



BUTTING – More than pipes

BUTTING is a renowned pipe specialist with a worldwide reputation. More than 44,000 tons of its longitudinally welded stainless steel pipes and clad pipes are used in many industrial sectors each year. However, BUTTING offers much more than this. Do you require prefabricated pipelines, vessels or sophisticated components? Then BUTTING is your partner. Extensive production capacities are available at its plants in Knesebeck and Schwedt in Germany, and in Tieling in China.

Photos ©Butting Gruppe GmbH & Co. KG

The family business undertakes extensive prefabrication of stainless steel pipelines and vessels according to models, isometric drawings, piping plans, as well as their assembly on behalf of its customers. Performing preparatory assembly work at the corresponding production sites optimises the quality of the pipelines, ensuring end-users in many industrial fields receive ready-for-installation products at fair prices.

Dieter Kleen, Head of the business unit Spools and Plant Construction at BUTTING in Knesebeck, says: “The BUTTING Group has extensive expertise in the production of pipes,

welding technology, materials technology and quality assurance, all of which are of utmost importance to our customers. In each group, we can rely on a great number of experts with considerable know-how.”

Customers also benefit from over 60 years of welding experience, with more than 85 different stainless steels and clad materials having been processed over the last decades. Dirk Mitterhofer, Managing Director of BUTTING Anlagenbau (Plant construction) in Schwedt, explains: “All current welding processes are utilised in our production. For this purpose, approximately 1,900 weld procedure

qualifications are available. We can fall back on more than 300 welders who are qualified and certified according to both national and international standards (DIN EN ISO and ASME IX).”

BUTTING produces ready-for-installation components for apparatus and plant construction according to customer requirements, in any technically possible shape, as per any rules and regulations, e.g. EN, AD or ASME.

The use of semi-finished products from own production and extensive prefabrication with a high degree of automation, supported by highly qualified staff, guarantee first-rate



Happy faces of project team: First complete reactor manufactured in Knesebeck.

product quality and high operational safety. State-of-the-art equipment and expertise in forming, milling and welding technologies are put to the test at BUTTING on a regular basis. For example, BUTTING Anlagenbau in Schwedt has a vessel production line equipped with innovative welding automats. Marcel Bartels, Managing Director of BUTTING International, states: "In terms of prices, our production location in China provides our customers with a clear advantage in a market where stiff competition prevails. Industrial sectors suffering from heavy pressure on prices benefit from our various locations and can commission European project management if they wish." At all locations, in-house construction departments take on upstream project tasks. The Managing Director adds: "The layouts for vessels and tanks according to all international standards are our daily business at all our production sites, however, in China, complete preliminary designs of vessels according to ASME, API or EN are also possible. Upon request,

BUTTING is also able to support customers with the design and construction of pipelines according to their unique requirements, thereby improving the planning quality and reducing production throughput times and costs." Many industrial sectors are won over by the high product quality and great savings potentials prefabrication offers, e.g.

- chemical and petrochemical industry
- water treatment plants
- oil and gas industry
- power and environmental engineering
- paper and pulp industry

Many examples from the past years are proof of the broad competences.

Tanks and spools according to Norsok

BUTTING in Knesebeck was commissioned for the production of four tanks and numerous spools for the pipelines required in the FPSO's Sulphate Removal Unit of the Johan-Castberg project. For the majority of the spools, super duplex material was specified due to the operating conditions in the Barents Sea. Dieter Kleen explains: "More than 2,000 spools, a total of more than 96 tons of material, were prefabricated by us such a way that they could be installed on-site with a minimum effort."

In case of such complex orders, BUTTING in Knesebeck not only demonstrates its expertise in production engineering: the vast number of pipeline components had to be carefully coordinated and managed in terms of production planning and logistics. Acceptance under the internationally recognised Norsok standard is mandatory for material used in the Norwegian offshore industry. Several inspectors were constantly present right from the start of production and confirmed that BUTTING in Knesebeck fully complied with the Norsok regulations. "The production of components for an FPSO is one of the most demanding tasks in the field of marine technology. The special materials, the stringent requirements on tolerances, welding technology, forming technology and quality assurance are unique. We were able to deliver our products to the complete satisfaction of our customers, and inspired them," says Dieter Kleen, drawing a positive conclusion.

Complete reactor from Knesebeck

For many years, BUTTING has produced and delivered double-tube systems and bayonet tubes to one of the world's leading companies dealing with converter technology and process engineering. Last year, for the first time, BUTTING in Knesebeck was



Skids for seawater desalination in superduplex.



By extensive prefabrication and further processing BUTTING is able to optimise the quality of the pipelines and offer products ready for installation at reasonable prices.

commissioned to produce the entire reactor tube bundles.

“Our Danish customer is very happy with their intense and expert cooperation with us. For projects already realised in the past, we have developed new, special tools and production lines, thereby continuously increasing our range of production possibilities,” explains Dieter Kleen. “Operating temperatures of 350° up to 1 050 °C put a lot of strain on the material. High alloyed materials are employed to meet these challenges”. The forming of tough materials with high wall thicknesses of up to 35 mm, and the welding of heat resistant nickel alloys and their combinations, require expertise and skill. For the heat treatment of large components, a special annealing furnace was built on the company premises. Machining the ends of the welded constructions to achieve the tightest tolerances of +/- 0,2 mm was also successfully completed by BUTTING, thanks to know-how and expertise built up over many years. The possible tightest tolerances had to be complied with during the final assembly of the components. Last but not least, the loading and despatch of the finished product, with a length of over 12 meters and a weight of 34 tons, had to be mastered.

Skid for distillation plant in the chemical industry

BUTTING Anlagenbau in Schwedt was commissioned with the production of a skid in one piece by a long-standing customer. The piping components, consisting of more than 681 meters of pipes mainly in material groups 1.4307 and 1.4404 and sizes from NB 25 up to

NB 150, were 100% prefabricated. These were installed on a steel rack together with the equipment parts provided by the customer (pumps, apparatus, other components, armatures and electric field equipment). All piping components were furnished with insulation.

The assembly of the entire skid, measuring 36 x 4.30 x 4.02 meters (L x W x H) and weighing approximately 68 tons in total, was carried out in the horizontal position in the presence of the customer’s supervisor. The final customer inspection was performed directly in Schwedt.

The skid was taken from the company premises in Schwedt/Oder to the harbour by special transport. Dirk Mitterhofer: “This one-stop-shop-solution enabled us to fully comply with the customer’s requirements in terms of a tight schedule, efficient project processing, quality of the products and flexibility.”

South African flue gas cleaning plant

BUTTING Anlagenbau supplied 35 vessels and apparatus for the upgrading of an existing flue gas cleaning plant in a paper and pulp mill in South Africa.

Instead of the previous cylindrical vessels, complex equipment with partly fitted mechanical systems was produced. The pre-assembly of the component groups largely took place in Schwedt/Oder to guarantee smooth installation on site. Dirk Mitterhofer: “The scope of supply was varied. It included loose parts, segmented constructions, as well as vessels in one piece. Over more than 27,000 hours,

365 tons of the high alloyed material grade 1.4462/duplex was processed and installed.”

More than 40 trucks left the company premises for the harbour of Schwedt. Additional sixteen 40’ containers were trucked to the port of Hamburg for shipping to South Africa. Looking back, Dirk Mitterhofer concludes: “Our state-of-the-art production facilities and long-standing expertise in the production of vessels, apparatus and pipelines enable us to fulfil almost any customer requirement. We can be proud of our experienced and quality-conscious welders.”

Pipelines for the pharmaceutical industry

BUTTING Anlagenbau in Schwedt was commissioned to deliver and install piping material and assemble equipment in a new plant for manufacturing the filters used in dialysis care.

“Pipes in this industry must be absolutely clean, free of pollutants and processed to high-quality standards”, explains Dirk Mitterhofer. BUTTING fitters laid 1.2 km of pipes in 1.4571, 1.8 km of pipes in 1.4541 and 1.2 km of double pipes. In addition, 1.2 km of pipes were assembled in accordance with the aseptic standard.

“Nearly 2,800 welds in pipes ranging from NB 15 to NB 125 were automatically produced by our fitters on-site using orbital welding to ensure consistently high quality. To meet these requirements, BUTTING uses the orbital welding process, a time-saving and high-quality alternative to manual welding.” Each weld was endoscopically examined, and every tenth weld was photographed and documented.

Customer benefits from synergy effects

GIG Karasek, a long-standing customer of BUTTING Anlagenbau in Schwedt, was involved in a project in the paper and pulp industry in South Africa. During its construction, GIG Karasek commissioned BUTTING in Knesebeck and the newly founded company BUTTING International Engineering (Hong Kong) Ltd. with packages consisting of prefabrication and assembly work of various vessels and pipelines. One of the packages included the production and static layout of four vessels used in the evaporator stage. On the basis of FEED, BUTTING took on the detailed planning, as well as the production afterwards. The vessels had a diameter of 6 meters, a length of 12 meters and weighed 130 tons each. Despite their enormous size, the vessels were produced in one piece at BUTTING in Tieling/China – the first time for BUTTING in this size range. The most sophisticated work was the installation of the heating bundles supplied by the customer, which was supervised by the quality control of BUTTING in Knesebeck, the TÜV and the end-user.

Duplex pressure vessels

The pressure vessels had to be produced according to the European standard EN 13445 and tested before being subjected to final inspection by TÜV. In this way, BUTTING in Tieling obtained the necessary qualifications unique to this order. The representative for pressure vessels from the main works in Knesebeck, was on-site in China to support his colleagues. BUTTING also received an order for the prefabrication and installation of 200 tons of duplex steam line pipes in dimensions of NB 800, with outside diameters of up to 2,200 mm.



Clad mega spool for refinery having a weight of 18 tons, a diameter of 2 meters and a total length of 22 meters.

The colleagues from Hong Kong undertook the management of the installation of the pipelines, including the supervision of European and local welders working on-site in South Africa. As the customer was impressed by this performance, BUTTING received more orders during the installation on-site, and so undertook the laying of pipelines from NB 20 up to NB 600 in stainless steel and carbon-manganese steel, on a smaller scale, for storage tanks. The isometric drawings necessary for the task were processed at the project office of BUTTING International in Knesebeck.

Impressed by quickness

Marcel Bartels draws positive conclusions: “BUTTING was able to demonstrate once again its competences as a reliable and versatile partner for paper and pulp industry projects, inspiring both our customer and the end-user. They were especially impressed by the quickness of the entire process: from the first discussions in Austria to the final inspection of the installation work, the project only took 24 months.”

“The new company structure of the BUTTING Group with their two Asian group members also proved its worth. The processing of the order demonstrated that our customers benefit from our highly efficient network, the diversity of our manufacturing facilities, our quality understanding and the extensive know-how of the different companies within the BUTTING Group.”

Skids for seawater desalination in super duplex

BUTTING was appointed to produce of skids the size of 40’ overseas containers to be used in a Chilean seawater desalination plant. The global positioning of the BUTTING Group paid off once again. While BUTTING in Brazil was responsible for acquiring the customer, the German sites in Knesebeck and Könnern took on the production of the pipes. The final assembly of the skids took place in China.

In addition to the super duplex pipes, the installation of the PE piping and the steel construction for the skids were part of the order. Therefore the complete prefabrication was organised in such a way as to ensure assembly directly on site.

Marcel Bartels explains: “This complete solution, true to our motto ‘One-Stop-Shop-Solution’, offered our customers many advantages: market-leading expertise, tailor-made product solutions, efficient communication and reduced administration costs.” He adds: “At the same time, our customers were impressed by the synergy effects of the BUTTING Group in this project. Quality products from Germany were combined with the advantage of labour costs in China. That inspired our customer!”



BUTTING Anlagenbau in Schwedt /Germany: the expert unit for the construction of vessels, tanks and apparatus.