



STAMANT-Safety Pipe

SMR

1.01.01

System Description

01.97

BRUGG STAMANT SAFETY PIPE is a double pipe system prefabricated in standard units, and particularly suitable for the transport of flammable and non-flammable hazardous materials.

The annular space between the inner and casing pipes is fitted with a leak monitoring system, ensuring complete and permanent surveillance of pipe integrity. Any spillages trigger optical and acoustic alarms and, if needed, the interruption of the further flow of the material transported.

The leak warning system controls the monitoring pressure in the monitoring space of the safety pipe and registers changes of pressure in the inner or outer pipes, however minor the leaks may be.

Additional features when the alarm is triggered, such as relaying the alarm signal, automatic cutoff of transport pumps or closing of magnetic valves, give increased operating security.

There are two monitoring systems:

Leak surveillance

1. on the vacuum principle
2. on the positive pressure principle (using an inert gas)

The employment of a leak monitoring device, apart from the safety aspects, also offers considerable cost saving advantages:

A simple check of the entire system can be carried out at any time without interrupting transport operations. Requirements such as e.g. pressure/volume measurements, pressure tests or visits on site to inspect the pipe routing are no longer necessary.

The standard units, delivered ready for use ex works, contain all necessary fittings for the project in question (e.g. bends, T pieces, wall entry fittings etc.), including the complete external corrosion-proofing for pipes laid into the ground according to DIN 30872.

The material specifications for the outer casing pipe and the inner medium pipe depend on the expected mechanical, thermic and chemical stresses and the legal regulations currently in force.

Conception, design and planning of double-walled pipe systems, especially for large piping dimensions for the transport of flammable hazardous substances, demands a high degree of engineering competence as well as profound knowledge of the precautions necessary to prevent fire, explosion and the contamination of watercourses.

Our long experience in planning and setting up steel cased piping systems in district heating projects and installing FLEXWELL safety piping in industry, the petrochemical sector and petrol stations have given us the know-how to fulfil these requirements.



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1. Elbows with equal radii

- Carrier and casing pipework elbow according DIN 2605, with equal radii

2. Elbow with larger elbow radius for carrier pipe

- Carrier and casing pipework elbow according DIN 2605, with larger elbow radius for carrier pipework.

3. Elbow with shorter elbow radius for carrier pipe

- Carrier and casing pipework elbow according DIN 2605, with shorter elbow radius for carrier pipework (Fig. 3).

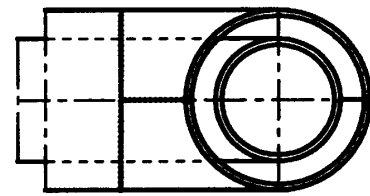
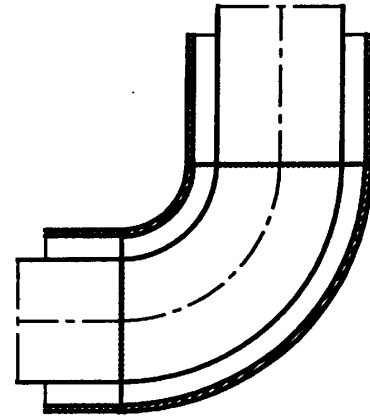


Fig. 1: Elbow with equal elbow radii for carrier and casing pipework

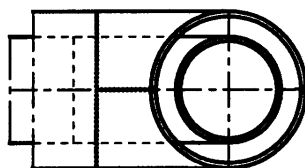
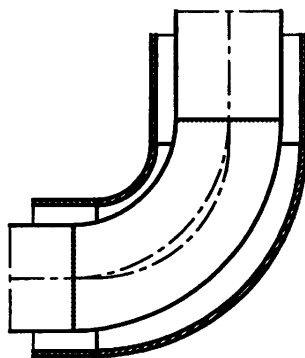


Fig. 2 Elbow with larger elbow radius for carrier pipe

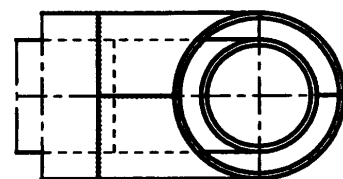
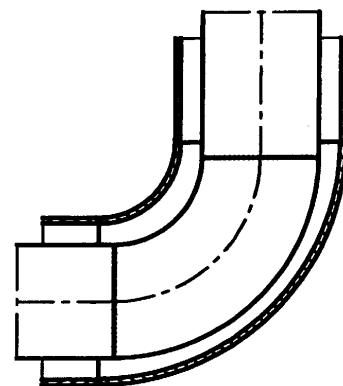


Fig. 3 Elbow with shorter elbow radius for carrier pipe

1. T-piece

- T-piece according DIN 2615, for carrier and casing steel piping (Fig. 1)

2. T-piece with saddle pieces

- T-pieces with saddle pieces according DIN 2618 for carrier and casing steel piping (Fig. 2.)
 - carrier pipework: saddle piece / long version
 - casing pipework: saddle piece / short version

3. T-piece with weldolet and saddle piece

- carrier pipework: weldolet
- casing pipework saddle piece / short version according DIN 2618

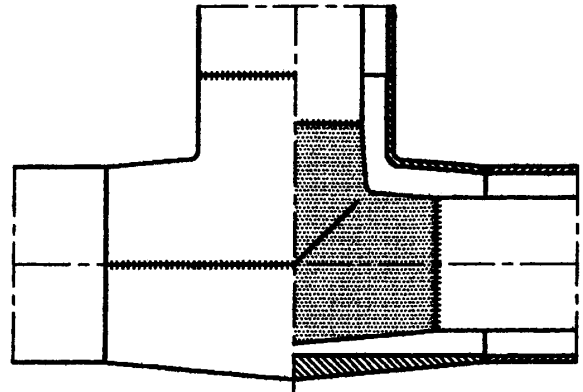


Fig. 1 : T-piece according DIN 2615

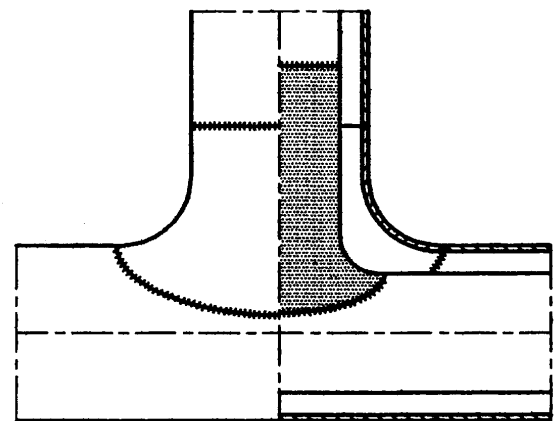


Fig. 2 : T-piece with saddle pieces

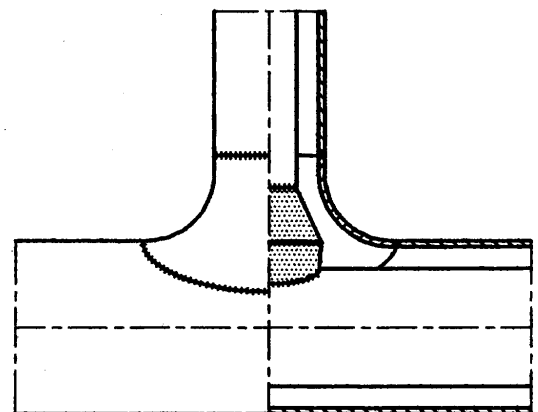


Fig. 3 T-piece with weldolet and saddle piece

1. Casing piping connections (abutting casing piping)

- To save welding, casing piping can also be abuted at the site joints provided. This must be done carefully and special attention paid to ensuring that the anchoring or bend units do not change position.

Note: All pictures are shown with an optional thermal insulating.

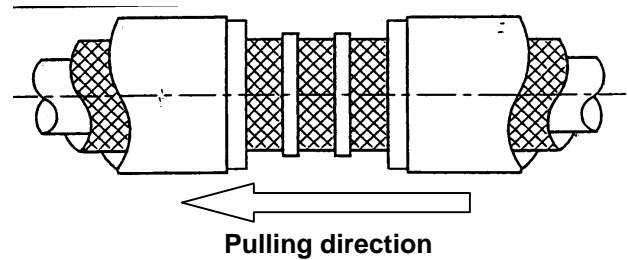


Fig. 1 Casing pipe before pulling

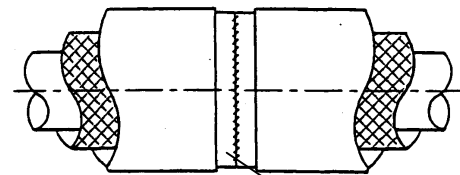


Fig. 2 Casing pipe after pulling

Welding seam on site

2. Casing piping connections

- Inserting adaptor pieces in the form of two make-up pieces.
- To connect two casing pipe lengths in the site joint area, BRUGG supplies a pipe with the required specifications to cut any desired length fitting of the casing pipe on site. Pre-fabrication is impossible due to the tolerances of the piping as supplied.

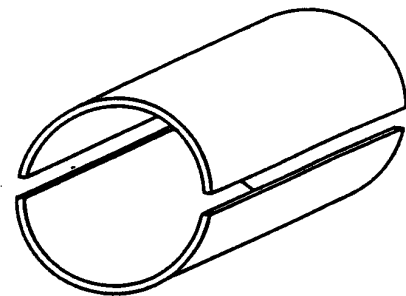


Fig. 3 Make-up piece (two halves)

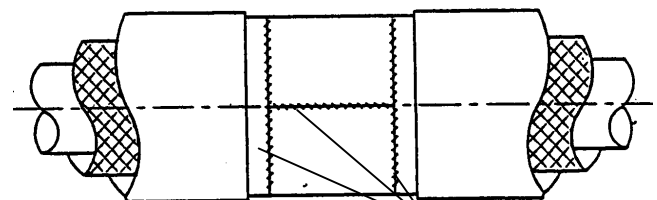


Fig. 4: Install make-up piece and weld it gastight

Welding seams on site

3 Premanufactured steel cased piping units

- To spare time and engineering on site BRUGG delivered premanufactured and prewelded units including all bends, anchors, guide and friction supports and, reducers.
- For this reason it is easy to install special premanufactured piping units according to BRUGG calculations for taking up the carrier piping reaction forces and diverting those forces to the casing piping and, from there, to the ground.

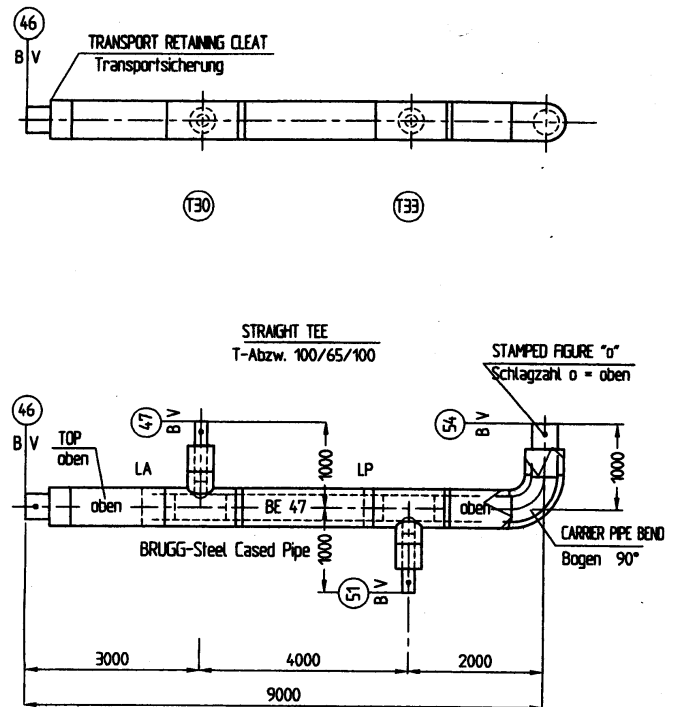


Fig. 5: Premanufactured piping units

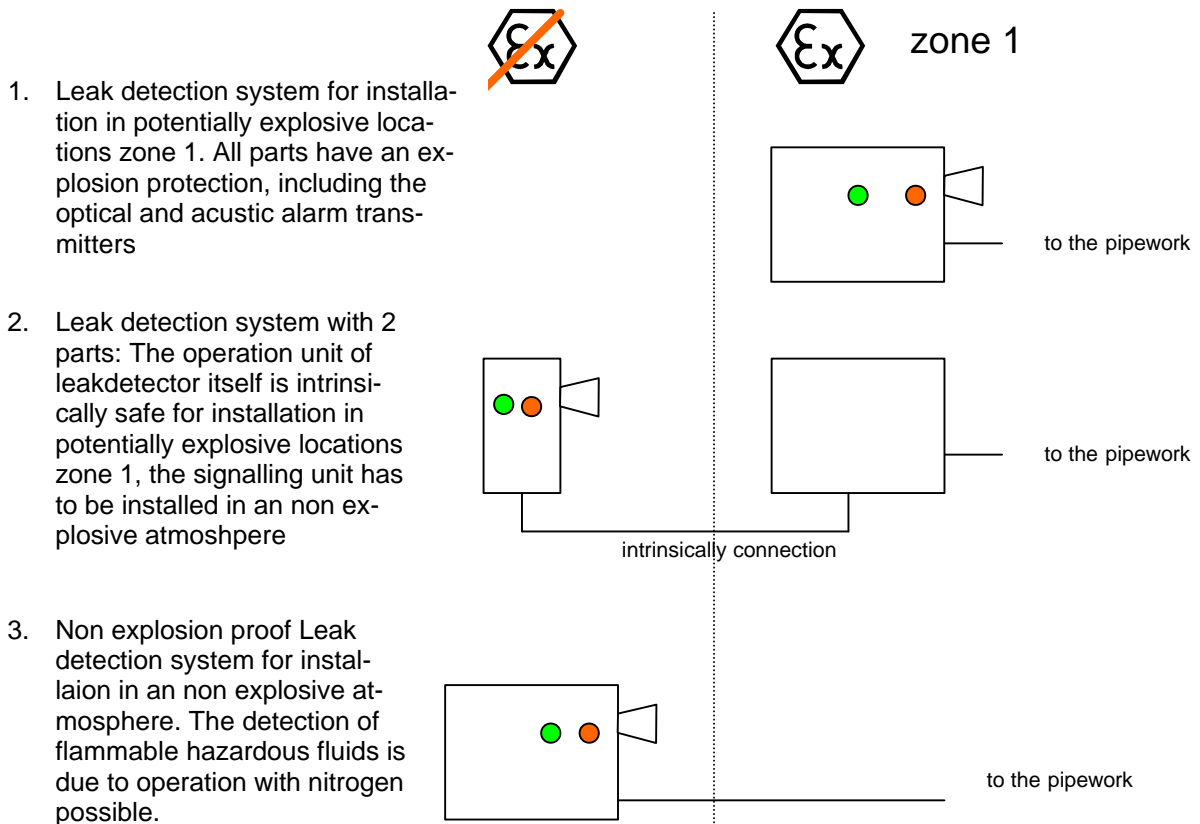
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3 Nitrogen overpressure leak detection system

- Stamant Safety Pipes are monitored by an pneumatic overpressure leak detection system. The leak detection system regulates the monitoring – pressure in the interstitial space of the pipework. It registers pressure differences in the case of damage to the inner and outer pipe. In the event of damage, the leak detector gives acoustic and visual alarm.
- The draft below shows application areas for overpressure systems, which are different due to their explosion proofness.

Application areas for overpressure leak detectors





STAMANT-Safety Pipe

Installation Instructions

SMR

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Corrosion-proofing for the outer casing pipe connections

Preparing the surface

Instructions as per DVGW Sheet GW 15
The surface to be wrapped must be clean (no loosely adhering particles of rust, dirt etc.) and must be dry and free of oil, grease, parting compound or wax.

Roughen the factory casing in the installation area for about 100mm and bevel the edges to about 30° using a circular file.

Additional wrapping with corrosion-proofing tape acc. DIN 30672

The prepared surface is coated first of all with primer.

Before using, stir the primer vigorously. Apply the primer to the surface (steel casing pipe and c. 100mm of the factory casing on both sides) using a brush. The primer is ready after c. 5-10 minutes exposure to the air.

The corrosion-proofing tape must be wound around the pipe over the following c. 3 hours.

With the adhesive side towards the pipe, wind the corrosion-proofing tape tightly around the pipe, ensuring c. 50% overlap. Include about 100mm of the factory casing of the outer pipe in the winding process. Number of windings: twice, overlapping by c. 50%.

Please note:

100mm wide corrosion-proofing tape may only be applied using a winding machine. The wrapping procedure may only be carried out by personnel with relevant training and qualifications.

The manufacturer's instructions for the material used must be observed.

Additional wrapping with heat shrinking material acc. DIN 30672

The prepared surface is heated to c. 60°-70° C beforehand.

Shrinkage hoses must be pulled over the pipe before commencing welding.

The correct shrinkage rate of the heat-shrinking material for the outer pipe diameter is important.

The material is heated radially all over using a gentle flame.

The shrinkage technique or the handling of the heat shrinking material must be carried out according to the manufacturer's installation instructions.

Wrapping may only be carried out by personnel with relevant training and qualifications.

Testing of the additional wrapping acc. DIN 30672 for pores, cracks and other defects

The additional insulation should be tested with 5 KV + 5 KV/mm layer thickness but not with more than 20 KV max. for integrity and absence of pores.

After rectifying any faults, repeat the test.

This test, including the test of the factory casing, must be certified by the competent factory expert.

For STAMANT safety pipe standard units the material for additional wrapping of the site connections of the outer casing pipe is available on request.



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