



# Caledonian

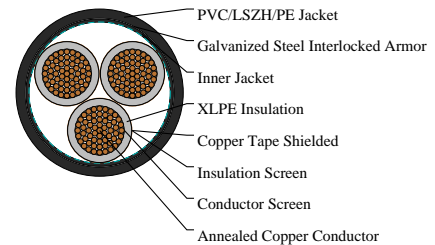
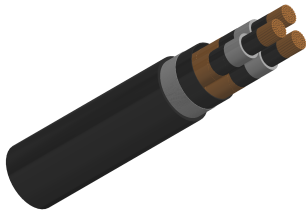
Medium Voltage Cables (ICEA Standard)

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## XLPE INSULATED CABLES MV-90 3C500 MCM

Armoured Tape Shielded Cables  
galvanized steel interlocked armor  
5kV 133% Three Conductor GSIA



## PRODUCT DESCRIPTION

The three core cables are designed for distribution of electrical power with nominal voltage  $U_0/U$  ranging from 5KV and frequency 50Hz. Three core cables are made of stranded copper or aluminium conductor, triple extruding insulating system consisting of thermosetting semi-conducting conductor shield, XLPE/TR-XLPE/EPR insulation and thermosetting semiconducting insulation shield. There are a number of designs of metallic shields including the copper tape helically applied with overlap, copper wire shield, concentric neutral, longitudinally applied corrugated copper tape and metal sheath available, which are surrounded with fillers and grounding conductor, overall binder tape and overall PVC, LSZH or PE jacket.

## STANDARDS

National Fire Protection Standard (NEPA 70): National Electric Code

AEIC CS8

ICEA S-93-639 (NEMA WC74), Standard for shielded power cable 5KV-46KV

ICEA S-93-639 (NEMA WC74), Standard for shielded power cable 5KV-46KV ICEA S-97-682

IEEE 1202 – Flame Testing of cables for use in cable tray

ICEA T29-520 Vertical

UL 1072 for medium voltage cables

## VOLTAGE RATING

5KV

## CABLE CONSTRUCTION

**Conductors:** The conductor consists soft drawn annealed copper meeting the requirement of ASTM B3. Unless otherwise specified, the conductor shall be supplied class B as per ASTM B496.

**Conductor Shield:** Conductor shield consists of extruded thermosetting semi conducting compound which is free stripping from conductor and bonded to the insulation.

**Insulation:** The insulation is either XLPE or EPR extruded concentrically over the conductor. High dielectric strength tree retardant XLPE (TR-XLPE) can be offered as option to provide an optimum balance of mechanical and



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electrical properties, insuring resistance to treeing. 133% insulation level is available upon request. The insulation meets or exceeds electrical and physical requirements of ICEA S-96-659/NEMA WC71, and UL 1072.

**Insulation Shield:** Insulation shield consists of extruded thermosetting semi-conducting compound with controlled adhesion to the insulation, providing required balance between electrical integrity and ease of stripping.

**Metallic Shielding (Copper Tape):** For Copper tape shield, helically bare 5 mil copper tape shield over the insulation shield with minimum overlap of 20%. There are grounding conductor made of bare stranded copper conductor per each interstices, per UL, ICEA and AST.

**Assembly:** Cables are cabled together with a left hand lay and suitable filler to make the cable round. A binder tape is applied to maintain core geometry and mechanical stability. Fillers may be PP yarn, ramie yarn, plastics or other filler material.

**Armour:** For armouring options, inner PVC jacket is applied over the binder type. Corrugated aluminium interlocking armour (AIA) is applied over the inner jacket.

**Jacket:** A protective sunlight and ozone resistant jacket of PVC is extruded for a tight fit over the welded armour or the core assembly.

### DIMENSION AND PARAMETERS

| Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Approx. Overall Diameter | Approx. Overall Diameter | Ampacity 90°C In Duct | Ampacity 90°C In Air | Cable Weight | Cable Weight |
|-----------|------------------------------|--------------------------|--------------------------|--------------------------|-----------------------|----------------------|--------------|--------------|
|           | mm                           | mm                       | in                       | mm                       | amps                  | amps                 | Lbs./Kft     | kg/km        |
| 500 MCM   | 2.92                         | 3.56                     | 2.93                     | 74.4                     | 430                   | 485                  | 7837         | 11660        |