

Pressure Pipe System

Imperial & Metric Range



ALGAWAS
Plastic Industries LLC

ASTM 1785 - ASTM 2241 - BS 3505 - EN 1452-2:2009 - EN ISO 4422-2:1996 - ISO 16111
DIN 8062:2009

uPVC pressure pipe system

Al Gawas Plastic Industries LLC manufactures a wide range of UPVC Pressure Pipes to most of the major international standards and dimensions of Metric and Imperial. PVC pressure pipes are manufactured from PVC resin compounded with stabilisers, lubricants and pigments. They do not contain any plasticisers and hence are known as unplasticised PVC and have a minimum required strength MRS=25 mpa so that the pipes meet or exceed the rigorous hydrostatic requirements of the standards. The pipes are produced in a range of colours such as grey, and white and carry full printing and identification at 1m intervals according to the standard requirements.

All pipes produced fall under an ISO 9001:2008 Quality Assurance system. For export requirements pipes can be supplied in 5.8m (19ft) lengths so they can be loaded into containers without damaging sockets. Al Gawas Plastic pressure pipes have been operating in demanding conditions for almost 2 decades now.

Mechanical & Physical Properties

Material Strength	MRS>25MPa	EN921
Impact Resistance	TIR>10%	EN744
Tensile Strength	min 45 N/mm ²	ISO 6259
Resistance to Internal Pressure	20°C 42MPa/1 hour	EN921
Vicat Softening	>80°C	EN721
Longitudinal Reversion	Maximum 5%	EN743
Dichloromethane Acid Resistance	No Attack	EN580
Socket strength dia < 90mm	4.2 x [PN]	EN921
Socket strength dia > 90mm	3.6 x [PN]	EN921

uPVC pressure pipe system

cold potable water

Pressure Pipe System
American Standards

ASTM D 1785 Schedule 40 / Schedule 80

Nominal Pipe Size Inch	Outside Diameter mm	Wall Thickness	
		Schedule 40 mm	Schedule 80 mm
1/2	21.3	2.8	3.7
3/4	26.7	2.9	3.9
1	33.4	3.4	4.5
1 1/4	42.2	3.6	4.8
1 1/2	48.3	3.7	5.1
2	60.3	3.9	5.5
2 1/2	73.0	5.2	7.0
3	88.9	5.5	7.6
4	114.3	6.0	8.6
6	168.3	7.1	11.0
8	219.1	8.2	12.7
10	273.1	9.3	15.1

ASTM D 2241 Class 100 / Class 125 / Class 160 / Class 200 / Class 315

Nominal Pipe Size Inch	Outside Diameter mm	SDR 41 100psi mm	SDR 32.5 125psi mm	SDR 26 160psi mm	SDR 21 200psi mm	SDR 13.5 315psi mm
1/2	21.3					1.6
3/4	26.7				1.5	2.0
1	33.4			1.5	1.6	2.5
1 1/4	42.2		1.5	1.6	2.0	3.1
1 1/2	48.3		1.5	1.9	2.3	3.6
2	60.3		1.9	2.3	2.9	4.5
2 1/2	73.0		2.2	2.8	3.5	5.4
3	88.9	2.2	2.7	3.4	4.2	6.6
4	114.3	2.8	3.5	4.4	5.4	8.5
6	168.3	4.1	5.2	6.5	8.0	12.5
8	219.1	5.3	6.7	8.4	10.4	
10	273.1	6.6	8.4	10.5	13.0	

uPVC pressure pipe system

for water distribution

Pressure Pipe System
Imperial Range

BS 3505 British Standard

Nominal Size (Inches)	Outside Diameter		Wall Thickness					
			CLASS C		CLASS D		CLASS E	
	Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm
1/2	21.2	21.5					1.7	2.1
3/4	26.6	26.9					1.9	2.5
1	33.4	33.7					2.2	2.7
1 1/4	42.1	42.4			2.2	2.7	2.7	3.2
1 1/2	48.1	48.4			2.5	3.0	3.1	3.7
2	60.2	60.5	2.5	3.0	3.1	3.7	3.9	4.5
2 1/2	75.0	75.3	3.0	3.5	3.9	4.5	4.8	5.5
3	88.7	89.1	3.5	4.1	4.6	5.3	5.7	6.6
4	114.1	114.5	4.5	5.2	6.0	6.9	7.3	8.4
6	168.0	168.5	6.6	7.6	8.8	10.2	10.8	12.5
8	218.8	219.4	7.8	9.0	10.3	11.9	12.6	14.5
10	272.6	273.4	9.7	11.2	12.8	14.8	15.7	18.1

EN 1452-2:2009 Inch Series

Nominal Size (Inches)	Outside Diameter		Wall Thickness					
			PN 9		PN 12		PN 15	
	Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm
1/2	21.2	21.5					1.7	2.1
3/4	26.6	26.9					1.9	2.5
1	33.4	33.7					2.2	2.8
1 1/4	42.1	42.4			2.2	2.7	2.7	3.3
1 1/2	48.1	48.4			2.5	3.0	3.1	3.7
2	60.2	60.5	2.5	3.0	3.1	3.7	3.9	4.5
3	88.7	89.1	3.5	4.1	4.6	5.3	5.7	6.6
4	114.1	114.5	4.5	5.2	6.0	6.9	7.3	8.4
6	168.0	168.5	6.6	7.6	8.8	10.2	10.8	12.5
8	218.8	219.4	7.8	9.0	10.3	11.9	12.6	14.5
10	272.6	273.4	9.7	11.2	12.8	14.8	15.7	18.1

uPVC pressure pipe system

for water distribution

Pressure Pipe System

Metric Range

EN ISO 1452-2:2009

Metric Series

Nominal Outside Diameter (mm).	Nominal (minimum) Wall Thickness					
	Series 16 SDR 33	Series 12.5 SDR 26	Series 10 SDR 21	Series 8 SDR 17	Series 6.3 SDR 13.6	Series 5 SDR 11
	Nominal Pressure PN based on service (design) coefficient C=2.5.					
	PN6	PN8	PN10	PN12.5	PN16	PN20
20	-	-	-	-	1.5	1.9
25	-	-	-	1.5	1.9	2.3
32	-	1.5	1.6	1.9	2.4	2.9
40	1.5	1.6	1.9	2.4	3.0	3.7
50	1.6	2.0	2.4	3.0	3.7	4.6
63	2.0	2.5	3.0	3.8	4.7	5.8
75	2.3	2.9	3.6	4.5	5.6	6.8
90	2.8	3.5	4.3	5.4	6.7	8.2
Nominal Pressure PN based on service (design) coefficient C=2.0						
110	2.7	3.4	4.2	5.3	6.6	8.1
125	3.1	3.9	4.8	6.0	7.4	9.2
140	3.5	4.3	5.4	6.7	8.3	10.3
160	4.0	4.9	6.2	7.7	9.5	11.8
200	4.9	6.2	7.7	9.6	11.9	14.7
225	5.5	6.9	8.6	10.8	13.4	16.6
250	6.2	7.7	9.6	11.9	14.8	18.4



uPVC pressure pipe system

for water distribution

Pressure Pipe System
Metric Range

ISO 161/1 Metric Series

Nominal Outside Diameter (mm).	Nominal (minimum) Wall Thickness				
	Series 20 SDR41	Series 12.5 SDR 26	Series 8 SDR 17	Series 6.3 SDR 13.6	Series 5 SDR 11
	PN 6.3	PN 10	PN 16	PN 20	PN 25
25	-	-	1.5	1.9	2.3
32	-	-	1.9	2.4	2.9
40	-	1.6	2.4	3.0	3.7
50	1.3	2.0	3.0	3.7	4.6
63	1.6	2.5	3.8	4.7	5.8
75	1.9	2.9	4.5	5.6	6.8
90	2.2	3.5	5.4	6.7	8.2
110	2.7	4.2	6.6	8.1	10.0
125	3.1	4.8	7.4	9.2	11.4
140	3.5	5.4	8.3	10.3	12.7
160	4.0	6.2	9.5	11.8	14.6
200	4.9	7.7	11.9	14.7	18.2
225	5.5	8.6	13.4	16.6	20.5
250	6.2	9.6	14.8	18.4	22.7

DIN 8062:2009 Metric Series

Nominal Outside Diameter (mm).	Nominal (minimum) Wall Thickness							
	Nominal Pressure PN based on safety factor (SF)=2.5							
	Series 25 SDR51 PN 4	Series 16.7 SDR 34.4 PN 6	Series 12.5 SDR 26 PN 8	Series 10 SDR 21 PN 10	Series 8 SDR 17 PN 12.5	Series 6.3 SDR 13.6 PN 16	Series 5 SDR 11 PN 20	Series 4 SDR 9 PN 25
20						1.5	1.9	2.3
25					1.5	1.9	2.3	2.8
32				1.6	1.9	2.4	2.9	3.6
40			1.6	1.9	2.4	3.0	3.7	4.5
50		1.5	2.0	2.4	3.0	3.7	4.6	5.6
63		1.9	2.5	3.0	3.8	4.7	5.8	7.1
75	1.5	2.2	2.9	3.6	4.5	5.6	6.8	8.4
90	1.8	2.7	3.5	4.3	5.4	6.7	8.2	10.1
110	2.2	3.2	4.2	5.3	6.6	8.1	10.0	12.3
125	2.5	3.7	4.8	6.0	7.4	9.2	11.4	14.0
140	2.8	4.1	5.4	6.7	8.3	10.3	12.7	15.7
160	3.2	4.7	6.2	7.7	9.5	11.8	14.6	17.9
200	3.9	5.9	7.7	9.6	11.9	14.7	18.2	22.4
225	4.4	6.6	8.6	10.8	13.4	16.6	20.5	25.2
250	4.9	7.3	9.6	11.9	14.8	18.4	22.7	27.9