







Clad pipes

-  Corrosion resistant pipes
-  Clad pipes
-  Special pipes and components ready for installation
-  Spools and welded components
-  Vessels, tanks and columns
-  Assemblies



BUTTING



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Clad pipes

Pipes made from clad materials meet the highest requirements of durability, corrosion resistance and good value.

Their use is recommended in all areas where dynamic stress, high pressure and a high level of corrosiveness can be found in the media transported.

By using clad materials, the excellent strength and toughness of carbon-manganese steels are combined with the corrosion resistance of high-alloyed materials.

BUTTING has been processing clad materials into pipes and piping components for almost 30 years. Renowned customers such as Statoil, ConocoPhillips, Shell, BP, ExxonMobil and Chevron use our products.

We are the only pipe manufacturer in the world that produces both longitudinally welded **metallurgically clad** and **mechanically lined pipes**.

BUTTING also processes clad pipes into **ready-to-install spools**.



Brigitte Blechinger
Sales Oil & Gas



Our capacities enable the production of an average of up to 7 500 m of metallurgically clad pipes per month in sizes between 6" and 26" with wall thicknesses of between 14 and 20 mm

We have already produced approx. 15 000 t of metallurgically clad pipes for projects worldwide

Metallurgically clad pipes

Metallurgically clad pipes offer the advantage of smaller wall thicknesses compared to austenitic solid-wall pipes and solid-wall pipes made from nickel-based alloys.

Other benefits include considerable weight savings and reduced material costs.

Metallurgically clad pipes are used, for example, as SCR, riser or process pipes, pipelines or pipes for elbows and fittings. Other application areas can be provided on request.

BUTTING has been producing longitudinally welded metallurgically clad pipes in varying material

combinations since the 1980s. Sizes range from OD 114.3 (4") to OD 1 219 mm (48"), and wall

thicknesses of up to 70 mm are achievable. The maximum wall thickness /outer diameter ratio is 1:9.

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Our production line offers you an additional crucial advantage over that of other manufacturers:

the manufacturing lengths without circumferential

weld are 6 or 12 m. Using a circumferential weld, lengths of 18 or 24 m can be achieved.



BUTTING produces metallurgically clad pipes, mainly from roll-bonded plates; it is also possible to use explosion clad raw material. Cladding can be attached on one side, internally or externally, or on both sides (splash zone)

The production process

Clad plates are used as raw material for the production of metallurgically clad pipes. The plates consist of a base material and a corrosion resistant alloy material. They are linked together firmly by a diffusion bridge.

The plates are formed individually on a press brake, using the JCO process, into an open seam pipe and provided with a longitudinal weld by a number of different welding processes.

We can also provide heat treatment for the clad pipes after the welding process, depending on the intended use.

Within quality assurance, various non-destructive tests can be carried out on the finished pipe: dye-penetrant, magnetic particle, ultrasonic, X-ray, dimensions test and a test of the residual magnetism can be carried out.



The benefit in cost-effectiveness terms of BuBi® pipes rises as the total piping system increases

Mechanically lined BuBi® pipes

The mechanically lined BuBi® pipe (BUTTING Bi-metal pipe) was launched by BUTTING as a market innovation in the mid-1990s.

Compared to a corresponding solid-wall version, the use of BuBi® pipes can save 25–50 % of costs. Due to the manufacturing process and the raw material used,

it is economically superior to the metallurgically clad pipe.

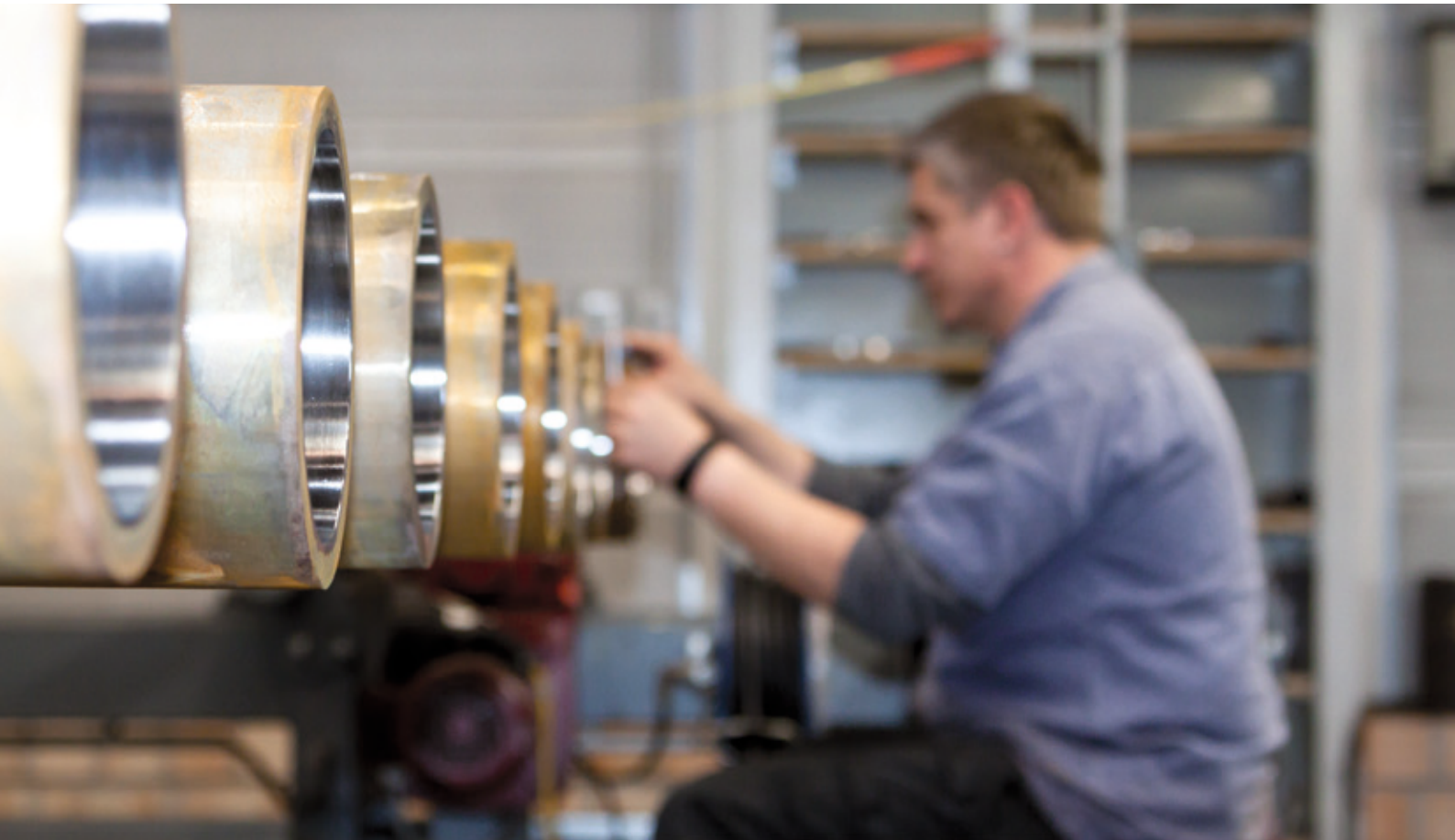
Another advantage is the wide range of materials that can be selected for both inner and outer pipe. Highly variable combinations of the relevant materials are possible.



The start of a success story: BuBi® pipes ready for shipment for the West Libya Gas Project



BuBi rail express: For the Tyrihans Project of our customer Statoil, more than 500 wagons had to be loaded



Mechanically lined BuBi® pipes

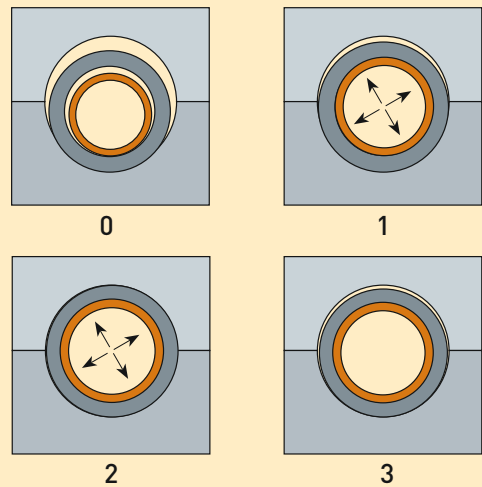
For many years, BuBi® pipes have been used successfully in the onshore and offshore areas of the oil and gas industry. Typical applications are pipelines or riser pipes; they are also installed as SCR pipes. Other areas of use are available on request.

Up to now, BUTTING has produced more than 900 km of mechanically lined BuBi® pipes for a variety of projects. Our manufacturing capacities enable the production of between 14.5 to 20 km of BuBi® pipes per month in sizes of between 4" and 26".





Main steps of the expansion process



The inner pipe and the outer pipe are expanded together by water pressure. Because of the normally more elastic resilience of the outer pipe, the inner pipe is placed under residual compressive stress. A secure mechanical tight fit is produced

Production process

In the hydroforming process we developed, a corrosion resistant pipe is lined into a pipe of high strength carbon-manganese steel and expanded with the help of a hydroforming press. The hydraulic expansion process offers the advantage of uniform pressure distribution without damaging the pipe surface.

During further processing, weld cladding is applied to the BuBi® pipes in order to produce metallurgically clad pipe-ends.

Sizes range from OD 114.3 (4") to OD 660 mm (26"). Other sizes, even outside the standard, can be produced by agreement. We manufacture lengths of up to 12.2 m, any lengths beyond this up to 24 m are achieved through circumferential welding.

BuBi® pipes are suitable for a wide range of laying processes as well as the reeling method.



A milestone: for the first time ever, BuBi® pipes were used as riser pipes as part of the major Guar & Lula project; altogether we delivered over 85 km of clad pipes for the order from Brazil. In January 2014, installation of the Guar project began using the reeling method

Use as riser pipes

In the oil and gas industry, clad pipes have been used as riser pipes as well as steel catenary risers (SCR), among other things.

The riser pipes developed for use in deep-sea areas are especially exposed to dynamic stresses and high temperatures. They must not be susceptible to fatigue, must have excellent mechanical properties and a high degree of strength and corrosion resistance. When producing these pipes, it is therefore necessary to comply with the strictest tolerances and special quality standards.

BUTTING is the market leader in this area. We achieve the strictest inner diameter tolerances, including ovalness, of ± 0.25 mm. Thus the displacement of the pipe-ends is minimal, the welding on the construction site is improved and the working life of the pipes increases.

The tolerances are agreed according to current standards, e.g. API, ASTM, DNV or ISO, and even stricter tolerance requirements have already been implemented for a number of BUTTING projects.



BUTTING offers prefabrication of metallurgically clad spools at the highest quality level

The direct additional processing of our pipe allows us to optimise the quality of the piping, and to supply you with products ready for laying at value-for-money prices



Ready-to-install clad spools

BUTTING processes clad pipes into spools ready to install. For this we use semi-finished clad material such as welded flanges, elbows, tees and reducers.

Prefabrication of clad pipes is used to optimise the pipeline quality and to reduce costs.

At an early stage in the production plant, the corrosion resistant layer of the piping components is pickled and passivated and all the non-destructive tests are performed.

This leads to considerable potential savings, especially during the subsequent installation of piping systems at the construction site.

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ
Интернет: www.tisys.ru www.tisys.kz www.tisys.by www.tesec.ru www.ти-системс.рф
Телефоны: +7 (495) 7774788, 7489626, 5007155, 54 Эл. почта: info@tisys.ru info@tisys.kz info@tisys.by