

Conduit Systems - Polyamide

CTPA Lightweight - General Purpose



Technical Characteristics

Conforms to

CE Mark to the Low Voltage Directive
 RoHS Compliant to 2011/65/EU
 Conforms with End of Life Vehicle directive (ELV) EU200/53/EC

Approvals and Standards



Degree of mechanical protection

High flexibility & fatigue life - Very High abrasion, impact and shock resistance

Degree of protection

IP40 - Hinged fittings
 IP67 - Sealed fittings

UV protection

Very High (Black) - Medium (Red, Green & Orange)

Finish

Black (BL), Green, Orange (RAL2003)

Application

Interior automotive harness applications, where tight bend radii may be required.

Normal operating temperature range

Application	Min Temp	Max Temp
Static	- 40°C	+120°C
Dynamic	- 5°C	+150 °C (5000 Cycles)

For use with - Fitting range

For use with all [hinged](#) fittings in the Harnessflex range

Fire performance

Test Standard

Performance Rating

IEC 61386

Pass

UL94

HB

ISO 4589-2

22.0%

IEC 60695

750°C

Self Extinguishing
 Low smoke toxicity
 & Halogen Free

Testing data

Click or See pages [3](#) & [4](#)

Type of material

Polyamide (Nylon) 6 - flame retardant - heat stabilised

Image



Conduit Systems - Polyamide

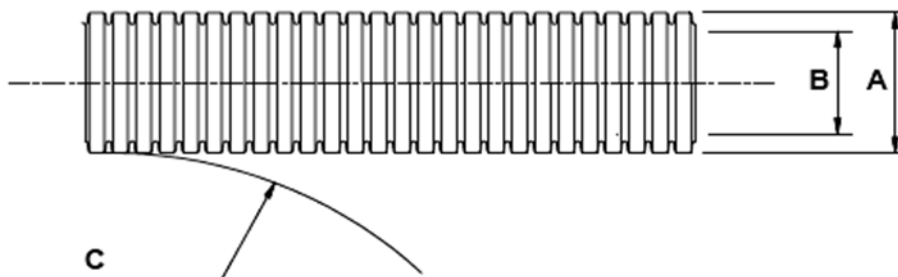
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Technical & Dimensional Data

Part No.	Conduit Size		Dimensions				Average Weight
	(NC)	(NW)	(A) Outside Diameter (Mid size)	(B) Minimum Bore	(C) Minimum Static Bend Radius	Reel Length (m)	(Kg/100m)
CTPA08	08	7.5	10.0mm	6.2mm	20mm	100	1.6
CTPA10	10	8.5	11.5mm	8.0mm	23mm	100	2.5
CTPA12	12	10	13.0mm	9.6mm	26mm	100	2.4
CTPA16	16	13	16.0mm	11.7mm	32mm	100	2.9
CTPA18	18	15	18.4mm	14.4mm	35mm	100	3.2
CTPA20	20	17	21.2mm	16.3mm	42mm	50	3.9
CTPA25	25	22	25.6mm	21.3mm	52mm	50	4.6
CTPA28	28	23	28.5mm	22.5mm	57mm	50	6.3
CTPA30	30	26	31.6mm	26.0mm	50mm	50	7.1
CTPA32	32	29	34.5mm	28.6mm	79mm	50	8.5
CTPA40	40	36	42.5mm	34.8mm	85mm	25	12.0
CTPA50	50	48	54.1mm	46.2mm	90mm	25	17.1

To order quote part number & reel length for black e.g. CTP20/50M or for all other colours add colour and reel length e.g. orange CTPA20/OR/100M red CTPA/RD/100M or green CTPA/GN/100M



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Mechanical Properties

Test Type	Methods / Standards	Requirements	Value
Crush Strength	IEC61386-1	<25% crush >90% recovery	>125N
Tensile Strength	IEC61386-1	Fitting Pull off (Hinged Fitting)	100N
Impact Strength @ 23 °C	IEC61386-1	No Cracks <20% deformation min value	>20J
Impact Strength @-5 °C	IEC61386-1	No Cracks. <20% deformation min value	>6J
Dynamic Bend radius @-5 °C	IEC61386-23	5000 cycles minimum (CTPA20 Conduit)	4xOD
Cold Bend @ -40 °C	NFR13-903	2xOD	Pass

Thermal Properties

Test Type	Methods / Standards	Requirements	Value
Minimum Temperature	IEC61386-23	Permanent Use - Static	-40°C
Minimum Temperature		Dynamic Use	-5°C
Maximum Temperature		Permanent Use	120°C
Short Term Temperature		Temporary Use	150°C
Short Term Temperature	IEC61386-23	Dynamic Use (5000 Cycles)	150°C

Chemical Resistance Chart

Key:	Green	Yellow	Red	Black
Suitable :	●	●	●	●
Limited Suitability :	●	●	●	●
Unsuitable :	●	●	●	●
Not Tested :	●	●	●	●

● Astm No.1	● Diesel oil	● Methyl Bromide	● Sulphur Dioxide (Gas)
● Astm No.2	● Diethylamine	● MEK	● Sulphuric Acid (10%)
● Astm No.3	● Ethanol	● Nitric Acid (10%)	● Sulphuric Acid (70%)
● Acetic Acid (10%)	● Ether	● Nitric Acid (70%)	● Toluene
● Acetone	● Ethylamine	● Oxalic Acid	● Transformer Oil
● Aluminium Chloride	● Ethylene Glycol	● Ozone (Gas)	● 1,1,1-Trichloroethane
● Aniline	● Ethyl Ethanoate	● Paraffin oil	● Trichloroethylene
● Benzaldehyde	● Freon 32	● Petrol	● Turpentine
● Benzene	● Hydrochloric Acid (10%)	● Phenol	● Vegetable Oil
● Carbon tetrachloride	● Hydrochloric Acid (36%)	● Sea Water	● Vinyl Acetate
● Chlorine water	● Hydrogen Peroxide (35%)	● Silver Nitrate	● Water
● Chloroform	● Hydrogen Peroxide (87%)	● Skydrol	● White Spirit
● Citric Acid	● Lactic Acid	● Sodium Chloride	● Zinc Chloride
● Copper Sulphate	● Lubricating oil	● Sodium Hydroxide (10%)	
● Cresol	● Methanol	● Sodium Hydroxide (60%)	

The information above is given as a guide only and is based on published technical data and experience. The chemical resistance of the above products is dependant on factors such as chemical exposure, concentration of the chemical and temperature. The above chemicals are valid for a temperature of 23°C. Use of the above table is at the users own discretion and risk. Those using it must satisfy themselves that their application presents no health and safety risks. The end user should assess compatibility with their application and contact Thomas & Betts for further information.

ADHERENCE TO THE CURRENT WIRING REGULATIONS BS7671 OR NEC WIRING REGULATIONS (FOR USA) IS STRONGLY ADVISED.

MINIMUM BEND RADIUS FOR FLEXING IS DEPENDANT UPON MINIMUM TEMPERATURE, BENDING FREQUENCY AND CHEMICAL ENVIRONMENT.

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Flammability

Test Type	Method / Standard	Requirement	Result	Unit
Oxygen Index	ISO 4589-2	% Oxygen to support combustion	23.0	%
Flammability	UL94	Vertical (V0,V2) or Horizontal (HB)	HB	
Flammability	IEC 61386-1	1Kw Burner @ 45° Vertical burn	Pass	Pass/Fail
Flammability	FMVSS3042	≤100mm/min	10	mm/min

Toxicity

Test Type	Method / Standard	Requirement	Result	Unit
Halogen Free		<0.5%	Pass	Pass/Fail
Phosphorous Free		<0.5%	Pass	Pass/Fail
Sulphur Free		<0.5%	Pass	Pass/Fail

Pre Test Conditions

Duration	Standard	Temperature	Relative Humidity
168 (Hours)	BS EN IEC61386	23 (°C)	50 (%)