AZEETA®

ABS PRESSURE PIPE SYSTEM

Listed By

SPAN

SIRIM

MS SIRIM

BUATAN MALAYSIA

7 ABS

THE MATERIAL

ABS is a copolymer of

Acrylonitrile **Butadiene** **Styrene**

blended to give unrivalled properties, offering a number of benefits over traditional materials.

It is an extremely versatile material suited to a wide range of piping applications, ranging from conveyance of potable water to highly corrosive chemicals. The large diversity of end uses make ABS one of the most successful of the engineering thermoplastics available.

Piping systems manufactured from this polymer display outstanding properties, which make ABS the first choice for many of the most demanding piping applications. Exceptional properties of ABS imparted by the raw material are:-

- Toughness.
- High impact strength.
- Good chemical resistance.
- Non-toxic material. Suitable for potable water intended for human consumption.
- Wide operational temperature range, from -30°C to + 60°C.

These properties mean that AZEETA® **ABS** is equally suitable for the transportation of slurries to the conveyance of ultra pure water of foodstuffs. It is designed to suit local conditions.

FEATURES

Principal features of AZEETA® **ABS** are:-

- Fully integrated range of pipes and fittings available from 15mm to 630mm.
- Significant savings in installation time and costs.
- No scaling.
- Robust and reliable.
- Tough and durable.
- Exceptional smooth bore.
- Reduced insulation.
- Designed to last 50 years.
- No corrosion.
- Minimal maintenance.
- Light weight.
- Ductile.
- Fast and reliable jointing.

BENEFITS

The benefits of using AZEETA® **ABS** are:-

IMPACT STRENGTH

The butadiene constituent in ABS affords exceptional resistance to accidental damage. ABS is a ductile material, which exhibits very high impact strength compared with other plastics.

This means that AZEETA® **ABS** piping systems can be used in more critical applications where other types of plastics could not be considered because of its brittleness and low impact strength.

MODE OF FAILURE

ABS being a ductile material exhibits a mode of failure that resembles soft copper. Failure due to mechanical damage of hydrostatic over- pressure cause ductile distortion and tearing.

However, the localised nature of failure result in minimal loss of pipe contents and the option to effect quick repairs over a relatively small surface area.

In contrast, the failure mode of brittle material is accompanied by crack propagation and material fragmentation.

CHEMICAL RESISTANT

ABS is unaffected by both internal and external chemical attack by a wide range of acids, alkalis, ground water salts and other environmental factors.

ABRASION RESISTANT

The butadiene phase in AZEETA® **ABS** offers good resistance to abrasion and erosion from aggressive slurries, which can rapidly damage steel or other traditional pipe materials. The chemical and impact resistance of ABS makes it an ideal choice for those corrosive, erosive environment.

WEATHER RESISTANT

Coating pipes with acrylic or water based paint is effective in minimizing any effects of ultraviolet radiation.

Prolonged exposure to sunlight result in a reduction of surface gloss. This degradation is confined only to the exposed surface and has minimal effects on the physical properties of the piping system. However, like any other materials exposed to sunlight, due consideration must be given to thermal expansion / contraction of the piping system.

Environmental stress cracking as commonly found in other plastics is minimised considerably due to the relatively high flexural modulus of ABS.

NON-TOXIC / TAINT- FREE

The ABS formulation does not contain harmful metallic stabilisers. All material used complies with food and toxicological requirement. Its has been widely used for many years in piping system for high purity water, food products and soft drinks.

AZEETA® **ABS** piping system is ideal for potable cold water. It conforms to British Standard BS 6920-1:2014 " Suitability of non-metallic products for use in contact with potable water intended for human consumption".

TEMPERATURE RANGE

The ability to perform over a wide temperature range form -30°C to 60°C has an advantage over other plastic systems. This make AZEETA® **ABS** very versatile, capable of handling a wide range of fluids from refrigerants to moderately hot corrosive liquids.

SMOOTH BORE

ABS does not suffer from increased surface roughness of internal corrosion and provides a smooth bore for the lift of the piping system.

Frictional factor is reduces considerably, having a considerable better roughness coefficient when compared with metal pipes.

Internal corrosion also causes a reduced bore in steel systems, which further inhibits flow. The smooths bore of ABS pipes inhibits the formation of scale.

Intenal diameter of AZEETA® **ABS** pipes will not be reduced over time, thereby eliminating the need to over size the pipes.

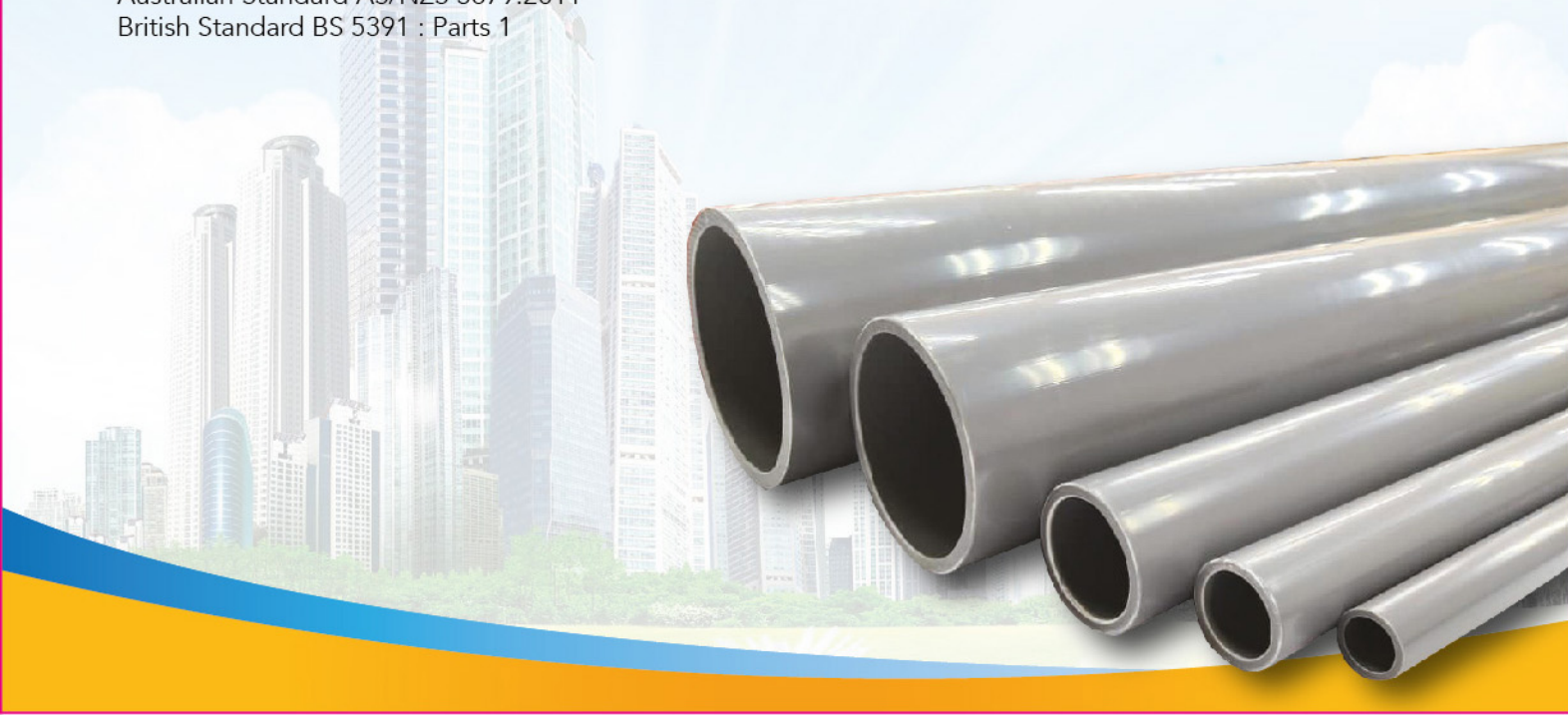
SIZE AND PRESSURE RANGE

ABS piping system are manufactured in sizes ranging from 15mm to 630mm.
Pressure ratings start from 4.5 bar to 15 bar.
These ratings are at 20°C.

MANUFACTURING STANDARDS

AZEETA® **ABS** pipes and fittings comply with the following:

Malaysian Standard MS 1419 : Parts 1 : 2007
Malaysian Standard MS 1419 : Parts 2 : Section 1 to 8 : 2007
Malaysian Standard MS 1419 : Parts 3 : 1997
Malaysian Standard MS 1419 : Parts 4 : 1998
Australian Standard AS/NZS 3518:2013
Australian Standard AS/NZS 3690:2009
Australian Standard AS/NZS 3879:2011
British Standard BS 5391 : Parts 1



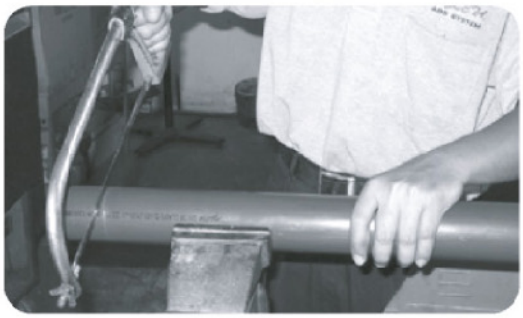
DIMENSION TABLE FOR ABS

Pipe Size	Inch	Pipe Class	Pipe OD (mm)	Pipe ID (mm)	Wall Thickness (mm)	Working Pressure	
						Bar	psi
DN 15	1/2	15	21.4	17.2	2.1	15.0	218
DN 20	3/4	15	26.8	21.4	2.7	15.0	218
DN 25	1	9	33.6	29.4	2.1	9.0	131
		12	33.6	28.2	2.7	12.0	174
		15	33.6	27.0	3.3	15.0	218
DN 32	1 1/4	9	42.3	37.1	2.6	9.0	131
		12	42.3	35.5	3.4	12.0	174
		15	42.3	33.7	4.3	15.0	218
DN 40	1 1/4	9	48.3	42.3	3.0	9.0	131
		12	48.3	40.5	3.9	12.0	174
		15	48.3	38.5	4.9	15.0	218
DN 50	2	9	60.4	53.0	3.7	9.0	131
		12	60.4	50.8	4.8	12.0	174
		15	60.4	48.6	5.9	15.0	218
DN 65 (OD75)	2 1/2	6	75.2	69.0	3.1	6.0	87
		9	75.2	66.2	4.5	9.0	131
		12	75.2	63.2	6.0	12.0	174
		15	75.2	60.2	7.5	15.0	218
DN 80	3	6	88.9	81.5	3.7	6.0	87
		9	88.9	78.1	5.4	9.0	131
		12	88.9	74.9	7.0	12.0	174
		15	88.9	71.7	8.6	15.0	218
DN 100	4	6	114.3	104.9	4.7	6.0	87
		9	114.3	100.5	6.9	9.0	131
		12	114.3	96.3	9.0	9.0	174
		15	114.3	92.3	11.0	15.0	218
DN 150	6	6	168.3	154.5	6.9	6.0	87
		9	168.3	148.1	10.1	9.0	131
		12	168.3	141.9	13.2	12.0	174
		15	168.3	135.9	16.2	15.0	218
DN 200	8	6	219.1	201.1	9.0	6.0	87
		9	219.1	201.1	13.1	9.0	131
		12	219.1	184.7	17.2	12.0	174
		15	219.1	177.1	21.0	15.0	218

Pipe Size	Inch	Pipe Class	Pipe OD (mm)	Pipe ID (mm)	Wall Thickness (mm)	Working Pressure	
						Bar	psi
OD 225	9	6	225.0	211.2	6.9	6.0	87
		8	225.0	206.8	9.1	8.0	116
		10	225.0	202.2	11.4	10.0	145
		12	225.0	198.0	13.5	12.0	174
		15	225.0	191.8	16.6	15.0	218
OD 250	10	6	250.0	234.8	7.6	6.0	87
		8	250.0	229.8	10.1	8.0	116
		10	250.0	224.8	12.6	10.0	145
		12	250.0	220.0	15.0	12.0	174
		15	250.0	213.2	18.4	15.0	218
OD 280	11	6	280.0	263.0	8.5	6.0	87
		8	280.0	257.4	11.3	8.0	116
		10	280.0	251.8	14.1	10.0	145
		12	280.0	246.6	16.7	12.0	174
		15	280.0	238.8	20.6	15.0	218
OD 315	12	6	315.0	295.8	9.6	6.0	87
		8	315.0	289.6	12.7	8.0	116
		10	315.0	283.2	15.9	10.0	145
		12	315.0	277.4	18.8	12.0	174
		15	315.0	268.6	23.2	15.0	218
OD 355	14	6	355.0	333.4	10.8	6.0	87
		8	355.0	326.4	14.3	8.0	116
		10	355.0	319.2	17.9	10.0	145
		12	355.0	312.6	21.2	12.0	174
		15	355.0	302.8	26.1	15.0	218
OD 400	16	6	400.0	375.8	12.1	6.0	87
		8	400.0	366.0	17.0	8.0	116
		10	400.0	359.8	20.1	10.0	145
		12	400.0	352.2	23.9	12.0	174
		15	400.0	341.2	29.4	15.0	218
OD 450	18	6	450.0	422.8	13.6	6.0	87
		8	450.0	413.8	18.1	8.0	116
		10	450.0	404.8	22.6	10.0	145
		12	450.0	396.2	26.9	12.0	174
		15	450.0	383.8	33.1	15.0	218
OD 500	20	6	500.0	469.8	15.1	6.0	87
		8	500.0	459.8	20.1	8.0	116
		10	500.0	449.8	25.1	10.0	145
		12	500.0	440.4	29.8	12.0	174
		15	500.0	426.6	36.7	15.0	218
OD 630	24	6	630.0	592.0	19.0	6.0	87
		8	630.0	579.4	25.3	8.0	116
		10	630.0	566.8	31.6	10.0	145
		12	630.0	555.0	37.5	12.0	174
		15	630.0	537.4	46.3	15.0	218

Note: All dimensions are subject to manufacturing tolerances

JOINING PROCEDURES



1 Cut the pipe clean and square.

2 Remove internal and external burr and clean out swart.

3 Abrade the end of the pipe over the length equal to the socket depth.

4 Clean the abraded surface with a clean rag moistened with AZEETA® Primer.

5 Apply AZEETA® Solvent Cement to the abraded surfaces of the pipe and fitting.
Push pipe fully home into the fitting.
DO NOT TWIST. Hold the pipe fitting together for a while, depending on the diameter to prevent movement.

6 Wipe off excess solvent cement from the joint.

AZEETA PIPE SYSTEM SDN BHD (199701039760)

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