

WATER SUPPLIES DEPARTMENT
STANDARD SPECIFICATION E-30-12
CABLE CLEATS, LUGS AND GLANDS

1. **CABLE CLEATS**

Cable cleats shall be used for fixing of cables onto cable trays or U-channels. Cable cleats shall be manufactured from Grade 316 stainless steel or pressure die-cast aluminum alloy of type LM 6 to BS 1490. The supplied cable cleats shall comply with the requirements of BS EN 50368, BS EN 61914 or equivalent.

Fixing accessories including adaptor plate, spring-loaded nut and stud to enable firm mounting of cable cleats and saddles onto the stainless steel U-channel or cable trays shall be supplied. All fixing accessories shall be made of Grade 316 stainless steel.

Claw cleats shall be used for multi-core power cables of overall diameter 25 to 50 mm. The cleat shall be manufactured in two identical halves with locating pins to ensure correct alignment. M10 stud shall be used for fixing.

2-bolt cleats shall be used for multi-core power cables of overall diameter above 50 mm. The cleat shall be manufactured in two identical halves using two M10 or M12 studs for fixing.

Trefoil cable cleats shall be used for 3-phase single-core power cables installed in group of three. Two M10 studs shall be used for fixing.

PVC covered aluminum strip saddles shall be used for securing multi-core control cables or small multi-core power cables onto cable trays. The saddle shall be shaped to the form of the cables to be secured.

2. **CABLE LUGS**

Compression type cable lugs shall be used for termination of power cables. The lug shall be manufactured from high conductivity seamless copper tube and electro-tin plated. The lugs shall be of single bolt palm type for cable up to 400 mm² and 4 bolt palm type for cables above 500 mm². Conductor size shall be clearly identified on each lug. The barrel portion of the cable lug shall be locally annealed for crimping.

Compression type cable terminals shall be used for termination of cable of core sizes of 4 mm² and below. The terminals shall be of pin or ring type, manufactured from copper strip, electro-tin plated to BS 1872 and PVC pre-insulated.

3. CABLE GLANDS

Cable glands shall be used for termination of XLPE or PVC-insulated cables. It shall be mechanical type complying with BS 6121, BS EN 50262 or IEC 62444. The body and nut shall have accurately machined threads for tight fitting and easy assembling. The face of the gland, which is to be clamped flat against the apparatus casing, shall be machined normal to the axis of the gland. The cable gland shall be marked with the standard, type and size.

Each cable gland shall be supplied with a brass backnut for plain hole fixing, a slip-on copper earth tag with brass bolt and nut for earth connection and a polychloroprene (PCP) outer shroud. The neck of the shroud shall provide effective seal on both gland and cable oversheath.

Copper or brass earth tag of flat circular ring type and cross section to BS 6121 shall be supplied for earthing connection.

3.1 Cable Gland for Unarmoured Cable

Type A2 to BS 6121 or complying with the requirements of IEC 62444 cable gland shall be provided for unarmoured cables with an elastomeric or plastics outer sheath. The gland shall be made of brass and fitted with an IP66 seal between the outer sheath and gland.

Cable glands used in chemical areas and chlorine gas environment provided for unarmoured cables shall be manufactured from nickel plated brass, complying with the requirements of BS 6121 or IEC 62444 and encapsulated with a protective guard/protective shield which is designed for use in highly corrosive environment. The gland shall be fitted with IP66 seal or seals between the outer sheath and the gland.

3.2 Cable Gland for Armoured Multi-core Power Cable

Type E1W to BS 6121 cable gland shall be provided for steel wire armoured multi-core power cables with an elastomeric or plastic outer sheath. The gland shall be made of brass and fitted with an IP66 seal between the outer sheath and gland, and between inner sheath and threaded fixing component. A brass gland nut incorporating a cone-grip armour clamp shall be supplied. The clamp shall provide a secure grip in form of a knurled surface.

Cable glands used in chemical areas and chlorine gas environment provided for steel wire armoured multi-core power cables shall be manufactured from nickel plated brass, complying with the requirements of BS 6121 or IEC 62444 and encapsulated with a protective guard/protective shield which is designed for use in highly corrosive environment. The gland shall be fitted with IP66 seal between the outer sheath and gland and between the inner sheath and threaded fixing component.

3.3 Cable Gland for Armoured Single-core Cable

The supplied cable glands shall comply with the requirements of BS EN 6121 or IEC 62444. Cable glands for aluminium armoured single-core cables with electrometric or plastic outer sheath shall be made of aluminium and fitted with an IP66 seal between the outer sheath and gland, and between inner sheath and threaded fixing component. The cable gland shall be of insulated type and shall be fitted with a removable earth strip.

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