

Thermoflex[®]-LPG

Flexible pipework for LPG transport



- No corrosion
- 35bar rated pressure
- Flexible reinforced pipe
- Installed in continuous runs
- Less pressure drop than steel
- Reduced installation time and cost (hours vs. days)
- The safest and most cost efficient pipework to install!

 **CGH**
Belgium

Thermoflex®-LPG Pipe

Based on more than 25 year's experience in non-metallic pipework design and project engineering in both the upstream and downstream segments of the Oil & Gas Industry, CGH Belgium offers with Thermoflex®-LPG an advanced piping technology for a safe underground LPG transport.

The continuous spooled, flexible pipes provide for extremely rapid and low cost installation. The use of advanced polymers and Aramid fibres braid ensure corrosion resistance, strength and enhanced lifetime. The Thermoflex®-LPG pipes are installed in continuous runs between tank and dispenser, eliminating all buried inaccessible joints. Plastics being 100 times smoother than steel, smaller pipe diameters will give identical flow results as the typically larger steel pipes and flexible corrugated steel pipes.

Thermoflex®-LPG pipes eliminates the disadvantages of traditional steel pipework, the welding with the required X-ray testing as well as the internal & external corrosion, a major concern of the safety authorities.

Applications

The Thermoflex®-LPG pipes are used for the transport of Liquefied Petroleum Gas (LPG), Propane, Butane, Pentane and Dimethyl Ether (DME) in liquid as well as in gas phase.

Several thousand installations are in use worldwide since 2009 in various applications:

- Autogas installations in service stations from several major oils companies
- Agricultural applications (grain & corn drying installations, frost protection, ...)
- LPG distribution centres and filling installations for gas bottles
- Industrial applications (heating, production processes, ...)
- Heating & cooking applications in remote area's (hotels, ...)
- Firefighting training centres
- ...

Installation of the fittings

The NPT male thread or flanged fittings are crimped on site (eventually in a workshop) by means of a (hand operated) hydraulic radial crimping machine. The crimping action will lock the pipe's braid between the insert and the ferrule.



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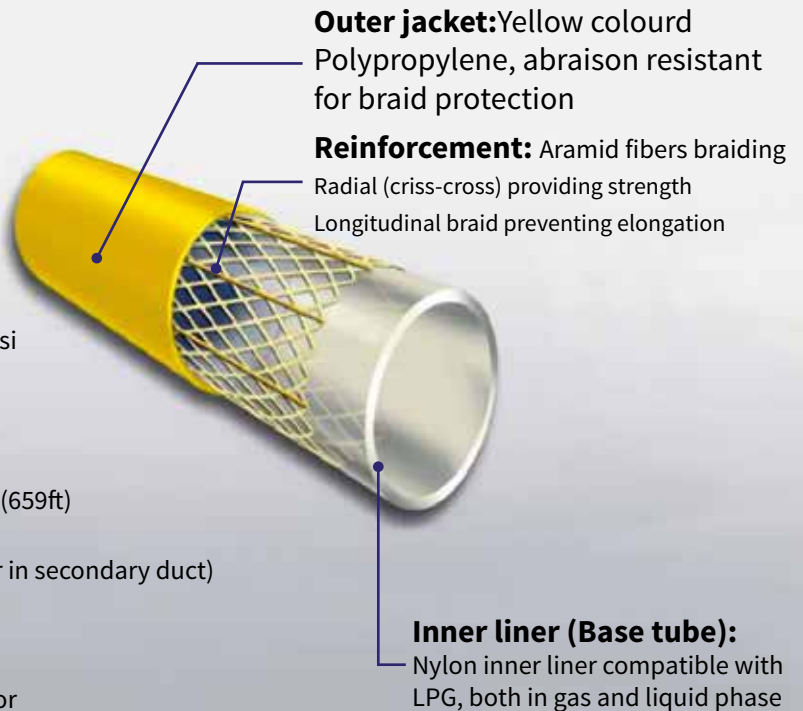
The strength of the pipe is entirely determined by the braid and NOT by the wall thickness making the Thermoflex®-LPG pipe extremely flexible and easy & fast to install!

Features & composition

- Max. operating temperatures: -40°C to +65°C / -40°F to 149°F
- Pipe's braid design strength: 2,2 times the max. operating pressure
- Max operating pressure: 35bar - 500psi
- Maximum testing pressure: 52bar - 760psi
- Min. installation temperature: 0°C (pipe must be heated before uncoiling when lower temp.)
- Crush resistance: 25 to 30 kg/cm²/284psi to 427psi (depending of the pipe diameter)
- Max. pull force : 5.000 kg - 11,000lbs
- Standard pipe diameters: DN20, DN25 and DN32 (larger diameters on demand)
- Disposable reels with a standard length of 200m (659ft) or 400m (1318ft) with marks in meter or foot
- Only for buried applications (directly in trench or in secondary duct)

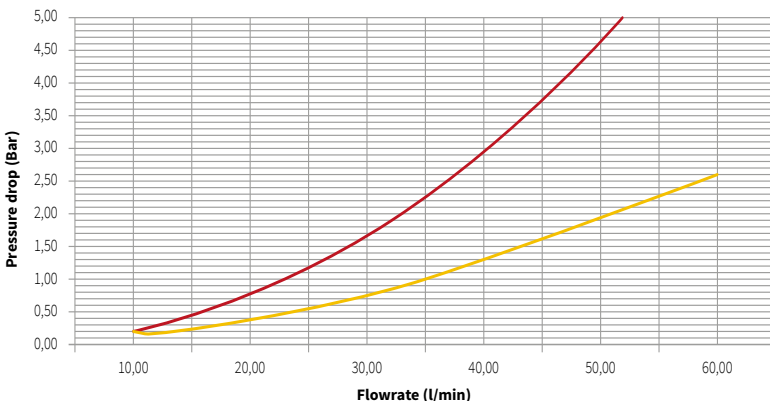
Fittings

- Insert: Carbon steel ending on male NPT thread or stub flange including slip-on flange & o-ring
- Ferrule: 304 stainless steel



Product code & dimensions

Product code pipe	Pipe O.D. in mm & inch	DN	Pipe I.D. in mm & inch	Product code flange fitting	Product code NPT fitting	Fitting size	Weight pipe in Kg/m & lbs/ft	Min. bend radius in m & ft
LP1025	31,75-1 1/4"	20	22,40 - 0,88	MC20075-FLA	MC20075-NPT	3/4"	0,44 - 0.29	0,6 - 1.97
LP1050	38,10 - 1 1/2"	25	27,40 - 1.08	MC20075-FLA	MC25100-NPT	1"	0,62 - 0.42	0,6 - 1.97
LP1075	44,45 - 1 3/4"	32	33,80 - 1.33	N/A	MC32125-NPT	1 1/4"	0,68 - 0.46	0,7 - 2.29



Plastics are +/- 100 times smoother than steel. Smaller Thermoflex®-LPG pipes will give identical flow results than typically larger steel pipes.

This pressure drop chart is based on a typical 80m DN20 pipe run at different flowrates.

Thermoflex®-LPG pipe:



Steel tubing:



Thermoflex®-LPG Pipe



Certification

The Thermoflex®-LPG pipes are designed to meet the new EN16125 Standard.

Meantime the Thermoflex®/LPG pipework has successfully passed different national test procedures, including pressure hold tests at temperatures to -40°C, burst tests, corrosion resistance, dielectric resistance and low temperature bending tests .

Since 2009 the pipes are introduced and installed in more than 20 countries worldwide and different test reports are available (Italian Ministero dell'Interno, LNE in France, Polish Oil & Gas Institute, ...)

In Europe DN20 & DN25 pipes do not fall under the PED. A Bureau Veritas signed manufacturer's declaration to EN10204-3.2 is provided. DN32 pipe falls under the PED.

A manufacturer's CE-Declaration of conformity according to directive VII 97/23/EG Module A1 is available. Thermoflex®-LPG pipe contractor's training and certification is always done under the supervision of CGH Belgium's engineers or engineers of officially recognized local Thermoflex®-LPG distributors.



Set-up of a dielectric test of the Thermoflex®-LPG pipe by a third party lab to meet the new EN16125 Standard.

Non-metallic LPG pipe's walls need to pass a 100kV test.

Thermoflex®-LPG pipe walls occurred no wall breakdown up to 140kV DC.

The elimination of both the welding and the internal & external corrosion of steel pipes increase the safety of the LPG installations, the authority's most important objective.

This, combined with the reduced installation time and cost makes Thermoflex®-LPG piping the safest and most cost efficient pipework to install!

Under and aboveground LPG tanks

CGH Group offers under- and aboveground LPG tanks from 9m³ to 120m³

- Tank diameters from 1250mm to 2900mm
- External coating (anticorrosive protection – Endoprene high density polyurethane coating for underground tanks)
- Arc Welding Technology
- Produced according to EU standards (PED 97/23/EC, AD2000)



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