

REPORT

Snøhvit LNG Plant



The Snøhvit LNG plant in Norway, which is built and operated by Statoil, is a unique new natural gas project. Due to its size and advanced technology it has meant the development

of many new technical solutions and standards. Roxtec is used frequently in the plant as a successful problem solver for cable sealing. One reason for this choice is Roxtec's prac-

ticality and flexibility to alterations. Cables can be added and changed during construction.

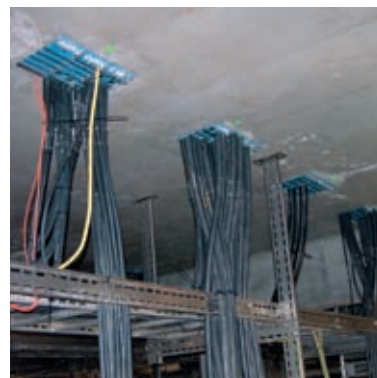
Roxtec team reports on site

From the construction of the LNG Plant
in Hammerfest, Norway

We Seal Your World

Flexible sealing solution with Roxtec cable transits

The Roxtec G 8x3 entry seals are used frequently in the substations on Melkøya. Cables pass through the Roxtec products in the floors and into control cabinets on the level above. The seals are flexible to allow changes of cables during the progress of the electrical installations.



The gas is transported in pipelines from the Snøhvit wells on the sea bottom to the process unit on the island of Melkøya, outside Hammerfest by the Barents Sea. The plant has been built as a self-sufficient production facility and a multitude of cables and openings are to be found in every system. Naturally, this has meant several challenges, not least for the electrical engineering and the planning of the work with electrical installa-

tions. One challenge was to standardize a flexible sealing solution for cable transits. Other were to handle alterations occurring in electrical installations during the build time, and in reducing logistics of electrical components to a minimum.

Need for competent seals

The needs and requirements at Melkøya include the protection against leakage from gas, water, dust and fire in openings where

cables pass. One of the many reasons for choosing Roxtec is that our solution not only protects against the above described hazards, but provides a whole range of valuable benefits during installation and following alterations.

Unique flexibility

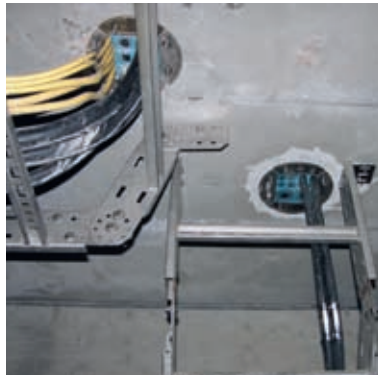
Roxtec's module-based seals make it easy to configure and build sealing solutions that will fit every single application and opening. They

provide a simple and efficient sealing standard for the entire plant. On Melkøya the Roxtec solutions seal anything from one cable in one opening, to several hundreds of cables in larger openings. No matter whether the openings are round or rectangular, Roxtec solves them all.

Subsequently Roxtec is used in the power supply from the gas turbines in the area for converters and transformers. Roxtec is also used in the power distribution with substations and in the process unit in the compressor rooms and in fire and gas junction boxes.

Accept changes

Multidiameter™, our technology based on sealing modules with removable layers, by which you



adapt the fit of the seal to match the OD of each cable, secures both high precision and enables great flexibility. "A regular problem in electrical engineering, is often the position of the electrical panels in the substations. These solutions usually grow out of the work as you go along and it is a challenge to the cable routing and sealing. This is why flexibility becomes extra important, such as for alterations in the seals. When

we add new cables, or move existing ones, we need to know that the seals are in place and that they fit both a different amount of cables and the new dimensions", says Svein Andersson at Aker Kvaerner. "All this we can do with Roxtec. With our previous solutions we were always missing the right size of blocks, but now this is not a problem anymore", say Svein's installers at the site.

Customization

When it came to the cable routing between the cable gallery in the basement of the power supply building and the compressor room, Roxtec found a solution with a customized product. The customer wanted to seal three big high power cables in each opening in the floor. Thanks to the experienced design-



ers at Roxtec the customer was offered a solution that combined flexibility during installation with high precision sealing.

Active support during the project

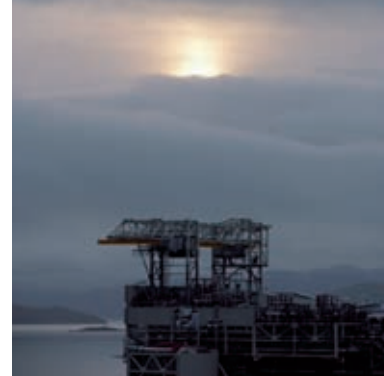
Roxtec is more than just a supplier. Our sales and support organization in over 70 markets enables us to support our customers during the entire project. Regardless if new problems or challenges arise

in a project, we are there to help. "We believe it is always important to follow up, to assist and prevent any possible problems. We talk to the installers and take our support mission very seriously" says Tore Wennerberg from Roxtec AS, Norway.



Facts

- Project type:** Liquefied Natural Gas (LNG) Plant.
- Europe's first LNG export plant and the world's most energy effective LNG plant. Unique technology with remote-controlled wells on the sea floor 143 km off the Norwegian coast outside Hammerfest.
- Customers:** Statoil ASA and Aker Engineering, Norway.
- Applications:** Cable sealing between external environments and inside areas and in between production areas. Through floors and walls, into rooms, cabinets and to process equipment.
- Requirements:** Water tight, gas tight, dust proof including IP 66, 67.
- Roxtec products:** Roxtec Frames and seals:
Roxtec G, Roxtec GH, Roxtec S, Roxtec SBTB, Roxtec SF, Roxtec R, Roxtec RS.
- More than 8 000 openings.
- Reasons for Roxtec** Unique Flexibility: easy to install and make changes.
- Simple and efficient sealing standard for the entire plant: helps reduce logistics and adds future included capacity thanks to Multidiameter™, the Roxtec technology based on sealing modules with removable layers.
- Active support from Roxtec during the entire planning and building phase, including on-site support.
- Pre-delivery tests of customized, special solutions.



Oil and Gas References

Statoil
Aker Engineering
Dragados
ExxonMobil
Shell
BP
Chevron Texaco
CNOOC
CNPC
Total
Kellogg Brown & Root
Snamprogetti
Flour Daniel
Hyundai Heavy Industries
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