RISE® MULTI-CABLE TRANSITS: TRAINING SESSION AT AKER YARDS ON THE "CARNIVAL LEGEND"

RISE

RAPID

SUCCESSFULLY TESTED ACCORDING TO IMO RESOLUTION A.754(18); FIRE RESISTANCE A0-A60 EC CERTIFICATE 09156/B2 ISSUED BY BV

MAXIMUM SIMPLICITY OF USE
OPTIMUM FLEXIBILITY
OUTSTANDING PERFORMANCE

Websites: http://www.actifoam.com, www.beele.com, www.csdplugs.com, www.firsto.com, www.nofirno.com, www.rise-systems.com, www.riswat.com and www.slipsil.com

BEELE ENGINEERING BV
CSD INTERNATIONAL BV

BEELE Engineering and CSD International have been working in the field of water and gas tight and fireproof sealing of conduits for pipes and cables for more than 30 years. In the field of passive fire prevention, we have invested substantial amounts of money in the development of systems which are capable withstanding fires for extended periods of time. Passive fire prevention is a very complicated matter due to the fact that cable and pipe penetrations have to be designed to the actual circumstances at site and not for a laboratory test. In case of a catastrophe penetrations are subject not only to flame erosion and very high temperatures, but also to mechanical loads due to collapsing cableways and possibly a jet of fire-fighting water. This means that the performance in actual situations can differ dramatically from that in a regular fire test. In fact, the systems could only be applied as tested to guarantee the required fire safety.

And this means discussions and limitations!

We have ensured that our systems will function under all circumstances, and the classification societies have awarded us signed and stamped installation drawings of our sealing systems. Approved for steel and aluminium partitions. Guaranteed safety in your installation will be the result.

The R&D department of BEELE Engineering is constantly working in the field of rubber and systems techniques to optimize the existing systems and to develop new concepts for cable and pipe conduits on board of vessels and offshore installations. Although installation of the CSD sealing systems is in fact an easy matter, a full training programme can be given in-house by our engineers. Because the advantages and possibilities of passive fire prevention and evacuation signposting can most effectively be discovered in an environment that matches the practical situation as closely as possible, work is currently proceeding on the construction of a unique research and development centre. As far is known, this R&D centre is the only institute world-wide where visitors can experience for themselves all the aspects of fire prevention and evacuation signposting systems.

Above an impression of the research and development centre with a training and schooling institute for passive fire prevention products and systems and for the improvement of evacuation signposting systems in buildings and on board ships. The centre consists of a presentation theatre seating up to 45 persons, and a mock-up covering about 500 square metres in which various evacuation signposting systems are installed to enable their effectiveness to be determined in the dark.

The behaviour of escaping persons inside the test facility is recorded from a separate technical area (with an associated showroom) by means of infra-red cameras and an audio-video system.

In addition the centre comprises three laboratories with a total surface area of about 300 square metres in which, respectively, large-scale fire tests, mechanical tests, and light emission investigations are performed.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Cable penetrations with a variety of cable filling rates had been selected by the yard. The training session started with three deck penetrations with a high, medium and low filling rate.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Over 100 cables in this transit measuring 550x150 mm. This means a filling rate of 40% or in other words .... fully packed. The RISE® product specialist showed "how to do".

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

The installation started with removing the tie wraps of the cables to obtain the necessary play for inserting the RISE® insert sleeves. Due to the high filling rate, sleeving was done from left to right.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

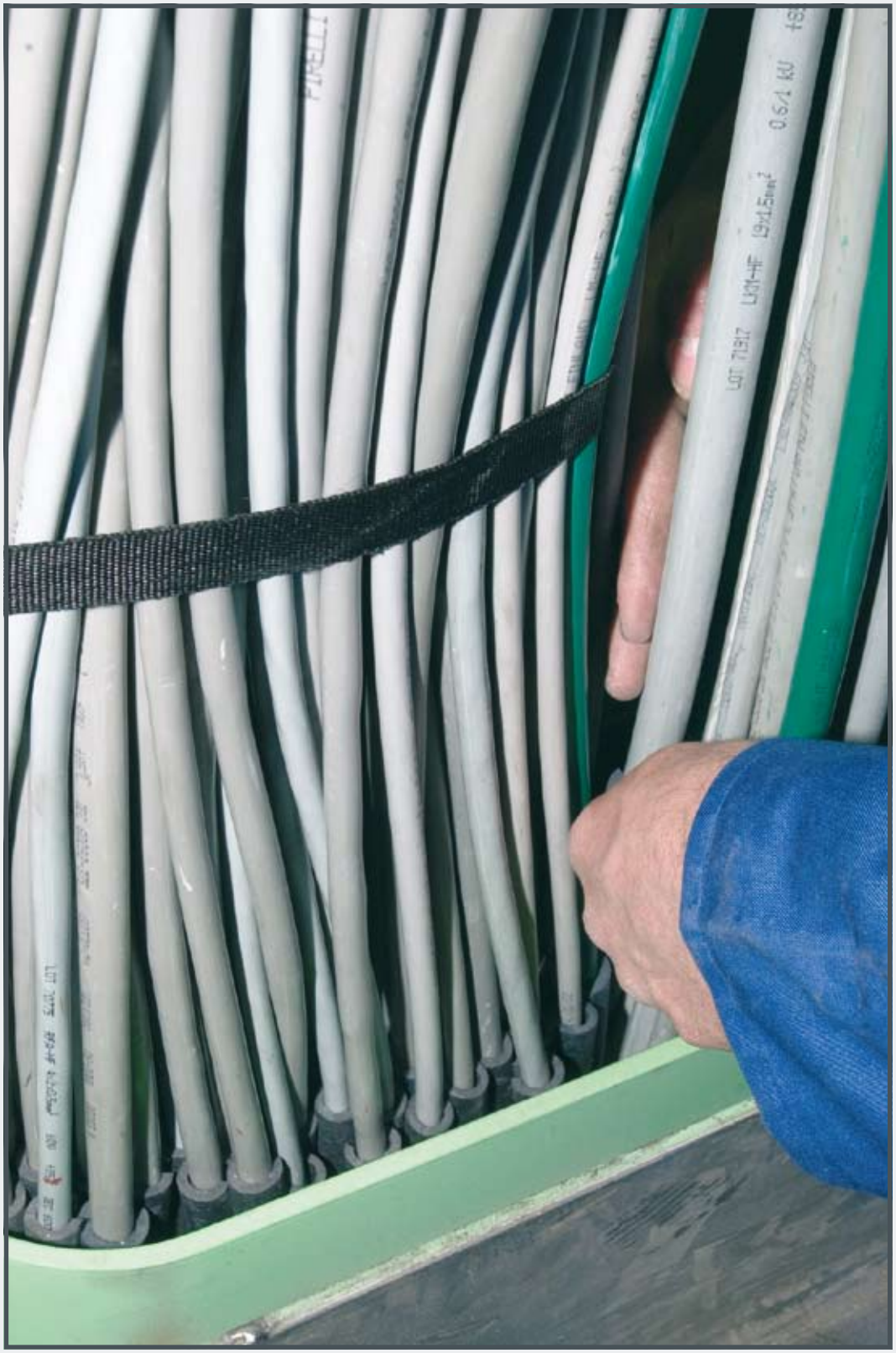
A complicating factor with the sleeving of the cables were the steel rings inside the coamings. These were originally intended for a different type of sealing method which needed the rings inside the penetrations.
For the RISE® system there is no need for extra supports because the insert sleeves cling to the cables and do not slip down.

A band was used to pull the sleeved cables tightly together with the objective to create enough space to sleeve the other cables.
This is not necessary with lower filling rates.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

A group of installers carefully watched the process of the installation job and took good notice of the "special tricks" to do even this difficult job:
deck penetration, high filling rate and obstacles.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"



Although the space inside the transit was very limited the sleeving itself was not a problem.
It shows clearly how compact a RISE® multi-cable transit in fact is.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

During the installation work some installation details and procedures were explained to the installers by the Finnish representative of the RISE® sealing system.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Pulling bundles of the cables apart in highly filled cable penetrations by banding is the perfect solution to simplify insertion of the RISE® insert sleeves. The cables are separated by the RISE® insert sleeves in such a way that applying the FIWA® in a later stage is a simple matter.

The amount of ducted cables is such that two bands are needed to create space for inserting the insert sleeves. Although the filling rate is actually at the maximum there is no problem with sleeving all the cables.

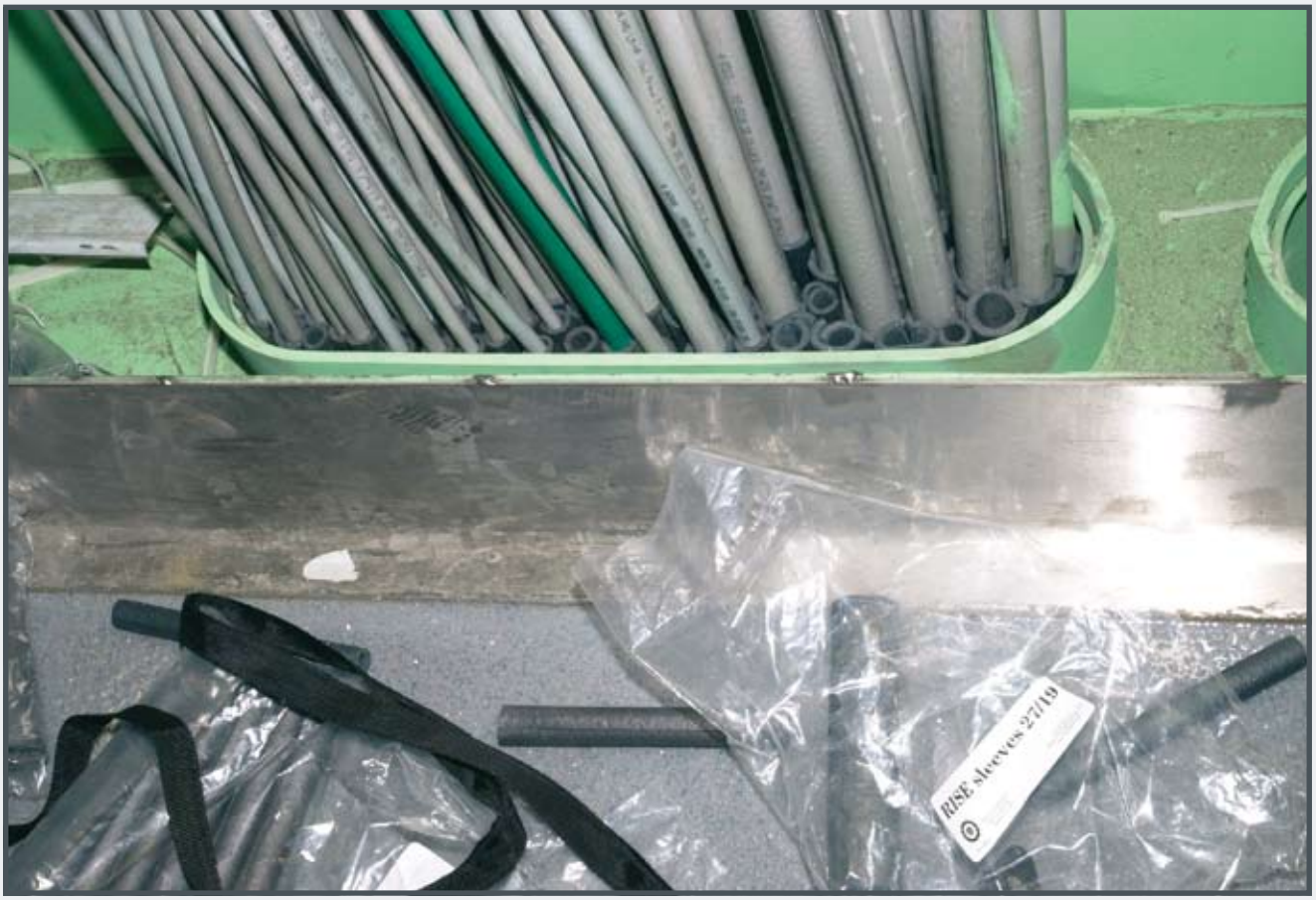
TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

At the beginning of the installation of the RISE® sealing system it was clear that the remaining work space in the transit was very limited.
Compared to the photograph below it can be seen that the sleeving of the cables does not take up a lot of extra space in a transit. RISE® is indeed a very compact sealing system. It will for sure not be possible with many other sealing systems to duct and seal this amount of cables in a transit of this size.

Now that all cables are sleeved, it is clear that the RISE® system allows a very high filling rate. Furthermore it is almost impossible to exceed the maximum allowable filling rate of 40% as defined in the IMO Res. A.754(18).

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

As soon as the bands used for separating the bundles of cables are released the cable set will settle again.



RISE® filler sleeves have been placed in the remaining open spaces in the cable transit. It is clear that the steel rings inside the coaming are not only an obstacle, but also minimize the total available surface substantially.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

After all the RISE® insert and filler sleeves had been inserted in the transit, the RISE® multi-cable penetration was finished by applying a layer of 20 mm FIWA® sealant on top of the RISE® sleeves.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Due to the high viscosity a good quality applicator gun is a must. Guns with a transmission ratio of 26:1 are available helping to avoid hand fatigue. They also build up the required pressure to let the sealant flow.

FIWA

RISE

An "overfill" of the FIWA® sealant has to be applied, because some sealant will be pushed between and into the empty insert sleeves during further finishing.

RISE

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Smoothing of the layer of FIWA® sealant can be done with a damp cloth. Spray some water on the cloth to prevent the FIWA® from sticking to the cloth and gently press the FIWA® down. Do not use soap water.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

By wetting the hand with soap and water the layer of the FIWA® sealant can also be smoothed by hand.
The FIWA® does not stick to the wet hand.
(People with sensitive skin should wear gloves).

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Residues of the FIWA® sealant can easily be removed with the damp cloth. By treating the surface of the FIWA® sealant layer by hand a smoothly finished penetration is obtained.

Sleeving of all the cables, inserting the filler sleeves in the empty spaces and finishing the penetration by applying and smoothing the FIWA® sealant at the top side took about 70 minutes.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Check by the installers of the yard and a "RISE" chat how easy in fact it was. It is advisable to bring the tie wraps back in place directly after finishing the transit to avoid any damage to the FIWA® layer.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

The next demonstration is the sealing of a cable penetration with a small amount of cables.

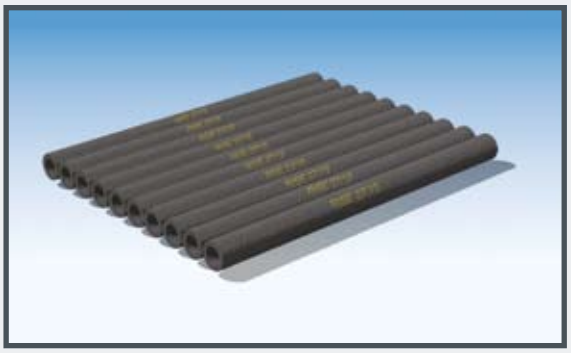
In this case there is no need to use any bands. The sleeving of the cables is done in a few minutes. The degree of difficulty in this case is the larger open space to be filled with filler sleeves.

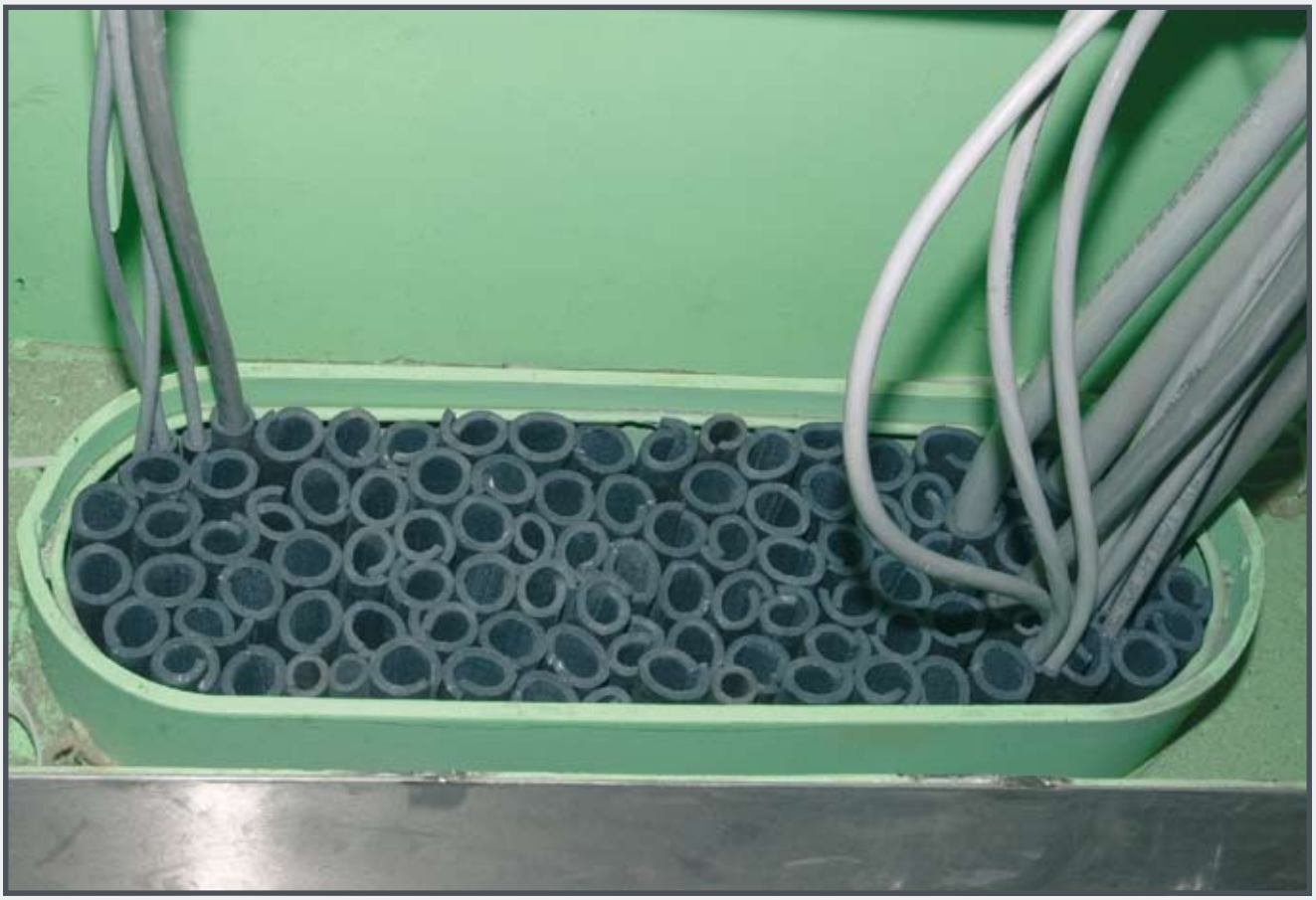
TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

The filler sleeves are bundled and fixed together with tie wraps or tape. The filler sleeves are also available in multi-units of 10 pieces. Using these instead of bundling the sleeves saves time.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Close-up of a bundle of filler sleeves. As mentioned before it is advisable to use the multi-filler sleeves in case of larger openings in the cable penetrations.





It is important to compose the bundles of filler sleeves in such a way that they tightly fit inside the penetration. This prevents them from slipping down.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Special pneumatic sealant dispensers have been developed to apply larger amounts of the FIWA® sealant.

For these larger surfaces the FIWA® sealant is available in 1 liter cartridges instead of the regular 310 ml cartridges. This saves time with replacing the empty cartridges.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

There is also a pneumatic sealant dispenser available for the 310 ml cartridges. This dispenser is mainly used for cable penetrations with larger spaces not occupied with cables. When the filling rate is as high as the first penetration, we sealed during this training session, a hand powered dispenser is most easy to use.

Although the nozzle of the 1 liter cartridges is much wider than those of the 310 ml cartridges, the application of the FIWA® sealant in between the cables is no problem with lower filling rates.

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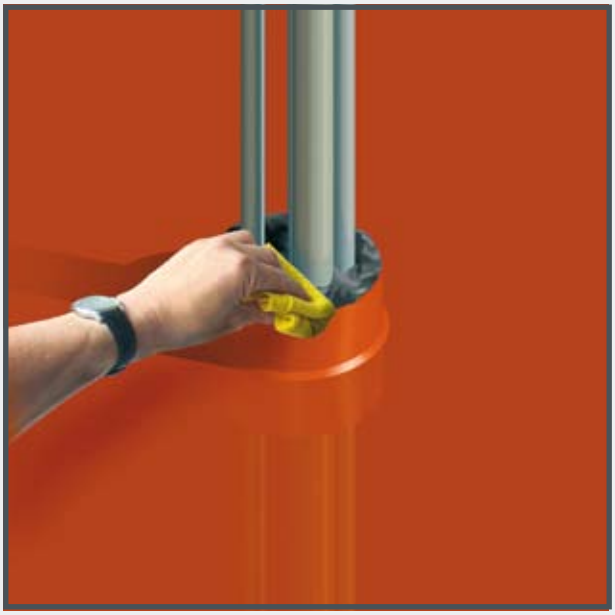

The cable penetration is finished by using a damp cloth and smoothing by hand.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Time now to learn "how to do" with the help of the RISE® product specialist.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

And also to learn "how to do" with a horizontal cable penetration with a difficult access.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Helping hands and explaining how to overcome a problem.

The first experience with the sleeving of the cables with the RISE® insert sleeves.

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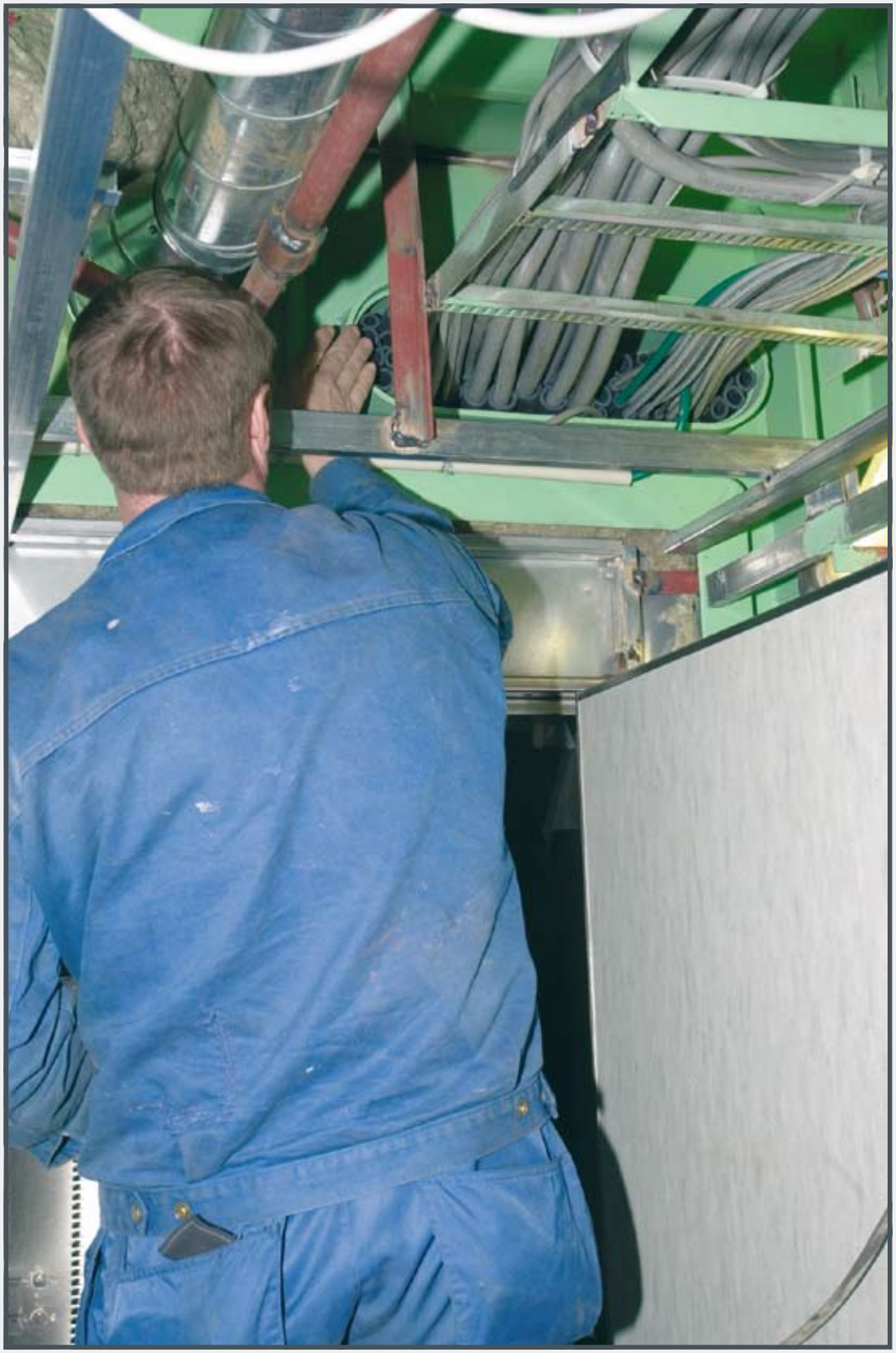
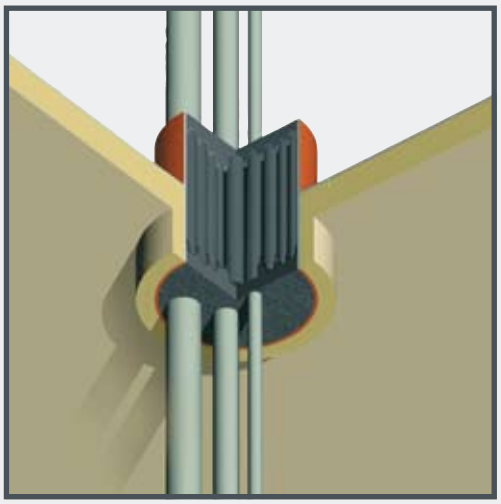


All the cables in the horizontal penetration are sleeved and the work proceeds with inserting the filler sleeves.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

With RISE® there is no need to apply insulation in front of the penetration and in between the cables.



After about an hour the installers were ready with both penetrations, including the finishing with the FIWA® layer.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

Four penetrations measuring 550x150 mm of which three vertical and one horizontal and a smaller horizontal penetration 250x150 mm sealed in about 4-5 hours, including training.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

The deck penetrations also have to be sealed from underneath with the FIWA® sealant. For this purpose a lot of research has been put into the development of the FIWA® to prevent the sealant from sagging or dripping off.

TRAINING SESSION FOR THE INSTALLATION OF RISE® MULTI-CABLE TRANSITS ON BOARD OF THE "CARNIVAL LEGEND"

In some cases the transits did not have an easy access, but due to the flow of the FIWA® sealant, application even in these circumstances, is possible.

RISE THE RAPID TRANSIT SYSTEM®

ARTIST IMPRESSION OF THE FIRST PHASE OF THE NEW FACTORY NEXT TO OUR R&D CENTRE

1) machines specially developed for compounding and processing of rubbers under controlled conditions to obtain optimum quality
2) machines specially developed for compounding and manufacturing of all types of sealants under controlled processing
3) moisture treatment installation and processing equipment for manufacturing of electrically conductive sealants and rubbers
4) a complete line of injection moulding presses ranging from 40 tons up to 400 tons for manufacturing sealing plugs and other rubber components
5) a complete line of compression moulding presses up to 300 tons for manufacturing larger type sealing plugs and ULEPSI rubber plates
6) processing installation for after-curing of rubber products to obtain the required compression set (long term behaviour)
7) extruder line including cooling system and cutting and slitting installation for manufacturing insert and filler sleeves for the RISWAT system
8) fully automatic extruder lines with a length of 20 meters, including cooling system and automatic cutting, slitting and sorting installation for manufacturing rubber insert and filler sleeves and rubber strips of the RISE system
9) extruder line for manufacturing luminescent profiles and hoses
10) line of injection moulding machines ranging from 50 up to 200 tons for manufacturing plates of the ULEPSI tank supports and luminescent YFESTOS floor coverings
11) completely equipped die-making shop for the in-house production of all tooling for rubber and plastics manufacturing
12) modern laser equipment for engraving the type codes in the dies for rubber manufacturing and for marking products with bar and 2D-matrix codes
13) mixing and airless spraying facilities for the NOFIRNO boards

Together with highly advanced systems and technologies we offer highest quality products.

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ASK FOR THE SEPARATE BROCHURES ON OUR PRODUCT RANGES:

* RISE® MULTI-CABLE TRANSIT SYSTEM
* RISE® SEALING SYSTEM FOR SINGLE AND MULTI-PIPE PENETRATIONS
* RIACNOF® MULTI-CABLE TRANSIT SYSTEM
* RISE®/NOFIRNO® MULTI-ALL-MIX CABLE AND PIPE TRANSITS
* RISE®-ULTRA SINGLE PLASTIC PIPE PENETRATIONS
* RISWAT® GAS AND WATERTIGHT CABLE AND PIPE DUCTS
* SLIPSIL® SEALING PLUGS FOR PIPE ENTRIES
* SLIPSIL®-SQ MULTI-CABLE TRANSITS
* DYNATITE® DYNAMIC HIGH PRESSURE SEALS
* BEESEAL® MULTI-PIPE AND CABLE PENETRATIONS
* ACTIFOAM® TEMPORARY SEALS AND CAVITY SEALS
* FIRSTO® FIRESTOPS FOR CABLE TRAY PENETRATIONS
* NOFIRNO® CAVITY SEALS, COATINGS AND SEALANTS
* ULEPSI® TANK SUPPORTS FOR BITUMEN TANKERS

CSD sealing systems

CONDUIT SEALING DEVICES OF AN AMAZING SIMPLICITY WITH AN OUTSTANDING PERFORMANCE

BEELE Engineering and CSD International have been involved with fire, water and gas tight sealing for more than 30 years. We have developed and tested products proven to provide the utmost in sealing protection around the world. To receive our complete civil construction and/or marine products catalogues, please contact your distributor or local representative.

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