

CABLE LUGS & FERRULES

Overview

Cable lugs and ferrules are connecting devices used primarily for terminating and joining cable and wire conductors in electrical installations and equipment.

In general, lugs and ferrules are fixed to the cables and wires by inserting the conductor/s into the "barrel" (tube) of the device and then "crimping" (squeezing) the "barrel" onto the conductor/s to form a secure mechanical and electrical joint.

The devices are manufactured in a number of different designs and made from high conductivity copper (tin plated) or aluminium to suit various cable and wire types and specific installation requirements.

Careful consideration must be given to selecting the right product for an application and the following information will assist in making the correct choice.



Options

The main options available are:

- Standard duty copper lugs and ferrules for use with copper cables and wires in general industrial, commercial and domestic applications.
- Heavy duty copper lugs and ferrules for use with copper cables and wires in specialised applications such as medium and high voltage electrical reticulation systems.
- Aluminium lugs and ferrules for use with aluminium cables in electrical reticulation systems.
- Copper and Aluminium shear lugs for applications where crimping equipment cannot be used.
- Bi-metal lugs for mating copper and aluminium conductors to prevent dissimilar metal corrosion.

Applications

The main areas of application include:

- The termination of cables and wires in electrical reticulation systems and equipment.
- The joining of cables and wires in electrical reticulation systems and equipment.

Selection criteria

When choosing a cable lug or ferrule for an application the following criteria must be considered:

- Metal type of the conductor i.e. copper or aluminium.

- Cross-sectional area of the conductor/s to be terminated or joined.
- Form of the conductor i.e. solid, stranded, compacted or multi-stranded (trailing/welding cable).
- The size of the securing bolt or stud.
- Product range available, quality and performance approvals. Always select a supplier with the following approvals:
 - » SABS NETFA approval in accordance with test specification SABS IEC 61238-1:1993 "Compression & mechanical connectors for power cables with copper or aluminium conductors".
 - » SABS Electrical Regulatory Body (RCC) approval.

Features and benefits

Copper cable lugs and ferrules are:

- Manufactured from high conductivity copper which is tin plated to prevent corrosion.
- Suitable for use in a variety of applications, with various copper cable and wire types, provided the correct size is selected and the relevant "crimping" methods are used. (See selector chart).



- Available for conductors from 1.5mm² to 630mm² with a wide range of mounting hole sizes per lug size.
- Easy to use in conjunction with mechanical or hydraulic crimping equipment.

DO's and DONT'S

- Take care to assess the application and installation requirements prior to specifying a cable lug or ferrule.
- Ensure that the lug size selected accurately matches the cross-sectional area of the cable or wire's conductor/s.
- Use a purpose designed crimping tool to ensure the integrity of the joint between the cable lug or ferrule and the conductor/s.
- Use the correct crimping method for the specific wire type i.e. hexagonal for solid, stranded and compacted conductors and indent for multi-stranded cables & wires.
- Never use pliers, side-cutters or a hammer to substitute for a crimping tool. This will almost certainly lead to a "hot connection" (high resistance joint), which in turn could result in a fire.
- Never cut conductor strands off a cable or wire in order to fit a smaller lug or ferrule.
- Never use lugs and ferrules which are not certified by the SABS's Electrical Regulatory Board.