MICC Fireproof Wiring

Terminations
Product Range:

- The complete range of Mineral Insulated (MI) products
  - Fireproof wiring cables > Protect against high temperature
  - Heating cables > Create high temperature
  - Temperature measurement cables > Measure high temperature
  - High temperature extreme environment transducer cables

- MICC wiring cable products are widely used in: high-rise buildings, hotels, hospitals, tunnels, petro-chemical plants, metallurgy, subways, airports, ships, nuclear power plants and other areas.
What is Mineral Insulated cable?

**MI Wiring Cable**

- **Conductor**
  - Copper – Melting point 1083°C (copper sheath cable)
  - Nickel clad copper – Ni melting point 1427°C (Alloy 825 sheath)

- **Magnesium oxide insulating layer**
  - High temperature ceramic +2800°C
  - Excellent electrical insulation qualities

- **Sheath options**
  - Copper - 1083°C
  - Alloy 825 – tested to 1095°C for 30mins (Alloy 825 melting point 1399°C)
What is Mineral Insulated cable?

Key Facts of MI Fire-Survival Wiring cable

- Bare MI cable is an inorganic cable construction: completely eliminating the production of smoke and toxic gas.
- MICC fireproof cable consists of a copper conductor, magnesium oxide mineral insulating materials and a seamless copper sheath.
- It can survive for over 3 hours in the temperatures up to 950°C.
- It can perform safely for long periods (>2 years) at temperatures up to 250°C.
- The cable itself can run at 105°C (in no-touch environment).
- The cable can carry high current short circuit loads without damage for long periods of time.
- Excellent performance of anti-nuclear radiation and shielding.
- Only Mineral Insulated Cable will pass the UL 2196 standard.
- If used correctly it will last a life time!
Why Mineral Insulated Fire Proof Cable?

• This short video commissioned by BICC aims to show an independent view of why Mineral Insulated Cable should be the only choice.

• The interviewees are recognized figures in the UK and World fire safety forums.

• Play video
Cable type referencing is relatively straightforward:

- **Bare cable** = CC
- **LSF covered** = CCM
- \(2\) = Number of conductors
- **L** = Light Duty 500v
- **H** = Heavy Duty 750v
- **1.5** = Cross sectional area of conductors

So, a 2-core, 1.5 sqmm, 500v, LSF cable would be CCM2L1.5
Understanding Cables and Accessories

- MICC Ltd supply everything you might need.

**Accessories;**

**Fixing Clips & Saddles**

A full range of clips and saddles is available in colours Bare Copper, Red, Orange, Black, White. Other colours available on request.

- RCHL (clips) + cable type ref. = RCHL2L1.5
- RSFL (saddles) + cable type ref. = RSFL2L1.5
Understanding Cables and Accessories

**Accessories;**

**Brass Glands**

The complete range of brass glands are available. 20mm, 25mm, 32mm, 40mm.

RGM + cable type ref. = RGM2L1.5
Understanding Cables and Accessories

**Accessories;**

**Earth Tail Kit**


RPSL + cable type ref. = RPSL2L1.5
Understanding Cables and Accessories

**Accessories;**

**Plain Seal Kit**

Complete termination seals without earth tail. (Earthing is done via the gland into a metal box or via an earth tag washer sold separately). Kit comprises of Plain pots, RMX sealing compound, Stub caps, Conductor and Sleeving. Sizes: 20, 25, 32, 40mm.

RPS + cable type ref. = RPS2L1.5
Accessories;

Copper Fixing Strap

Enables making your own special size cable fixings for multiple cables. All colours available or can be supplied bare. Size: 12mm, 18mm.

RSH12 = 12mm – RSH18 = 18mm - 5m rolls Bare
RSHL12 = 12mm – RSHL18 = 18mm - 5m rolls LSF
Understanding Cables and Accessories

Accessories;

Gland Shrouds

Protect the gland from the elements and match the LSF cable colour. Can be provided in both LSF and PVC versions.

- PVC – RHG20 = 20mm and RHG25 = 25mm
- LSF – RHGMM20 = 20mm – Also available in 25, 32 and 40mm
Accessories;

Brass Locknuts

For use with the RGM glands, helps secure the gland into the box.

Sizes: 20mm, 25mm, 32mm, 40mm.

RLM20 = 20mm and so on up to 40mm
Accessories;

Serrated Washers

Also for use with the RGM glands, helps secure against vibration. Sizes: 20mm, 25mm, 32mm, 40mm.

RLWS20 = 20mm and so on upto 40mm
Understanding Tools

Tools options;

Plate Type Crimper

Uses a 3 point crimping plate to lock the stub cap into the pot. Sizes: 20mm, 25mm, 32mm, 40mm.

ZDD20 = 20mm and so on upto 40mm
Understanding Tools

**Tools options:**

- **Hand Crimper**

  A quick and easy tool for crimping the stub caps into the pots. The ‘T’ bar avoids the need for spanners.

  - ZDC20 (only available in 20mm)
Understanding Tools

**Tools options:**

**Bending Lever**

To assist in the dressing of cables or when using the larger cables. The bending lever will help save time.

- ZBLA (cables 10-16mm)
- ZBLB (cables 16-27mm)
Understanding Tools

Tools options;

*Pyro Straightener*

To also assist in the dressing of cables or when using the larger cables. The straightening wheels will help save time and make the job of a neat installation much easier.

ZBS (cables <12mm)
Understanding Tools

**Tools options;**

**Rotary Stripper**

Stripes cables sheaths.

- ZSUS (<8mm dia. Cable - small)
- ZSU (>8mm dia. Cable - large)

**Spare blades:**

- ZSUSB (pack of 5)
- ZSUB (pack of 5)
Understanding Tools

**Tools options;**

**Joi Stripper**

Easy to set tool for fast and efficient stripping of.

Size compatibility: 2L1, 2L1.5, 2L2.5, 3L1, 3L1.5, 4L1, 4L1.5

**ZSJ**

Spare blades:

**ZSJB** (sold individually)

* MICC have a prototype for heavy Duty cables
Understanding Tools

Tools options;

Ringing Tool
Used to score a light groove around the cable sheath to neatly stop the stripping action.

ZR
Understanding Tools

**Tools options;**

**Wrench**

Quick and easy ratchet tool for screwing on 20mm brass pots to the cable.

ZRP (20mm pots only)
Tools options;

**Pot Wrench**

Tool ensures quick and accurate screwing on of the brass pot. Sizes: 20mm, 25mm, 32mm, 40mm.

ZPM20 = 20mm and so on upto 40mm.
Referencing

Understanding Tools

- Please use the MICC data-wheel tool for quick and easy referencing.
- We can also provide factory pre-terminated units, saving time and money on installation!
Video 2

Terminating Mineral Insulated Cable

• This short video also by BICC shows that terminating MI cable is not difficult, just different.

• All accessories and tools shown along with termination instructions and training are available from MICC Ltd.

• Play video
Handling and Storage

Proper Handling and Storage of MI Cable

- The insulant of all Mineral Insulated Cables has an affinity for moisture. However, the totally inorganic insulant utilised in the manufacture of MICC Cables has a self-limiting characteristic and they can be left unsealed during installation and storage without being adversely affected.

- During a period of several weeks exposure, atmospheric moisture will only penetrate an unsealed cable to the depth of 100mm (see graph) and subsequent stripping back during termination will remove the moisture affected insulant.
Installation basics

Tips for a successful MI cable installation

• Use ‘pig tail’ loops to ensure flexibility and protection of cable seal.

• Pig tails also allow for the box to be moved a short distance without need for re-termination or new length of cable.