Pre-insulated Solutions

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The LOGSTOR BandJoint System

A weldable joint system for pre-insulated pipe systems

Kingspan®

The LOGSTOR BandJoint family
– the weld joint system with straight joints and branch joints

The LOGSTOR BandJoint weld system has unique properties which, combined with the advanced welding machine LOGSTOR WeldMaster/WeldMaster Light, ensure that the joints have the same expected service life as the rest of the system.

It pays off to focus on joint solutions with the same expected service life as the pre-insulated components.

On BandJoint weld joints, HDPE material fuses together in the joint and in the casing at the time of installation. This eliminates the risk of expensive joint damage and repair during the service life of the system.

The BandJoint system consists of straight joints and branches made of material with the same quality as the outer casing. Using computer-controlled welding technology and the copper wires embedded in the joint, the joint and the outer casing are welded together to form a continuous, unbreakable pipe with weld zones that are stronger than the actual casing.

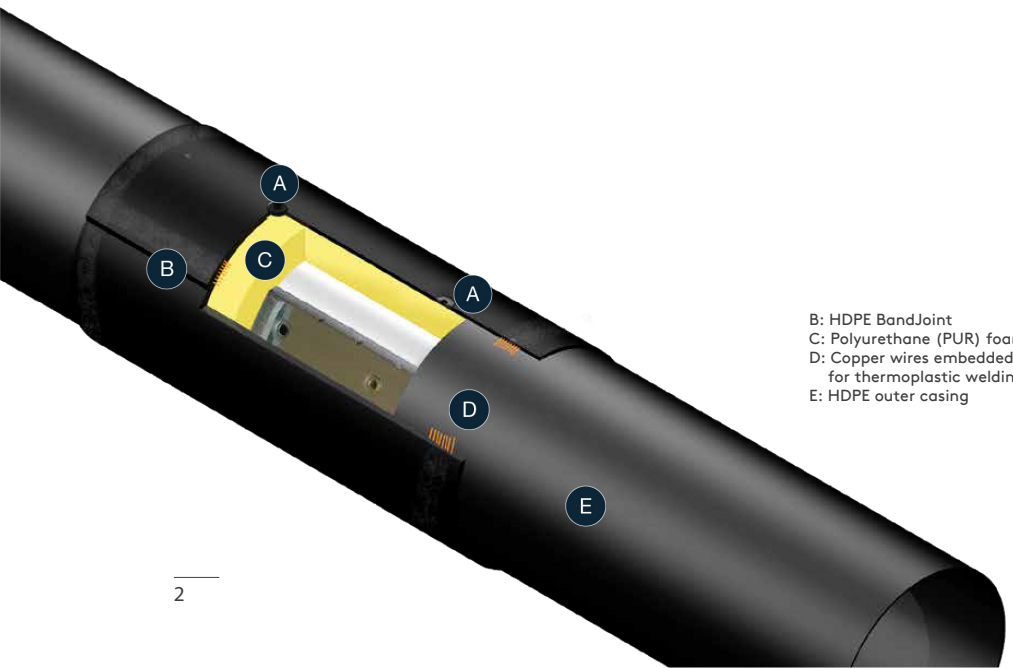
Applications

Its exceptional durability makes the BandJoint system perfect for joining distribution and transmission pipelines to systems of all kinds. It is particularly suitable in installations where:

- Access, excavation and repair would be difficult and costly
- Any damage or leakage would have environmental consequences
- There is a risk of considerable axial movements in the system as in solar heating systems for example
- The pipes are more than 0.5 m below the water table
- The pre-insulated pipes are laid in oil-contaminated soil
- Any damage and leaks would affect a large number of users

Advantages

- Fully welded joint system for straight joints dimension ø90 - 1400 mm casing
- BandJoint branch that is weldable on the main pipe and on the branch is a double sealed shrinkable solution that can be used as a connection to FlextraPipe
- Open weld joint. The straight joint does not need to be pre-installed, which ensures effective cleaning
- Dimensions ø355-1400 mm can be delivered in rolls or flat. Transport can be optimized if the joints are delivered flat
- On all dimensions ø90 - 1400 mm the welding pressure is secured by a controlled air pressure
- On dimension ø90 - 200 and ø225 - 800 mm the same flexible pressing tool can be used for all dimensions
- The joint and casing are welded together to form a solid unit
- Welding with the LOGSTOR WeldMaster/WeldMaster Light and using the PDA or LOGSTOR Connect app via your mobile phone
- The joint fitter will get immediate information if the welding process is approved or not approved according to accept criteria
- The PDA/LOGSTOR Connect monitors the welding process and registers all welding data, which are uploaded directly to the WeldMaster portal
- It is possible to perform a visual inspection to verify correct welding
- BandJoint can be supplied in long lengths for use with E-comp or to repair old systems or casing damage



B: HDPE BandJoint
C: Polyurethane (PUR) foam insulation
D: Copper wires embedded in the joint for thermoplastic welding
E: HDPE outer casing

Complete set of pressing tools and LOGSTOR WeldMaster/ WeldMaster Light. The welding pressure is maintained with air pressure which is continuously checked during installation.

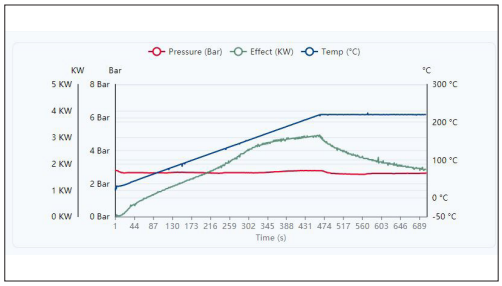
Visual inspection is possible. A filled hole indicates correct fusion and welding.

Leakage test before foaming.

Each joint has a label with a barcode.

The barcode contains unique data on the joint type and dimension, and the resistance of the welding wires.

This provides reliable data for correct automatic configuration of the welding process.



The welding process is documented in the web-based documentation.

BandJoint
Branch Joints

The LOGSTOR BandJoint system also includes:

- BandJoint branch Flextra, with welding on the main pipe and shrink with mastic sealing on the branch. BandJoint branch Flextra can therefore be used to connect Flextra house connections for single pipe and TwinPipe. The cross-linked corrugated branch ensures that the joint can be used as a straight branch, a 45 degree branch and a parallel branch. The branch is double sealed with a collar
- BandJoint Branch Flextra Twin/single which is used when branching from a TwinPipe on the main to two single branch pipes

BandJoint branch joints must be pre-installed on the branch pipe. Apart from that, they offer the same unique advantages as the straight BandJoint.

BandJoint branch Flextra

Welding with embedded copper wires

LOGSTOR BandJoint has special copper wires embedded in the weld zones of the joints (circumferential and longitudinal). LOGSTOR WeldMaster automatically ensures that the energy input is correct for the heating phase and the welding phase, whatever is the ambient temperature.

During the heating phase, the materials are heated to 200 – 220°C depending on the dimension, after which the welding phase starts. The welding phase then continues for predefined times according to the dimension. Throughout the heating phase, the welding phase and the cooling phase, the welding pressure is maintained in a pressing tool with air pressure that can be monitored throughout the process. The result is a weld joint in which the weld zone as strong as the actual casing.

Welding with LOGSTOR WeldMaster and WeldMaster Light

The LOGSTOR WeldMaster is a PE welding machine that uses leading technologies in order to make pipe systems faster and safer to install. Our focus is therefore on ensuring that installation is carried out correctly and is documented, and that the joints can be located in future.

Unique weld joints

LOGSTOR BandJoint weld joints are unique because each joint has a 2D barcode containing the product and production data of the individual joint (joint type, dimension, R20 resistance), which are necessary input for the welding process.

Global Positioning System (GPS)

The PDA/LOGSTOR Connect features a built-in GPS receiver which uses the satellite system to register the position of each joint installation as well as the date and time when the work was done. These data form part of the subsequent documentation, which users are able to access via the Internet in order to monitor the entire process and locate the particular installation.

Documentation

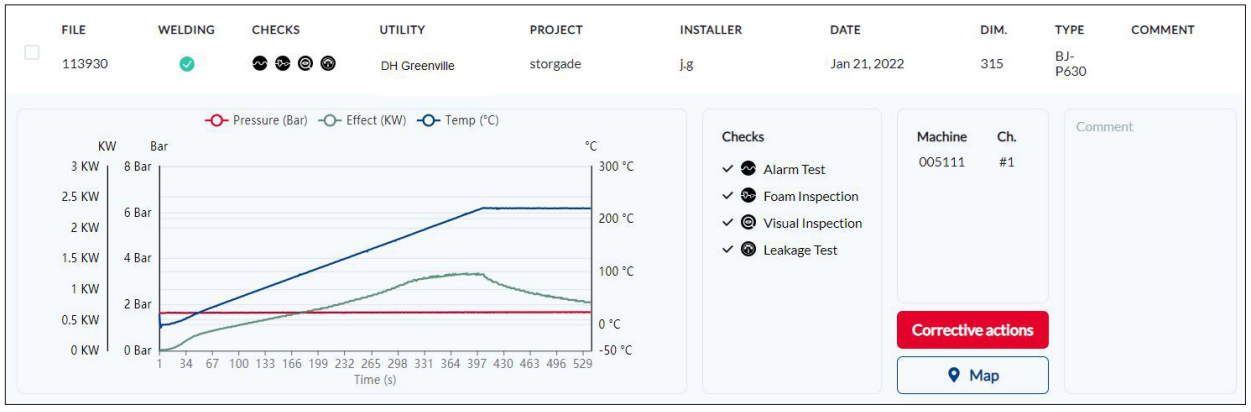
LOGSTOR WeldMaster allows each customer to view documentation on all joints. After welding, all data from the welding process are collected in the handheld PDA/LOGSTOR Connect. Along with data for each individual joint.

On the LOGSTOR web site, each individual welding process appears in graphical form with time, temperature, current and power, and the joint report also shows the GPS position, date, time and the operator's data.
The geographical position is displayed in Google Maps. All data are protected and access of any kind requires a user login and password. Quality documentation and traceability are now possible for every single joint/joint installation anywhere in the world.

Advantages

- LOGSTOR WeldMaster can install two BandJoints at a time in the dimension range ø90 – 1400
- LOGSTOR WeldMaster Light can install one BandJoint at a time in the dimension range ø90 – 560 but can be upgraded to install the full dimension range
- LOGSTOR WeldMaster Light weighs just 25 kg
- LOGSTOR Weldmaster Light needs a smaller generator with a power supply of at least 8 KVA
- The 2D barcode on the joint is scanned using the PDA, guaranteeing that the welding process is correctly configured
- The GPS module registers the geographical location of the joint
- The joint fitter will get immediate information if the welding process is approved or not approved according to accept criteria
- The PDA/LOGSTOR Connect monitors the welding process and registers all welding data, which are uploaded directly to a web server
- The welding process provides remote support
- Automatic update is possible

LOGSTOR WeldMaster with two welding units. PDA/LOGSTOR Connect for remote control of the welding process. The 2D barcode on the joint contains the necessary data for the welding process and is scanned with the PDA/LOGSTOR Connect.



Example of documentation on the web site of the welding of a BandJoint

Foam liquid
LOGSTOR FoamPack

High focus on safety for fitters and on foaming quality.

When working with foam liquids (isocyanate and polyol), it is important to ensure that the safety of those working with the liquids at all phases from transport to installation has the highest priority. The packaging has therefore been carefully designed with safety in mind. Each bag is clearly labelled to indicate the content with the relevant hazard symbols. In addition, there is a QR code that can be scanned with a mobile phone, providing access to detailed Material Safety Data Sheets.

Also, on every foam pack there is a safety information for polyol and Isocyanate in different languages in a booklet.

Once the liquids are mixed, the nozzle is inserted into the foaming hole, and only then is the nozzle membrane broken. This ensures a minimal risk of the fitter coming into contact with the foam liquids.

A: Nozzle with membrane
B: Name of foam liquid and related hazard symbol
C: QR code with access to detailed information about foam liquids
D: Label stating foam pack number and production date
E: Safety information for polyol and Icocyanate in different languages in a booklet

Ensuring the highest foam quality

It is of crucial importance for the service life of the foam liquids and the high quality of the foaming that the liquids are stored under the right temperature conditions and have the correct temperature during foaming. Therefore, foam packs are always supplied in polystyrene boxes for easy storage at the customer's warehouse. Correct storage ensures that the liquids have the right temperature when foaming the joints.

Advantages

- Measured foam dosage per joint guarantees the quality of the foam and minimises waste
- Diffusion-tight foil for the isocyanate ensures high quality and a long shelf-life for the foam liquids
- The nozzle membrane is not opened until the nozzle is placed in the foaming hole, which ensures that the fitter does not come into contact with the foam liquids
- Foam packs are supplied in polystyrene boxes. The correct temperature of the liquids ensures high-quality foaming
- New improved labelling stating foam liquids and related hazard symbols
- QR code that can be scanned with a mobile phone provides access to Material Safety Data Sheets
- Foam size and production date are marked on the FoamPack
- Safety information for Polyol and Isocyanate in different languages in a booklet on each half part of the foam pack

Foam pack in the field

General overview
Technical data

Material
Polyethylene (HDPE) with copper wires embedded in the weld zones

Joint	Casing dimensions (Ø mm)	
Straight joint	90-1400	
BandJoint Branch Flextra	Main Pipe	Branch
BandJoint Branch Flextra single/single	125-315	90-225
		140-160
BandJoint Branch Flextra Twin/Twin	125-710	90-125
		140-160
BandJoint Branch Flextra Twin/Single	125-710	90-125

Documented standards

The LOGSTOR BandJoint is tested according to requirements in EN489-1. Additionally, the BandJoint is tested in a sand box test with 1000 cycles.

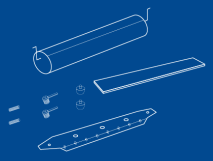
Quality-controlled production and assembly

Quality and the environment are of crucial importance – from manufacturing the components to final assembly. The ISO 9001 and ISO 14001 standards form the basis for the production of all pipes and components.

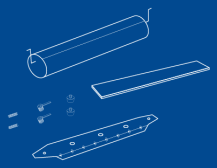
We offer our customers, contractors, consulting engineers and supervisors in-depth practical training with certification at Kingspan Academy in the use of the LOGSTOR BandJoint weld joint system and its components, at one of Kingspan's training centres or on the construction site.

Components

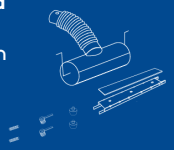
Straight Joint
90-315
Delivered in rolls



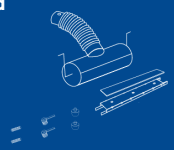
Straight Joint
355-1400
Can be delivered flat or in rolls



BandJoint Branch Flextra
125-315/90-125, 140-160
Single/Single or Twin/Twin

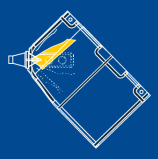


BandJoint Branch Flextra
355-710/90-125, 140-160
Twin/Twin



BandJoint Branch Flextra
125-710/90-125
Twin/Single

Foam packs



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