

The earth pin of the plug is longer than the live and neutral pins so that when the luminaire is offered up to the track, the earth connection is made before the live and neutral, and when removing the luminaire, the live and neutral connections are broken before the earth.

Through wiring is a system for connecting a series of luminaires in parallel across a supply cable. This reduces the amount of cabling required and speeds up installation. The supply cable should have a cross section of  $2.5 \text{ mm}^2$  as a minimum, but the wiring from the connection block in each luminaire may have a smaller cross section, typically  $0.5$  or  $0.75 \text{ mm}^2$ .

## Earthing

Metal parts of Class 1 luminaires (see Section 4.3.2, Table 4.11) that are accessible when the luminaire is installed or open for maintenance or that may become live if the insulation fails should be permanently connected to an earth terminal. The wire used for earthing should be at least  $2.5 \text{ mm}^2$  in cross section.

### 4.1.2 Mechanical

The mechanical integrity of a luminaire depends on the materials used and the quality of its construction.

## Materials

### *Steel*

Many interior lighting luminaires are made from ready-painted sheet steel, white being the usual paint colour. Where corrosion is a problem, galvanised sheet steel is used. Where a very durable paint finish is required, enamelling is used.

### *Stainless steel*

Stainless steel is rarely used for luminaire bodies but it is widely used for many small, unpainted luminaire components that have to remain free from corrosion.

### *Aluminium sheet*

Aluminium sheet is mainly used for reflectors in luminaires. It can have good reflection properties and the physical strength to form stable reflectors of the desired form.

### *Cast aluminium*

Cast aluminium is widely used for floodlight housings. Such housings are light in weight and can be used in damp or corrosive atmospheres without any further treatment provided that the correct grade of aluminium has been used.

### *Plastics*

There are many different forms of plastic used in luminaires, either for complete housings or components. These plastics differ in their transparency, strength, toughness, sensitivity to UV radiation and heat resistance.

### *Glass*

Three types of glass are used in luminaires; soda lime glass, borosilicate glass, and very high resistance glass. Soda lime glass is used where there are no special heat resistance demands. Where high heat resistance, chemical stability and resistance to heat shock are required, borosilicate glass is used. High resistance glass has the advantage that it can deliver high heat resistance, high thermal shock resistance and great physical strength even in thin sheets.