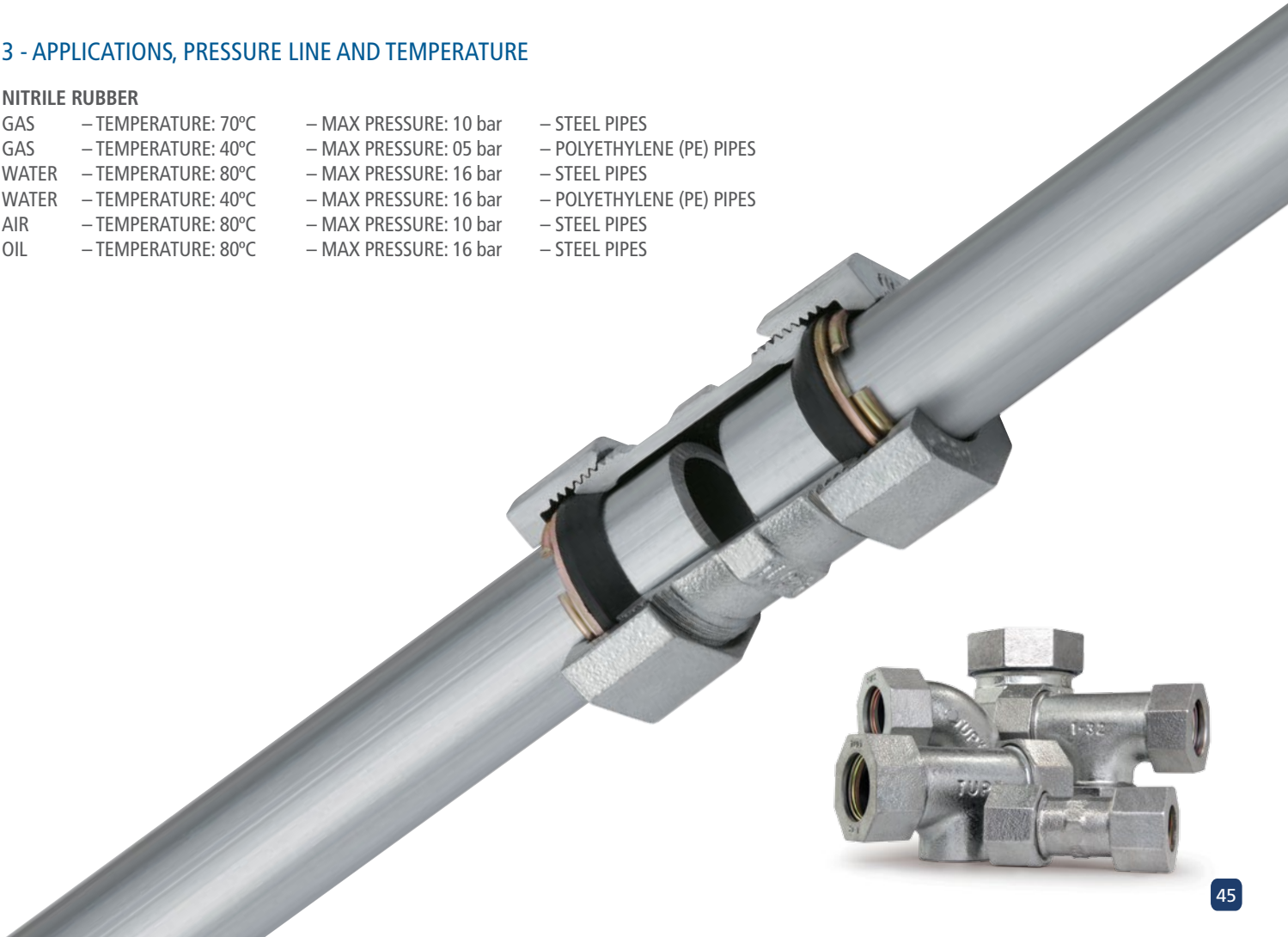
Line of fittings for steel pipes and polyethylene pipes with smooth spigot, versatile, quick to install, simple and with perfect watertight fit, without using special tools

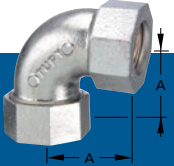
2 - TECHNICAL SPECIFICATIONS

		Applicable Standards	
		ISO	ABNT
Body and Nut		ISO 5922	NBR 6590
Thread	of Seal	ISO 7-1	NBR NM-ISO 7-1
	of Coupling	ISO 228-1	NBR 8133
Double Galvanizing	Hot-Dip Galvanizing	ISO 1461	NBR 6323
	Electrogalvanizing	ISO 2081	NBR 10476
Components	Snap Ring for steel pipe	ISO 8458-1	NBR NM 194-1
	Compression Ring	ISO 683-18	NBR NM 87
	Sealing Ring	ISO 16010	NBR EB 362

3 - APPLICATIONS, PRESSURE LINE AND TEMPERATURE

NITRILE RUBBER			
GAS	– TEMPERATURE: 70°C	– MAX PRESSURE: 10 bar	– STEEL PIPES
GAS	– TEMPERATURE: 40°C	– MAX PRESSURE: 05 bar	– POLYETHYLENE (PE) PIPES
WATER	– TEMPERATURE: 80°C	– MAX PRESSURE: 16 bar	– STEEL PIPES
WATER	– TEMPERATURE: 40°C	– MAX PRESSURE: 16 bar	– POLYETHYLENE (PE) PIPES
AIR	– TEMPERATURE: 80°C	– MAX PRESSURE: 10 bar	– STEEL PIPES
OIL	– TEMPERATURE: 80°C	– MAX PRESSURE: 16 bar	– STEEL PIPES

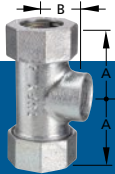




1907

ELBOW

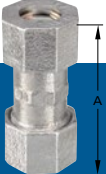
Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
½	15	53	
¾	20	57	
1	25	64	690
1¼	32	75	
1½	40	79	1445
2	50	86	1937
2½	65	106	3056



1949

TEE WITH CENTRAL
THREAD

Nominal Diameter		Dimensions in mm		Unit. Weight
Inch	mm	A	B	Galv. g
½	15	53	32	
¾	20	55	38	
1	25	59	38	734
1¼	32	68	78	
1½	40	71	48	1470
2	50	79	61	2113
2½	65	136	75	3388



1931

SOCKET

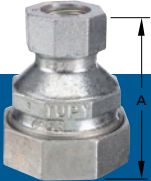
Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
½	15	85	379
¾	20	94	572
1	25	92	625
1¼	32	104	912
1½	40	99	1230
2	50	115	1697
2½	65	150	2764



1900

KIT COMPONENTS
TUPYPRES

Nominal Diameter		Unit. Weight
Inch	mm	Galv. g
½		
¾		
1		
1¼		
1½		
2		
2½		



1932

SOCKET REDUCING

Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
1½ x 1	40 x 25	101	975
2 x 1	50 x 25	104	1200
2 x 1½	50 x 40	116	1492



1944

TEE

Nominal Diameter		Dimensions in mm	Unit. Weight
Inch	mm	A	Galv. g
½	15	53	
¾	20	54	
1	25	64	1020
1¼	32	75	
1½	40	79	2065
2	50	86	2713
2½	65	106	4536



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