POWER AND CONTROL CABLES

Manufacturing of cables:

Cable with Aluminium, Copper conductor and polymaric insulation are manufactured at Swedeshi Cable. Essentially cables comprise of conductors, insulation, inner sheath, armour and outer sheath. The brief description of the process is mentioned as under.

Conductor

SWADESHI cables are available with both Aluminium and Copper conductors. They are manufactured with Solid/Stranded Circular /Shaped/Compacted Aluminium/Copper Conductor. Stranding makes Cables flexible and easy to handle while shaping makes them compact.

All conductors for SWADESHI cables are manufactured strictly in accordance with National and International specifications.

National specification :- IS 8130

International specification :- IEC 60228/BS EN 60228/BS 6360

Dielectric Insulation:

Insulation for SWADESHI Cables is strictly as per National and International specifications. Cables are designed and manufactured with polymer dielectrics to bear thermal and thermo mechanical stresses at continuous normal and short circuit temperature conditions.

SWADESHI Cables are available with both thermoplastic and thermosetting insulations.

***PVC Cables** Thermoplastic dielectric

***XLPE Cables** Thermosetting dielectric

Swadeshi Cables are manufactured with national and international standards as given below:-

National specifications : IS 5831/IS:1554-1/IS: 7098-1/IS 17505-1

International specification :- IEC:60502-1/BS 5467/BS:6346/BS:6746

LAYING UP:

Cores are tested on line during production for both, physical and electrical characteristics. Control is observed within strict tolerance limits for dimensions in case pf PVC/XLPE insulation. For multicore cables cores are laid up on our latest laying machine equipped with sector correction equipment. In case of XLPE insulated cores the same are cured so as to impart the requisite characteristics both electrical and mechanical and then are laid up.

INNER SHEATH:

Laid-up cables are provided with an inner sheath with high-quality PVC which acts as bedding for steel/strip armoring. Wherever required filler cords are provided to maintain the circularity to laid up cables, In-polymers used for inner sheath are softer than insulation or outer sheath & are compatible with temperature ratings of cables & do not have a deleterious effects on any other component of cable.

The inner sheath is applied either with extrusion or by wrapping. In SWADESHI CABLES, though the inner sheath is closely applied on the laid-up cores, the same can be stripped with ease without damaging the insulation. The inner sheath dimensions are maintained strictly by the laid down specification.

SPECIFICATION:

for PVC Cable - IS: 1554 (Part-1) and For XLPE Cables IS: 7098 (Part-1)

ARMOURING

Mechanical protection to the cables is provided with amouring. In SWADESHI CABLES, single-core cables are armoured with Aluminium or Aluminium alloy wire/strips, thus avoiding magnetic hysteresis losses on A.C. systems. Multicore cables are provided galvanized steel wire/strip armouring.

SWADESHI Cables armour wire/strips are of low resistivity material and meet the requirement of IS:3975

OUTER SHEATH

All SWADESHI Cables are provided with PVC/Polymer outer sheath.

IS: 1554 IS: 7098

POWER AND CONTROL CABLES

General purpose sheathing compound: ST 1

Heat resistant compound for sheath: ST 2

Flame Retardant sheath

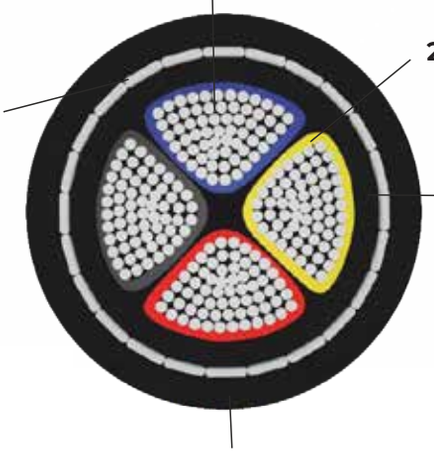
Flame retardant low smoke sheath

ADVANTAGES OF PVC CABLES

1. A Non-hygroscopic insulation almost unaffected by moisture.
2. Non-migration of compound permitting vertical installation.
3. Complete protection against most forms of electrolytic and chemical corrosion.
4. A tough and resilient sheath with excellent fire-resisting qualities.
5. Good aging characteristics

ADVANTAGES OF XLPE CABLES

1. Higher current rating.
2. Higher short circuit rating.
3. Longer service life.
4. For a short circuit time it can withstand a maximum of 260 oC and is favorable to endure short circuit stresses.
5. It is less sensitive to the setting of network protection.
6. Because of the thermosetting process taking place due to the effect of cross-linking, the crack resistance in increased.
7. Due to the chemical cross-linking internal stresses are reduces. Consequently, the material is less sensitive during the Manufacturing process to setting of the cooling gradient.
8. The thermal resistivity of cross-linked material is favourably low, compared to the thermoplastic material.
9. The low dielectric loss is significant advantage.
10. The excellent mechanical features of the insulation improve the protection against external effects.
11. The resistance of the XLPE to acids, alkalies is outstanding and is often compensating the adverse environmental influences.



IS: 1554 IS: 7098