

# Getting district cooling right

## Pre-insulated pipe technology for efficient district cooling



# District cooling product range

## Product program

LOGSTOR, part of Kingspan group, provides a comprehensive range of pipes and components, designed to meet virtually all of your district cooling requirements.

LOGSTOR pre-insulated pipe lengths are available with different insulation thicknesses. These are referred to as series 0, 1 and 2, where series 1 has better insulation properties than series 0 and series 2 has better insulation properties than series 1.

The range includes all the necessary components, casing joints and fittings, as well as the tools required for effective installation.

Different types of casing joints are available to ensure maximum safety and durability.

The entire system is supplied in accordance with European standards EN 17415-1 (Pre-insulated pipes), EN 17415-2 (Pre-insulated fittings), EN 17415-3 (Pre-insulated valves) and EN 489 (Casing joints).



## Features

A complete fully bonded system consisting of pipes, fittings, valves and casing joints. Strong and effective insulation against loads and heat gain. High resistance against diffusion of water and oxygen.

Casing joints that are either electrically welded or sealed, shrinkable cross-linked to directly buried or above-ground systems.

Service pipe	Shot-blasted carbon steel
Insulation foam	Low-lambda polyurethane (PUR). Thermal conductivity at 15°C from 0.020 to 0.022 W/mK depending on the type of pipe
Outer casing	High-density polyethylene (HDPE)
Diffusion barrier	Optional; aluminium foil
Surveillance system	Insulated 3dc wires or Nordic system with 2 uninsulated copper wires

# Product programme

## Pipes

Dimensions	Insulation series	Pipe length
DN50-1200	Series 1/2	12 m
DN100-1200	Series 1/2	16 m
DN200-1200	Series 0	12 m/16 m

## Casing joints

### Weldable joints

Computer-controlled welding fuses the PEHD joint and outer casing pipe together

### Shrinkable joints

Made of extruded, cross-linked polyethylene (PEX), which is shrunk around the casing pipe and remains firmly in place

## Bends

90° and 45° – other angles on request

## Branches

45° or straight

## Valves

Ball valve – DN50 - 300. Bigger dimensions on request  
Butterfly valve – on request

## Reductions

1 step and 2 steps

## Surveillance system

Insulated 3dc wires or Nordic system with 2 uninsulated copper wires



# Advantages of District Cooling Compared to Individual Cooling for the Individual Consumer

## Advantages for the society:

- Many different sources to produce the cooling agent from e.g. surplus heat, surplus power from windmill production, free cooling with the use of lake or sea water etc
- High efficient chillers

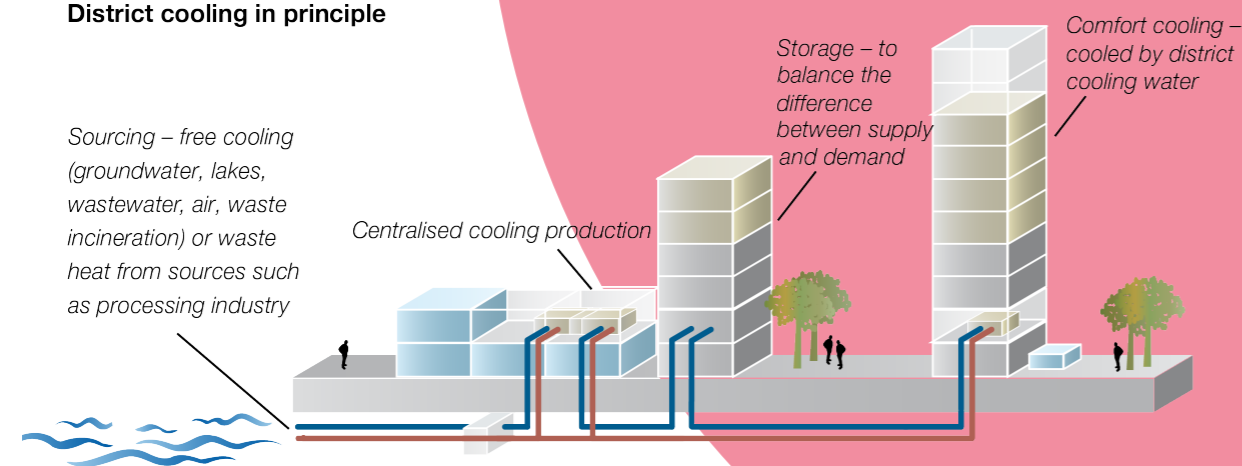
## Advantages for the energy companies which already deliver district heating:

- New product to existing customers
- Growth potential for the energy companies
- Supports the corporate social responsibility and image of the energy companies

## Advantages for the consumer:

- High security of supply
- Less maintenance
- Less tied-up capital
- Competitive price
- Space-saving – frees up m<sup>2</sup> in the building for other purposes

## District cooling in principle



# The benefits

Specifying LOGSTOR pre-insulated pipes as the backbone of a district cooling systems helps you achieve multiple advantages, with significant bottom-line benefits.

- Extremely robust – can be installed underground, on the surface or across rooftops, for lowest possible installation costs
- Exceptional reliability and long service life, with unusually low inspection, maintenance and repair costs
- Builds on more than 50 years of know-how and technology familiarity, reducing engineering costs
- Euroheat & Power certification assures product quality according to European standards
- Easily budgetable operating costs, with no unforeseen surprises
- No need for painting, coating or any other corrosion protection for the service pipe, saving on project costs
- No need to install a cathodic protection system to prevent corrosion from the outside, saving on project costs
- The pre-insulated pipe system is established with an integrated surveillance system detecting any moist in the insulation due to damages on the service pipe or outer casing. This enables you to respond as soon as the damage occurs and prevent the damage from spreading and in worst case resulting in a system breakdown, so cooling cannot be delivered to the consumers
- The insulation stays completely dry even when the pipe is installed in water
- Avoids thermal bridges due to pipe supports, because the piping is supported on the outside of the casing
- Resistant to ambient surroundings. The insulation can withstand even the roughest treatment and the effects of the most dramatic weather fluctuations
- The pipe system can also be used for crossing of channels or streams
- No condensation on pipes when they are installed indoor or above ground
- The pipe system can be installed in aggressive soil
- Long service life of the system, in accordance with EN17415-1 an expected service life of minimum 50 years

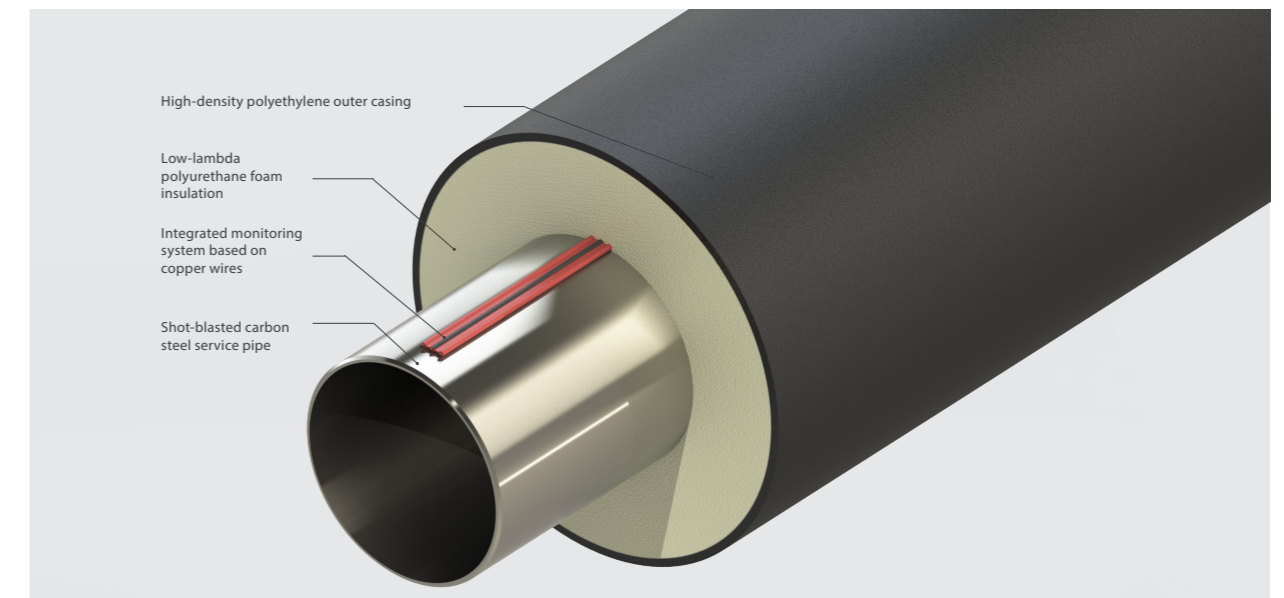


# The core of the matter

## Energy-efficient distribution

The overall efficiency and service life costs of any district cooling system are heavily dependent on an efficient distribution network. Any reductions in emissions you achieve by cooling liquids efficiently at a central location, or by exploiting waste heat from CHPs or industrial facilities, gets wiped out if thermal energy goes to waste en route from the supplier to the individual user and back.

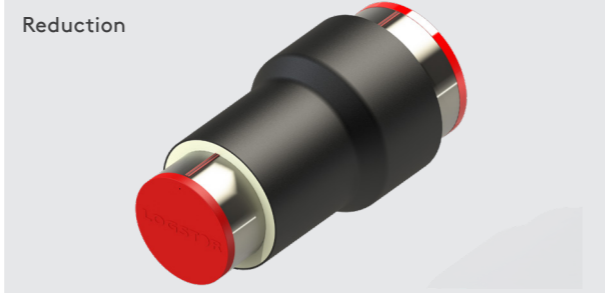
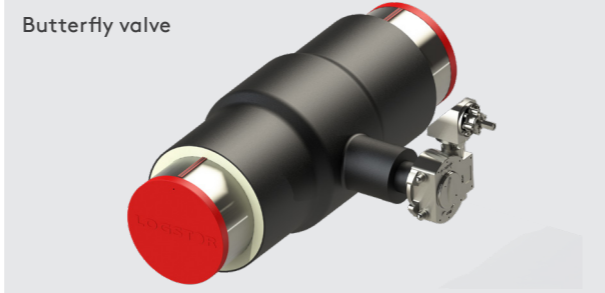
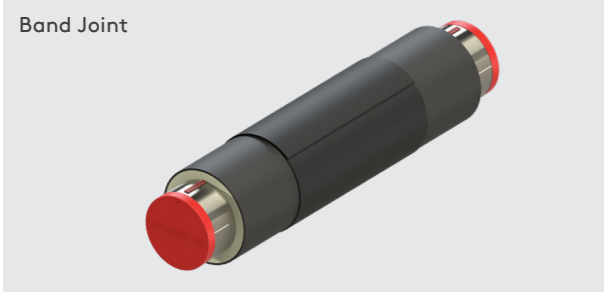
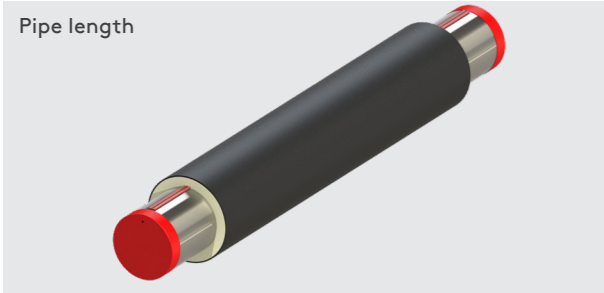
LOGSTOR pre-insulated pipe systems are the world's most reliable and energy-efficient solutions to district cooling transmission and distribution requirements. They make sure the cooling liquid gets from the supplier to the user ends of the pipe with no leaks and with the absolute minimum of thermal energy loss - even over long distances. This enables you to significantly reduce the CO<sub>2</sub> emissions associated with any district cooling solutions you provide. And, of course, the operating costs involved.



All LOGSTOR pre-insulated pipe systems use a unique CFC-free polyurethane foam that prevents thermal energy loss from the service pipe. The exceptionally fine cell structure of this foam, combined with its remarkable consistency, reduces energy losses to an absolute minimum.

This brings you the dual benefits of helping reduce CO<sub>2</sub> emissions, and making end-to-end savings in distributing district cooling liquids – throughout the entire 50-year minimum service life provided by LOGSTOR pre-insulated pipe systems.

# District cooling product range



A full range of practical information and support materials are available on [www.logstor.com](http://www.logstor.com)

# Comprehensive support and training with Kingspan Academy secure your assets

LOGSTOR engineers and technicians provide a full range of support services during all phases of your district cooling project, right from initial planning to final commissioning.

This is a key way to boost the efficiency of project implementation. Training of fitters in all the practical details of installing LOGSTOR district cooling components, is an integral part of our delivery packages.

The core principle is that no fitter should install any joints without having a valid certificate from Kingspan Academy.

This will secure the long expected flawless lifetime.



**Kingspan Academy**  
**LOGSTOR Solutions**

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