

LOW VOLTAGE ALUMINIUM WAVEFORM CABLE



APPLICATION

Used by Distribution Network Operators (DNOs) such as UKPN, WPD, ENW, NPG, SSE etc. Aluminium Waveform cable is used as an energy supply cable most commonly found in power station distribution, panel boards and street lighting areas where mechanical protection is required. It consists of 3 or 4 aluminium conductors in sector shape with a copper conductor in a waveform lay.

CONSTRUCTION

Conductor: Class 1 solid aluminium conductor
Insulation: Cross-Linked Polyethylene (XLPE)
Separator: Binding tape
Bedding: Extruded Rubber Compound
Waveform Conductor: Plain Copper wire Screen
Sheath: Poly Vinyl Chloride (PVC) with UV additive
Sheath Colour: ■ Black

CABLE STANDARDS

BS7870 - 3.40
Insulation & Sheath to BS7870-1
BS EN 60228

CHARACTERISTICS

Voltage Rating: 600/1000 Volts
Minimum Bending Radius: As per cable manufacturer datasheet

CORE IDENTIFICATION

3 Core: ■ Brown ■ Black ■ Grey
4 Core: ■ Brown ■ Black ■ Grey ■ Blue

LV ALUMINIUM WAVEFORM CABLE – DIMENSIONS

CCC CODE	NUMBER OF CORES	CONDUCTOR SIZE (MM ²)	CONCENTRIC WAVEFORM CONDUCTOR NUMBER OF WIRES			OVERALL DIAMETER (MM)	WEIGHT (KG/KM)
			NUMBER OF WIRES	WIRE DIAMETER	LENGTH OF LAY		
WAVEFORM 3X95	3	95	22	1.58	300	36	1980
WAVEFORM 3X185	3	185	41	1.88	410	43	3500
WAVEFORM 3X300	3	300	41	1.88	410	53	4900
WAVEFORM 4X95	4	95	22	1.58	300	36	2300
WAVEFORM 4X185	4	185	41	1.88	410	48	4200
WAVEFORM 4X300	4	300	41	1.88	410	60	6100

LV ALUMINIUM WAVEFORM CABLE – ELECTRICAL CHARACTERISTICS

Nominal Cross Section mm ²	95	185	300
Maximum DC resistance of phase conductor @ 20°C (Ω/km)	0.320	0.164	0.100
Maximum DC resistance of neutral/earth conductor @ 20°C (Ω/km)	0.320	0.164	0.164
Maximum AC resistance of conductor @ 90°C (Ω/km)	0.411	0.211	0.130
Approximate Reactance @ 50Hz (Ω/km)	0.073	0.073	0.072
Approximate volt drop (mV/A/m)	0.720	0.390	0.260
Zero Phase Sequence Resistance (Ω/km)	0.241	0.124	0.084
Zero Phase Sequence Reactance (Ω/km)	0.086	0.077	0.074
Nominal internal diameter of ducts (mm)	70.0	90.0	110.0
Current Ratings			
Direct in ground (Amps)	237	346	459
In Ducts (Amps)	204	312	421
In Air (Amps)	227	355	493
Current rating conditions			
Ground temperature	15°C		
Ambient Air temperature	25°C		
Depth of burial (to top of cable)	450mm		
Thermal resistance of soil	1.2°C m/W		

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