12.7/22 kV XLPE Three-Core Copper Screened Armoured Cable

CABLE DESCRIPTION

Three-core copper wire, screened and armoured, manufactured to AS/NZS 1972.

APPLICATION
Primary supply cable for mines and industrial networks.

APPROVALS
AS/NZS 1972

BEHAVIOUR IN FLAME & FIRE
Flame retardant

FLEXIBILITY
Rigid

MAX OPERATING TEMPERATURE
+90°C

MIN OPERATING TEMPERATURE
-25°C

MIN BENDING RADIUS (INSTALLED)
12D

CHEMICAL EXPOSURE
Very good / Frequent

MECHANICAL IMPACT
Very heavy

WATER EXPOSURE
Water splashes

SOLAR RADIATION & WEATHER
Very good / Frequent

INSTALLATION CONDITIONS
Free air / Duct / Ground / Trench

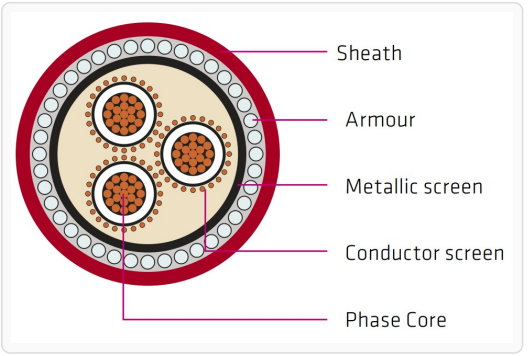


Fig. 1 – Cable cross-section construction

CABLE CONSTRUCTION

1. **Conductor:** Plain circular compacted copper.
2. **Conductor screen:** Extruded semiconducting compound, bonded to the insulation and applied in the same operation.
3. **Insulation:** Cross-Linked Polyethylene (XLPE) – standard grade.
4. **Insulation screen:** Extruded semiconducting compound.
5. **Metallic screen:** Plain annealed copper wire screen; combined screen area provides not less than 50% conductance of one associated power conductor.
6. **Armour:** Galvanised steel wires.
7. **Outer sheath:** Red 5V-90 polyvinyl chloride (PVC).

Note: This cable is not specifically designed for use as a self-supporting cable, as a submarine cable, or where exposure to excessive heat and/or corrosive products is involved. For guidance on suitability for a particular application, please contact our technical sales team.

AnHui Feichun Special Cable Co., Ltd

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DIMENSIONAL & MECHANICAL CHARACTERISTICS

Parameter	35XFED3C22	50XFED3C22	70XFED3C22	95XFED3C22	120XFED3C22	150XFED3C22	185XFED3C22	240XFED3C22
Nominal conductor area (mm²)	35	50	70	95	120	150	185	240
Nominal conductor diameter (mm)	7.0	8.2	9.8	11.5	12.9	14.3	16.0	18.2
Nominal diameter under armour (mm)	52.43	55.07	58.82	62.48	65.7	68.92	75.49	80.41
Nominal wire armour diameter (mm)	2.5	2.5	2.5	2.5	3.15	3.15	3.15	3.15
Nominal overall diameter (mm)	63.6	66.5	70.4	74.5	79.4	83.0	89.8	95.1
Nominal mass (kg/100m)	603	660	776	902	1110	1245	1449	1699
Pulling tension – conductor(s) (kN)	7.4	10.5	14.7	20.0	25.0	25.0	25.0	25.0
Pulling tension – stocking (kN)	7.4	10.5	14.7	19.4	22.1	24.1	25.0	25.0
Pulling tension – armour wires (kN)	16.3	18.31	20.0	22.5	25.0	25.0	25.0	25.0
Min bending radius – during install (mm)	1145	1195	1265	1340	1430	1490	1615	1710
Min bending radius – set in position (mm)	760	795	845	890	950	995	1075	1140

ELECTRICAL CHARACTERISTICS & CURRENT RATINGS

Parameter	35XFED3C22	50XFED3C22	70XFED3C22	95XFED3C22	120XFED3C22	150XFED3C22	185XFED3C22	240XFED3C22
Rdc @ ref. temp. – phase conductor (Ω/km)	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754
Rac @ oper. temp. – phase conductor (Ω/km)	0.668	0.494	0.342	0.247	0.196	0.159	0.128	0.098
Inductance (mH/km)	0.438	0.418	0.385	0.367	0.351	0.34	0.336	0.323
Inductance reactance (Ω/km)	0.137	0.131	0.121	0.115	0.11	0.107	0.106	0.102
Zero-sequence impedance Z0 – R0 @ ref temp (Ω/km)	2.87+j0.092	2.57+j0.085	1.76+j0.075	1.28+j0.069	1.02+j0.065	0.82+j0.061	0.66+j0.059	0.53+j0.055
Capacitance – phase to earth (μF/km)	0.164	0.179	0.2	0.223	0.241	0.259	0.282	0.311
Capacitance charging current – per phase (A/km)	0.65	0.71	0.8	0.89	0.96	1.03	1.12	1.24
Short-circuit rating ISC – phase cond., 1 sec (kA)	5.0	7.2	10.0	13.6	17.2	21.5	26.5	34
Current rating – in ground, direct buried (A)	174	204	247	293	330	365	410	465
Current rating – in ground, in duct (A)	145	170	210	252	285	314	353	403
Current rating – in free air, spaced from wall (A)	182	216	265	319	364	407	465	535
Current rating – in free air, clipped to wall (A)	171	202	248	298	339	380	433	497
Preferred duct nominal size (mm)	100	100	100	125	125	125	150	150

Note: All sizes and values without tolerances are reference values. For rating derating factors under non-standard installation conditions, please consult our technical department.

PRODUCT CODE SUMMARY – 8 CONFIGURATIONS

Product Code	Conductor Size	Core Count	Conductor Material
35XFED3C22	35 mm²	3-core	Copper
50XFED3C22	50 mm²	3-core	Copper
70XFED3C22	70 mm²	3-core	Copper
95XFED3C22	95 mm²	3-core	Copper
120XFED3C22	120 mm²	3-core	Copper
150XFED3C22	150 mm²	3-core	Copper
185XFED3C22	185 mm²	3-core	Copper
240XFED3C22	240 mm²	3-core	Copper

TYPICAL APPLICATIONS

- Primary power supply for open-cut and underground mines
- Industrial and heavy-plant power networks
- Substation and switchroom feeder connections
- Direct burial, duct, trench and free-air installation
- Fixed installation in mineral processing plants
- Quarry and construction site power distribution

ORDERING INFORMATION

Please specify: Product Code • Conductor Size (mm²) • Cable Length (m) • Reel/Drum requirements • Quantity
Custom conductor sizes, sheath colours and voltage classes are available on request – contact our engineering team for a tailored quotation.

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