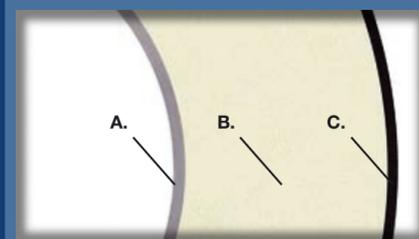


Fastest way between two points



General data

A. Service pipe

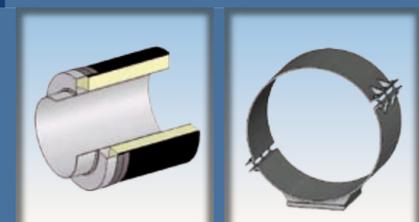
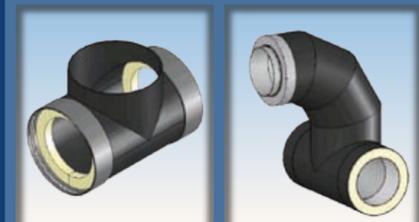
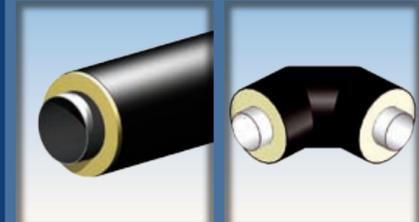
Material stainless steel, ANSI B 36.19 10S
Media density 490 kg/m³

B. Insulation

Material PUR, closed cell
Lambda -170°C 0.014 W/mK
PUR design stress 0.45 Mpa
Operating temperature -200°C to +120°C

C. Casing pipe

Material HDPE, min. PE80, ISO 12162
Melt flow rate less than 0,5 g / 10 mins
Oxidation induction time more than 30 mins at 210°C



Maximum axial shear force on straight pipes

Pipe dimensions

Ø 273/500 mm	68000 N/m
Ø 323/560 mm	81000 N/m
Ø 355/630 mm	89000 N/m
Ø 406/710 mm	102000 N/m
Ø 457/800 mm	115000 N/m
Ø 508/900 mm	128000 N/m
Ø 610/1000 mm	153000 N/m
Ø 711/1100 mm	179000 N/m
Ø 813/1200 mm	204000 N/m
Ø 914/1300 mm	230000 N/m
Ø 1016/1400 mm	255000 N/m

Maximum vertical load on fixed support

Pipe dimension		Width of support
Ø 273/500 mm	22181 N	325 mm
Ø 323/560 mm	24894 N	325 mm
Ø 355/630 mm	28088 N	325 mm
Ø 406/710 mm	36150 N	350 mm
Ø 457/800 mm	40600 N	350 mm
Ø 508/900 mm	50000 N	400 mm
Ø 610/1000 mm	50000 N	450 mm
Ø 711/1100 mm	62500 N	450 mm
Ø 813/1200 mm	Custom made	Custom made
Ø 914/1300 mm	Custom made	Custom made
Ø 1016/1400 mm	Custom made	Custom made

Pre-insulated pipe technology

The LOGSTOR pre-insulated pipe concept includes all the joints, bends, branches and valves necessary to construct end-to-end pipe systems that meet every specific requirement.

The heart of all LOGSTOR pre-insulated pipe systems is the unique cyclopentane-blown, CFC-free polyurethane cellular foam. This provides completely consistent, highly effective thermal protection around the service pipe, keeping any energy loss to the absolute minimum.

The modular design ensures easy, rapid installation at minimum cost, with every single component designed to avoid weak points anywhere in the system.

● distributing energy efficiency

● distributing energy efficiency

End-to-end dependability

With LOGSTOR pre-insulated pipe systems, all the difficult work has already been done when the pipes arrive on site. You just join together the fully-finished pre-fabricated sections, using a few easy, rapid procedures. Using the LOGSTOR pre-insulated pipe concept, your LNG terminal pipeline gets to function within weeks rather than years.

Ready made – ready to use

Pre-insulated pipe makes all the expensive, time-consuming work involved in insulating LNG terminal pipes *in situ* a thing of the past.

LOGSTOR pipe systems are insulated – and tested – in a factory environment under meticulously controlled conditions, and then delivered to your site fully finished, complete with all the supports and fittings needed for easy, glitch-free installation.

Consistent pipe and insulation quality ensures you exceptional safety, reliability and durability.

This breakthrough approach reduces on-site insulation work to the absolute minimum, makes project management much easier and the entire installation and commissioning process much faster, safer and cheaper.

Which means you bring your terminal into revenue-generating service much sooner.

Safely and on time

Laying LNG terminal pipe the LOGSTOR way makes the assembly and insulation work a rapid, straightforward process that you can carry out under more easily managed conditions, using a much smaller workforce.

Using LOGSTOR pre-insulated pipe systems, you no longer risk weather and climate playing havoc with your construction schedules. And the manpower, logistics and infrastructure requirements are much more modest, for both you and your contractors.

This makes project supervision much easier and helps you maintain high standards for both work and safety.

LNG terminal at Isle of Grain, UK, featuring 9.31 km of LOGSTOR pre-insulated pipe

All in one

The LOGSTOR pre-insulated pipe concept makes your entire terminal pipeline one single bonded system. A special low-temperature version of our unique polyurethane (PUR) cellular foam is used, and this is bonded to both the service pipe and the outer casing.

The composition of this insulation foam makes it strong and flexible enough to absorb the forces created by the steel service pipe expanding and contracting, and to transmit them to the outer

casing. The entire system behaves as one unit, and there is no stress-inducing movement of the service pipe within the insulation.

As a result, LOGSTOR pre-insulated pipe systems are capable of repeated temperature fluctuations from -200°C to 80°C with no degradation or crack formation.

Tough shell

The insulation is encased in a high-density polyethylene (HDPE) casing. This resilient outer shell is impervious to salt, chemicals and other sources of corrosion, as well as being impact-resistant and 100 % waterproof.

These qualities make the pipe extremely durable, and ideal for long-term maintenance-free use in the exposed shoreline positions typical in LNG terminals.

No weak points

One of the many advantages of LOGSTOR pre-insulated pipe systems is that any potential weak points have been done away with.

- The only on-site insulation work is the installation of a relatively small number of joints, using rapid, foolproof foaming procedures.
- Insulation covering the joints is just as effective as that in the pipe lengths.
- Individual pipe lengths are connected with electrically welded joints, using field-proven, quality-assured procedures.
- The pipe supports are positioned on the outer casing, which eliminates any thermal bridging.
- No problems with seepage or ice formation, regardless of weather or climate.

Bankable advantage

The design principles used in LOGSTOR pre-insulated pipe systems mean the practical benefits and financial advantages begin with installation – and then continue to accumulate throughout the design life of the system, which is normally 30 years.

Our pre-insulated pipe systems are designed to ensure minimal energy loss, with no material degradation and virtually no service, maintenance or repairs. Regardless of specifications, your operating costs are rock bottom – and completely predictable, with no unwelcome surprises ahead.

Interested in cashing in on the LOGSTOR advantage?



Getting there fast

With LOGSTOR pre-insulated pipe systems, the whole decision-to-delivery process is much faster.

In one recent LNG project, for example, we delivered 9.31 km of pre-insulated pipe, ready to link up, and with all the requisite bends, joints and supports – within an 8-week time frame.



The workforce calculation

To give you some idea of what you can achieve – on a recent LNG terminal project in the UK, LOGSTOR carried out the on-site jointing and insulation work at a progress rate of as much as 100 m per day, with a workforce of only eight men.

Fewer men on site = simpler logistics, easier supervision, greater safety.



140,000 km – and counting

LOGSTOR is the world's pre-eminent supplier of energy-efficient pre-insulated pipe systems. These are the safest, most cost-effective way of transporting liquids and gases with temperatures ranging from -200°C to 315°C by pipe, with the absolute minimum of energy loss. Our current production amounts to more than 10,000 km per year – and counting.

In addition to LNG terminal projects, our systems are

standard equipment in onshore and offshore oil and gas installations, marine applications, district heating and cooling, and industry in general.

All LOGSTOR pre-insulated pipes and components are manufactured in compliance with ISO 9001 and ISO 14001 standards.

More information is at www.logstor.com