



Energy Division

Raychem cable accessories
for the mining and ore
processing industries

 **Tyco Electronics**
Our commitment. Your advantage.



Introduction

Tyco Electronics develops, manufactures and markets innovative products that benefit from advanced know-how in the field of material science. This brochure describes the most commonly used products in the mining industry. Please contact your local Tyco Electronics Energy Division office for technical support and additional information.

Technologies basic design and materials.

Tyco Electronics offer technologies including

- Heat-shrink
- Gel
- Resin
- Elastomeric

Features

Thorough research in close co-operation with our electrical power industry customers has resulted in new and improved materials with features including

- Increased resistance to thermal ageing
- Shape memory
- Excellent resistance to surface electrical activity
- Elevated UV performance
- Electrical stress control
- Void-free interfacial bonding
- Moisture blocking
- Improved flame resistance
- Unlimited shelf life



1. Heat-shrink wraparound

Raychem wraparounds MRSM and CRSM wraparounds are fast, versatile and for permanent repair of damaged flexible and rigid cable jackets for LV & MV cables. The adhesive exhibits excellent bonding and sealing characteristics to materials commonly used in various cable and cable jacket, such as plastic, rubber, cross-linked polyethylene, lead, aluminium and copper. They ensure tight moisture-proof and insulating seal and can be easily removed. High abrasion resistance, flexibility and excellent insulation are typical properties.

2. Heat-shrink flame-retarded tubing

Raychem FCSM tubing is designed for use in hazardous areas where electrical insulation, flame retardance and flexibility and abrasion resistance are critical factors. The combination of these features has FCSM being used in a wide range of demanding applications, in particular to insulate, to protect and seal flexible LV and MV cable joints & terminations. The tubing with and or without adhesive coating is available.

3. Heat-shrink tubing for fire hazard areas

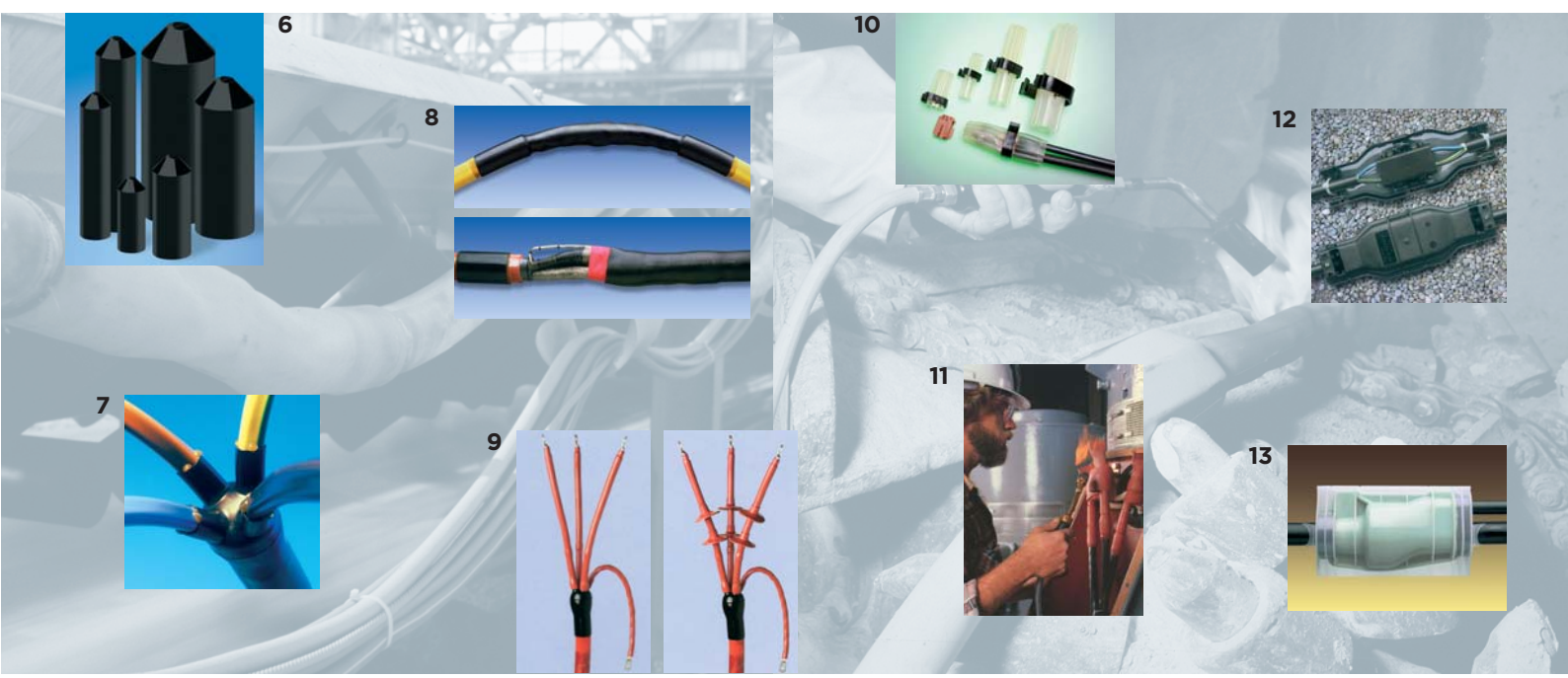
Raychem ZCSM tubing has been developed to provide a low smoke, low toxicity, and low gas generation while being highly flame retardant and having low calorific value. The value of low fire hazard materials is increasingly recognised not only because of the potential fire hazards, but also the corrosion damage by halogenated materials to equipment. The tube can be used as re-jacketing for LV and MV accessories to the same fire standards as the cable.

4. Heat-shrink tubing for insulating and sealing

Raychem WCSM tubing is designed to restore the mechanical, electrical properties of the cable jacket of LV and MV cables. It's internal adhesive provides an excellent moisture seal. The tube is widely used to protect, insulate and seal LV & MV cable joints, accessories and electrical connections.

5. Heat-shrink tubing for insulating, sealing and weathering

Raychem MWTM tubing is designed to insulate electrically, resist weathering and ultra-violet light, to stand up to continuous temperature changes, to keep out moisture and corrosive liquids and be resistant to oils and solvents. The tube is extensively used to protect, insulate and seal power LV & MV cable joints, LV terminations, accessories and electrical connections.



6. Cable end caps

Raychem heat-shrinkable end caps are used to seal the ends of plastic, rubber and paper insulated cables from moisture, corrosion and dirt.

7. Cable breakouts

Raychem heat-shrinkable breakouts are used to seal the crutches of plastic, rubber and paper cables up to 1kV. The breakout is coated with hot melt adhesive, which seals onto the cable jacket and the core insulation.

8. Heat-shrinkable joints for flexible cables up to 1kV

In modern heavy industries such as open cast mining, shipbuilding, steel-works and chemical plants flexible cables used for power supply have to withstand rough handling and prolonged exposure to abrasion and aggressive liquids. To meet the need for fast dependable connection and repair technique, Tyco Electronics Raychem offers a joint system that is slim and flexible enough to allow spooling of the cable, quick to install, resistant to aggressive liquids and to mechanical abuse.

9. Heat-shrinkable terminations for flexible MV cables

The termination EMKT is designed for 7.2kV screened flexible rubber insulated cable with one or three earth cores. The termination HVT-C is designed for 5, 8 and 15kV screened flexible rubber insulated cable with one or three earth cores.

10. Gel motor connections up to 1kV

Gel Cap motor connector kits quickly and conveniently insulate, seal and protect stub splice connections up to 600 V. The robust yet compact design was engineered to handle the harsh environment of motor connections. They are also suitable for other applications including street light connections. The especially formulated material provides excellent abrasion resistance, electrical insulation and ultra-violet resistance. The cap is transparent which allows visual inspection of the connector during service life. The cap is pre-filled with gel.

11. Heat-shrink motor connections 1 to 5kV

MCK-1V & MCK-5V are designed for making fast and reliable bolted splice connections to motor terminal boxes. Allows stub or butt configuration of the connector.

12. Gel filled joints for flexible cables up to 1kV

Raychem power gel filled joint for 1.5 up to 35mm². It consists of flame retarded rugged closures. It is designed to seal and protect the joint quickly and efficiently. No special tools needed.

13. Resin-filled joints for 1kV cables

Rigid resin-filled joints are available for a very wide range of in-line and branch jointing applications on fixed power and control cables. These joints are based on well-proven polyurethane resin that provides both electrical insulation and rugged mechanical protection. The resin joint kits have few components and are simple and quick to install. They are suitable for armoured or unarmoured multi-core cables and can accommodate all types of conductor connector.

The Energy Division, a global operating unit of Tyco Electronics, develops manufactures and markets products and systems for the electrical power industry. Today, the Energy Division employs approximately 4,000 people and annual sales amount to almost \$800 million. Our products are extensively employed by power utilities and equipment manufacturers, in rail transport systems and in industry around the world.

All of the above information, including drawings, illustrations and graphic designs, reflects our present understanding and is to the best of our knowledge and belief correct and reliable. Users, however, should independently evaluate the suitability of each product for the desired application. Under no circumstances does this constitute an assurance of any particular quality or performance. Such an assurance is only provided in the context of our product specifications or explicit contractual arrangements. Our liability for these products is set forth in our standard terms and conditions of sale. Raychem, TE Logo and Tyco Electronics are trademarks.

Energy Division - innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, lighting controls, power measurement and control.

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