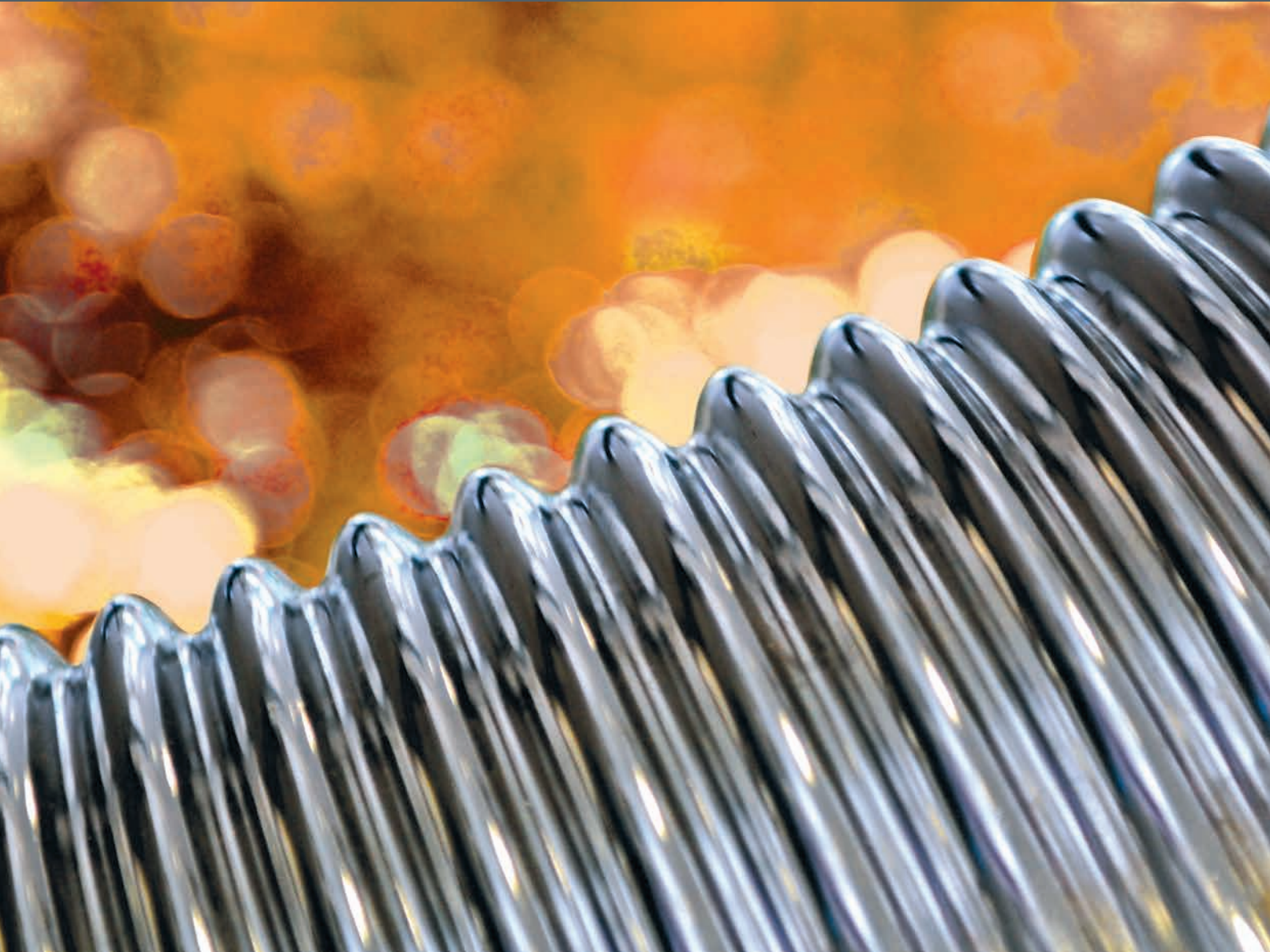


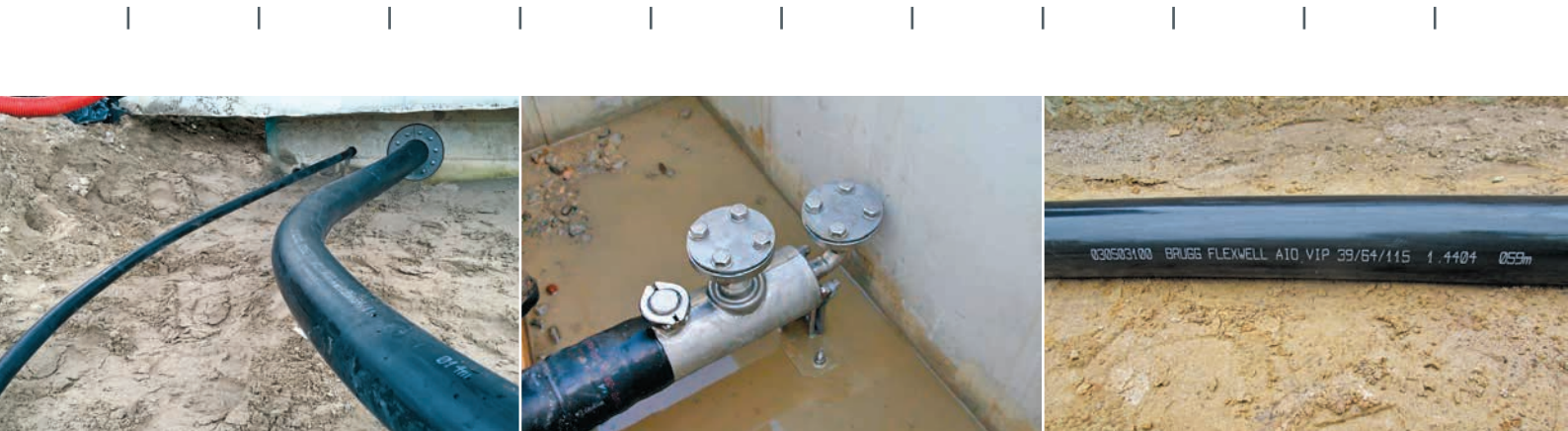
# FLEXWELL® LNG All-in-One

Flexible pipe systems for LNG fuel stations



# FLEXWELL® LNG All-in-One

Flexible pipe systems for LNG fuel stations



**FLEXWELL® All-in-One is a unique and cost efficient LNG pipe which applies at LNG fuel stations as endless transportation, re-circulation and BOG recovery line: All-in-One!**

### The design of FLEXWELL® LNG All-in-One

Because of a continuous manufacturing technology of the corrugated pipes, FLEXWELL® LNG All-in-One comes in an infinite length, which enables the installation without any need of welded joints.

The multi-layer-construction of the FLEXWELL® LNG All-in-One is able to combine

- LNG flow
- LNG return
- BOG return
- vacuum superinsulation in one pipe.

### Properties of FLEXWELL® LNG All-in-One

Material of corrugated pipes	SS 316 L
Material of protective jacket	HDPE
Min. working temperature	–163 °C / –260 °F
Max. allowed working pressure	25 bar / 360 lbs
Typical flow rate	50 kg/min

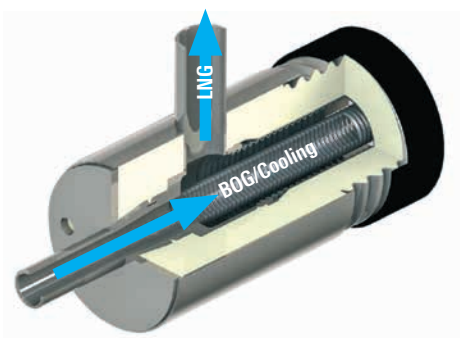
### Save costs through a self-compensating and easy to install pipe system

The corrugated pipe technology enables the FLEXWELL® LNG All-in-One to be endless and flexible. And flexibility leads to self-compensation.

Due to the huge temperature differences regular rigid pipe needs expansion bends (either U or Z shaped) after a certain pipe run. With FLEXWELL® LNG All-in-One no special expansion bends are required with a pipe run which is still straight.

### Safety first!

With FLEXWELL® LNG All-in-One safety is never a problem! Thanks to its integrated under pressure leakage detection system, unlikely leakages will be detected immediately and the whole system can be shut down within seconds.



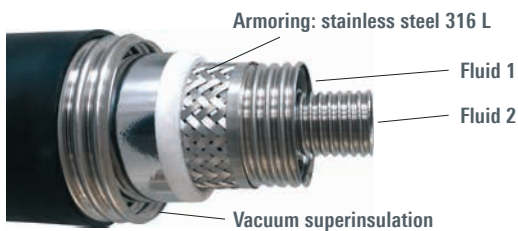


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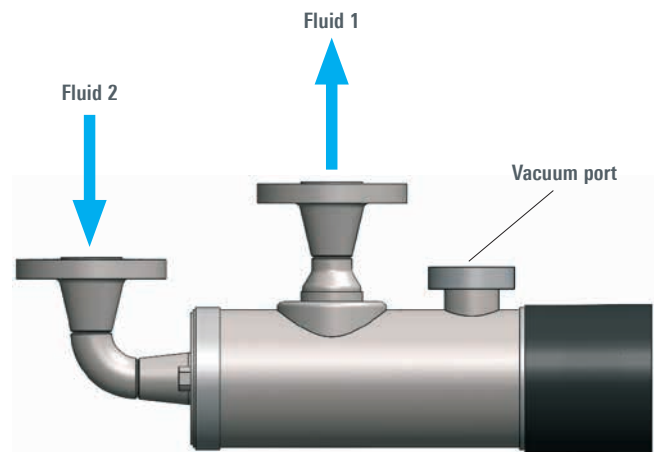
Flexible pipe systems for LNG fuel stations



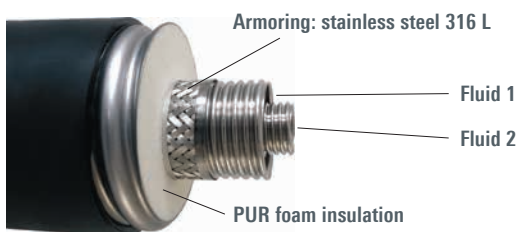
FLEXWELL® LNG All-in-One VIP – the Vacuum Insulated Pipe Insulation at a High End



FLEXWELL® LNG All-in-One – the pre-assembled end fitting



FLEXWELL® LNG All-in-One PUR – Foam insulation at its best



- all stainless steel
- flanges either ANSI or DIN available
- butt welding end available

## Technical data

Type	Fluid 1 corrugated carrier pipe	Fluid 2 annular interstitial	Diameter outside VIP inch/mm	Diameter outside PUR inch/mm	Bending radius VIP inch/mm	Bending radius PUR inch/mm	Material corrugated pipes	Material braiding
39/64	1 ¼" DN 32	1 ¼" DN 32	4.7/120	6.0/152	39/1000	47/1200	1.4404/316 L	1.4301/304
48/83	1 ½" DN 40	2" DN 50	6.0/152	6.7/171	47/1200	60/1500	1.4404/316 L	1.4301/304

# FLEXWELL® LNG All-in-One

“Reality proves us right”



## LNG fueling in Utrecht (NL) with AiO VIP

35 Trucks per day refueling with LNG (liquefied natural gas) at two pumps is an excellent rate, which the Dutch company Rolande was able to implement with its LNG service station in Utrecht within the first month after commissioning in October, 2015.

An important component of this system is the innovative and efficient corrugated pipe system FLEXWELL® LNG All-in-One VIP for the transportation of liquefied natural gas from the storage tank to the pump.

The All-in-One VIP offers a solution that is quick to install as well as efficient and simple to operate. For this purpose, a pipe-in-pipe solution is used with three concentrically located corrugated stainless steel pipes and a special super insulation. The inner pipe and the annular space between pipe one and pipe two then constitute the flow and return and the gas recirculation.

Cut to the required length and provided with welded end fittings, the All-in-One comes pre-assembled and ready to install. Subsequently, the insulating space is placed under a vacuum which, together with the super insulation, creates the best possible insulation.

A big advantage of the All-in-One is the opportunity to deliver to the construction site a finished product which is already subjected to a vacuum, and to lay the line quickly and flexibly in the pipe trench. In the case of Utrecht, the complete LNG lines between the LNG storage tank and both LNG pumps were able to be installed within two days.



## AiO PUR for LNG fuel station in Harnaspolder

The shortest possible installation time and an efficient insulation are two criteria which applied to the piping of the LNG filling station in Harnaspolder. The PUR foam insulated All-in-One is the best solution.

In addition to six pumps for conventional fuels (diesel/gasoline), the “multifuel” filling station in Harnaspolder has a dispenser for CNG and two more for liquefied natural gas (LNG).

For the piping of two LNG dispensers, flow and return are required which, due to the cryogenic medium, also have to be cold insulated. The customer’s preference was for All-in-One PUR.

Supplied as complete rings (16 m and 18 m), pre-insulated and pre-equipped with end fittings, both lines were installed within a few hours.

In addition to the two dispenser lines, the filling line for the LNG tank has been installed with a 40-meter PUR foam-insulation single line. Here, as well, the entire line was delivered with pre-installed end fittings and laid from the drum directly into the trench.

# FLEXWELL® LNG All-in-One

Good reasons to chose All-in-One



## Infinite length

- Time savings through easy installation
- No hot works on site
- No need to insulate joints on site

## Self-compensation

- No need for costly compensation elements
- Corrugated pipe works as a bellow
- Each single corrugation compensates thermal expansion

## Efficiency

- Integrated return recovery saves costs
- Cooling down of BOG automatically during operation, less energy input for re-liquefaction
- No need to insulate joints on site

## Safe

- Possibility of leakage detection system

## Insulation

Choose between

- “highly efficient” with PUR foam insulation
- “high-end” with vacuum insulation

## Flexible

- No prefabricated elbow fittings necessary
- Uninterrupted factory corrosion proofing jacket



## Flexible

Fast installation and self-compensation



## Efficient

Flow and return line in one



## Easy

Fast and pre-assembled



## Reliable

100 % tested in factory



Simply BRUGG – All-in-One

# Pipe systems for the future

District heating – Industry – Petrol stations – System packages



## Your partner for pipe systems

We are the people you should talk to when you need to find efficient solutions for transporting liquid materials. With our project engineers, development department, in-house production unit, and our professional team of fitters, we have the know-how and the resources to look after your projects competently and reliably in the sectors of heating systems, petrol station construction, industrial plant construction, and system packages.

## International network

Our global partnership network can be reached on site at any time. More than 34 partners in 20 different countries will look after you wherever you are.

## Customer-specific solutions

Brugg is the full service provider in the field of single-wall, double-wall and insulated pipe systems. This know-how allows us to manufacture project-specific customised items.

## Give us a call!

Our engineers would be pleased to advise you and find a made-to-measure solution.

## BRUGG Rohrsysteme GmbH

Adolf-Oesterheld-Straße 31  
D-31515 Wunstorf  
phone +49 (0)5031 170-0  
fax +49 (0)5031 170-170  
info.brg@brugg.com  
www.brugg.de

A company of the BRUGG Group