tyco Electronics

Energy Division
http://energy.tycoelectronics.com

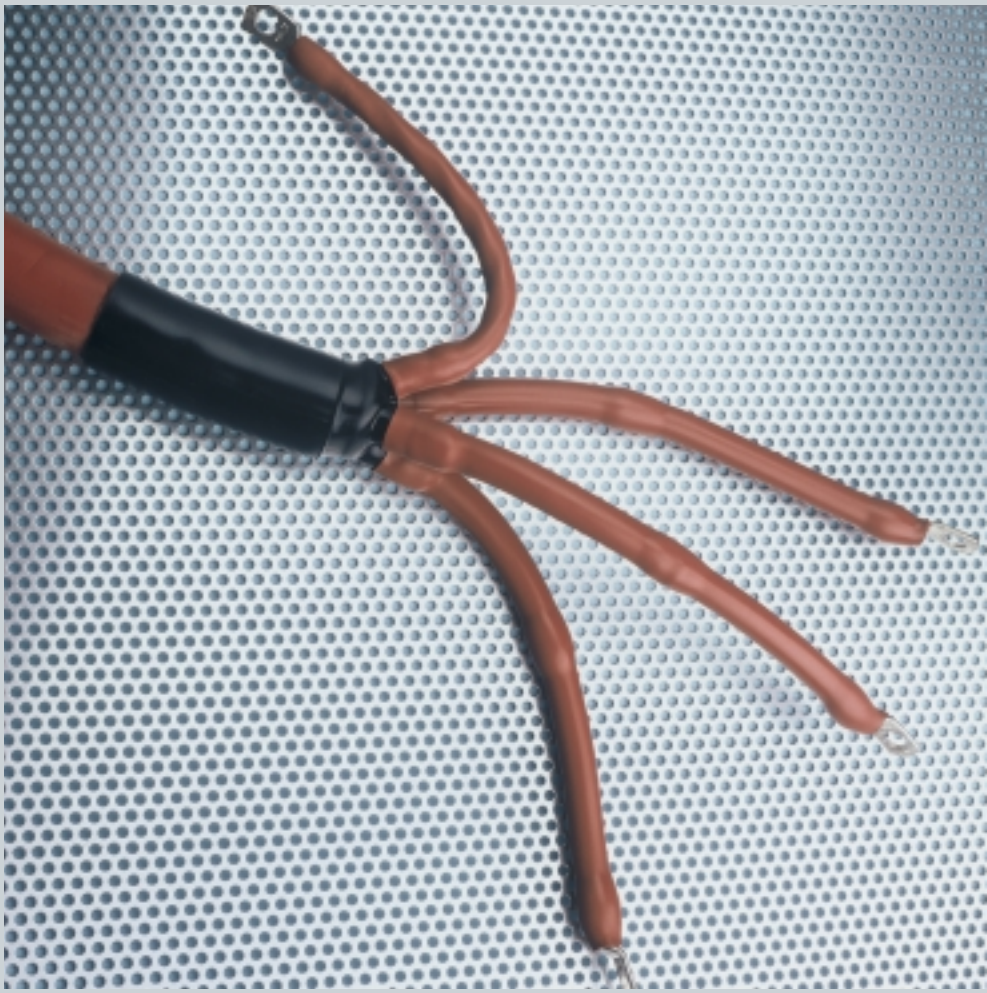
Terminations for flexible multi-core cables up to 36 kV

Features
The scale and speed of modern mining requires versatile and dependable electrical power supply, which can be rapidly extended and maintained. We contribute to the industry's high levels of efficiency with a flexible cable termination system for up to 36 kV which is specifically designed for mining purposes.

Proven performance
Raychem flexible terminations have a range of features which decisively reduce downtime. The slim design simplifies connection in confined spaces. Free movement and easy transport of terminated flexible cables is allowed by the highly pliable materials used. Users also choose this system because it has proven its reliability in exhaustive test programmes and over more than 20 years of successful performance in the field, even under rugged mining conditions.

Installable on-site at up to 36 kV
The practical advantages of the system arise from the heat-shrinkable feature of the Raychem termination components, which allows installation by site personnel on cables for up to 36 kV without special tools or equipment. Each kit covers a large number of cable sizes, and as no curing or vulcanizing is involved, the completed termination can be connected and power switched on immediately.

Universal outdoor and indoor application
The creepage path of the Raychem flexible termination is quickly extended by installing heat-shrinkable sheds. With this simple operation the system becomes suitable for use outdoors in polluted and dusty environments.



A complete system
With more than 30 years experience Raychem is the leader in heat-shrinkable materials and one of the largest cable accessory makers. The flexible termination system described here is just one of the Raychem range of jointing, repair, insulation and sealing systems for flexible and power cables in service throughout the world of energy.

Raychem

Photo: Installation of a flexible termination at an open-pit coal mine.

Compact and flexible
Stress control at the core screen end is achieved by means of a defined impedance characteristic material applied in the form of a heat-shrinkable tubing or stress relieving mastic. Over this, a special Raychem non-tracking tubing is shrunk down to protect against dust, pollution and weathering.

As the termination is exceptionally slim it fits easily into various types of compact equipment and stands up well to handling during cable transport even at low temperatures.

Moisture sealing
Durable sealing is achieved by special adhesives pre-coated on the inside of the non-tracking tubing.
The installation of a heat-shrinkable tubing then causes the adhesives to melt and flow, making a dependable and tough moisture barrier.

Minimum performance of Raychem terminations for flexible multi-core cables up to 36 kV

		Highest voltage for cable Um (kV)				
		7.2	17.5	24	36	
Tests		Test Voltage (kV)				Requirements
A.C. Voltage Withstand	1 min	27	45	55	75	No breakdown or flashover
Partial Discharge		4.5	10.9	15	22.5	< 20 pC
Impulse Voltage Withstand	10 positive and 10 negative 1.2/50µs between each conductor and grounded screen	60	95	125	170	No breakdown or flashover
Load Cycling	63 cycles 5h heating, 3h cooling with conductor temperature in accordance to cable specification	9	22	30	45	No breakdown or flashover
Thermal Short Circuit	Two 1 s symmetrical faults with conductor temperature in accordance to cable specification					No visible signs of damage
A.C. Voltage Withstand	4h	14	36	48	72	No breakdown or flashover
D.C. Voltage Withstand	30 min	28	72	96	144	No breakdown or flashover
Flame Resistance	IEC 332					Self-extinction

Notes: U_m is the highest phase to phase voltage. All other voltages are stated as phase to ground values. Further details are given in Raychem Specification PPS 3013.

Raychem flexible termination kits are complete with detailed installation instructions and are available for cables with one or three earth cores, cross sections up to 185 mm², and voltages up to 36 kV. A full selection table is available on request.
For further details on these or any other Raychem products please contact your local sales representative.

Energy Division – a pioneer in the development of economical solutions for the electrical power industry. Our product range includes: Cable accessories, connectors & fittings, electrical equipment, instruments, lighting, insulators & insulation enhancement and surge arresters.

For more information and your country contact person, please visit us at:
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