



for top temperature and pressure resistance

## STEAM AND GAS TURBINE APPLICATIONS

BIRKOSIT Dichtungskitt<sup>®</sup> offers a 100% seal for all the relevant areas in gas turbines, steam turbines and nuclear plants, including surfaces, intermediate gaskets and oil control valves.

A **combined cycle power plant** or gas and steam power station is a power plant in which the waste heat from a gas turbine power station is used in a steam power plant. The gases given off by the turbine serve as a heat source for a downstream waste heat boiler, which in turn acts as a steam generator for the steam turbine. A liquid is evaporated on the one side. The speed of the steam is high enough to drive a turbine. The steam then condenses and is pumped back into the cycle as a liquid with reduced volume. There is a large pressure difference between the evaporator and the condenser which stimulates the steam flow in the turbine.

Electricity is generated in the **combined cycle power plant** with one to four gas turbines and one steam turbine, based either on a multi-shaft system, where the turbines each drive one generator, or on a single-shaft system where one gas turbine drives the generator with the steam turbine (which can be uncoupled with a synchronous self-shifting clutch). The hot gases given off by the gas turbines are used in a waste heat boiler to generate steam. The steam is then expanded by means of a conventional steam turbine process (where the pressure and temperature increase).

If, in addition to using the heat given off by the gas turbine, there is an increase in the steam output and therefore in the electrical power of the steam turbine through additional firing of the steam boiler, this is referred to as a **combined process**. Gaseous or liquid fuels like natural gas, biogas or heating oil are used to operate the gas turbine. Other fuels can also be used to operate the burner in the steam boiler.

The **gas turbine** (gas expansion turbine) consists of an upstream compressor and an intermediate combustion chamber. The **steam turbine** consists of a heat source, a steam generator, a turbine with a generator and a unit for cooling the hot steam.



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## **BIRKOSIT Dichtungskitt®**

**Be on the safe side when it comes to sealing.**

### **Areas of application for BIRKOSIT Dichtungskitt®:**

- Covers for gas turbines, high-pressure, medium-pressure and low-pressure housings, outer and inner casings and vane supports.
- Surfaces on bearing housings, cover plates and oil seals.
- Shaft expansion joints, cross joints and LP hoods.

### **Advantages at a glance:**

- BIRKOSIT Dichtungskitt® meets all the requirements in terms of reliability, resistance and ease of use.
- BIRKOSIT Dichtungskitt® boasts an exceptional ability to withstand the effects of extreme temperatures and an impressive measure of lasting elasticity.
- BIRKOSIT Dichtungskitt® can be easily and quickly cleaned from the sealing areas when equipment is dismantled, saving time during inspections and speeding up the resumption of normal operations.
- BIRKOSIT Dichtungskitt® is a cost-effective solution which can be used to replace or enhance other sealing options.

### **Further possible applications:**

BIRKOSIT Dichtungskitt® can be used to optimise seals with solid materials. It is also suitable for use on surfaces as a replacement for conventional seals, such as the following:

- O-rings
- Flat gaskets
- Rubber
- Paper
- Asbestos
- Graphite
- Metal gaskets