

Electricity sub-stations in the Sultanate of Oman



Universal press seal.

Sultanate of Oman.

The Sultanate of Oman (capital: Maskat) is located on the Arabian Peninsula in the Middle East and borders in the northwest on the United Arab Emirates, in the west on Saudi Arabia and in the southwest on Yemen. Altogether the Sultanate extends over an area of 309,500 square kilometres.

The peninsula Musandam is a coastal enclave in the Street of Hormus and borders on the UAE; the Al-Hajar-Mountains go from here in a south-eastern direction. The 2,700 km long coast extends from the Gulf of Oman to the Arabian Sea. The narrow fertile level of the Batinah coast which is dominated by Djebel Akhdar is located in the northwest. The southern province Dhofar gets separated from the north by a desert; behind the coastal area mountains rise.

Requirements.

The requirement is to seal medium-voltage cables and control cables in electricity substations from the external transformer (33 kV/11 kV) to the switchgears inside the building and cable basement subsequently.

The cables - partly laid in oval liners - have to be sealed to prevent the ingress of animals, sand, water and gas.

The challenge is to develop a cable seal, which is adjustable to the outside diameters of the cables and to the deformed oval liners.

The cable diameters vary from $\varnothing 14$ mm to 108 mm, and the liners from $\varnothing 145$ mm to 165 mm. The use of segmented ring technology provides the answer to all these challenges and also allows the provision of reserve openings for additional cables to be laid in the future.

Since not all openings are occupied with cables, an easy process for retrofit and later laying of cables is also required.



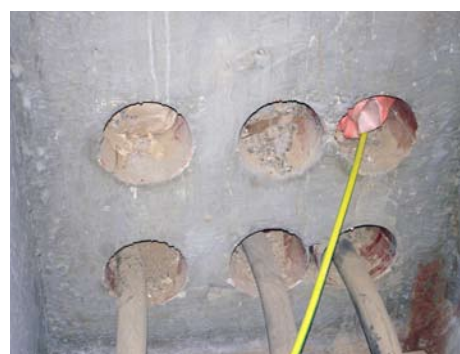
Inside of building

Liners – some oval – that are still unoccupied.



Inside of building

Several cables of different diameters are laid into the building.



Inside of building

Introduction of various cables with as yet unoccupied openings.

Simple installation.

The universal press seal is ideal for use in core drillings or plastic liners for sealing medium and low-voltage cables. The split design allows effortless installation – even on cables that are already in place. Integrated blank seals keep reserve openings sealed, ready for later laying of additional cables.

Segmented ring technology allows any cable seal to be adapted to the individual cable diameter in seconds.

All what is needed is to easily remove the segmented rings, place the seal around the cable, insert the cable seal in the liner and tighten the screws with the torque meter!

End result.

Using universal press seal elements, standard openings provided by liners with $\text{Ø}150$ mm individual cable arrangements are easily, quickly and securely sealed.



Segmented ring technology

The split design allows effortless removal of the individual segmented rings.



Project details.

Location:	Electricity sub-stations in the Sultanate of Oman Al Buraymi S/S. No. 4 Sohar Industrial S/S. No. 4 Falaj Al Qabail All operated by Majan Electricity Company (SAOC)
Application:	Retrofit sealing of already laid cables in new and existing buildings
Requirement:	Universal press seal to prevent ingress of animals, sand, water and gas
Installation company:	United Engineering Projects Co. L.L.C. Eastern Overseas L.L.C.

Hauff-Technik solutions.

Specification:	Retrofit seals with universal cable seals
Solution:	Universal press seal with segmented ring technology
Capacity:	82 cable seals

