

XLPE Insulated Wire Armoured and PVC Sheathed Power Cables (1900/3300V)

CABLE DESCRIPTION

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To provide distribution of power in coal mines, both on the surface and underground.

BCS295 Part 2: 1900/3300V Cables

Plain Annealed Copper (PAC) Conductors, XLPE Insulated, Laid Up, PVC Bedded, Single (SWA) or Double (DWA) Galvanised Steel Wire Armoured and PVC Sheathed. Generally to BCS 295 Part 2.

These 1900/3300 V Part 2 cables can be supplied with copper tape screens and there is also the option of a steel tape binder over the single wire armour. The SWA and SWA with steel binder taped cables also contain a PETP tape and a bitumen compounded hessian tape over the bedding sheath. Bitumen compound is also applied under, between and over the armour wires.

In the case of the Double Wire Armoured designs a PETP tape and a bitumen compounded hessian tape are applied over the bedding sheath and a bitumen compounded hessian tape is applied between the two layers of armour. Bitumen compound is also applied under, between and over the armour wires.



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Description Details

Item	Description	Details
1	Phase conductor	PAC Conductors
2	Phase Insulation	Extruded Coloured XLPE
3	Phase Identification	Red, Yellow, Blue
4	Lay Up	Cores Laid Up
5	Bedding Sheath	Extruded PVC (Black)
6	Additional Bedding	PETP Tape and Bitumen Compounded Hessian Tape
7	Armour (First Layer)	Galvanised Steel Wires
8	Separator	Bitumen Compounded Hessian Tape
9	Armour (Second Layer)	Galvanised Steel Wires
10	Overall Sheath	Extruded PVC (Black)

3 CORE UNSCREENED WITH SWA AND STEEL TAPE

Phase Conductor

Size of conductors mm ²
50
70
95
120
150
185

Cable Details

Size of Phase conductor mm ²	Nominal diameter over inner sheath mm	Approximate overall diameter mm	Minimum bending radius mm	Maximum pulling tension Kgf	Approximate cable weight Kg/Km
50	28.1	38.3	325	900	3450
70	31.0	41.4	350	1260	4200
95	34.2	44.8	375	1710	5250
120	37.2	48.6	400	2000	6800
150	40.1	52.1	425	2000	7900
185	43.2	55.2	450	2000	9100

Electrical Details

Size of Phase conductor mm ²	Continuous current rating at 30°C Ambient -in air Amps	Maximum d.c. resistance at 20°C		Maximum a.c. resistance at 90°C Power conductor Ohms/Km	Nominal reactance at 50 Hz Ohms/Km	Nominal reactance at 60 Hz Ohms/Km
		Power Conductor Ohms/Km	Armour plus steel tape Ohms/Km			
50	204	0.387	0.645	0.494	0.090	0.108
70	257	0.268	0.447	0.342	0.086	0.103
95	315	0.193	0.322	0.247	0.082	0.098
120	365	0.153	0.255	0.196	0.080	0.096
150	415	0.124	0.207	0.159	0.079	0.095
185	476	0.0991	0.165	0.128	0.077	0.092

Phase Conductor

Size of conductors mm ²
50
70
95
120
150
185

Cable Details

Size of Phase conductor mm ²	Nominal diameter over inner sheath mm	Approximate overall diameter mm	Minimum bending radius mm	Maximum pulling tension Kgf	Approximate cable weight Kg/Km
50	28.1	43.4	350	900	4800
70	31.0	46.5	375	1260	5900
95	34.2	49.9	400	1710	6900
120	37.2	54.9	450	2000	9000
150	40.1	58.4	475	2000	10300
185	44.5	61.5	500	2000	11550

Electrical Details

Size of Phase conductor mm ²	Continuous current rating at 30°C Ambient Amps	Maximum d.c. resistance at 20°C		Maximum a.c. resistance at 90°C Power conductor Ohms/Km	Nominal reactance at 50 Hz Ohms/Km	Nominal reactance at 60 Hz Ohms/Km
		Power conductor Ohms/Km	Armour Ohms/Km			
50	204	0.387	0.516	0.494	0.090	0.108
70	257	0.268	0.357	0.342	0.086	0.103
95	315	0.193	0.257	0.247	0.082	0.098
120	365	0.153	0.204	0.196	0.082	0.098
150	415	0.124	0.165	0.159	0.079	0.095
185	476	0.0991	0.132	0.128	0.077	0.092

Notes:

1. The designs shown in the above tables contain shaped stranded Class 2 conductors.
2. The above designs represent the more popular sizes/designs. Information on the availability of other sizes/designs can be provided upon request.



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