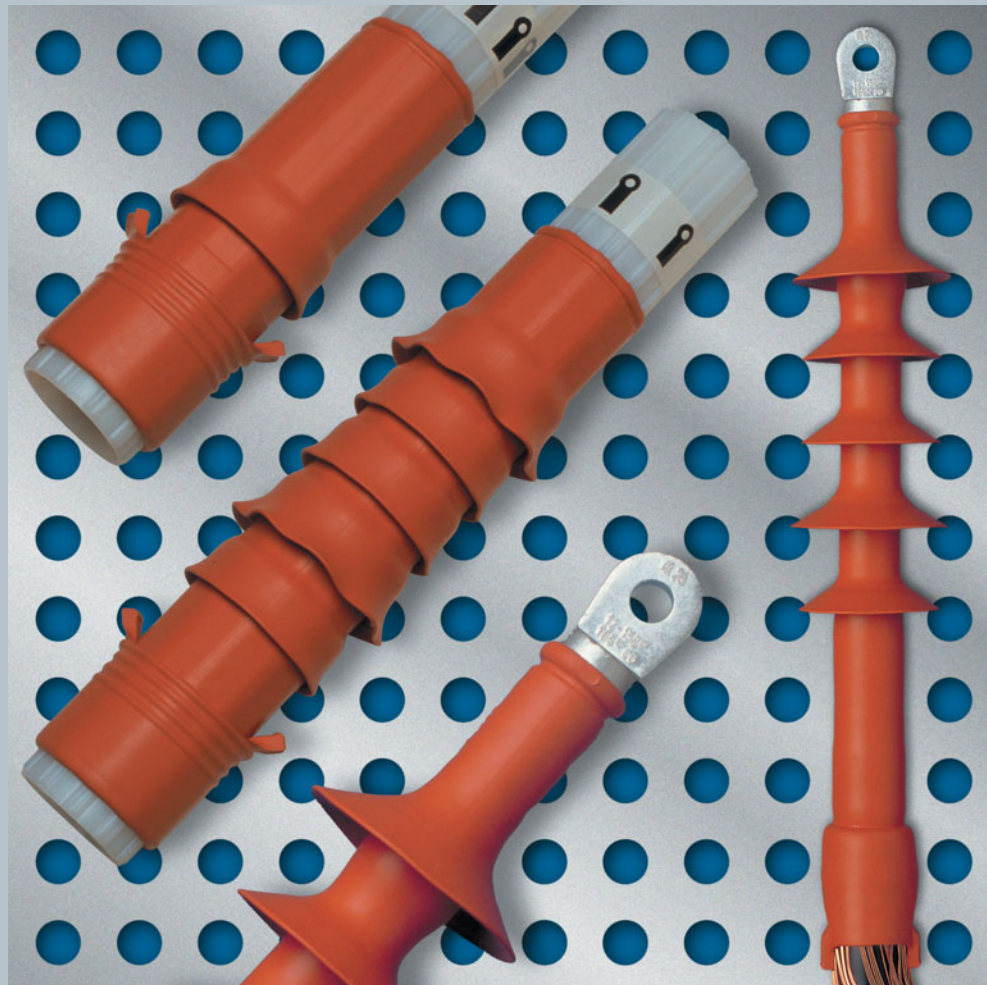


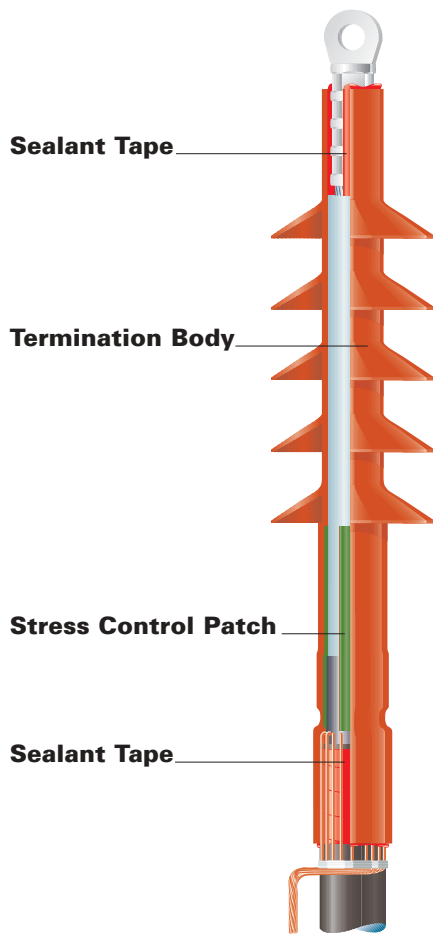
TFTI/TFTO

Pre-Expanded elastomeric medium voltage terminations for indoor and outdoor applications for single core polymeric cables up to 42 kV

Features

- High performance termination material
- New stress control system
- Moisture sealing mastic
- Compact design
- Few components
- Simple to install, high reliability
- Crush resistant holdout
- Range taking





24 kV outdoor termination

The materials are the difference
Key to the performance of Raychem products is the materials science and technology going into their development. The Energy Division has a history of excellent performance in heat-shrinkable cable accessories up to 72 kV. The advantages of Raychem's heat-shrinkable terminations have a proven record of long-term stability, durability, and reliability over many years.

Raychem cable accessories have been used by utilities and industrial companies around the world for more than 30 years. This field experience has enabled us to be a leader in materials technology for high-voltage applications.

Our materials technology is at the core of the development of our new range of **TFT Elastomeric Terminations**.

Benefits

- Compact design
- Few components
- Simple and fast to install
- Re-positioning after installation possible
- Superior application ranges

Designed for both indoor and outdoor use in all climate conditions, the TFT range covers applications on single core plastic cables up to 42 kV.

The TFT has been developed to complement the Raychem termination product line. TFT includes an elastomeric body material in contrast to the semi-crystalline polymeric body of the heat-shrink terminations. Both types of bodies consist of crosslinked polymer networks and both types of terminations are easy to install over a range of cable sizes.

The TFT includes:

- a non-tracking, silicone-based, pre-expanded elastomeric body
- a stress control patch
- self amalgamating sealant tape

These components combine to provide the same important functions as heat-shrink products: electrical performance, stress control, and moisture sealing. Because of the inherent physical property differences between semi-crystalline and rubbery polymers, the TFT stress control and sealant materials are tailored to achieve optimum performance with an elastomeric system.

The proprietary materials used in Raychem cable accessories are subjected to a long period of optimisation with respect to product design and function, manufacturing and expected service environments.

We recognise that polymeric and elastomeric insulation materials are not generic and that extreme variations and differences can exist among base polymer grades and additives. Formulations consist not only of polymer but of additives and fillers which greatly influence material properties. It is the entire formulation package in combination with compounding procedures, material processing, product design and assembly that all contribute to the overall product performance.

Insulation materials

The materials employed in TFT have undergone many years of development, yielding an elastomeric product with exceptional electrical and weathering performance properties.

The insulation material has been developed to maximize the inherent material hydrophobicity and thermal-stability characteristics of silicone and, through formulation expertise, to deliver excellent erosion resistance, weatherability and dielectric properties.

Stress control materials

A new patch for electrical stress control has been developed with physical and electrical properties providing superior performance when combined with the TFT termination.

We have formulated a superior new stress control material which is included in the patch resulting in an outstanding impulse withstand performance of the TFT termination.

Sealant tapes to prevent moisture ingress

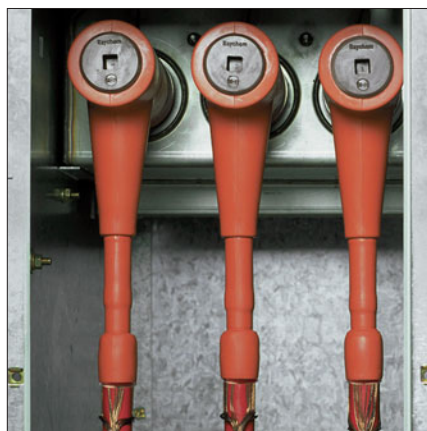
Sealant is applied at the top and the bottom of the prepared cable. The tape is self amalgamating and resistant to tracking and erosion. When the TFT body is installed, its compressive force provides a tight seal preventing moisture ingress.

Product range

The product line is designed for single core polymeric cables up to 400 mm² for 36 kV cables. This coverage is completed with a minimum number of designs. Push-on versions are available.



TFTI installed with Raychem bushing boot (RCAB)



TFTI installed with Raychem insulated connection system (RICS)

The products are fully tested to CENELEC specification HD 629 and to IEEE Std.48-1996 which encompasses international standards such as IEC, British Standard (BS) and VDE.

For cable box applications TFT can be combined with the Raychem elastomeric bushing boot (RCAB) or insulated connection system (RICS) to fit most types of switchgear.

For pole top applications we can supply TFT together with polymeric support insulators (EPBI), Polygarde metal oxide surge arresters and most fittings required for installation.

Kit content

Each standard TFT product consists of an outer elastomeric termination body on a pre-lubricated, crush resistant core (holdout), a stress control patch, sealant tapes and installation instructions.

For special applications contact your local sales representative.

The right kit for your cable range can be selected with the help of the selection table below.



TFT-components

Installation

Each kit contains an easy to follow installation instruction with excellent visual displays of the installation steps. Installation is both fast and simple.

TFTI/TFTO Termination Family

- 1** Indoor up to 17.5 kV
- 2** Outdoor up to 12 kV
Indoor up to 24 kV
- 3** Outdoor up to 17.5 kV
- 4** Outdoor up to 24 kV
Indoor up to 42 kV
- 5** Outdoor up to 42 kV

Features and benefits

Features

High-performance termination material

New stress control system

Crush resistant core (hold out)

Compact design with integrated sheds

Range taking kit

Easy application

Leakage current collector only for 36 kV and 42 kV

Benefits

Outstanding UV properties
Exceptional track and erosion resistance
Highly hydrophobic surface
Excellent high voltage insulation material

Excellent high-impulse withstand performance

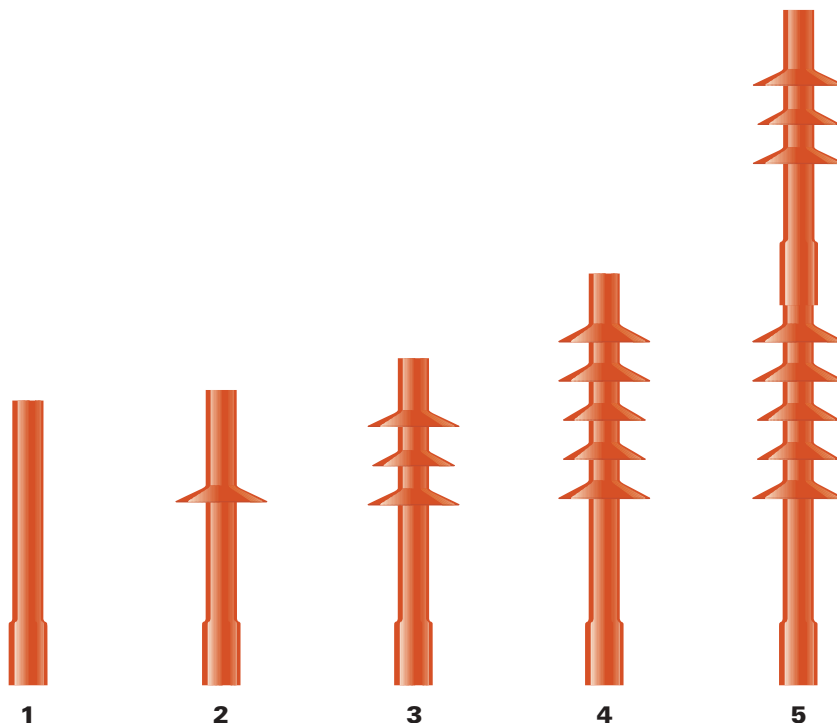
Prevents collapsing due to rough handling

Space saving

Fewer kits to accommodate a wider range of cable sizes

Time saving and simple to install

Defines a clear earth electrode to drain the leakage current



TFTI/TFTO Selection Table

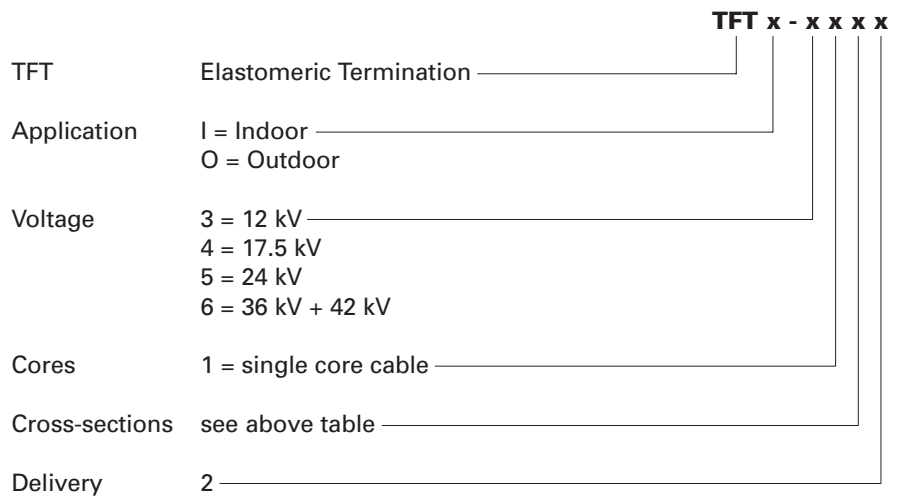
Application		Voltage in kV	[U _m]
I	Indoor	3	12
O	Outdoor	4	17.5
Cores		5	24
1	Single core polymeric cable	6	36 + 42

TFT Terminations – Pre-Expanded version Cross sections in mm²

	12 kV Indoor/Outdoor	17.5 kV Indoor/Outdoor	24 kV Indoor/Outdoor	36 kV Indoor/Outdoor	42 kV Indoor/Outdoor	Diameter over insulation in mm
1	25 – 70	25 – 50**	–	–	–	13.5 – 21.0
2	70 – 185	50 – 150	25 – 95	–	–	17.0 – 28.0
3	150 – 400	120 – 300	95 – 300	35 – 150	35 – 120	23.0 – 37.0
4	400*	300 – 400*	240 – 400*	150 – 400	95 – 240*	30.0 – 46.0
5	–	–	–	400 – 630*	–	42.0 – 60.0

*Larger on request

**Only indoor



for example:

TFTI-5132
Indoor termination for single core polymeric cable 24 kV, 95 – 300 mm² (Pre-Expanded version)

TFTI-5131
Indoor termination for single core polymeric cable 24 kV, 95 – 240 mm² (Push-On version)

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. ALR, AMP, AXICOM, B&H, BOWTHORPE EMP, CROMPTON INSTRUMENTS, DORMAN SMITH, DULMISON, GURO, HELLSTERN, LA PRAIRIE, MORLYNN, RAYCHEM, and SIMEL are trademarks.



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 controls, insulators & insulation enhancement and surge arresters.

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