

A COST EFFECTIVE ALTERNATIVE TO COPPER PIPE



ISO 9001:2000
Certification
(02/08/2007)



SABS tested
Complies with the
requirements of
SANS 15874-1:2004
(06/09/2007 / ISO15874)



HYGIENIC
QUALITY PRODUCT
EASY, SPEEDY APPLICATION

Fusion Pipe
SOUTHERN AFRICA

Why PPR pipes:

- GI pipe corrodes over a period of time; and therefore needs replacing.
- CPVC and Copper pipes are more expensive.
- All metal pipes are not insulated; hence dissipation of heat leads to higher electricity consumption.
- Fusion Pipe meets all requirements and is **cost effective and easy to use.**

The 'Fusion' process



Step 1
Prepare the pipe lengths
Using standard pipe cutter



Step 2
Apply heat to pipe ends
Specialised Heating Tool (250°C)
-Between 5 and 50sec
depending on pipe thickness



Step 3
Join the pipe to desired fitting
Allow for welding time
-Between 4 and 10sec
depending on pipe thickness

Fusion Plastic Pipe (PPR) is the 'Preferred Choice'

A comparison between the different pipe available

Characteristics	PPR	CPVC	GI	Copper	Stainless Steel
Light Weight	Yes	Yes	Yes	No	No
Rust Proof	Yes	Yes	Yes	Yes	Yes
Insulation	Good	Good	Good	Poor	Poor
Hot Water Application	Suitable	Suitable	Suitable	Suitable	Suitable
Cost	Cheap	Costly	Costly	Very Costly	Very Costly



Agriculture



General Construction

Applications

PPR pipe is designed for Hot and Cold water supply

- Hot and cold water supply systems
- Compressed air system
- Drinking water and food liquids
- Watering system for green house and gardens
- Traditional heating system
- Transportation of aggressive fluids
- Transportation of chemicals

Prospective markets

- Residential Buildings
- Luxury Hotels
- Hospitals
- Chemical Industries
- School and College Buildings
- Solar Plants
- Agriculture and Horticulture
- Swimming Pools etc.

PPR Pipes features and benefits

- No leaking
- No rusting
- No abrasion
- No scaling down
- No clogging
- No maintenance
- Light weight
- Rupture free
- Non toxic
- Not carcinogenic
- Tolerates high pressure and temperature
- High resistance to acids and chlorides
- Noise free at high flow rates
- Extremely low thermal conductivity
- Not detrimental to human health
- Insulation is not necessary for interior applications
- Speed and ease of joining by Fusion Technology
- Eco-friendly
- Approved by water quality institutes in 16 countries
- Competitive price
- Savings in time and labour

Dimensions of pipes as per DIN 8077

Wall thickness in mm

Size	PN 10 (SDR 11)		PN 16 (SDR 7.4)		PN 20 (SDR 6)	
	Min	Max	Min	Max	Min	Max
20	1.9	2.3	2.8	3.3	3.4	4.0
25	2.3	2.8	3.5	4.1	4.2	4.9
32	2.9	3.4	4.4	5.1	5.4	6.2
40	3.7	4.3	5.5	6.3	6.7	7.6
50	4.6	5.3	6.9	7.8	8.3	9.4
63	5.8	6.6	8.6	9.7	10.5	11.8
75	6.8	7.7	10.3	11.6	12.5	14.0
90	8.2	9.3	12.3	13.8	15.0	16.7
110	10	11.2	15.1	16.9	18.3	20.4

Welding depth, heating, welding and cooling times

Pipe Diameter (mm)	Welding Depth (mm)	Heating Time (min)	Welding Time (sec)	Cooling Time (min)
20	14.0	5	4	2
25	15.0	7	4	2
32	16.5	8	6	4
40	18.0	12	6	4
50	20.0	18	6	4
63	24.0	24	8	6
75	26.0	30	8	8
90	29.0	40	8	8
110	32.5	50	10	

Pipes available in:

20, 25, 32, 40,
50, 63, 75, 90
and 110mm



Swimming Pools



Industry



Gardens



Hotels & Hospitals

Mechanical and thermal properties

Sl.#	Property	Unit	Value
1	Viscosity Number J	cm ³ /g	430
2	Melt Flow Rate		
	MFR 190/5	g/10 min	0.5
	MFR 230/2.6	g/10 min	0.3
	MFR 230/5	g/10 min	1.5
3	Density at 23°C	g/cm ³	0.898
4	Crystalline	°C	154
	Melting Temperature		
5	Tensile Stress at yield	N/mm ²	23
6	Tensile stress at break	N/mm	40
7	Elongation at break	%	>50
8	Ball Indentation hardness	Shore-D	43
9	Flexural stress at 3.5% Outer fibre strain	N/mm ²	20
10	Modulus of elasticity	N/mm ²	800
11	Shear modulus		
	-10°C	N/mm ²	1100
	0°C	N/mm ²	770
	10°C	N/mm ²	500
	20°C	N/mm ²	370
	30°C	N/mm ²	300
	40°C	N/mm ²	240
	50°C	N/mm ²	180
	60°C	N/mm ²	140
12	Impact Strength at 0°C	KJ/m ²	0/42
13	Coefficient of linear Thermal expansion	K ⁻¹	1.5x10 ⁻⁴
14	Thermal conductivity at 20°C	W/mk	0.2314
15	Surface resistance	Ω	>10 ¹²

Allowable working pressure

Temp in °C	Years of service	Allowable working pressure in bar		
		PN 10 (SDR 11)	PN 16 (SDR 7.4)	PN 20 (SDR 6)
10	1	17.6	27.8	35.0
	5	16.6	26.4	33.2
	10	16.1	25.5	32.1
	25	15.6	24.7	31.1
	50	15.2	24.0	30.3
20	1	14.8	23.4	29.5
	5	14.1	22.3	28.1
	10	13.7	21.7	27.3
	25	13.3	21.1	26.5
	50	12.9	20.4	25.7
30	1	12.5	19.8	24.9
	5	12.8	20.2	25.5
	10	12.0	19.0	23.9
	25	11.6	18.3	23.1
	50	11.2	17.7	22.3
40	1	10.9	17.3	21.8
	5	10.6	16.9	21.2
	10	10.8	17.1	21.5
	25	10.1	16.0	20.2
	50	9.8	15.6	19.6
50	1	9.4	15.0	18.8
	5	9.2	14.5	18.3
	10	8.9	14.1	17.8
	25	9.2	14.5	18.3
	50	8.5	13.5	17.0
60	1	8.2	13.1	16.5
	5	8.0	12.6	15.9
	10	7.7	12.2	15.4
	25	7.4	11.8	14.9
	50	7.7	12.2	15.4
70	1	7.2	11.4	14.3
	5	6.9	11.0	13.8
	10	6.7	10.5	13.3
	25	6.4	10.1	12.7
	50	6.5	10.3	13.0
80	1	6.0	9.5	11.9
	5	5.9	9.3	11.7
	10	5.1	8.0	10.1
	25	4.3	6.7	8.5
	50	5.5	8.6	10.9
95	1	4.8	7.6	9.6
	5	4.0	6.3	8.0
	10	3.2	5.1	6.4
	25	3.9	6.1	7.7
	50	1.5	4.0	5.0
100	1	1.3	6.4	4.2
	5			

PPR fittings



Fusion Pipe PPR fittings are injection moulded and available in a full range from 20mm to 110mm

Fusion Pipe
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