

# FLEXWELL-LPG® Piping

## Pipe system for petrol stations

### Flexible Pipe system for automotive LPG in service station constructions

#### System advantages

- fast and simple to install without welding and x-raying of welds on site
- no downtime and only minimal interruptions to petrol sales on retrofits
- the most cost effective pipe system

#### General Description

FLEXWELL-LPG® Piping is suitable for automotive LPG (Autogas) buried installations of service stations in both vapour and liquid phase.

LPG's main constituents are Propane ( $C_3H_8$ ) and Butane ( $C_4H_{10}$ ) which have different boiling points :  $-45\text{ }^\circ\text{C}$  for propane and  $-2\text{ }^\circ\text{C}$  for butane. The actual mixture of propane and butane of any automotive LPG marketed varies considerably from one country to another, depending on their sources of LPG. The mix of propane and butane has a profound impact on design requirements of LPG fuelling components; the one for a propane only mix being the most stringent. Care must be exercised in the selection of the minimal design requirements as the equipment may turn to become unsuitable, if the LPG marketed in a country is being changed to propane richer mixtures in view of changing national sources of LPG.

FLEXWELL-LPG® Piping is designed for operating temperatures up to  $-50\text{ }^\circ\text{C}$  and operating pressures of PN 25 (360 PSI) as indicated for propane only mixtures.

#### Application

FLEXWELL-LPG® is a single walled flexible pipe system designed for the underground transport of LPG. Typically FLEXWELL-LPG® Piping is used as an underground liquid feedline and vapour return between the LPG storage tanks and the liquid gas dispenser in fuelling stations.



#### Construction

The flexible composite pipe has a helically corrugated primary pipe. This is manufactured of EN 1.4404 stainless steel (US equivalent: AISI TP 316 L) and has excellent corrosion resistance characteristics as a result. Around this carrier pipe, high-strength reinforcing bands are fitted, which effectively limit longitudinal expansion even at high operating pressures. Corrosion protection for buried installation in the ground is afforded by an external PE-LD jacket.

#### Installation

FLEXWELL-LPG® Piping is manufactured in standard factory lengths up to 700 m. The pipework is supplied on a cable reel or coil allowing it to be run directly off the reel or coil into position in the pipe trench. The corrugated primary pipe and the helically fitted reinforcing bands give this piping system remarkably good flexibility and ease of laying. FLEXWELL-LPG® pipework can be cut to the required length on site and, as necessary, bent through very tight angles to run around, under or over existing services.



FLEXWELL-LPG® with reinforced bands



Easy installation on site

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### Physical properties of FLEXWELL-LPG® Piping

| Type designation:             | LPG 22/33  | LPG 30/40              | LPG 39/50              | LPG 48/61              | LPG 60/74              |
|-------------------------------|--|------------------------|------------------------|------------------------|------------------------|
| material:                     | <ul style="list-style-type: none"> <li>primary pipe: stainless steel 1.4404*</li> <li>corrosion proofing: PE-LD jacket</li> </ul>  |                        |                        |                        |                        |
| max. operating pressure for:  | + 25.0 bar/<br>360 PSI   | + 25.0 bar/<br>360 PSI | + 25.0 bar/<br>360 PSI | + 25.0 bar/<br>360 PSI | + 25.0 bar/<br>360 PSI |
| nominal diameter:             | DN 20 / ¾"   | DN 25 / 1"             | DN 32 / 1 ¼"           | DN 40 / 1 ½"           | DN 50 / 2"             |
| dimensions:                   | <ul style="list-style-type: none"> <li>inner pipe diameter</li> <li>outer pipe diameter</li> <li>volume inner pipe</li> </ul>  |                        |                        |                        |                        |
| min. bending radius:          | 200 mm   | 200 mm                 | 300 mm                 | 400 mm                 | 600 mm                 |
| weight:                       | 0.7 kg/m   | 0.9 kg/m               | 1.5 kg/m               | 1.9 kg/m               | 2.7 kg/m               |
| available type of connectors: | <ul style="list-style-type: none"> <li>male thread end NPT</li> <li>also available with reduced male thread end NPT</li> <li>split flanges DIN</li> <li>split flanges ANSI</li> <li>welding end</li> </ul> |                        |                        |                        |                        |

\*US equivalent: AISI TP 316 L

All technical data subject to change.

### Approvals, 3rd party testing

STOOMWEZEN, SCHIELAB, Report No. SL 584/01 dated 07/10/01;  
KIWA, 97/23/EC Modul, A1. 01.07.2008 CE 620 –  
Flexible single walled pipe for LPG.

### For additional 3rd party testing of connectors refer to:

TÜV-Nord, Germany, report on burst pressure testing of FLEXWELL connectors using graphite packing.

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