UK Power Network Low Voltage Aluminium Waveform Cable (UKPN) - 1kV, XLPE, PVC - 95mm² to 300mm²



Description

Low voltage (600/1000V) waveform cables are primarily used by UK Distribution Network Operators (DNOs) for underground power distribution, specifically for connecting mains supplies to homes and businesses.

Their unique construction, featuring a "waveform" lay of neutral/earth conductors, allows for easier, safer jointing to live conductors, making them ideal for street lighting, service connections, and network extensions.

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.

PVC waveform cables are suitable for direct burial. For directly buried cables, the laying depth for sufficient protection of the cables shall be at least 0.5 m and 0.8 m under road.

Used by Distribution Network Operators (DNOs) such as UKPN, NGED, ENW, NPG, SSE, SPEN and NIE.

Key Features

Voltage Rating
600/1000 Volts

Minimum Bending Radius
95mm²: 8X Overall Diameter
185mm²: 9X Overall Diameter
300mm²:10 X Overall Diameter

Flame Retardancy
BS EN 60332-1-2

Temperature Limits
Temperature Range: -15°C to + 70°C

Core Colours

3 Core: Brown | Black | Grey

4 Core: Brown | Black | Grey | Blue

Standards

- BS7870 - 3-40
- BS EN/IEC 60332-1-2
- BS7870-1

Construction

- **Conductor**: Class 1 Solid Aluminium
- **Insulation**: Cross Linked polyethylene (XLPE)
- **Binder Tape**: Non-hygroscopic binder tape
- **Bedding**: Extruded Rubber Compound
- **Waveform Conductor**: Plain Copper wire Screen
- **Separator**: Binding Tape
- **Outer Sheath**: Poly Vinyl Chloride (PVC) with UV additive
- **Sheath Colour**: Black

Training & Testing Lab

AN ISO/IEC 17025 ACCREDITED FACILITY

Cleveland Cable Test & Training Lab
Our state-of-the-art cable testing facility ensures that every cable meets the highest standards of quality and compliance through continuous, rigorous testing.

ISO/IEC 17025 Accredited Testing Laboratory
UKAS TESTING 31196

CPR
Cleveland Cable Company is committed to compliance with the Construction Products Regulation (CPR). Where applicable, all cables manufactured after 1st July 2017 have been assessed in accordance with CPR requirements, with full supporting documentation available.

Our Sustainability Commitment

We are committed to the journey to Net Zero as a business partner, an employer and a community member.

By thinking and acting sustainably, we deliver excellent customer service while reducing carbon emissions in collaboration with our customers and suppliers.

CLEVELAND CABLE COMPANY

ecovadis
Cleveland Cable Company has been independently assessed by EcoVadis, a globally recognised provider of business sustainability ratings. Our score places us among the top 35% of companies evaluated worldwide, reflecting our strong commitment to environmental, social, and ethical performance

ecovadis

UK Power Network Low Voltage Aluminium Waveform Cable (UKPN) - 1kV, XLPE, PVC - 95mm² to 300mm² - Dimensions

Reference	Conductor Size (mm2)	No Of Cores	Overall Diameter(mm)	Weight(Kg/Km)
WAVE3X95UKPN	95	3	36	1980
WAVE3X185UKPN	185	3	43	3500
WAVE3X300UKPN	300	3	53	4900

LV ALUMINIUM WAVEFORM - ELECTRICAL CHARACTERISTICS

Nominal Cross Section mm^2	95	185	300
Maximum DC resistance of phase conductor @ 20°c (Ω/km)	0.32	0.164	0.1
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)	0.410	0.330	0.250
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)	244	353	461
In Ducts (Amps)	227	328	429
In Air (Amps)	232	364	508
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		

THE INFORMATION CONTAINED WITHIN THIS DATASHEET IS FOR GUIDANCE ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE OR LIABILITY. WE BELIEVE THE INFORMATION IS CORRECT AT THE TIME OF PUBLICATION. PLEASE NOTE WHEN SELECTING CABLE ACCESSORIES THAT ACTUAL CABLE DIMENSIONS MAY VARY DUE TO MANUFACTURING TOLERANCES.

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