

Digital Tools

Listening to and understanding our customers is an important competence. With our digital tools, we provide our customers with expert advice about pipes and insulation. And by extension, we assist in the fields of planning, construction, and maintenance, to ensure optimal energy utilisation, and low lifetime costs.



What's in it for you? It's very simple. With our digital tools, we help you secure the best possible long-term investment.

HOW CAN OUR DIGITAL TECHNOLOGIES BENEFIT YOU?

To secure our customers' assets, we must address the long perspective. That means looking beyond the initial investment and taking the total cost of ownership - over the total lifetime of a pipe system - into consideration.

Choosing the right pipe system with LOGSTOR TCO Tool

The TCO Tool helps the customer choose the most suitable pre-insulated piping system for both fixed and flexible systems in terms of Total Cost of Ownership (TCO) and makes it easy to conduct sensitivity analyses with different requirements.

The Total Cost of Ownership calculation considers investment costs for pre-insulated materials, excavation works and installation, as well as operating costs for heat loss and carbon allowance. Investment costs can be adjusted to reflect local conditions. You can also use your own prices when comparing projects.

The TCO tool budgets the energy company's project according to:

- Channel meterage for each pipe size.
- The customer's requirements for design data, such as flow and return temperature in summer and winter, ground temperature, laying depth etc.
- The customer's requirements regarding the calculation period and energy price.
- The customer's requirements regarding the fuel mix and carbon allowance price.

These requirements are used to calculate Total Cost of Ownership across all potential systems for the pipe dimensions involved in the project, and the system with the lowest Total Cost of Ownership is highlighted. Potential systems might be:

- Single pipe or TwinPipe.
- Series 1, 2 or 3.
- Pipe with or without a diffusion barrier to ensure consistent heat loss over its lifetime.

In addition to Total Cost of Ownership, the TCO tool calculates the following:

- Heat loss in the first year.
- CO2 emissions over the calculation period.
- Comparison of two projects and payback time for additional investment in the better insulated system.
- When comparing two projects, the customer can use investment costs from projects with a specifically calculated budget.

LOGSTOR Design Tool:

LOGSTOR Design Tool provides the possibility to calculate axial stress level in steel, expansion at bends and branches, location and amount of expansion cushions, and other calculation functions needed to make a complete static layout of the pre-insulated pipe system.

All calculation functions are available for both Single pipe and TwinPipe and when the calculation results are complied with, a minimum design life of 30 years is ensured.

If the calculation results exceed the allowable values, a warning is shown on the screen.

The calculation results are accompanied by graphics showing the location and number of expansions cushions. Calculations can be exported to a PDF file and saved.

LOGSTOR Design Tool is based on the calculation methods and the design rules given in LOGSTOR Design Manual, which is based on optimization of technical and economic aspects.

By using the Design Tool, which complies with the LOGSTOR Design Manual, and by taking local conditions into account, it is ensured, that the designed bonded pipe system is on the level with the static requirements in the European standard for District energy pipes, EN 13941.

This compliance means that dimensions up to and including DN 300 can be designed with this Design Tool as documentation.

The Design Tool calculations are only guiding for dimensions larger than DN300.

LOGSTOR Connect WeldMaster Tool:

The LOGSTOR Connect WeldMaster tool controls the communication between the joint and the welding machine and it is to replace our existing PDA solution. All features, scan options and remote support as we know it from the PDA are naturally also available in the LOGSTOR Connect WeldMaster tool.

The LOGSTOR Connect WeldMaster tool provides a user-friendly and intuitive welding flow with ample options for improved documentation i.e. via a Photo Documentation feature implemented for different phases in the welding process.

With LOGSTOR Connect we lift the full WeldMaster solution to next level technology and together with the InstallationPortal we offer a one-of-a-kind solution enabling both Utilities and Contractors to have better overview of ongoing projects and excellent documentation.

Key features:

- Photo documentation for WeldMaster during preparation, process, and completion.
- Prevent unnecessary welding-stops through easy access via smartphone.
- Immediate feedback to the installer if welding process is approved or not approved according to accept criteria.
- The installer shall actively sign off 4 manual checks.
 - "Alarm" – that alarm wires in the joint are checked for wire and insulation resistance.
 - "Pressure test" – leakage test is done correctly (0,2 bar) and no leakages in joint.
 - "Foamed" – inspection that the foam is appearing at the ventilation plugs.
 - "Visual inspected" – final visual inspection of the joint including the weld plugs.
- The InstallationPortal is the hub for both ShrinkMaster and WeldMaster, which means all your joint documentation is stored in the same place and gives you a combined overview.

All data (current, effect, temperature, welding time and GPS location of the joint) is stored in a LOGSTOR hosted database where the customers have direct access to full documentation for their own projects. There is also the possibility of adding operator name and other relevant data for the installation.

Surveillance

LOGSTOR's surveillance of the district heating or district cooling network generates security in everyday life, minimises the risk of having to replace pipes, and significantly reduces the costs associated with repairs.

LOGSTOR Detect

With the active LOGSTOR detect concept it is possible to detect eventual damages and moisture in the foam at an early stage.

Thereby action can be taken to make repairs immediately to avoid further damage and minimize cost.

This secures the long-expected lifetime of the pre-insulated pipe system.

- Possible to see if moisture in the foam due to is a leak on the steel pipe or leak in the casing Joint/damage on casing.
- Notification about eventual failure will be sent to person who shall action.

We have detectors with long range and Li-battery that can measure:

- Resistance of wire.
- Insulations resistance.
- Galvanic voltage.
- Location of fault.
- Sensors that can measure pressure in pipe – temperature in pipe and water level in chambers.
- We also have detectors that can make measurement on Brandes wire.

Hosting Solutions:

- Hosting solutions with the possibility of long-distance support from LOGSTOR.
- Collect all measurements from detectors.
- Present the data from handover in a historical overview.
- Alarm levels are defined by the customer.
- Automatic notification when alarm levels are exceeded.

LOGSTOR Connect ShrinkMaster Tool:

The LOGSTOR Connect ShrinkMaster tool, an easy-to-use tool to capture the entire shrinkable joint installation with comprehensive documentation, which supports you in securing the expected lifetime of your district heating network.

The LOGSTOR Connect tool is available in LOGSTOR Connect for utilities, contractors, installers, advisors, and supervisors, who want better documentation of shrinkable joint installations. The tool

enables users to capture the installation process with photo documentation, and resistance measurements for alarm wire and insulation.

After uploading it in the LOGSTOR ShrinkMaster tool the documentation will be available in the InstallationPortal, where it can be extracted as reports. Unlike today's manual processes, our product provides comprehensive documentation for every single installation, eliminates written manual administrative processes, stores reports with easy user access, and makes it simple for our customers to supervise quality assurance.

Key features:

- Date, time, installer credentials, contractor credentials, project information, GPS-location, joint type, joint dimension, insulation type, photo documentation, manual checks, resistance measurements, and comments are saved during installation.
- After uploading in ShrinkMaster all documentation is saved in the InstallationPortal and hereby eliminates manual processes, as reports can be generated automatically.
- Using photo documentation, GPS-location, metadata, resistance measurement validation and joint batch information, quality assurance of shrinkable joint installations have never been easier.
- Through a map feature in the InstallationPortal, you will gain a great overview of your shrinkable joints' GPS-location.
- Simple, easy to use, and automated report generation, which can be combined with existing joint documentation.
- The InstallationPortal is the hub for both ShrinkMaster and WeldMaster, which means all your joint documentation is stored in the same place and gives you a combined overview
- Easy and direct access to product information and user manuals.

All data is stored in a LOGSTOR hosted database where the customers have direct access to full documentation for their own projects. There is also the possibility of adding operator name and other relevant data for the installation.

LOGSTOR BIM Models

BIM (Building Information Modeling) is the foundation of digital transformation in the architecture, engineering, and construction (AEC) industry. The primary concept behind BIM is to speed up the design process through the utilization of 3D BIM models. These models includes not only the geometric data of a product but also all the necessary associated information (e.g. material types, operational details, etc.).

By integrating all these elements into a single, coherent model, BIM enhances collaboration, improves efficiency, reduces costs, and minimizes risks in the design, construction, and operation of buildings and infrastructure projects. It has become an integral part of the modern construction industry, promoting more sustainable and informed decision-making throughout the entire lifecycle of a project.

Access our available BIM models on our [part community portal](#). Here you can view the currently available models and modify them within our standard product variant specifications. Feel free to download the BIM models as well but be sure to create a free user before doing so, as this feature is only available for users.