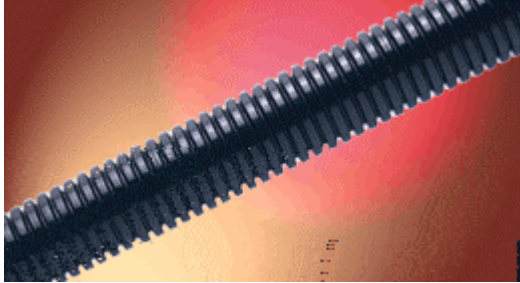




Flexible Conduit Systems

## PA Conduit

### Construction



PA conduit is a corrugated flexible conduit manufactured from flame retardant, halogen, phosphorus and sulphur free, nylon 6 (PA6).

The corrugated form of the product ensures high compression strength yet provides excellent flexibility. PA conduit also provides excellent impact and abrasion resistance. Four grades are available, Light, Standard and Heavy, which provide increasing compression strength.

All the PA conduit range in conjunction with Adaptalok, Adaptaseal and Adapting fittings are recognised by Underwriters Laboratories (UL) under file no. E135398.

Black PA conduits are UV resistant since they incorporate a minimum of 1% carbon black, which protects the nylon from ultra violet degradation when used outside.

### Colours

Standard colours are black and grey (RAL 7031).

### Temperature

The operating temperature of PA conduit is  $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$  for static applications and  $-20^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$  for dynamic applications.

### Fire Performance

All PA conduits are flame retardant, standard and heavy grades have higher flame retardancy than lightweight grades. In addition to being self-extinguishing and halogen free, PA conduits have low smoke density and low toxicity and Standard and Heavy weights are classified as Low Fire Hazard. Brief test results are listed below but full test data is available upon request from head office.

The oxygen index (LOI) of the nylon (polyamide) compound used to manufacture PA conduit is 28%

Tested to BS6401 "Method for Measurement, in the laboratory, of the specific optical density of smoke generated by materials" PAFS21 gave a maximum value of Ds of 65 in flaming mode and 21 in non-flaming mode, which is considered low.

Tested to NE713, Issue 3 "Determination of the toxicity index of products of combustion for small specimens of material", PAFS21 gave a toxicity index of 5.2/100 grams burnt, which is considered low.

### IP Rating

The IP rating of PA conduit and Adaptalok fittings is IP66. The IP rating of PA conduit and Adaptaseal fittings is IP66 & 67 (IP68 to 2 bar). The IP rating of PA conduit and Adapting fittings is IP40

### Applications

Type PA conduits are used in many applications, similar to those using SP but with the added advantages of being Low Fire Hazard and having higher IP ratings.

PA conduit and fittings are typically used within the construction of machines, for light industrial and commercial wiring installations and for wiring harnesses on vehicles. This product is particularly suitable for public buildings or transport because of its LFH properties.

PA conduit and fittings are widely used since they are so easy to cut and fit.

Black PA conduit and fittings can be used for outdoor applications.

PA Lightweight is **NOT** LFH but it is still self-extinguishing and Zero Halogen.



EN 50086





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TEST	Temperature °C	METHOD/ STANDARD	REQUIREMENT	VALUE	UNIT
<b>Mechanical Properties</b>					
Impact Strength	-45	EN50086	21mm	> 6.0	J (Joule)
Impact Strength	23	PMA norm 9-4330	21mm	> 6.0	J (Joule)
Crush Strength	23	EN50086-1	<25% Crush with >90% recovery	>320	N (Newton)
Crush Strength	23	AFX norm C1988	25% Instantaneous Value	400	N (Newton)
Tensile Strength	23	EN50086-1	With Adaptalok Fitting	>100	N (Newton)
Tensile Strength	23	AFX norm T1987	Ultimate pull-out of Adaptalok	200	N (Newton)
Fatigue	23	AFX norm F1986	MBR 5x OD to EN50086-2.3 method	>1E6	Cycles
Static Bend radius	23	AFX norm S1985		45	mm
Dynamic Bend radius	-5	EN50086-2.3		80	mm
<b>Thermal Properties</b>					
Cold Bend test	-40	SNCF 478	Mandrel Diameter (n)	2	n x O.D.
Heat Load test	120	EN50086-1	Weight @ Crush classification (48hrs)	Pass	Pass/Fail
<b>Fire Smoke &amp; Toxicity Properties</b>					
Halogen Free		LUL	< 0.5 %	Yes	Yes/No
Phosphorus Free		LUL	< 0.5 %	Yes	Yes/No
Sulphur Free		LUL	< 0.5 %	Yes	Yes/No
Oxygen Index		ISO 4589	% Oxygen to support combustion	28	%
Glow wire rating		IEC 695	No ignition, Extinguish within 2 s	-	°C
Flammability		UL94	Vertical (V0, V2) or Horizontal (HB)	V2	
Flammability		EN50086-1	1kW burner @ 45°	Pass	Pass/Fail
I Classification		NFF16-101	Oxygen Index & Glow wire	I4	
F Classification		NFF16-101/102	Smoke density & Toxicity	F3	
Smoke Density		BS6853	Smoke density	0.026	Ao
Toxicity		NES713 Issue 3	Smoke toxicity	5.2	
Smoke Density		ASTM E662	Ds < 100 in both modes.	98/ 17	Ds max
<p>All specimens were conditioned for 168 hours at 23°C and 50% RH prior to test</p> <p><b>EN Classification (21mm with Adaptalok fittings) 242440660110</b></p> <p><b>Approvals: Underwriters Laboratories E135398 (M), Lloyds Register of Shipping, BSI Kitemark KM35161, NFR13-903, NFF16-101/102, Deutsche Bahn</b></p>					



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