

LT XLPE CABLES

The compound used in LT-XLPE CABLES has set new standard of excellence, in terms of power rating, emergency overload capacity, insulation resistance and moisture resistance. These cables consist of carbon and hydrogen compounds, which essentially contain low density polyethylene molecules in the form of long flexible chains. On cross linking, slippage between flexible chains can be prevented. Cross linked polyethylene (XLPE) is a thermosetting compound. It softens at the crytaline melting point of polyethylene (85 deg C to 115 deg C) and assumes an elastic rubber like consistency, a property which it retains during further rise of temperature until it becomes carbonised without melting at 250 deg C to 300 deg C . All this strengthens LT-XLPE cables against stress cracking and gives them a greater resistance to fight ageing in hot air.

GENERAL CONSTRUCTION OF XLPE CABLES

CONDUCTOR

Conductors are made from electrolytic grade aluminium / copper conforming to IS: 8130, and are compact circular or compact shaped.

INSULATION

Technocab XLPE cables are specially made of high-grade cross-linked polyethylene for insulation by extrusion process.

CORE IDENTIFICATION

The cores are identified by different colours :

- Single core Red, Black or Natural
- Two core Red and Black
- Three core Red , yellow, Blue
- Four core Red, Yellow, Blue Black
- Three and half core Red, Yellow, Blue and reduced neutral core in Black

LAYING UP

In multicore cables, cores are laid up as per the above colour scheme, interstices are filled wherever necessary to make the laid up cores circular.

INNER SHEATH

Laid up cores are bedded over with thermoplastic material for protection against mechanical and electrical damage.

ARMOURING

Armouring is provided over the inner sheath to guard against mechanical damage. Armouring is generally of galvansed steel wires or strips, (In single core cables used in AC system armouring is by non-magnetic hard aluminium wires/ strips). Round steel wires are used where the diameter over the inner sheath does not exceed 13 mm; above 13 mm, flat steel strip armour is used. Round wire of different sizes can be provided against specific request.

OUTER SHEATH

Specially formulated heat resistant black PVC compound conforming to the requirement of type ST2 of IS: 5831-1984, extruded to form the outer sheath. Technocab XLPE also offers a specially formulated Flame Retardant Low Smoke compound (FRLS) for outer sheath used in fire hazardous environment.

TESTS

In addition to all tests as required by IS : 7098/Part-I, XLPE cables are subjected to a number of in-house tests at every stage of production. Incoming raw material is also tested thoroughly to ensure consistency of quality.

PRODUCT CODE

As per IS: 7098 : Part I , the codes are :-

Constituent	Code
⇒ Aluminium conductor	A
⇒ XLPE insulation	2X
⇒ Steel round wire armour	W
⇒ Steel strip armour	F
⇒ Steel Double round wire armour	WW
⇒ Steel Double strip armour	FF
⇒ Non –magnetic (A!) round wire armour	Wa
⇒ Non-magnetic (A1) Strip armour	Fa

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PRODUCT RANGE LT-XLPE CABLES

CABLE TYPE	MFG. RANGE	RELEVANT SPECIFICATION
Power Cables with Alum. Conductor 1.1KV	Single Core upto 1000mm ² Multicore upto 630mm ²	IS 7098` /Part-I/1988
Control cables with copper conductor	upto 61 core	IS 7098/ Part-I/1988

KNOW THE SUPERIOR PRODUCT

The LT-XLPE Cables

- LT-XLPE Cables have longer life as compared to conventional PVC Cables.
- LT-XLPE Cables have a higher conductor temperature rating i.e. 90 deg C as against 70 deg C of PVC and hence higher current rating.
- LT-XLPE Cables have higher emergency overload capacity than PVC Cables (upto 60%)
- Maximum temperature limit under short circuit condition for LT_XLPE Cables is 250 deg C as against 160 deg C for PVC Cables. Hence XLPE Cables have higher short circuit rating.
- The moisture resistance of LT-XLPE Cables is nearly 100 times that of PVC.
- Insulation resistance of LT-XLPE Cables is very high compared to PVC (as high as 1000 times).
- LT-XLPE Cables have high corrosion resistance in polluted atmosphere as compared to PVC Cables.
- LT-XLPE Cables have better properties of resistance to chemical and corrosive gases.
- LT-XLPE Cables have low installation cost of light weight, dimensions and are far more flexible.
- LT-XLPE Cables have better properties to withstand vibrations, hot impacts.
- Jointing of LT-XLPE Cables is easier and quicker.
- LT-XLPE Cables are ideal for transmission and distribution of power.

<u>COMPARISON OF OTHER PROPERTIES</u>		
Max. conductor temperature for continuous operation [Deg C]	PVC	XLPE
		70
Max. Conductor temperature during short circuit [Deg C]	160	250
Max. conductor temperature for emergency overload [Deg C]	130 For total duration of 4 hours in life times	130 For total duration of 100 hours in per annum.