

TRANSNET

HV JUICE

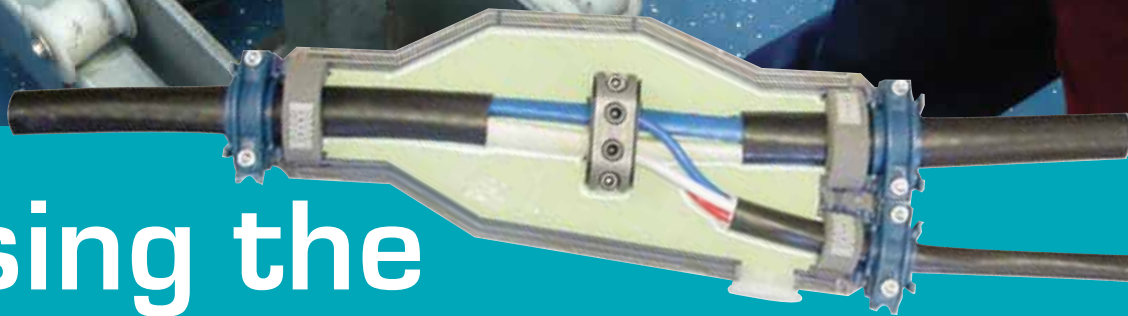


January/February 2011

Raychem Product Training



Choosing the right Resin.



Raychem Training, Ottobrunn Germany



International attendees & instructors at the LV/MV Distributor training.

In October and November 2010 Tyco Electronics Ottobrunn (Raychem facility) ran training sessions covering HV and LV/MV joints and terminations. Although we have a team of experienced Raychem specialists on staff already, Spencer took this opportunity to expand the knowledge base we already have. In October Steve Breeze (TransNet) and Paul Godfrey (Tyco Electronics) attended the HV training course and are now the only two Raychem HV trainers in New Zealand, they are qualified to work on and train up to and including 172kV, this is a huge asset for TransNet, Tyco Electronics and the industry throughout NZ & the Pacific.

The November training was a LV/MV Distributor training. We sent five members of staff who were accompanied by a member of the Tyco Electronics NZ team. This training was

more directed at basic product knowledge and understanding of technologies used in Raychem and Utilux product ranges. There were theory and practical workshop sessions, where the products were installed. This course gave our team an unparalleled understanding of concerns and issues jointers face everyday when preparing cables and installing joints and terminations. We are now better equipped to assist our customers with selection and installation concerns.

We'd like to thank Tyco Electronics NZ and their colleagues in Ottobrunn, Witham and Gevrey Chambertin for their time. We came away with a lot of information about new developments as well as an excellent understanding of the research, development and testing that goes into every Tyco Electronics product.



Workshop sessions help prove the theory.

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RAYCHEM COLD APPLIED PRODUCTS

In addition to the full range of RAYCHEM heatshrink joints and terminations, we are also able to offer a comprehensive range of cold applied solutions, should the requirement arise.

The recent Raychem trainings conducted in Ottobrunn, Germany, also covered cold applied joints and terminations. This technology offers a suitable alternative for specific situations such as near gas mains (where heat and flames may be hazardous) or switchgear requiring screened elbow products.

As with all Raychem cable accessories, the research and development is extensive and boasts all the latest technologies. One of the many advantages Raychem has over other manufacturers is that they design and manufacture their own components giving traceability and quality assurance from components to finished product.

New cold applied products recently added to the Raychem range are PILC to XLPE transition and branch joints. All Raychem cold applied technologies have been qualified in various applications at external and internal test laboratories in accordance to;

- CENELEC HD 629.1 up to 42kV
- IEC 60502 part 4 up to 42kV
- IEEE 404 up to 35kV

When a situation requires cold applied products—we have them and the technical support team to assist you every step of the way. Contact our team on 0800 RAYCHEM (729243)



Tyco Electronics

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ACCLES & SHELVOKE CABLE SPIKER

ENSURING THE SAFETY OF YOUR TEAM

- A high quality durable safety tool
- Penetrates every form of normally applied cable coverings
- Easy to assemble and simple to operate
- Safest tool available for assured cable de-energization
- Employee safety achieved through positive remote operations
- Provides years of regular trouble-free usage

The Accles & Shelvoke Cable Spiker offers the great advantage that it can be remotely controlled at the moment of firing by means of a lanyard (rope) release. The operator can thus stand at a point of safety and if by chance a "live" cable is spiked, the damage will be local to the cable.

Four cartridge strengths to choose from depending on size and sheath of cable.

CARTRIDGE STRENGTHS

RED (Strong)

For older types of steel wire armored cables over 3³/₈" outside diameter, in the standard cable Spiker and up to 6" outside diameter in the Heavy Duty Cable Spiker.

GREEN (Medium)

For lead covered and all armored cables up to 3¹/₈" outside diameter.

SILVER (Light)

For Aluminium sheathed cables up to 300mm² and the modern small diameter plastic covered cables.

YELLOW (Extra Light)

For small polymeric type cables having no outer metallised sheath.



PRODUCT #FA2233

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Rayflate Duct Sealing System

The RDSS duct seal is an inflatable duct sealing system that wraps around cables in ducts of manholes or basements. RDSS effectively seals power cable ducts, stopping or preventing water from leaking into the manhole or basement.



Specially designed for power cables but also suitable for telecommunications cables, Rayflate was tested with cables load-cycled at conductor temperatures of 90°C, similar to specifications required for cable accessories. The sealing tests showed water and air tightness with internal duct pressures of 0.3 bar with single and multi-cable configurations.

Lifespan calculations indicate that a typical Rayflate duct seal will withstand a 3m waterhead for 30 years after installation. These results are based on typical utility cable loads at average ambient temperatures of 25°C and diffusion rate measurements at elevated temperatures and after ageing by load-cycling. The sealing performance was confirmed by sealing tests with reduced internal bladder pressures.

The RDSS duct seal is suitable for use with polyethylene or lead sheath cables in the plastic, concrete, or steel ducts of

wall feed-through systems. RDSS permits cable movement and thermal expansion while retaining its sealing properties. RDSS can be easily and quickly installed even in flowing water. The RDSS duct seal is inflated with air or CO₂ gas and conforms to the irregular geometry of cable and ducts. It is easy to remove as well, even in adverse field conditions.

Standard kits accommodate a wide range of cable diameters, as well as empty ducts and ducts with multiple cables. The RDSS duct seal system is environmentally friendly: no hazardous chemicals are used to create the seal. It is made from chemical and bacteria resistant materials and will provide a reliable, durable long lasting seal.



TDUX-IT-16



CO2-CYLINDER

INSTALLATION

Inflation tool TDUX-IT-16 has an ON/OFF switch and an automatic pressure monitoring system (available for hire).

CO₂-CYLINDER must be ordered separately. CO₂ gas cylinder inflates approximately 5 pieces of RDSS-100 duct seals.

FEATURES

- Easy and quick to install
- Provides watertight duct seal
- Helps prevent flooding
- Installs whilst water is flowing

All dimensions in mm

*RDSS-Clips must also be used for these 2-cable configurations

- Suitable for empty duct
- With cables only

DUCT INSIDE DIA	RDSS-45 CABLE DIA	RDSS-60 CABLE DIA	RDSS-75 CABLE DIA	RDSS-100 CABLE DIA	RDSS-125 CABLE DIA	RDSS-150 CABLE DIA
40	0 - 27					
45	0 - 32	0 - 18				
50		0 - 30				
60		0 - 45	0 - 30			
70			0 - 46			
80				0 - 52		
100				0 - 80	0 - 65	
150					90 - 130*	60 - 129
Clip Selection	RDSS-CLIP-45	RDSS-CLIP-75	RDSS-CLIP-75	RDSS-CLIP-100	RDSS-CLIP-125	RDSS-CLIP-150

When three or more cables have to be sealed an RDSS sealing clip is also required RDSS-CLIP-XXX.

For 200MM ducts a RDSS-AD-210 adapter is required.



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Tyco Electronics Surge Arresters

Over the years it's become apparent — there are some basic issues users have with Surge Arresters. Tyco Electronics has taken these issues on board and introduced a number of changes to improve the quality of surge arresters on the market. The main issues have been; moisture ingress, insulation ageing & deterioration and lastly mechanical damage.

Moisture Ingress can cause tracking in/on the material and interfaces. The conductive path can puncture arrester housing and short one or more ZnO varistors damaging the integrity of the arrester. Mechanical damage and large swings in ambient temperature can also cause movement and damage to the seal. To counter this Tyco Electronics surge arresters are moulded in place, the Silicone is chemically bonded direct to the core giving excellent resistance against moisture ingress.

To ensure consistent mechanical strength, Tyco Electronics has adopted (or adapted) the Sheet Wrap system rather than Tape Wrap like some competitors, this has led to these arresters passing a cantilever test of 350Nm [other brands average <180Nm w/o TM cycle]. Mechanical damage can initiate a site for moisture ingress and erosion. By designing an arrester with superior mechanical strength, Tyco Electronics has eliminated this issue.

The Silicone insulating material used on Tyco Electronics surge arresters is of the highest quality and has been tested for Tracking and Erosion Resistance along with UV testing and Weather ageing. It is moulded in place — a critical design feature, the Silicone is chemically bonded directly to the core of the arrester giving excellent resistance against moisture ingress.

The ZnO Varistors used in Tyco Electronics surge arresters are thermally stable and strong, they have a safe failure mode, meaning they are non-shattering and non-explosive and won't display the same temperature change movement characteristics as competitors models, meaning they don't

experience damage to the seal like others do, another key in reducing the chances of water ingress.

The key points that separate Tyco Electronics surge arrester disconnect units from others on the market are;

- The activating agent used to operate the system is not classified as "explosive" by UN1485 making it safer to transport.
- The Disconnect system has a safe failure mode and cannot be activated by mechanical force or fire, they are non explosive and non shattering, ensuring safety for workmen.
- This product is stable at higher temperatures.
- This disconnect system activates consistently at low current unlike many cartridge systems.
- The polymeric material used is tested and qualified by Tyco's Raychem material scientists.

Tyco Electronics has managed to design and manufacture a superior arrester based on the solutions they have found to the common issues users face. These arresters are available in class 1 and class 2, ex-stock from our store.

Arresters have one main objective — to limit the excessive over-voltages that occur on the network from damaging substations, plant and equipment. The main sources of over-voltages are lightning and switching errors. The superior design features of Tyco Electronics surge arresters ensure these objectives are achieved.



Surge Arrester silicone insulation testing

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Choosing the right Resin

Resin joints have been used for many years and as expected the technology has developed and improved with time, enhancing reliability, application procedures and protection of the environment. These technologies each offer different benefits suited to different applications. The question is how to decide which one to use.

The basic functions of resin are essentially the same;

- Electrical Insulation
- Mechanical Protection
- Moisture Exclusion

Resin is a liquid mixture of two or more components that undergoes a chemical reaction to form a solid suitable as a joint filling material. To be suitable a resin must;

- Be affordable
- Have a low or acceptable health and environmental impact
- Have good mechanical and electrical properties
- Be easy to mix and pour
- Have an adequate shelf life

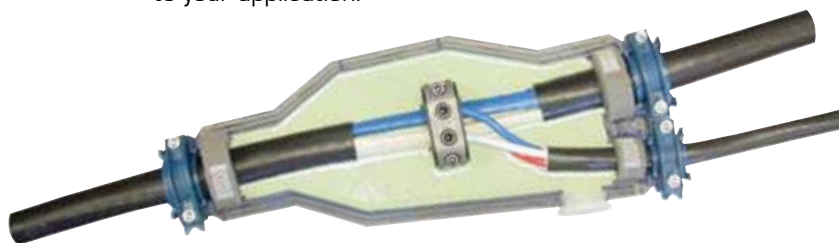
We have a variety of different resins available ex stock and although they function as required, they do offer different attributes. See the table below.



Although they all function as expected, all resins have different attributes and it's these attributes that determine which one is best suited to the job at hand.

The trend has moved away from Epoxy resins due to their safety classification and because the final consistency is very hard.

We have an excellent range of resins in stock, please contact your local rep for more information on the product best suited to your application.



ATTRIBUTE	GUROFLEX	POLYURETHANE RAPID 3010/4100	EPOXY RESIN
SAFETY CLASSIFICATION	NONE	HARMFUL	IRRITANT/CORROSIVE
COST	HIGHER	MIDDLE	LOWER
HEAT PROTECTION DURING HARDENING	NONE	MIDDLE	HIGH
CONSISTENCY OF FINAL PRODUCT	SOFT ELASTIC	SOFT ELASTIC - RAPID 3010 HARD ELASTIC - RAPID 4100	HARD TO VERY HARD
COLD RESISTANT COMPONENTS	YES	NO	YES
MOISTURE SENSITIVE DURING HARDENING	NO	YES	NO


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TOMKAT 2, SIGEN 2 PIPE & CABLE LOCATOR

TOMKAT 2

Better by design, the TOMKAT 2 is rugged, lightweight & packed full of features including a detachable speaker (can be held close to the ear) for use in noisy conditions. Fingertip controls adjust the sensitivity & allow rapid switching between the TOMKAT 2's three operating modes.

The TOMKAT 2 is used to assist in the location of buried pipes & cables offering three modes of detection.

POWER MODE

- Locates live cables radiating a detectable signal.

RADIO MODE

- Locates buried metallic conductors carrying a detectable VLF signal.

GENNY MODE

- Locates buried metallic conductors carrying a detectable signal by induction or connection using the SIGEN 2.

SIGEN 2

The **SIGEN 2** is a full function industry standard signal transmitter. Operating at 33kHz, applying a signal by intermittent output. Using induction or connection.

The **SIGEN 2** comes supplied as standard with connection leads & earth stake.



PRODUCT #EK2006/UK/33

NEW REGULATIONS MEAN MORE TESTING

If you have extension cords, toasters, drills, battery changers, portable generators and photocopiers (just to name a few) in your building then you are strongly advised to undertake appliance testing to ensure safety.

With the introduction of AS/NZS 3760 2010 edition standard, all work places are advised to undertake appliance tests in order to reduce the risk of harm to employees. Part of the new standard is that a competent person must now carry out the testing. TransNet can arrange for you or one of your staff to attend a 1 day training course. Once completed you will receive a PAT testing certificate.

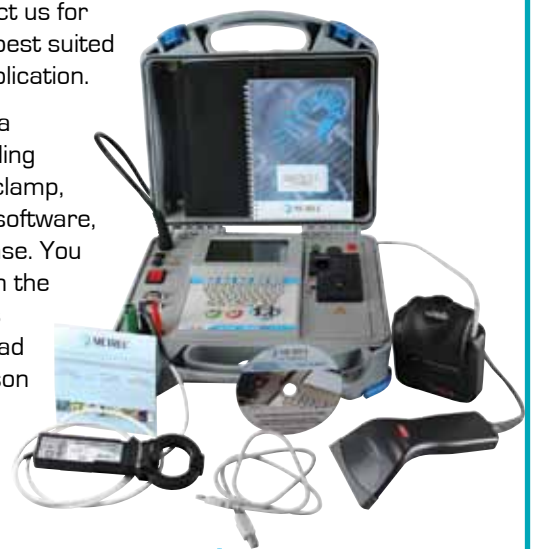
In some cases electrical appliances require testing every three months, others are good for a number of years, it depends on the appliance. Some insurance companies along with ACC are looking more favorably at companies who take the initiative to test appliances than those who choose not to.

Testing can be an expensive exercise, in some cases \$5-8.00+GST per test, if you have 3000 items in your building that need to be tested even once per year that's a lot of money. We have several portable appliance testers that can be used

by one of your very own staff to test and tag everything in your building over and over. Once you've purchased the machine, the only outlay is for consumables, such as the test tags themselves. Contact us for advice on the unit best suited to your specific application.

The TRANSPAT is a complete kit, including a printer, leakage clamp, barcode scanner, software, labels and carry case. You can save results on the machine as well as upload and download to PC for comparison of historic results. Contact customer service for information on the full range.

All units are available ex stock



 **METREL**[®]

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0800 RAYCHEM Technical Hotline

A major part of the TransNet philosophy is support – Customer support, After Sales Support and Product Support.

When we got a call about a problem with the installation of elbows on a 33kV circuit, we sent Rob (one of our Raychem Technical staff members) to find out what was going on and to find a solution. It was 2.45pm on a Friday afternoon when Rob got in his Ute and headed for the Bay of Plenty. He worked with the jointers to find the problem and implement a solution. Once the elbows were reinstalled they worked exactly as expected and Rob was on his way again.

A cable fault up north occurred when members of our team were in the general area, they headed to site, figured out what was required, called it through to the office and had a staff member head north with the kits to meet them half way. The cable fault was fixed quickly and the network was grateful for the extra service we were able to provide.

For any Raychem specific enquiries please call the Raychem hotline **0800 RAYCHEM (0800 729 243)** and one of our Raychem Technical Team will answer your call. We have a very experienced technical team specialising in Raychem joints and terminations and they are able to advise and assist, so get in touch and we'll be there to help.



Rob Dickerson assists on a 33kV fault

TRANSNET – YOUR PARTNERS IN POWER



Assisting with a “one off” joint

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