

BRUGG

Pipes

LNG FLEXWELL Pipe

Flexible LNG transfer pipe – aerial, floating or submerged



**PIONEERS IN
INFRASTRUCTURE**

Unbonded flexible pipe for LNG offshore application

SYSTEM DESCRIPTION

The transfer pipe for LNG consist of a flexible, stainless steel inner pipe and a flexible stainless steel outer pipe. The LNG is transported in the inner pipe, the annulus between outer and inner pipe is vacuum insulation.

This means that the transfer of environmental heat to the refrigerated LNG at $-160\text{ }^{\circ}\text{C}$ is reduced, as in a thermos flask.

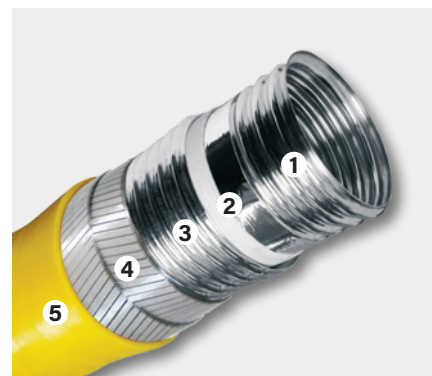
It is also an important safety consideration that the LNG is contained in two pipes. In the unlikely scenario that a leakage occurs in the inner pipe the outer containment pipe prevents a spillage of LNG into the environment.

COMBINATION OF WELL PROVEN TECHNOLOGIES:

- Fatigue Lifetime: Established and verified calculation models proven in the field of
 - dynamic offshore cables (umbilical and dynamic power cable)
 - unbonded flexible pipes (flexible riser, jumper, flowlines)
- Thermal Insulation: Proven technology of vacuum insulated flexible pipes
 - Experienced in research and industry since 1980s
 - 1/10th of heat inleak compared to conventional thermal insulation (foam)
 - Static vacuum without operation of pumps
- Loss of vacuum engages alarm signal (dry contact) indicating the loss on one barrier (before any LNG spillage may occur!)
- Double Containment – no loss of LNG possible in any single fault failure scenario!

Technical data

Material:	inner pipe	1.4404 / 316 L
	outer pipe	1.4404 / 316 L
	armoring	DC01
	corrosion protection	PE-LD casing
Operating pressure:	16 bar	
Heat inleak 8":	30 W/m	



- 1 corrugated carrier pipe
- 2 vacuum superinsulation
- 3 corrugated secondary casing pipe
- 4 armoring
- 5 protective sheath

Mechanical Properties

Type	Nominal bore	Inner diameter	Outer diameter floating/ submerged	Volume inner pipe	Weight empty floating/ submerged	Weight filled (LNG) floating/ submerged
FLEXWELL	DN 200 / 8"	196 mm	332 mm 345 mm	30.8 l/m	66 kg/m 97 kg/m	80 kg/m 110 kg/m

Subject to change without notice.

A BRUGG GROUP COMPANY