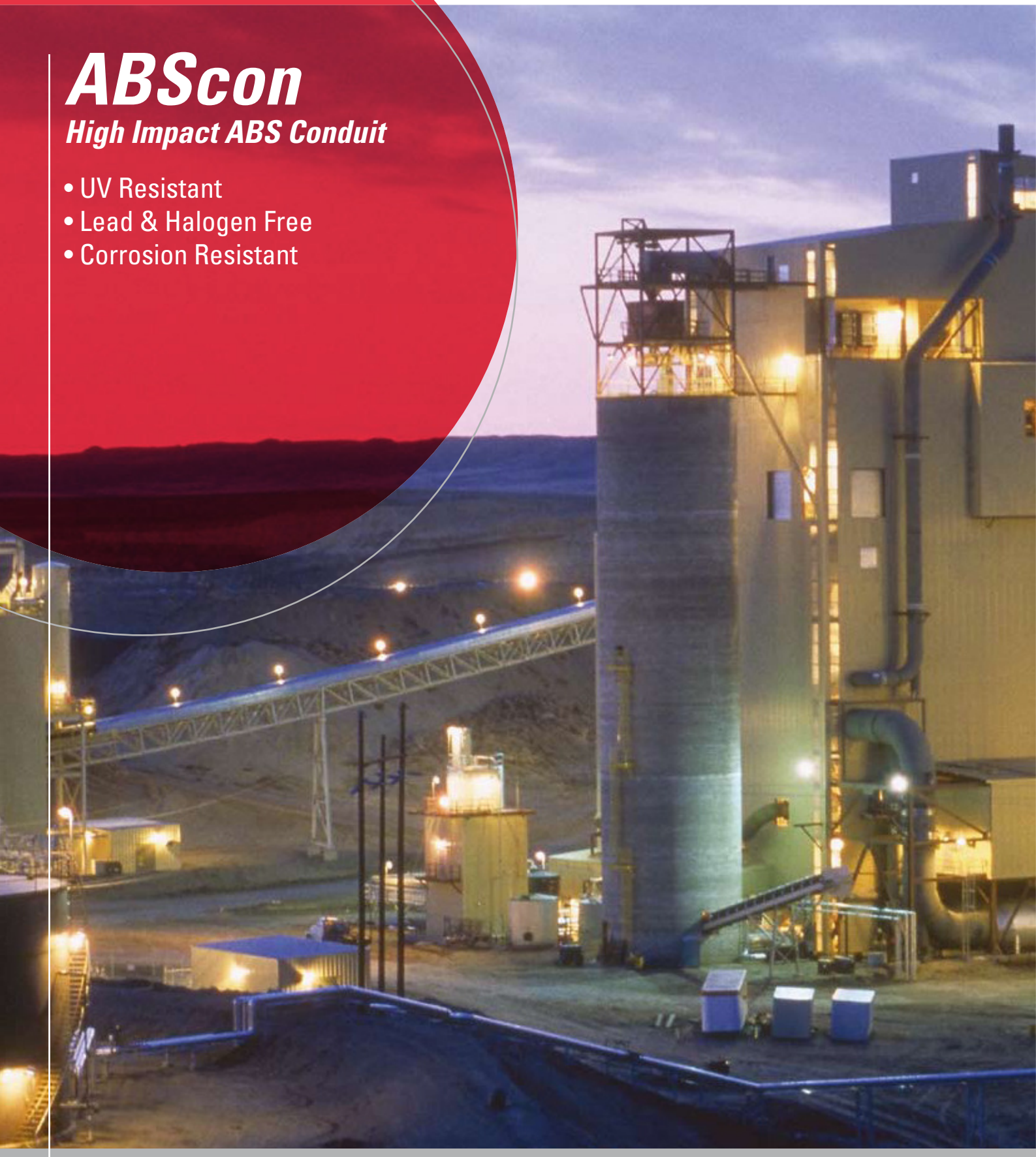
allied®
TUBE & CONDUIT

ABScon

High Impact ABS Conduit

- UV Resistant
- Lead & Halogen Free
- Corrosion Resistant



Electrical & Mechanical Solutions – APAC
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ABScon

The Material

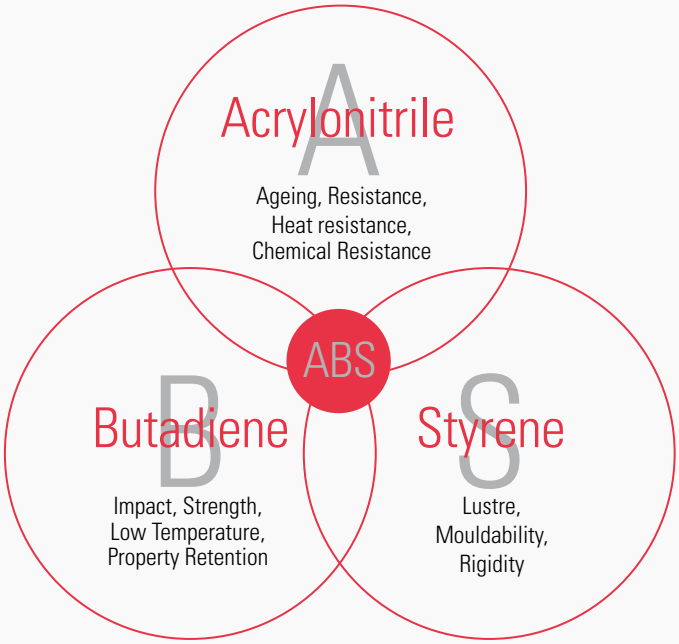
Acrylonitrile-Butadiene-Styrene (ABS) identifies a family of engineering thermoplastics with an exceptionally broad range of performance characteristics.

Acrylonitrile – provides chemical resistance and rigidity.

Butadiene – is a rubber which gives the material its exceptional impact resistance and low temperature toughness.

Styrene – contributes to the ease of processing and rigidity.

Allied Tube and Conduit uses a formulation developed in conjunction with polymer manufacturers to optimise performance with respect to tensile strength, impact resistance, ductility, weatherability, heat stability and processability from raw material to finished product.



Features

The outstanding properties of ABS are:

Impact strength

ABS has exceptional impact strength over a broad range of temperatures. It is the butadiene rubber phase of the copolymer that makes ABS shatter proof and allows ABS to withstand impact levels much higher than those of other plastic conduits. It also retains this impact resistance at sub zero temperatures.

Corrosion resistant

ABScon is resistant to damage from a wide range of chemicals. It has good resistance when in contact with inorganic acids, alkalis and metal salts, which will corrode most metal conduits. It can also be used in areas of contact with oils and fats.

It is recommended that ABScon not be used in areas in contact with aromatic hydrocarbons and solvents such as ketones or esters.

Direct Sunlight Resistant

ABScon performs excellently in harsh weather conditions. Its corrosion resistance combined with heat stability and resistance to damage through sunlight, means that it retains superior impact resistance and strength even after long term exposure to the harshest weather.

Temperature range

ABScon can be used in a broad range of temperatures. It does not become brittle at temperatures down to –30°C and it maintains rigidity and strength at temperatures up to 70°C. This allows ABScon to be used in areas such as refrigerated cool rooms and hot process environments.

Light weight

ABScon is light weight. High Impact ABScon conduit weighs on average 30% less than the equivalent Heavy Duty PVC conduit and 75% less than steel conduit. This means easier installation and transportation.

Rigid

ABS is a rigid thermoplastic, providing high security against crushing. ABScon's rigidity also allows for ease of installation on straight runs and a minimum of support brackets. ABScon is designed to remain straight even at its maximum operating temperature when installed as recommended.

Insulating

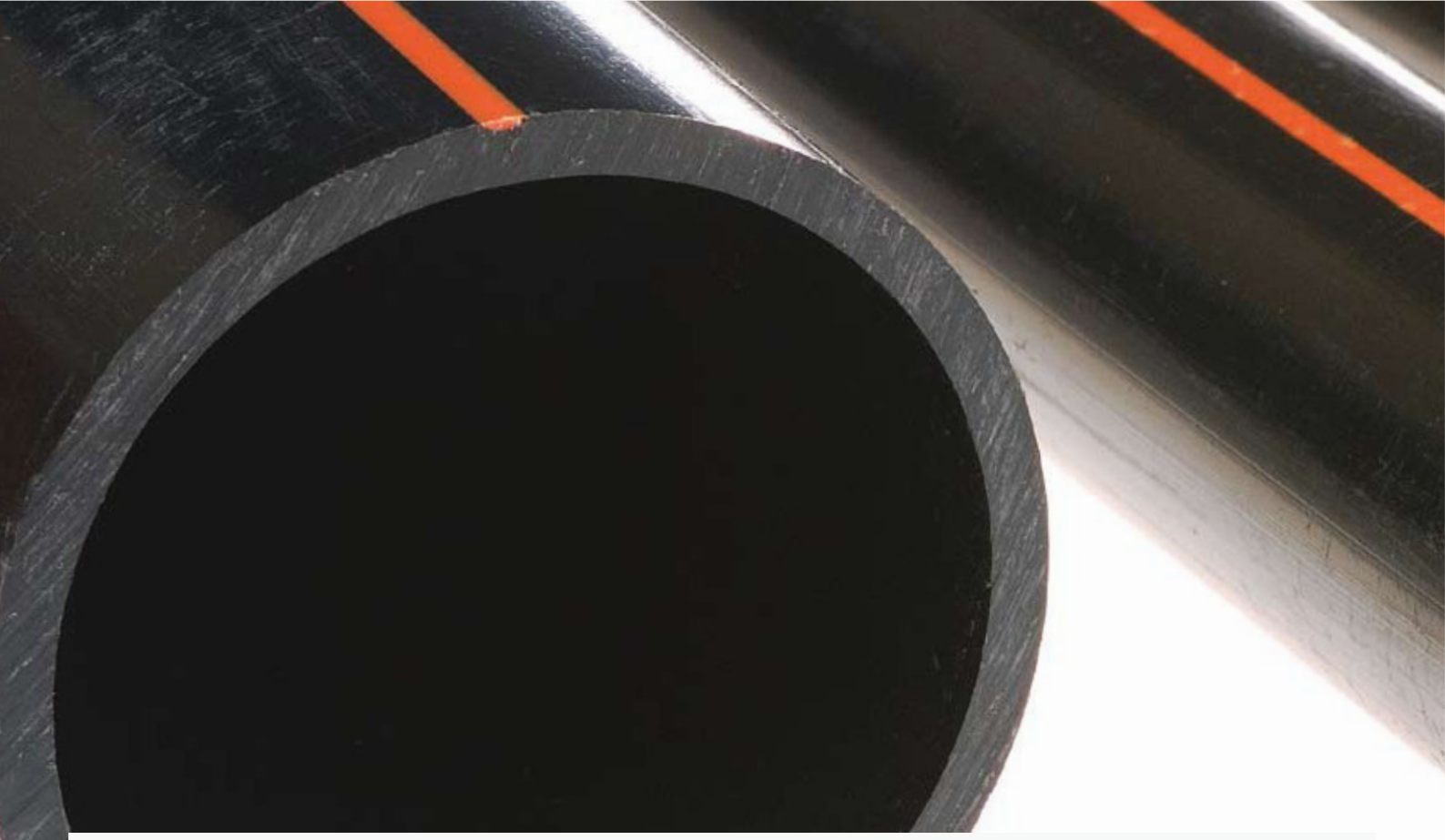
ABS is an excellent insulator providing extra protection for equipment and personnel. There is no need for earthing or maintaining electrical continuity through joints and connections.

Water-tight

ABScon's solvent welded joints provide a simple leak-tight seal against water, other fluids, dust and contaminants ensuring protection for wiring and personnel.

Lead and Halogen Free

ABS is lead and halogen free. If burned ABS does not release corrosive gasses. ABS can be readily recycled.



Installation

Installation

ABScon should be installed according to the relevant sections and international industry standards and regulations as applicable to non metallic conduit.

ABScon should be supported on straight runs with correctly sized clips or saddle clips at intervals of not more than 1 metre. Clips and saddle clips must be installed so as to allow longitudinal movement of the conduit.

Joining

ABScon conduits and fittings are easily joined by using ABS Solvent Cement. To ensure a strong watertight joint follow these steps:

1. Cut conduit to length using a fine tooth hack saw or pipe cutters and remove all swarf and burrs.
2. Clean the joining surfaces of the pipe and fitting with a clean rag dipped in MEK Cleaner.
3. Coat both surfaces with ABS solvent cement and push together immediately. Do not twist.
4. Wipe off any excess solvent cement. Do not handle the joint for approximately 5 minutes. Full joint strength is achieved 24 hours after joining.

Bending

Due to its high softening temperature ABScon cannot be bent cold. A full range of bends is available to ensure simple and convenient installation.

Conduits up to 32 mm can be bent on site using the following procedure:

1. Insert a correctly sized bending spring or some other type of internal mandrel.
2. Using a portable gas torch gently heat up the area to be bent, rotating it continuously to ensure even softening. Do not play the flame directly on to the pipe wall. Surface discolouration indicates overheating and damage to the conduit.
3. When the pipe becomes soft and flexible, bend to slightly more than required and allow the bend to ease back to the desired angle.
4. Hold the bend in place until cool. Cooling can be accelerated using a wet rag.

The minimum radius around which ABScon should be bent is 4 times the diameter of the conduit.

Expansion

Expansion due to changes in temperatures can be accommodated by using conduit routing to minimise problems.

Expansion can be accommodated by using the inherent ductility and flexibility of ABS. By not restraining the conduit at changes of direction the conduit can be allowed to flex and convert the expansion along the run into a bending action on the adjoining leg.

For buried conduits no measures need to be taken to control expansion.

IMPORTANT NOTE

This product is designed to provide mechanical protection for insulated and sheathed electrical wiring and is not suitable for use where the wiring is not sheathed.

In such installations only use conduit that meets the requirements of AS/NZS 2053 - 2001.

ABScon Specifications

ABScon conduit (all dimensions in mm)

Nominal Size	Product Code	Outside Diameter	Wall Thickness	Inside Diameter
20	ABS20	20.0	2.4	15.2
25	ABS25	25.0	2.6	19.8
32	ABS32	32.0	2.8	26.4
40	ABS40	40.0	3.2	33.6
50	ABS50	50.0	3.6	42.8
63	ABS63	63.0	4.2	54.6
80	ABS80	88.9	5.0	79.0
100	ABS100	114.3	6.3	101.7
150	ABS150	168.3	8.8	150.7

ABScon is typically supplied in 4m plain ended lengths

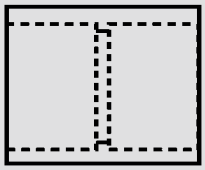
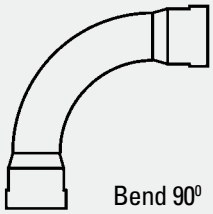
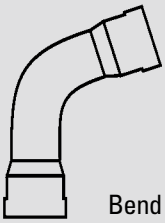
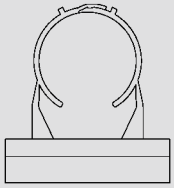
ABScon conduit properties

Physical properties	
Specific gravity	1.05
Ultimate tensile strength	40MPa
Elongation at break	50%
Instantaneous flexural modules	2200 MPa
Izod impact strength (notched)	340 J/m notch
Thermal properties	
Operating temperature range	-30 to 70 ^{0}C
Vicat softening point	95 ^{0}C
Coefficient of linear expansion	10.1 x 10^{-5} m/m ^{0}C
Thermal conductivity	0.25W/m ^{0}K
Electrical properties	
Volume resistivity	3.5 x 10^{16} Ωcm
Dielectric constant	95 ^{0}C
Coefficient of linear expansion	3.12 at 1000 Hz
Flammability	ABS is not self extinguishing
ABScon is Halogen free and produces no corrosive gasses in he event of fire.	

Chemical resistance of ABS conduit

Strong acids	Limited resistance
Weak acids	Good
Alkalis	Good
Metal salts	Excellent
Aromatic hydrocarbons	Poor
Organic Solvents	Poor
ABSconduit absorbs less than 1% water and is classed as non-hygroscopic	

ABScon Fittings

	Size (mm)								
	20	25	32	40	50	63	80	100	150
 Plain Coupler	ABSC20	ABSC25	ABSC32	ABSC40	ABSC50	ABSC63	ABSC80	ABSC100	ABSC150
 Bend 90^0	ABS90DB20	ABS90DB25	ABS90DB32	ABS90DB40	ABS90DB50	ABS90DB63	ABS90DB80	ABS90DB100	ABS90DB150
 Bend 45^0	ABS45DB20	ABS45DB25	ABS45DB32	ABS45DB40	ABS45DB50	ABS45DB63	ABS45DB80	ABS45DB100	ABS45DB150
 Saddle Clip						ABSSC63	ABSSC80	ABSSC100	
 Conduit Clip	ABSCC20	ABSCC25	ABSCC32	ABSCC40	ABSCC50				

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TUBE & CONDUIT

Metal
- Steel Screwed Conduit
- Galvinised and Hot Dip Galvinised
- Fittings

PVC
- Electrical and Telecommunications
- Medium and Heavy Duty
- PVC Fittings

ABS ABScon
- High Impact ABS Conduit
- ABS Fittings

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