Raychem Heat-shrinkable Joints for Flexible Cables up to 1 kV

In modern heavy industries such as open-cast mining, ship-building, steelworks and chemical plants flexible cables used for power supply have to withstand rough handling and prolonged exposure to abrasive materials and fluids. To meet the need for a fast, dependable connection and repair technique for such cables, we developed a joint system which is slim and flexible enough to allow spooling of the cable, quick to install and resistant to aggressive liquids and mechanical abuse.

Our joints for flexible cables meet Raychem specification PPS 3013. Their performance and ease of use are a result of our capability in materials science and long experience in the field of power engineering.

Ease of installation
The connector insulating sleeves and outer joint sleeve are made of tough, flexible polymers specially developed and cross-linked to give them an „elastic memory“. This enables the joint to be supplied as a kit of ready-expanded components. When positioned over the joint and heated, each component shrinks to a predetermined diameter tightly fitting the cable and automatically providing the correct insulation thickness in one operation. Shrinking requires no special skills and can be carried out in a few minutes with a commonly available gas torch. The heat-shrinkable feature also means each kit can accommodate a range of cable sizes. Requiring no special equipment and eliminating curing delays, installation can be made on-site and the joint taken into service immediately.

Moisture sealing
The components of the joint are supplied internally pre-coated with special adhesives. The heat of installation causes the adhesive to melt and flow under the shrinking action, bonding to the cable insulation and making a robust seal against water and chemicals. Heat-sensitive paint on the outer joint sleeve provides the installer with an additional check that he has applied sufficient heat to activate the adhesive.

Flexible and abrasion resistant
Tough, pliable materials and a small overall diameter make Raychem flexible joints suitable for use on trailing cables. Their resistance to the stress and strain of repeated winding onto take-up reels has been confirmed by a rigorous Raychem test programme and reliable service in demanding field conditions in many countries.

Raychem
from TE Connectivity

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Flexible heat-shrinkable sleeves are first slipped over the cable core ends and the conductors jointed. The sleeves are then shrunk down over the connectors to insulate them and seal out fluids and chemicals.

After the joint area has been smoothed out with strips of electrical filler, the adhesive-coated outer sleeve is shrunk into place to restore the cable over-sheath and complete the joint.

Minimum performance for Raychem joints for flexible cables up to 1 kV

Test Sequence		Result
Insulation Resistance	between conductor and grounded water bath	≥ 1000 MΩ
Impact	4 kg wedge dropped 6 times from 2 m	no functional damage
A.C. Voltage Withstand	4 kV for 15 min	no breakdown and no flashover
Load Cycling	63 cycles 5 h heating, 3 h cooling Conductor temperature as for cable specification	pass
A.C. Voltage Withstand	repeat	no breakdown and no flashover
Load Cycling	as above with cable in 1 m water, oversheath removed	pass
Insulation Resistance	repeat	≥ 1000 MΩ
Flexibility	internal test method	no electrical or mechanical failure
Insulation Resistance	repeat	≥ 1000 MΩ
A.C. Voltage Withstand	repeat	no breakdown and no flashover
Abrasion	DIN 53516	less than cable oversheath
Flame Resistance	IEC 60332	self-extinction
Notes:	1. All voltages are phase to ground 2. Further details are given in Raychem specification PPS 3013	

Ordering information

Raychem joints for flexible cables up to 1 kV are available for shielded and unshielded cables with 2 to 5 cores and cross-sections up to 120 mm^2.
A full selection table is available on request.

For further details on this or or any other Raychem products please contact your local sales representative.

TE Energy – 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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