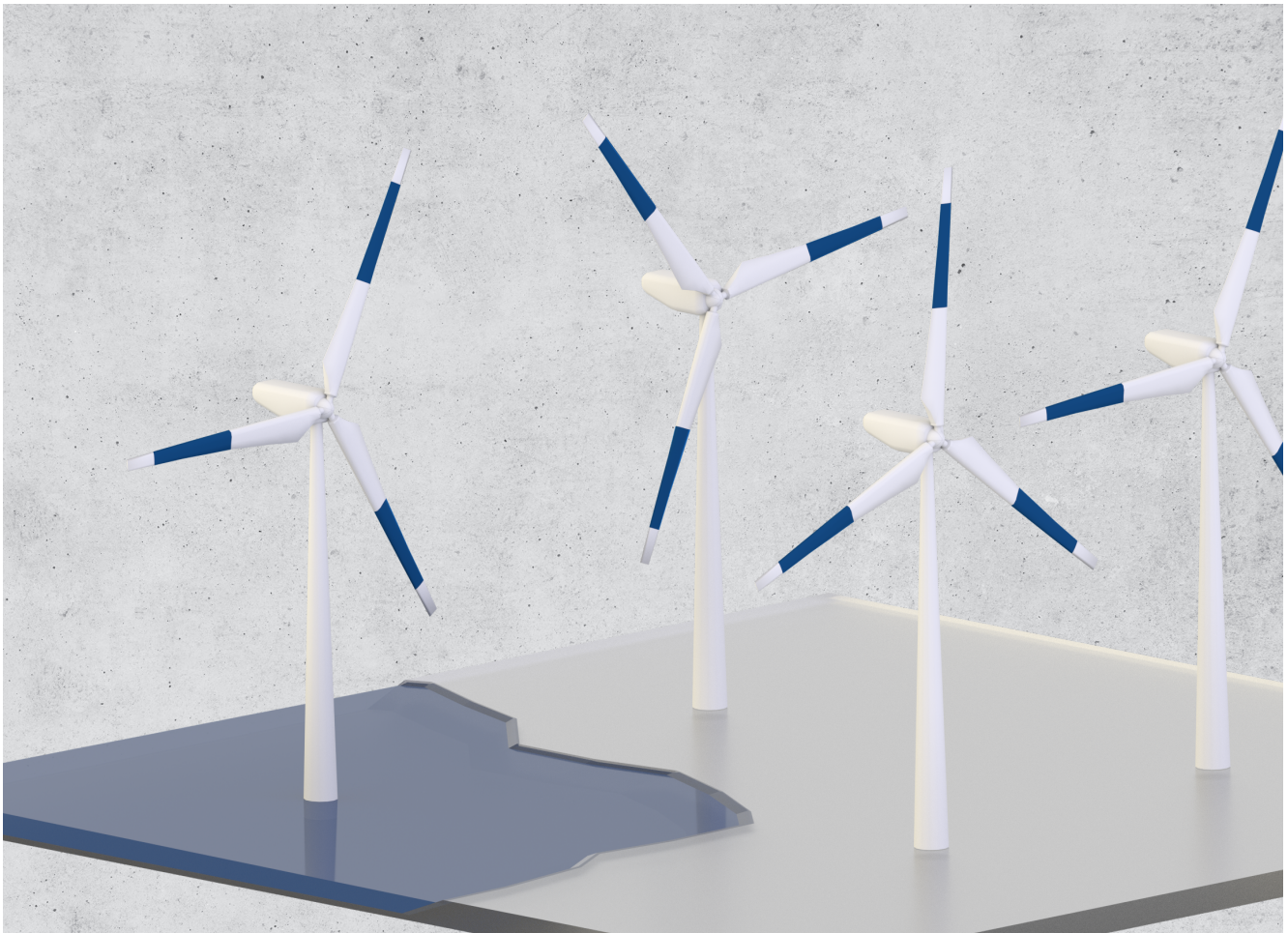


Always. Reliable. Tight.

hauff-  
technik®



WHERE THE WIND OF THE FUTURE IS BLOWING!  
INNOVATIVE SOLUTIONS FOR WIND POWER:  
SECURE AND RELIABLE SEALING OF POWER CABLES WITH HAUFF-TECHNIK.

## RENEWABLE ENERGY SOURCES

# It is only really secure if it is leakproof

## HAUFF-TECHNIK FOR WIND POWER PLANTS

Hauff-Technik is one of Europe's leading manufacturers of cable and pipe sealing systems. For over 60 years, we have been specialising in the sealing of buildings. Our innovations protect all kinds of buildings from gas and water leakages, dirt and vermin.

Our clients include energy suppliers, public utility companies, construction firms, fitters and installation services as well as industry. Many architects and other project-planning agencies have added us to their lists of recommended companies.

### Some key data:

- Hauff-Technik was established in 1955 and, since then, has grown from a small factory into one of Germany's most innovative medium-sized companies. In 2018, we were for the eighth consecutive time elected among the TOP 100 of the most innovative medium-sized companies.
- Our portfolio encompasses over 3,000 products.
- Quality made and engineered in Germany: we develop and produce at one location in Germany.
- We are represented successfully in over 20 countries by competent partner companies.



## WHETHER ONSHORE OR OFFSHORE – WE ARE READY FOR YOUR PROJECT.

### We provide comprehensive support for your entire project:

- Individual technical planning.
- Technical project supervision.
- Training, if required.
- NEW: on-site offshore service – along with a whole range of specially constructed solutions for the implementation of difficult offshore projects, Hauff-Technik also offers on-site supervision by specially trained personnel, such as on offshore platforms.



Hauff-Technik – our skills cover a wide range of applications:  
Find out more about us at [www.hauff-technik.de](http://www.hauff-technik.de)!

Skills and experience

## OUR FIELDS OF EXPERTISE

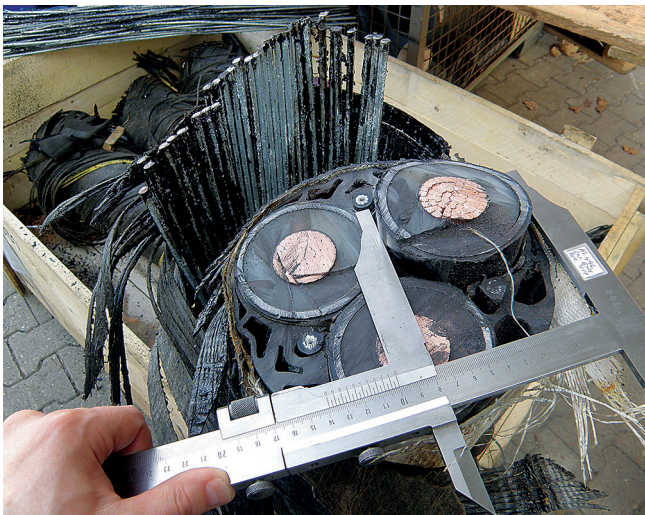
Hauff-Technik is the ideal choice for qualified advice and support – no matter what the sealing task is. Our expertise and many years of experience in the sealing of buildings provide a sound basis for this. You will also benefit from this special know-how when it comes to onshore and offshore applications. A large number of wind power plants today have already been fitted with our systems.

**For us, flexibility means:**

**Individual, when and wherever necessary – standardised, when and wherever possible.**

The sealing of cables in the field of wind power involves some very individual demands. Our researchers and developers are particularly well equipped for this. We endeavour to clarify your requirements in the best possible way, in order to realise the most suitable sealing product for you, the client.

The successful development of your made-to-measure solution requires our product components to be extremely flexible. It is this flexibility, in particular, that Hauff-Technik's individually manufactured seals are endowed with. In this way, we are able to develop special products designed according to your specifications – even for the most special demands.



Undersea cables with very wide diameters – typical of offshore applications.



Individually manufactured, split press seals.

## ROUND SEALING – AN ALL-ROUND SUCCESS.

The characteristic feature of press seals is their round shape, which ensures even sealing.

### The advantages:

- High occupancy density due to round shape.
- Simple and fast assembly: no loose individual parts, easy to refit.
- Simple assembly, especially in the case of horizontal fire-retarding sealing (deck).
- Cable-friendly and even radial sealing (distribution of pressure).
- Reliable sealing without additional sealing grease.
- Special solutions can be developed at short notice.

## Example of use in wind power plants

# HAUFF-TECHNIK IN ONSHORE USE

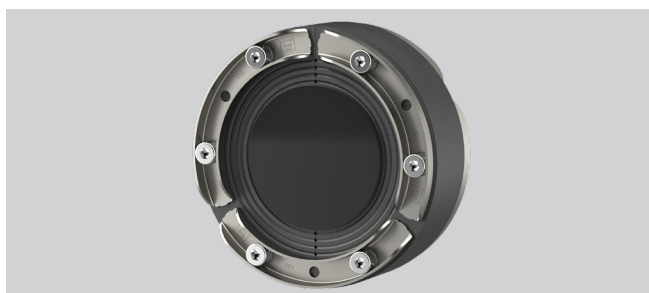
### RELIABLE REALISATION OF PROJECT GUARANTEED.

In order to ensure the operational safety of wind power plants, it is absolutely imperative that the pipes and cables are all securely sealed. Hauff-Technik's sealing systems make an essential contribution to achieving this. Here are some of the typical sealing tasks involved in applications for onshore projects: entries in transformer stations, substations and in wind power plants themselves.



### SIMPLE, ADAPTABLE, LEAKPROOF.

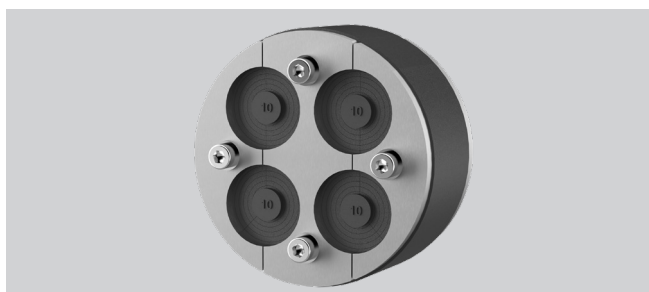
Hauff-Technik's universal press seals are ideal for use in onshore projects. Their segmented ring technology enables them to cover a wide range of diameters. The seal can be adapted easily to the appropriate cable diameter in a very short period of time. Just one seal provides you with a whole range of sealing possibilities.



HSD 150-SSG – press seal for sealing of provisional openings



HRD 150-SG-3/22-54 – press seals with segmented ring technology



HRD 104-SG-4/8-30 – press seals with segmented ring technology



Segmented ring technology in use: HRD 150-SG in the foundations of a wind power plant

### HOW IT WORKS.

The seal consists of two stainless steel plates and a rubber insert made of EPDM. Installation is carried out in concreted cable ducts or wall sleeves. By tightening the bolts the stainless steel pressure plates compress the rubber from both sides. This will provide the sealing between the cable/cables and the cable duct/wall sleeve. With their segmented ring technology, the press seals are split uniformly throughout, and, due to its integrated plugging, the standard press seal HRD-SG is also suitable for sealing any unused openings or holes.

## Example of use in transformer stations

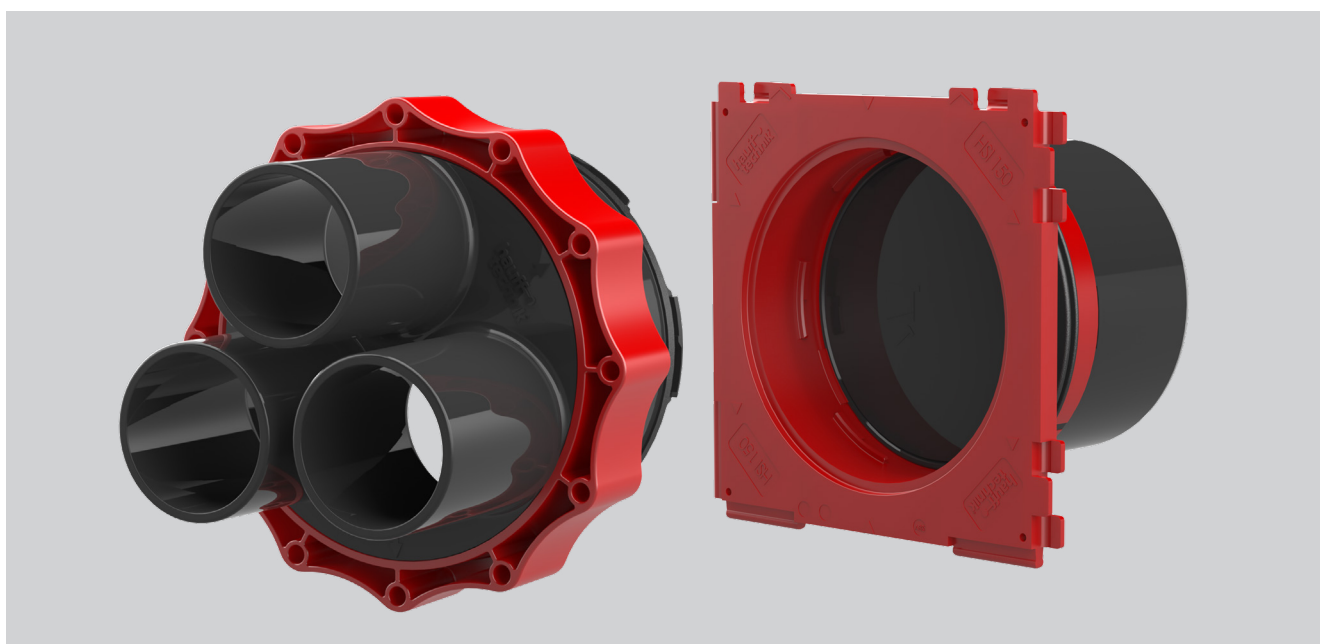
# HAUFF-TECHNIK IN ONSHORE USE

Transformer stations are responsible for transforming electric currents so that they can be used in low-voltage networks. These are also necessary in the case of wind power plants.

Our HSI 150 cable seal has proved its worth in this field, in particular. It consists of a fitted component that is flush with the shuttering, the packing piece and its individual cover. Cables and pipes of different diameters and numbers can be securely sealed with it. Thanks to the pressure tight blind insert and a security cover (to be knocked out) you have double security, which is especially important for the construction of the station. This enables the packing pieces to be either individually fitted or fitted in the right position in packets via a framework system.

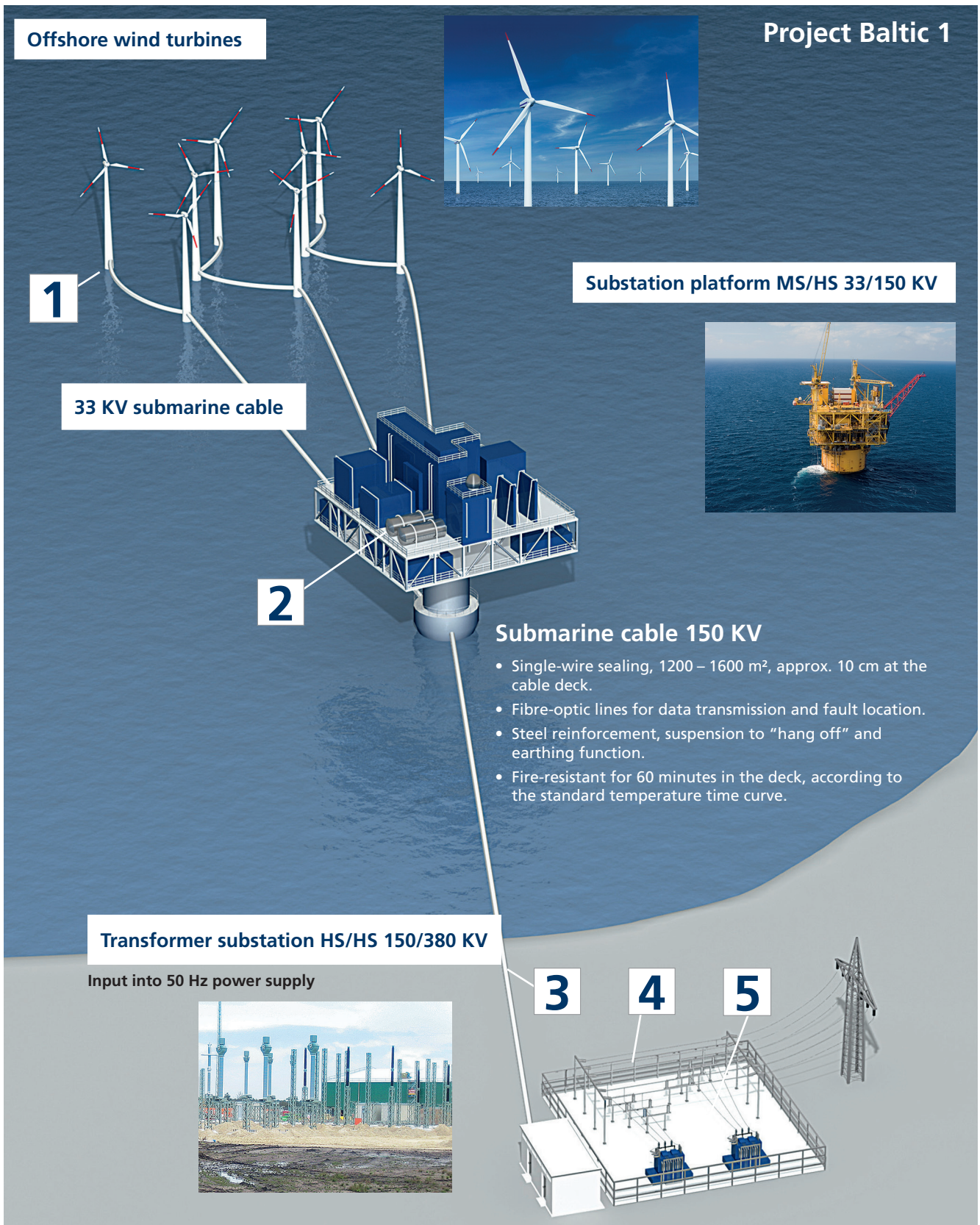


Transformer station of an onshore wind power station: the cables have been sealed with a HSI 150 packing piece using various system covers.



HSI 150 packing piece and the HSI 150 D3/58 system cover, suitable for sealing up to three 22–56 mm cables.

We bring energy ashore safely  
**HAUFF-TECHNIK IN OFFSHORE USE**



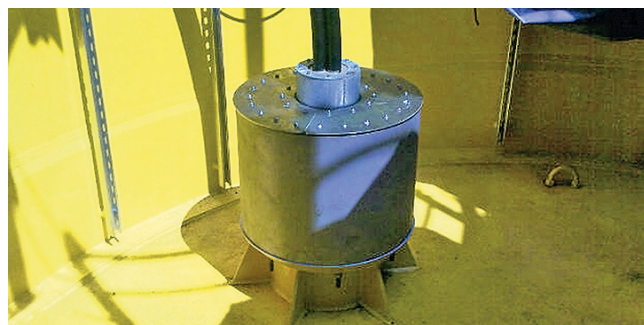
Energy cable systems require fireproof and pressure-tight sealing made of steel and concrete. This particularly applies to projects at sea. In practice, an example of this would be Hauff-Technik’s contribution to the Baltic 1 Project (in collaboration with nkt Cables GmbH). This is the location of one of Germany’s first offshore wind parks, just off the coast of Mecklenburg-Western Pomerania, 16 kilometres north-west of the Darss-Zingst peninsula.

## Explanations

# HAUFF-TECHNIK IN OFFSHORE USE

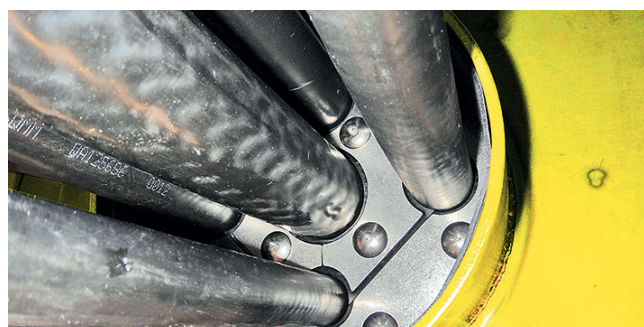
### 1 33 KV SUBMARINE CABLE

Pressure-tight cable sealing for the junction in the lower section of the tower of an offshore wind turbine. Joint face with a fitted HRD-flange construction at the "hang-off" junction point.



### 2 400 V LOW-VOLTAGE CABLE

Split-design cable entry on an offshore substation platform. Pressure-tight, permanently elastic sealing of low-voltage cables between the generator room and the cable deck using a split press seal HRD 200.



### 3 150 KV SUBMARINE CABLE

Shore connection involving a 150 KV cable route in combination with fibre-optic data cable in a sheet pile wall.



### 4 150 KV SUBMARINE CABLE

Pressure-tight entry of individual high-voltage cable and fibre-optic data cable at the transformer substation for input into the 380KV/50Hz supply network.



### 5 EARTHING AND POTENTIAL EQUALISATION IN THE CONCRETE FLOOR SLABS

HEA-P-M16 earthing connection. Connection thread in the concrete floor slab and, at the same time, electromagnetic shielding via the steel reinforcements.



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# ALWAYS HAUFF

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