TRUSTED FOR QUALITY

TF PIPES LTD.

A subsidiary of Telecom Foundation

ISO 9001:2008 Quality Management System Certified Manufacturer

www.tfpipes.com

Customer Satisfaction
Our Priority

Manufactured According to

BS 6099
DIN 8061
PS 3051/91

BS 3505
DIN 8062
ASTMD 1785/86

BS 3500
DIN 19532

ABOUT US

TF Pipes was established in Islamabad in 1992 as a subsidiary of Telecom Foundation. The Industry was visualized and planned at an annual capacity of 6000 tons to meet the requirements of PTCL and the Telecommunication Industry where PVC pipes were required for projects in communication net works.

The vibrant industry by virtue of its excellent quality and professional commitment gradually captured a number of strategic projects in the public sector including exports to Afghanistan. TF Pipes Limited is now a trusted name in PVC and HDPE pipes and fittings.

A wide range of pressure and non pressure PVC Pipes with built in sockets and Z-joints are produced on top of the line computerized extruders from CINCINNATI MILACRON, using the best quality PVC resin from ENGRO POLYMERS. Our pipes conform to international standards for physical and chemical properties and TF Pipes has the capability of meeting clients specific requirements to meet BS-6099, BS-3505, BS-3506, BS4514, DIN-8061 DIN-8062, DIN-19532, ASTMD 1785/86, PS 3051/91, SDR Series & EN 1401. The company is ISO 9001 -2008 and ISO 14000 certified and maintains a complete analytical laboratory for in house testing of all products being manufactured.

TF ® PVC and HDPE pipes have found exclusively acceptance in the construction industry, water supply, sewerage & drainage systems ,agriculture, as well as in pharmaceutical beverage & chemical industries. One of our specialties is the production of high pressure pipes with threaded coupling as well as providing special “lead free” PVC pipes exclusively for drinking water and health sector projects.

TF Pipes is constantly upgrading its technology to meet the challenges of the new millennium.

A PRODUCT RANGE - uPVC Pipe

Pressure Pipes: Class B,C.D,E
Complete range of pressure pipes in pressure class up to 15 bar [220 PSI, 500 ft water head] up to 12" size.

Schedule High Pressure Pipes
Schedule 40 and Schedule -80

Pressure Pipes SDR Series
PN 4,PN10& PN16

Non Pressure Pipe in Inch Size:
Complete range of non~pressure pipes up to 6" size.

Non Pressure and Pressure Pipe Metric System:
32mm,40 mm, 50 mm, 63 mm. 75 mm,82mm,90mm,110 mm and 160 mm Dia

PVC Molded and Fabricated Fittings:
Non~pressure fittings upto 6" size.
Filter Screen: Tube well piping upto 12".
Threaded High Pressure Pipes for special applications

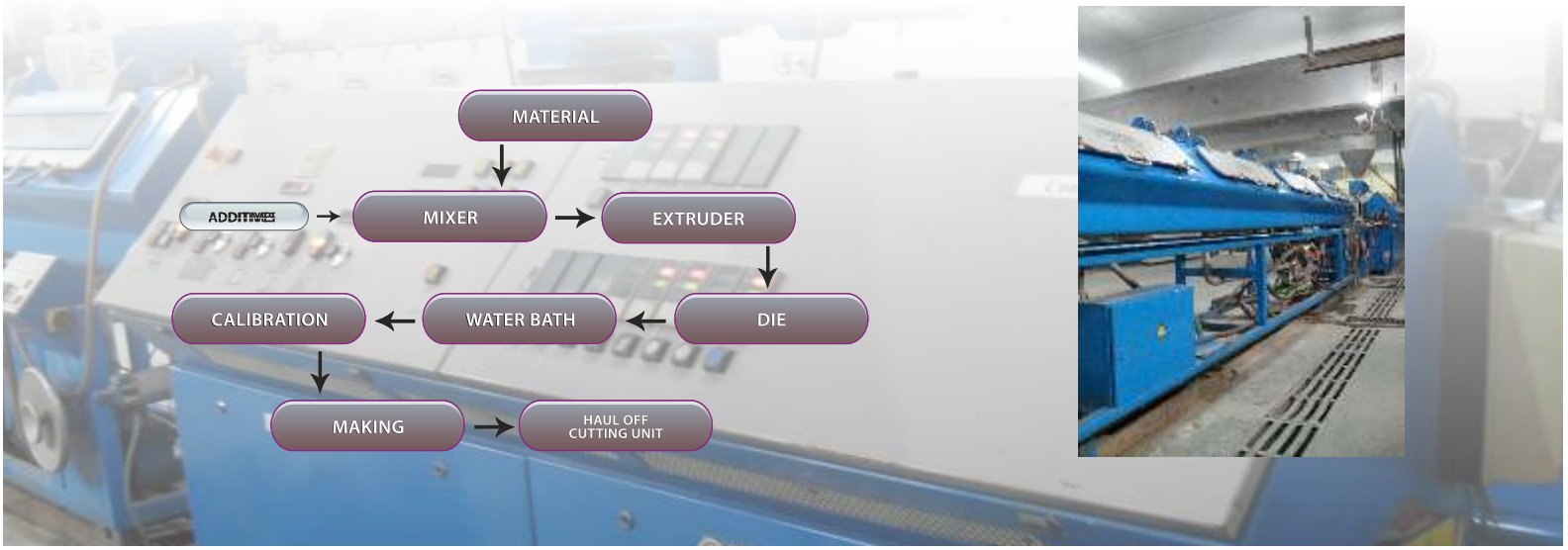
Food Grade - PVC Pipes
Food grade- Lead free pipes for Drinking Water Beverage Industry.

B PRODUCT RANGE HDPE Pipes

High density polyethylene pipes (HDPE). are widely used for water, sewerage and telecom ducts manufactured in different sizes ranging from 20 mm to 300 mm.

Fittings
PVC and HDPE Fittings both pressure and non pressure are also available on order

MANUFACTURING PROCESS



OUR STRENGTH

Guaranteed Resin from Engro Polymers &Chemicals.
Superior quality pipe at competitive prices.
High production speed.
State of the art equipment.
Superior quality raw material and additives used.
Well organized and fully equipped Quality Control Department.
Automatic high precision socketing machine.

PVC PIPES CHARACTERISTICS

Light Weight. Easy transportation, Easy handling and installation.
Simple yet sturdy jointing.
Chemically resistant to a wide range of chemicals (acids, salts &alkalis).
No corrosion / No abrasion
Smooth inner surface & excellent flow characteristics
Resistant to growth of bacteria, algae and fungi.
Long life & durable.
Flexible and resistant to breakage.
Non toxic / Non conductive.
No maintenance required

FIELD OF APPLICATION

Construction Industry.
Clean Drinking Water [Lead Free]
Casing & Filter Pipes
Suction & Delivery Pipes
Water supply Lines.
SWV pipes
Drinking water
Electrical Sector.
Industrial Applications.
Drainage System.
Agricultural Networks
Sewage System
Optical Fiber ducts.

STANDARDS

British Standard. (BS 4514, BS 6099, BS 3505, BS 3506).

German Standard. DIN 8061. DIN 8062. DIN 19532, EN-1401.

PS 3051/91.

ASTM-D - I 785/86. Ps 3051/91. SDR - Series

LAB TESTS

Measurement Dimensions	BS 3505, BS 3051, DIN 8062
Ball Drop Test	BS 3505, PS 3051
Heat Reversion Test	BS 3505, BS 3051 ,DIN 8061
Short Term Hydrostatic Test	BS 3505. PS 3051 DIN 8061
Resistance to Dichloro Methane	BS 3505, PS 3051
Water absorption Test	DIN 8061
Density Measurement	PS 3051, DIN 8061 .(Ref: DIN 53479)
Fracture Toughness Test	BS 3505. PS 3051

PHYSICAL PROPERTIES

PVC pipe possess typically good mechanical, electrical and thermal characteristics which render it an excellent material of general engineering use

I. MATERIAL QUALITY

1. Specific gravity	1.38 - 1.46
2. Flammability	Self extinguishing
3. Decomposition point	200°C - 220°C
4. Water absorption	<1 mg/cm^2
5. Softening point (initiating)	75°C - 80°C
6. Welding & molding temperature	180°C - 190°C
7. Shore Rockwell	100°C - I20°C

II. MECHANICAL

1. Tensile Strength	550 Kg/cm^2
2. Modulus of Elasticity	30,000 Kgf/cm^2
3. Elongation at break	> 75%
4. Co-efficient of Elongation	80 x I0 $^{-6}$/K
5. Bending Strength	1000 Kg/cm^2
6. Young's Modulus	3.4 x 10^4 Kg/cm^2
7. Compressive Strength	650 - 750 Kgf/cm^2
B. Stiffness	1000 Kgf/cm^2

III. THERMAL

1 . Specific heat at 20°C	0.2 - 0.3 cal/g/°C
2. Thermal conductivity	0.12 - 0.14 KCal/mh°C
3. Co-eficient of linear expansion	7 - 8 x10 $^{-5}$/°C
4. Vicat softening temperature	85°C
5. Heat distortion temp. at 18.5 Kg/cm‘	75°C

IV. ELECTRICAL

1. Surface Resistance	10^{12} ohm
2. Dielectric Constant I000 cycle	3.7
3. Dielectric Strength	25 KV/mm

V. WEATHERING

PVC pipe owes much of its acceptance and operating success to its exceptional resistance to aggressive environment compared to steel and cast -iron pipes.

Buried PVC pipelines are well shielded from sunlight. Long exposure of PVC pipes to sun hardly affects the tensile strength but can result in color fading, reduction in impact strength and slight decease in elongation property. However, considering PVC pipe's high initial impact strength, the reductions are not significant enough to warrant concern.

VI. THERMAL EXPANSION

A 6-meter TFP PVC pipe will expand approximately 1.6 mm for a temperature rise of 10°C. The use of rubber ring joints accommodates any thermal movement that may develop in a buried PVC water main.

VII. IMPACT OF HIGH AND LOW TEMPERATURES

Though the softening point of TFP PVC pipes is between 75°C to 85°C, it is recommended not to use these pipes for hot water beyond 55°C. In an open PVC pipe. the water will freeze below 0°C causing increase in volume inside the pipe. However, it will not crack or burst due to its resilience but cause it to become brittle and liable to break due to any impact

STRENGTH OF BURIED PVC PIPE

Buried pipe lines have to withstand the vertical loads due to the weight of the soil and the surcharge loads due to traffic.

BEARING CAPACITY OF SOIL

The bearing capacity of soils depends upon the soil texture and are generally as follow:

Soil Texture	Bearing Capacity Vertical		Bearing Capacity	
	Ton/m²	(lb/in²)	Ton/m²	(lb/in²)
Soft silt and slurry	1.4 - 4	(2 - 5.3)	0.4 1	(0.6 - 1.4)
Wet silt	10 - 20	(14.2 - 28.4)	2.5	(3.6)
Soft Clay	10 - 15	(14.2 - 21.3)	2.5	(3.6)
Hard Clay	20 - 25	(28.4 - 35.6)	5 - 6	(7.1 - 8.5)
Wet Sand	20	(28.4)	5	(7.1)
Coarse Sand	30	(42.7)	6	(8.5)
Gravel containing Stones	40 - 50	(56.9 - 71.1)	7.5	(10.7)
Gravel containing sand	50 - 60	(71.1 - 85.3)	10	(14.2)
Soft Rock	70 - 100	(99.6 - 142.2)	10 - 25	(14.2 - 35.6)
Hard Rock	200 - 400	(284.5 - 568.9)	50 & over	(71.1 & over)

CHEMICAL RESISTIVITY RESULTS

PVC pipes are resistant to the chemicals mentioned below with their concentrations in aquous solution and temprature upto 40° C. For most of the chemicals good tolerance shown upto 60° C if contact time is short.

LEGEND:

O : Unaffected
P : Little affected but recommendeble
X : Not recommendable

Chemicals	Concentration	%	Temperature °C 20	40	60
Inorganic Acids					
Sulfurous acid		100	p		x
Hydrochloric acid	Below	30	¦	¦	p
	Above	30	¦	¦	p
Chloric acid	Below	30	¦	¦	p
Chlorine water		Sat.	p	p	
Perchloric acid	Below	10	¦	¦	p
		20	¦	¦	p
Nitric acid	Below	50	¦	¦	p
		60	¦	p	
Hydroflouric acid		10	¦	¦	p
		20	p	p	p
		40	p	p	x
Sulfuric acid	Below	90	¦	¦	p
		96	¦	p	p
		98	p	p	¦
Phosphoric acid	Below	30	¦	¦	p
	Above	30	¦	p	p
Boric acid		Sat.	¦	¦	p
Carbonic acid			¦	¦	p
Organic Acid					
Adipic acid		sat	¦	¦	p
Benzoic acid		sat	¦	¦	p
Oleic acid		100	¦	¦	p
Formic acid	Below	50	¦	¦	p
	Above	50	¦	¦	x
Citric acid		25	¦	¦	¦
Acetic acid	Below	60	¦	¦	p
		96	¦	p	p
	Above	95	¦	x	x
Lactic acid	10%		¦	¦	x
Picric acid		5	p	p	p
Butyric acid		20	¦	p	x
		100	p	p	x
Alkalies					
Ammonia water		30	¦	¦	p
Potassium hydroxide	Below	40	¦	¦	p
	Above	40	¦	¦	¦
Sodium hydroxide	Below	40	¦	¦	p
(castic soda)	Above	60	¦	¦	¦

Chemicals	ncentration %	Temperature °C 20	40	60
Inorganic Salts and Other Inorganics				
Sodium Sulfite	40	¦	¦	¦
Zinc Chloride	sat	¦	¦	¦
Aluminum Chloride	25	¦	¦	p
Ammonium chloride	27	¦	¦	¦
Potassium chloride	sat	¦	¦	¦
Calcium chloride	sat	¦	¦	¦
Sodium chloride	sat	¦	¦	¦
Hydrogen peroxide	20	¦	¦	p
Potassium permanganate	15	¦	p	p
Potassium hypochlorite	30	¦		
Brine		¦	¦	¦
Organic Solvents and Other Organics				
Acetaldedyde	100	x	¦	p
Acetone	100	x	p	p
Ethyl alcohol	100	¦	¦	p
Ethylene chloride	100	x	x	x
Methylene chloride	100	x	x	x
Xylene	100	x	x	x
Glycerine	100	¦	¦	x
Chloroform	100	x	x	x
Carbon Tetrachloride	100	x	x	x
Dioctyl pthalate (DOP)	100	x	x	x
Dibutyl phthalate (DBP)	100	x	x	x
Urea	sat	¦	¦	¦
Butyl alcohol	100	¦	¦	p
Butane Pentane		¦	p	x
Hexame, Heptane		¦	p	x
Molasses		¦	¦	¦
Gases				
Sulfur dioxide gas	100	¦	¦	¦
Ammonia	100	¦	¦	¦
Chorine, dry	10	¦	¦	x
wet	10	¦	¦	x
Roasting furnance gas	100	¦	¦	¦
Methane		¦	¦	¦
Phosgene		¦	¦	x

For any specific information, please do not hesitate to contact us

>>The purpose of the above data is to provide general information and advice only. The information herein is believed to be accurate. However, pipes are sold on condition that purchaser shall conduct their own test to determine suitability for their particular purpose/use order specific conditions. No liability is admitted for the use of this chemical resistance data.

CLASSIFICATION OF TF PIPES

TFP Pipes are classified for maximum sustained working pressure in the following classes based on working stress of material at 20°C.

Class B	6.0 bar	60 m Head of water
Class C	9.0 bar	90 m Head of water
Class D	12.0 bar	120 m Head of water
Class E	15.0 bar	150 m Head of water

MAXIMUM SUSTAINED WORKING & FIELD TEST PRESSURES

	Sustained Working Pressure			Field Test Pressure		
class	bar	kfg/Cm2	Ibf/in2	bar	kgf/Cm2	Ibf/in2
B	6	6.12	87	9	9.18	130
C	9	9.18	130	14	13.77	195
D	12	12.25	173	18	18.38	295
E	15	15.3	217	23	22.95	325

The maximum admissible service pressures are calculated from known data on the basis of a life of atleast 50 years of continuous operation and Short - term hydrostatic pressure resistance at 20°C.

Minimum I h failure pressure

Class of Pipe	Minimum 1 h Failure Pressure
6 bar class - B	21.6 bar
9 bar class - C	32.4 bar
12 bar class - D	43.2 bar
15 bar class - E	54.0 bar

PVC PIPES ACCORDING TO ASTM D 1785, SCHEDULES 40 & 80

Nominal Size	Outer Diameter		SCHEDULE 40 (WHITE COLOUR)				SCHEDULE 80 (GREY COLOUR)			
			Wall Thickness (mm)		Weight		Wall Thickness (mm)		Weight	
	Minmum	Maximum	Minmum	Maximum			Minmum	Maximum		
inch.	mm	mm	mm	mm	kg/m	PSI	mm	mm	kg/m	PSI
1/2	21.24	21.44	2.77	3.28	0.24	600	3.73	4.24	0.3	850
3/4	26.57	26.77	2.87	3.38	0.33	480	3.91	4.24	0.43	690
1	33.27	33.53	3.38	3.89	0.48	450	4.55	5.08	0.61	630
1-1/4	42.03	42.29	3.56	4.06	0.65	370	4.85	5.44	0.87	520
1-1/2	48.11	48.41	3.68	4.19	0.77	330	5.08	5.69	1.03	470
2	60.17	60.47	3.91	4.42	1.04	280	5054	602	1.43	400
2-1/2	72.84	73.2	5.16	5.77	1.57	300	7.01	7.85	2.2	420
3	88.7	89.1	5.49	6.15	2.14	260	7.62	8.53	2.91	370
4	114.1	114.5	6.02	6.73	3.05	220	8.56	9.58	4.26	320
5	141.05	141.55	6.22	7.347	4.18	190	9.52	10.67	6.42	290
6	168	168.56	7.11	7.98	5.37	180	10.97	12.29	8.13	280
8	218	219.46	8.18	9.17	8.11	160	12.7	14.22	10.1	250
10	272.6	272.75	9.27	10.15	11	160	15	15.9	19	230
12	323.2	323.4	11	13		140	17.45	19.2	25	230

PIPE LENGTH:STANDARD 4 & 6 MTRS.

SCHEDULE 40:White

SCHEDULE 80: Dark Grey

TECHNICAL DATA METRIC SIZE AS PER DIN 8062

Nominal Size	Series 1		Series 2		Series 3		Series 4		Series 5	
	2.5 Bar		4 Bar		6 Bar		6 Bar		6 Bar	
mm	thickness	Mass kg/ml	thickness	Mass kg/ml	thickness	Mass kg/ml	thickness	mass kg/ml	thickness	mass kg/ml
20									1.5	0.137
25							1.5	0.174	1.9	0.212
32							1.8	0.264	2.4	0.340
40					1.8	0.334	1.9	0.350	3.0	0.525
50					1.8	0.422	2.4	0552	3.7	0.809
63					1.9	0.562	3.0	0854	4.7	1.290
75			1.8	0.642	2.2	0.782	3.6	1.220	5.6	1.820
90			1.8	0.724	2.4	1.130	4.3	1.750	6.7	2.610
110	1.8	0.95	2.2	1.160	3.2	1.640	5.3	2.610	8.2	3.900
125	1.8	1.08	2.5	1.480	3.7	2.130	6.0	3.340	9.3	5.010
140	1.8	1.21	2.8	1.840	4.1	2.650	6.7	4.180	10.4	6.270
160	1.8	1.39	3.2	2.410	4.7	3.440	7.7	5.470	11.9	8.170
200	1.8	1.74	4.0	3.700	5.9	5.370	9.6	8.510	14.9	12.800
225	1.8	1.96	4.5	4.700	6.6	6.760	10.8	10.800	16.7	16.100
250	2.0	2.40	4.9	5.650	7.3	8.310	11.9	13.200	18.6	19.900
280	2.3	3.11	5.5	7.110	8.2	10.400	13.4	16.600	20.8	24.900
315	2.5	3.78	6.2	9.020	9.2	13.200	15.0	20.900	23.4	31.500
400	3.2	6.10	7.9	14.500	11.7	21.100	19.1	33.700	29.7	50.800
500	4.0	9.38	9.8	22.400	14.6	32.900	23.9	52.600		
630	5.0	14.70	12.4	35.700	18.4	52.200	30.0	83.200		
710	5.7	18.90	14.0	45.300	20.74	66.100				

TECHNICAL DATA PVC CONDUITS

Nominal Size in Inches	Outside Diameter mm		Wall Thickness mm	
	Min	Max	Min	Max
½	17.0	17.3	1.0	1.2
3/4	21.2	21.5	1.1	1.3
1	26.6	26.9	1.2	1.4
1 ¼	33.4	33.7	1.4	1.7
1 ½	42.1	42.4	1.6	1.8
2	60.2	60.5	1.7	1.9
3	88.7	89.1	1.8	2.0
4	114.1	114.5	1.9	2.1

ASTM D - 2241 SDR 32.5

Nominal Size	Outside Dia		Wall Thickness		Nominal Weight		Pressure Rating
Inches	Min	Max	Min	Max	Min	Max	In psi
3	88.9	89.98	2.74	3.25	6.75	6.87	125
4	114.50	114.70	3.51	4.01	10.87	10.88	125
6	168.30	168.38	5.18	5.79	26.54	26.74	125
8	219.30	219.45	6.73	7.54	40.07	40.84	125

ASTM D - 2241 SDR 41

Nominal Size	Outside Dia		Wall Thickness		Nominal Weight		Pressure Rating
Inches	Min	Max	Min	Max	Min	Max	In psi
4	114.30	114.50	2.78	3.31	9.50	9.66	180
6	168.28	168.50	4.12	4.62	20.50	20.76	180
8	218.08	219.40	5.33	5.97	35.55	34.80	180
10	272.60	273.40	6.60	7.60	50.33	50.44	180
12	323.40	324.30	7.80	9.00	74.64	74.80	180
14	355.00	356.00	8.50	9.80	88.68	88.90	180
16	405.90	406.90	9.70	11.20	127.30	127.40	180
18	456.76	457.70	11.00	12.70	148.82	148.90	180
20	507.50	508.50	12.20	14.10	186.23	186.44	180
24	609.10	610.10	14.60	16.80	264.00	264.35	180

ASTMD - 2241 SDR 64

Nominal Size	Outside Dia		Wall Thickness		Nominal Weight		Pressure Rating
Inches	Min	Max	Min	Max	Min	Max	In psi
6	168.00	168.50	2.64	3.15	13.24	13.52	63

TECHNICAL DATA PRESSURE PIPE DIMENSIONS FOR CLASSES B, C, D & E BS 3505 1975

Nominal Size	Mean Outside diameter		Wall Thickness																				
			Class 0 (non pressure)			Class B 6 - bar *			Class C 9 - 0 bar *			Class D 12 - 0 bar *			Class E 115 - 0 bar *			Class 6			Class 7		
			averaged value	individual value		averaged value	individual value		averaged value	individual value		averaged value	individual value		averaged value	individual value		averaged value	individual value		averaged value	individual value	
Inch	min	max	max	min	max	max	min	max	max	min	max	max	min	max	max	min	max	max	min	max	max	min	max
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1/4	13.6	13.9	-	-	-	-	-	-	-	-	-	-	-	-	1.7	1.3	1.7	2.7	2.2	2.7	3.5	3.0	3.5
3/8	17.0	17.3	-	-	-	-	-	-	-	-	-	-	-	-	1.9	1.5	1.9	2.8	2.3	2.8	3.8	3.2	3.8
1/2	21.2	21.5	-	-	-	-	-	-	-	-	-	-	-	-	2.1	1.7	2.1	3.3	2.8	3.3	4.3	3.7	4.3
3/4	26.6	26.9	-	-	-	-	-	-	-	-	-	-	-	-	2.5	1.9	2.5	3.4	2.9	3.4	4.5	3.9	4.5
1	33.4	33.7	-	-	-	-	-	-	-	-	-	-	-	-	2.7	2.2	2.7	4.0	3.4	4.0	5.2	4.5	5.2
1 1/4	42.1	42.4	-	-	-	-	-	-	-	-	-	2.7	2.2	2.7	3.2	2.7	3.2	4.2	3.6	4.2	5.5	4.8	5.5
1 1/2	48.1	48.4	2.2	1.8	2.2	-	-	-	-	-	-	3.0	2.5	3.0	3.7	3.1	3.7	4.3	3.7	4.3	5.9	5.1	5.9
2	60.2	60.5	2.2	1.8	2.2	-	-	-	3.0	2.5	3.0	3.7	3.1	3.7	4.5	3.0	4.5				6.3	5.5	6.3
2 1/2	75.0	75.3	2.2	1.8	2.2	-	-	-	3.5	3.0	3.5	4.5	3.9	4.5	5.5	4.8	5.5						
3	88.7	89.1	2.2	1.8	2.2	3.4	2.9	3.4	4.1	3.5	4.1	5.3	4.6	5.3	6.5	5.7	6.6						
4	114.1	114.5	2.8	2.3	2.8	4.0	3.4	4.0	5.2	4.5	5.2	6.8	6.0	6.9	8.3	7.3	8.4						
5	140.0	140.4	3.1	2.6	3.1	4.4	3.8	4.4	6.3	5.5	6.4	8.3	7.3	8.4	10.1	9.0	10.4						
6	168.0	168.5	3.7	3.1	3.7	5.2	4.5	5.2	7.5	6.6	7.6	9.9	8.8	10.2	12.1	10.8	12.5						
7	193.5	194.0	3.7	3.1	3.7	6.0	5.2	6.0	8.7	7.7	8.9	11.4	10	11.7	13.9	12.4	14.3						
8	218.8	219.4	3.7	3.1	3.7	6.1	5.3	6.1	8.8	7.8	9.0	11.6	10.3	11.9	14.1	12.6	14.5						
9	244.1	244.8	3.7	3.1	3.7	6.7	5.9	6.8	9.8	8.7	10.0	12.9	11.5	13.3	15.8	14.1	16.3						
10	272.6	273.4	3.7	3.1	3.7	7.5	6.6	7.6	10.9	9.7	11.2	14.3	12.8	14.8	17.5	15.7	18.1						
12	323.4	324.3	3.7	3.1	3.7	8.8	7.8	9.0	12.9	11.5	13.3	17.0	15.2	17.5	20.8	18.7	21.6						
14	355.0	356.0	4.2	3.6	4.2	9.6	8.5	9.8	14.1	12.6	14.5	18.6	16.7	19.2	22.8	20.5	23.6						
16	405.9	406.9	4.8	4.1	4.8	10.9	9.7	1.2	16.2	14.5	16.7	21.1	19.0	21.9	26.0	23.4	27.0						
18	456.7	457.7	5.3	4.6	5.3	12.3	11.0	12.7	18.2	16.3	18.8	23.8	21.4	24.7	-	-	-						
20	507.5	508.5	5.9	5.1	5.9	13.7	12.2	14.1	20.2	18.1	20.9	-	-	-	-	-	-	-	-	-	-	-	-
22	558.3	559.3	6.4	5.6	6.5	15.0	13.4	15.5	22.1	19.9	22.9	-	-	-	-	-	-	-	-	-	-	-	-
24	609.1	610.1	7.0	6.1	7.1	16.3	14.6	16.8	24.1	21.7	25.0.	-	-	-	-	-	-	-	-	-	-	-	-

Note 1: The pressures given at the to of the columns for classes B, C and D are the maximum working pressures for which the pipes are suitable and are based on water at a temprature of 20 °C.

Note 2: Class 7 pipes are suitable for screw trheading for pressures not exceeding Class C rating

Note 3: Classes 6 and 7 are equivalent to American Schedules 40 and 80 respectively. Larger diameters in these sizes are not required since they are close to (in some casses less then) the wall thickness selected for Class E pressure rating

Note 4: Pipes to these nominal sizes are not normally available form stock.

Note 5: Standard pipe lengths for non pressure pipe 3m (However, any length from 1m to 9m possible on request)
Standard pipe lengths for pressure pipe 3m (However, any length from 1m to 9m possible on request)

Note 6: Pipes are normally socketted at one end (to suit either Rubber Ring or Solvent Cement Joint) and with both end plain also available.

Note 7: Pipes of nominal diameter above 6" in various classes can be manufactured against specific orders.

TECHNICAL DATA PRESSURE PIPE DIMENSIONS FOR CLASSES B, C, D & E BS 3505

Nominal Size	Mean Outside diameter		Class B 6 bar/200 ft water head/88 PSI			Class C 9 bar/300 ft water head/132 PSI			Class D 12 bar/400 ft water head/176 PSI			Class E 15 bar/500 ft water head/220 PSI		
			averaged value	individual value		averaged value	individual value		averaged value	individual value		averaged value	individual value	
Inch	min	max	max	min	max	max	min	max	max	min	max	max	min	max
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3/8*	17.0	17.3	-	-	-	-	-	-	-	-	-	1.9	1.5	1.9
½*	21.2	21.5	-	-	-	-	-	-	-	-	-	2.1	1.7	2.1
3/4	26.6	26.9	-	-	-	-	-	-	-	-	-	2.5	1.9	2.5
1	33.4	33.7	-	-	-	-	-	-		-	-	2.7	2.2	2.7
1¼	42.1	42.4	-	-	-	-	-	-	2.7	2.2	2.7	3.2	2.7	3.2
1 ½	48.1	48.4	-	-	-	-	-	-	3.0	2.5	3.0	3.7	3.1	3.7
2	60.2	60.5	-	-	-	3.0	2.5	3.0	3.7	3.1	3.7	4.5	3.9	4.5
2½*	75.0	75.3	-	-	-	3.5	3.0	3.5	4.5	3.9	4.5	5.5	4.8	5.5
3	88.7	89.1	3.4	2.9	3.4	4.1	3.5	4.1	5.3	4.6	5.3	6.5	5.7	6.6
4	114.1	114.5	4.0	3.4	4.0	5.2	4.5	5.2	6.8	6.0	6.9	8.3	7.3	8.4
5*	140.0	140.4	4.4	3.8	4.4	6.3	5.5	6.4	8.3	7.3	8.4	10.1	9.0	10.4
6	168.0	168.5	5.2	4.5	5.2	7.5	6.6	7.6	9.9	8.8	10.2	12.1	10.8	12.5
7	193.5	194.0	6.0	5.2	6.0	8.7	7.7	8.9	11.4	10.1	11.7	13.9	12.4	14.3
8	218.8	219.4	6.1	5.3	6.1	8.8	7.8	9.0	11.6	10.3	11.9	14.1	12.6	14.5
9	244.1	244.8	6.7	5.9	6.8	9.8	8.7	10.0	12.9	11.5	13.3	15.8	14.1	16.3
10	272.6	273..4	7.5	6.6	7.6	10.9	9.7	11.2	14.3	12.8	14.8	17.5	15.7	18.1
12	323.4	324.3	8.8	7.8	9.0	12.9	11.5	13.3	17.0	15.2	17.5	20.8	18.7	21.6
14	355.0	356.0	9.6	8.5	9.8	14.1	12.6	14.5	18.6	16.7	19.2	22.8	20.5	23.6
16	405.9	406.9	10.9	9.7	11.2	16.2	14.5	16.7	21.1	19.0	21.9	26.0	23.4	27.0
18	456.7	457.7	12.3	11.0	12.7	18.2	16.3	18.8	23.8	21.4	24.6	-	-	-
20	507.5	508.5	13.7	12.2	14.1	20.2	18.1	20.9	-	-	-	-	-	-
22	558.3	559.3	15.0	13.4	15.5	22.1	19.9	22.9	-	-	-	-	-	-
24	609.1	610.1	16.3	14.6	16.8	24.1	21.7	25.0	-	-	-	-	-	-

- Pipe to these nominal sizes are not normally available from stock
- Standard pipe lengths: 4m and 6m (However, any length from 1m to 9m possible on request)
- Pipes are normally socketted at one end (to suit either Rubber Ring or Solvent Cement joint) and with both ends plain also avaiable
- pipes of nominal diameter above 6" in various classes can be manufactured against speci c orders.

PRESSURE PIPE WEIGHTS FOR CLASSES B,C,D & E

BS-3505

Normal	CLASS-B (Kgs/Mtr)			CLASS-C (Kgs/Mtr)			CLASS-D (Kgs/Mtr)			CLASS-E (Kgs/Mtr)		
Size	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
3/8"	-	-		-	-	-	-	-	-	0.115	0.129	0.142
1/2"	-	-	-	-	-	-	-	-	-	0.164	0.182	0.199
3/4"	-	-	-	-	-	-	-	-	-	0.232	0.265	0.298
1"	-	-	-	-	-	-	-	-	-	0.339	0.374	0.409
1-1/4"	-	-	-	-	-	-	0.433	0.479	0.525	0.525	0.570	0.614
1-1/2"	-	-	-	-	-	-	0.562	0.615	0.667	0.688	0.749	0.810
2"	-	-	-	0.711	0.818	0.925	0.872	0.951	1.030	1.082	1.159	1.235
2-1/2"	-	-	-	1.064	1.146	1.232	1.366	1.465	1.563	1.660	1.772	1.883
3"	1.226	1.328	1.429	1.469	1.589	1.709	1.906	2.040	2.178	2.331	2.501	2.670
4"	1.853	2.011	2.165	2.428	2.608	2.788	3.194	3.418	3.642	3.839	4.106	4.372
5"	2.547	2.742	2.937	3.641	3.925	4.209	4.768	5.105	5.441	5.803	6.219	6.634
6"	3.622	3.895	4.167	5.243	5.622	6.001	6.896	7.410	7.923	8.357	8.963	9.568
8"	5.569	5.978	6.386	8.1	8.697	9.293	10.570	11.344	12.118	12.788	13.685	14.581
10"	8.641	9.277	9.913	12.552	13.482	14.411	16.369	17.570	18.781	19.854	21.265	22.675
12"	12.116	13.022	13.927	17.654	18.977	20.299	23.057	24.708	26.346	28.045	30.066	32.086

Note

Orders are accepted for PVC Pipes within the range in weight mentioned above

HDPE PIPES

TECHNICAL SPECIFICATIONS

Pressure Rating Pipes:

Operating Pressure of pipes ranges between 8, 10, 12.5, 15 and 20 bars, the nominal Pressure (PN) corresponds to the maximum working pressure in bar for pipes at 20°C

Cold Bending Radii (CBR):

CBR in meters at 20oC=22 x Outside Diameter of pipe.

As per Grade PE-100 (DIN 8074, ISO 4427)							
Nominal Sizes (mm)	Nominal Wall Thickness (mm)					Length (Meters)	
	PN-08	PN-10	PN-12.5	PN-16	PN-20		
	SDR-21	SDR-17	SDR-13.6	SDR-11	SDR-09	Standard	Maximum
20	-	-	-	2.0	-	100	1,000
25	-	1.8	1.9	2.3	2.8	100	1,000
32	-	1.9	2.4	2.9	3.6	100	1,000
40	-	2.4	3.0	3.7	4.5	100	1,000
50	-	3.0	3.7	4.6	5.6	100	500
63	-	3.8	4.7	5.8	7.1	100	250
75	3.6	4.5	5.6	6.8	8.4	100	250
90	4.3	5.4	6.7	8.2	10.1	100	200
110	5.3	6.6	8.1	10.0	12.3	12	12
125	6.0	7.4	9.2	11.4	14.0	12	12
140	7.0	8.3	10.3	12.7	15.8	12	12
160	7.7	9.5	11.8	14.6	17.9	12	12
180	8.6	10.7	13.3	16.4	20.1	12	12
200	9.6	11.9	14.7	18.2	22.4	12	12
225	10.8	13.4	16.6	20.5	25.2	12	12
250	11.9	14.8	18.4	22.7	27.9	12	12

TF PIPES LTD.

Shift to Lead Free Food Grade PVC TF Pipes - the pioneer in food grade pipes

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