

Process Heat Recovery Systems and Pressure Equipment Steam, Heat and Equipment for Process Plants



Solid Fuel Boiler Plants
Combined-Cycle / Cogeneration HRSG
Waste Heat Recovery Boilers
Process Heat Recovery Systems and Pressure Equipment
Service

Why BERTSCH? A question of success.

„You get sweeping success when you decide to focus on quality.“ (Engineer Hubert Bertsch)

Experience and Innovation

In sustainable working processes, we refined, enhanced and continuously adjusted the design and manufacturing of process waste heat systems and equipment to the changing needs of our customers.

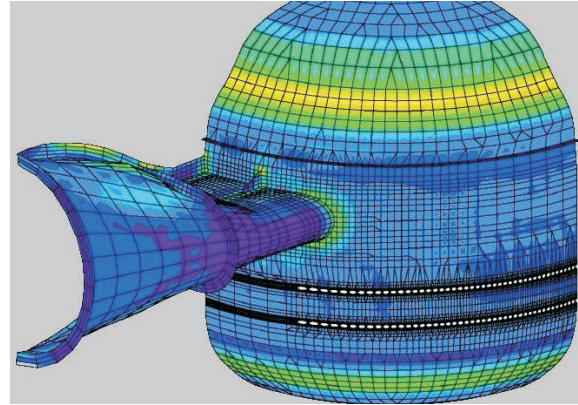
Suitable resources and quality

Cutting-edge construction and calculation methods as well as a specialised workshop that provides on the finest level welding meets the high expectations placed on construction parts for the (petro-)chemical industry.

The path to success

- Customised design
- Highly specialised manufacturing
- On-time delivery
- Custom-fit assembly

The supply of the following products is part of our core expertise.





Heat recovery systems in processes

We annually deliver process heat systems to our global customers, starting with thermal calculation, 3D layouts and 2D detail drawings right up to modules that are ready for transport. And we have been doing this for decades.

Regardless what is produced - hydrogen, carbon monoxide, methanol, ammonium, carbamide, sulfuric acid,... - complex heat recovery systems utilise energy from combustion gases to generate hot steam and to heat combustion air or gas mixes.

Examples for processes

- Steam reforming process
- Haber Bosch process
- Claus process

Design codes / Licences for pressure parts (excerpt)

Pressure Equipment Directive, AD 2000
EN12952, EN12953
ASME I and ASME VIII Div. 1; S and U stamp
Manufacturer license pressure parts/boiler for China

Typical designs

- Horizontal and vertical arrangement of ferritic, ferritic-martensitic, austenitic heating surfaces in rectangular or cylindrical ducts.
- Natural cycle evaporator (water tube boiler and fire tube boiler).
- Hot steam temperature regulation via spray attemperators or drum coolers.
- Air preheater in plate or tubular construction.
- Refractory lining and/or ceramic fibre.

System sizes

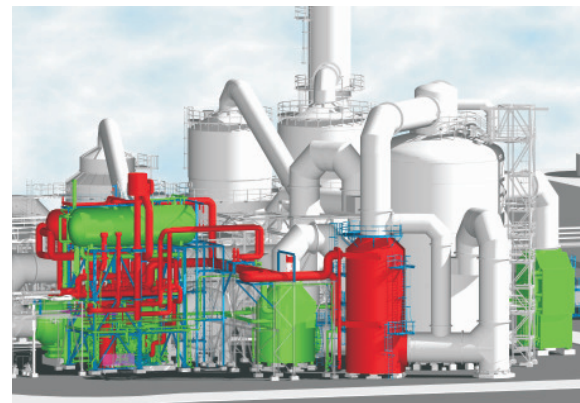
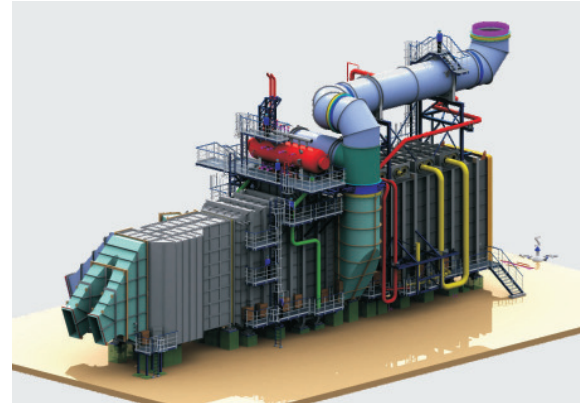
Combustion gas flow per heat recovery system:
20,000 to 500,000 m³n/h

Max. allowable operating pressures

Depending on application between 10 and 150 barg

Max. allowable operating temperatures

On the flue gas side up to 1,300°C
Superheated steam, gas mixes, air ... up to 650°C





Process gas coolers for reformer gases (pressurised cracked gases)

Aside from the thermal design including main and bypass surfaces, our main focus is on the tube sheet construction and the automatic tube to tube sheet welding.

Supported by finite elements, sophisticated and precisely manufactured tube sheets are connected with the tubes through our in bore welding. Low operating voltage and homogeneous temperature fields combined with perfect heating surface cooling of the welding are the main benefit for our customers.

Regardless what is produced, hydrogen, carbon monoxide, methanol, ammonium, carbamide, ... - pressurised cracked gases must be cooled down to the specified temperatures. The energy is used to generate steam. In a strongly reduced atmosphere, the material selection combined with our professional fabrication are extremely important for a long working life.

Design codes / Licences for the pressure parts (excerpt)

Pressure Equipment Directive AD 2000

EN12952, EN12953

ASME I and ASME VIII Div.I; S and U stamp

Manufacturer licenses China, India, ...

Typical designs

- Fire tube boiler as natural circulation evaporator system with internal steam space or integrated steam drum set directly on top or on a separate steel construction.
- Refractory lining self-flowing or monolithic.
- Metallic or ceramic ferrules.
- Internal bypass heating surfaces with gas flow regulation via a control valve.

System sizes

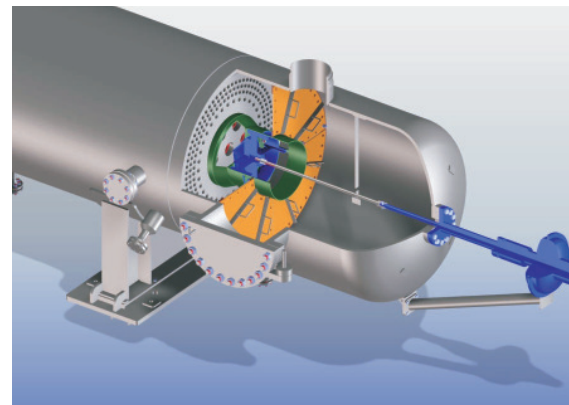
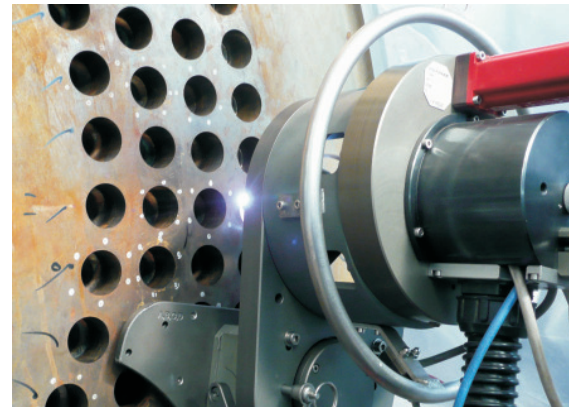
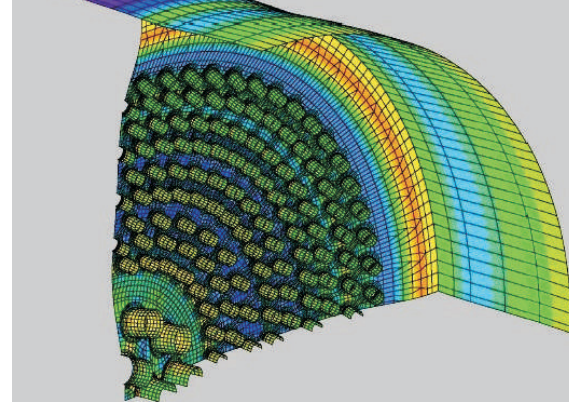
Process gas flow per boiler of 15,000 to 650,000 m³n/h

Max. allowable operating pressures

Up to 150 barg

Max. allowable operating temperatures of clean process gases

Up to 1,100°C





Reactors and columns for various (petro-)chemical processes

Reactors and columns are required for the product recovery of most industrially utilised chemical substances according to specified processes.

The expansion and retrofitting of process plants pose continuously increasing challenges to the respectively required process equipment and facilities.

Adherence to various customer specifications are the basis for a successful delivery and secure operation.

Based on the process provider's layout, we calculate static and dynamic loads and create detailed fabrication drawings. The equipments are manufactured in our specialised welding facility, which is located close by our technical department. We process a large number of construction materials (excerpt) there:

- General construction steel types
- Alloyed and unalloyed steel
- Heat-resistant CrMo steel
- Fine grain steel
- Nickel alloy steel with specified low temperature properties
- Austenitic corrosion-resistant and heat-resistant steel
- Austenitic ferritic steel
- Austenitic weld claddings
- Ferritic martensitic steel

Design codes / Licences for pressure parts (excerpt)

Pressure Equipment Directive AD 2000

EN12952, EN12953

ASME I and ASME VIII Div. 1; S and U stamp

Manufacturer licenses China, India, ...





Pressure vessels, heat exchanger and various specialised pressure equipment for chemical and petrochemical processes

Decades of experience in the construction of pressure vessels and equipment as well as state-of-the-art facilities in our fabrication guarantee an expert solution for your requests.

Continuously enhanced calculation and construction programs and a large variety of tested and proven welding procedures are daily utilised by our experts to fabricate high-quality vessels.

A large number of satisfied customers worldwide is proof for the high standards of our products.

You are welcome to use our long years of experience and well-established expertise in the construction of process equipment.

Absorbers, adsorbers, double jacket vessels, steam storage tanks, extractors, feeder vessels, falling film evaporators, fluidised bed systems, converters, reboilers, regenerators, stirrer tanks, separators, condensers, tanks, heat exchangers, liquefiers, ...

Design codes /licences for pressure parts (excerpt)

Pressure Equipment Directive AD 2000

EN12952, EN12953

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