

BRUGG

Pipes

FLEXWELL® Safety Pipe

Be on the safe side with this pipe



**PIONEERS IN
INFRASTRUCTURE**



FLEXWELL® Safety Pipe – innovative and proven in many applications

Safety through double-walled construction

The surveillance space between the inner and outer pipes enables permanent leak monitoring using approved leak detection devices operating either on the positive pressure or vacuum principle. The use of these systems is compliant with the highest European safety standards. The system is constructed with safety in mind and will detect any leak above or below the fluid level within a double-walled protective system.

Safety through permanent monitoring and remote diagnostic systems

The leak detector online diagnosis (LOD) system enables safe and on-going remote monitoring of a leak detection device. All operating parameters are recorded around the

clock, automatically transmitted to the LOD server and analyzed there. Any irregularities which may be detected in the leak detection system can already be recognized in this way even before the annual maintenance check is due and can therefore be pinpointed more easily and fixed, thus reducing costs.

When an alarm is given, all relevant stakeholders are informed by text message and/or email.

FLEXWELL® Safety Pipe – the features

General type approval:

Z-38.4-253

Dimensions: DN 12 – DN 150

Pressure range: 25 bar, PN 25

Temperatures: -10 °C to +50 °C

Laying: below ground and above ground

Applications: Transport of environmentally hazardous, flammable, toxic fluids and gases

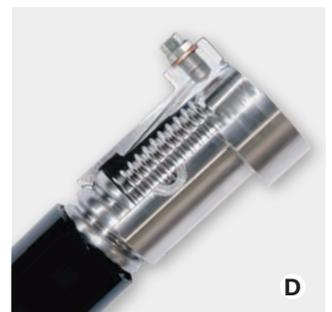
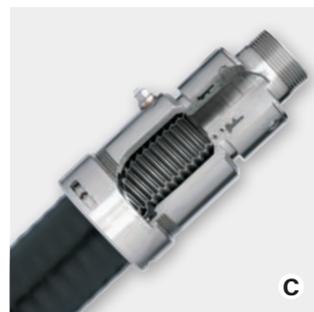
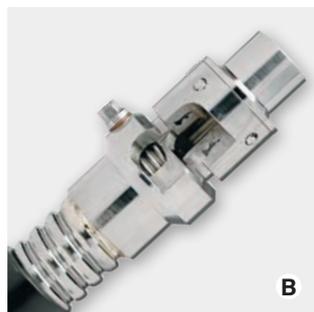
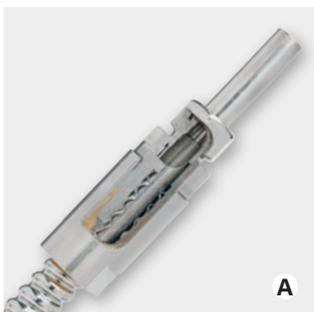
Universal connection fittings

The use of FLEXWELL® Safety Pipe is designed for the transport of very diverse media. The demands placed by these require connection fittings which are just as reliably tested and certified. With the GRAPA®-modular system it is possible to offer a comprehensive range of different connections, all based on identical principles and workmanship.

In the course of technical modernization and development, the following joining techniques for the connections have proved to be the best:

- A** graphite with cutting ring (non-welded)
- B** graphite with soldered end
- C** graphite with rubber seal (non-welded)
- D** TIG welding/hard-soldering

FLEXWELL® Safety Pipe – connection fittings





FLEXWELL® Safety Pipe - the pipe that protects the environment

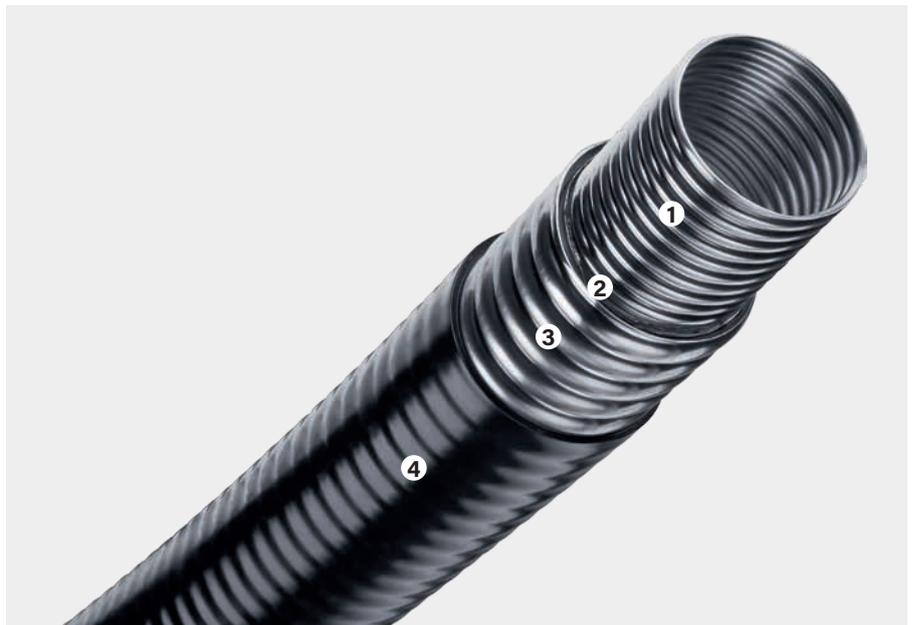
Laying in protected areas

Interference with an existing ecosystem mostly involves high costs for preparation and also for the restoration of the original surface appearance of the site.

FLEXWELL® Safety Pipe enables environmentally hazardous media to be transported safely even in nature reserves and water protection areas.

The piping, manufactured in endless lengths, can be laid direct off the drum through its whole length, simply and easily, so that no long construction times are needed. And there are no welded connections on the route and no construction and pressure tests during laying.

In combination with our approved leak monitoring systems Class 1, which can be used without additional requirements in all plants subject to acceptance tests (LAU/HBV). Compliant with all water protection law regulations and the requirements of fire and explosion safety.



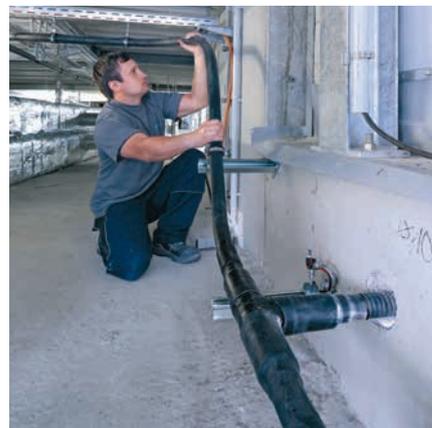
Transport of environmentally hazardous fluids

The material resistance of our products is certified and includes, among others, the following media:

- petrol DIN EN 228
 - diesel fuel DIN EN 590
 - kerosine, Jet A-1
 - heating oil DIN 51603
 - alternative fuels; Ad Blue, biodiesel
 - lubricating oils DIN 51501 ff
 - various alcohols; methanol, isopropanol
 - lyes
 - ammoniac in solution
- and many other media on request.

FLEXWELL® Safety Pipe - the construction

- 1** corrugated stainless steel inner pipe (1.4404/1.4571)
- 2** monitoring space
- 3** corrugated stainless steel outer pipe (1.4301)
- 4** polyethylene jacket



FLEXWELL® Safety Pipe – the pipe that bends and turns every which way

Applications

The outer protective jacket of the FLEXWELL® Safety Pipe is made of UV-resistant polyethylene.

There are no limits to your flexibility in laying it. Whether inside the building through the walls, in crawl space in sub-basements or exposed to the elements above ground.

The pipe construction and the materials used allow FLEXWELL® Safety Pipe to be operated safely in all areas in which it is necessary to transport environmentally hazardous fluids and gases.

References/Use cases

Here are just a few examples:

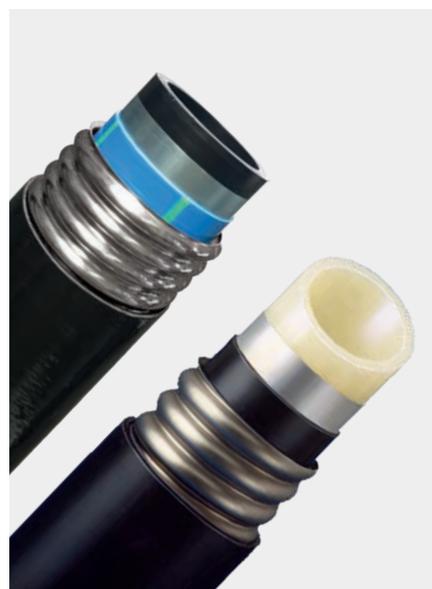
- supply lines for fuelling ships through water
- fuel lines for fuelling aircraft, helicopters
- oil supply lines in power stations
- propane supply for propane fireplaces
- fill pipes for emergency power systems

Product variants

On request we can also manufacture special customized solutions in our works in Germany.

FSR-S line

Depending on the medium and the project data, a PE-HD/PEX pipe can be integrated into the FLEXWELL® Safety Pipe. With this enhancement of the quality, it is possible also to transport media in a monitorable double-walled system for which even high quality stainless steel is not usable.



FSR-WD line

Thermal oil pipelines demand safe transport and heat insulation. The FSR-3-WD is a monitorable double-walled pipe system which is heat insulated by means of a PUR foam jacket.



FSR-H line

The FLEXWELL® FSR-H is a product variant in which the inner carrier pipe is encased in a wire mesh. The wire mesh gives the inner pipe greater stability, enabling pressure stages up to in excess of 50 bar to be compensated. The excellent flexibility is not restricted.





System advantages

Laying in endless lengths

- less downtime through shorter installation work
- no welding needed in the trench
- environmentally friendly

Laying options

- below/above ground
- in a duct or protective pipe
- in buildings
- in water protection areas
- in areas threatened by earthquakes

Connection technology

- TIG welding/hard-soldering, PN 25
- GRAPA® compression joint/hard-soldering, PN 10
- GRAPA® compression joint/screwed connection, PN 25, non-welded

Flexible

- no elbow fittings needed under ground
- ex-works corrosion proofing along the entire length
- can be laid in areas prone to subsidence and on slopes without any special precautions being needed

Transport

- as a coil
- on a drum
- as a straight line

Monitoring

- positive pressure
- vacuum
- LOD - remote leak detector online diagnosis

Integrated fittings

- stays monitorable even when the route is extended
- moulded fittings
- monitorable flanged connection fittings

Fire protection

- R90 or R120

Minimal costs for drainage

- safe laying even in waterlogged ground and where there is a high ground water table
- no need to lower the ground water table
- can be used when crossing rivers and other bodies of water

Minimal costs for excavation work

- narrower trenches and shorter routing
- less spoil
- reduced costs for restoring the surface appearance
- cost reductions for securing the site and for road and pedestrian bridges

Just go around obstacles

- crossings underneath and over obstacles with no extra costs
- no additional unplanned work through re-routing existing lines

Environmentally friendly laying

- can be exactly fitted to the local circumstances
- trees and bushes can be given a wide berth

Technical data FLEXWELL® Safety Pipe

Type FSR ID/OD	DN	PN	Weight kg/m	Min. bending radius cm	Max. length deliverable m
13/ 25	DN 12	25	0.52	30	500
30/ 48	DN 25	25	1.40	50	1000
39/ 60	DN 32	25	2.00	60	1000
48/ 71	DN 40	25	2.90	60	1000
60/ 83	DN 50	25	3.80	70	1000
75/107	DN 65	25	6.20	90	500
98/134	DN 80	25	9.00	120	500
127/175	DN 100	25	18.10	150	250
200/262	DN 150	25	29.00	400	250

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