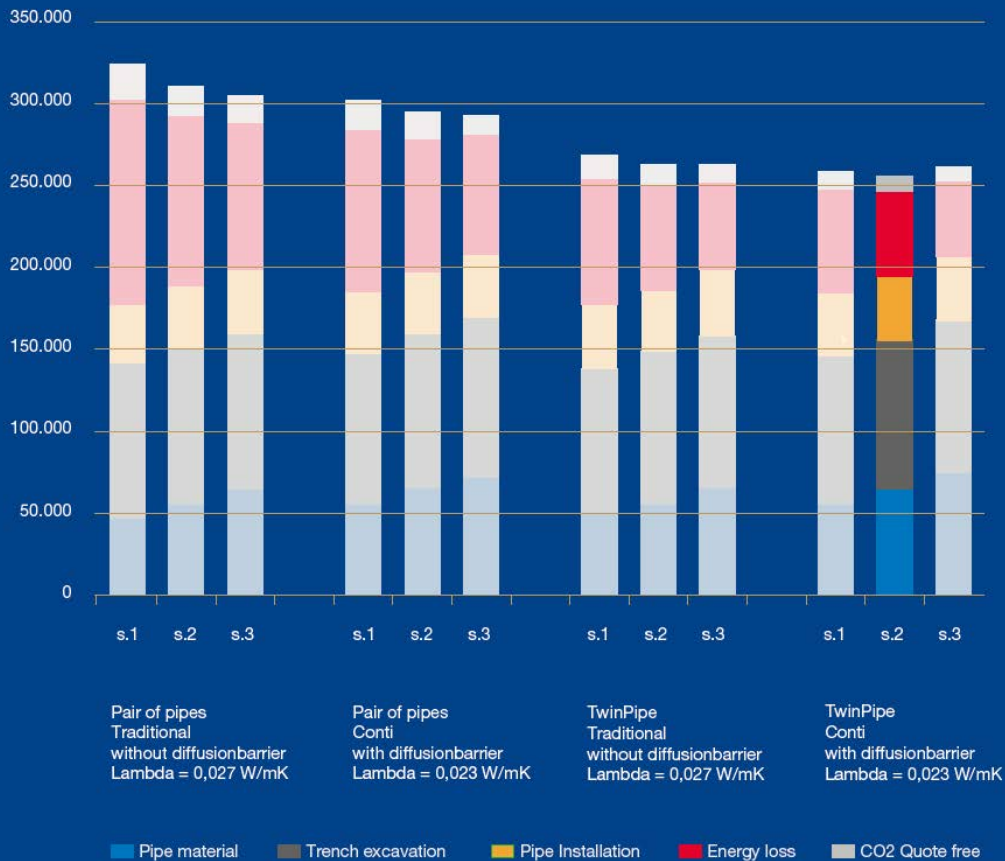


TCO cost in EUR



24-11-2021 / LOGSTOR Product info no. 2-2021

Once again, we have exciting news from LOGSTOR.

Below, please find our Product Info No. 2-2021 with following updates:

- A new digital calculation tool, LOGSTOR TCO tool, which guides the customer to the most suitable pre-insulated pipe system in relation to "Total Cost of Ownership"
- WeldMaster 5.0 with an update of the software which provides even greater security for long flawless service life
- New closed pressure connection for Alupex

Should you have any questions, please contact your usual LOGSTOR contact person or the undersigned.

Best regards
LOGSTOR A/S

Peter Jorsal
Product & Academy Manager

LOGSTOR

24-11-2021 / LOGSTOR Product info no. 2-2021

New digital tool for calculating the system with the lowest “Total Cost of Ownership”

We are pleased to introduce a new calculation program "LOGSTOR TCO tool" which can guide our customers to choose the most suitable pre-insulated pipe system for both fixed and flexible system in relation to "Total Cost of Ownership" (TCO).

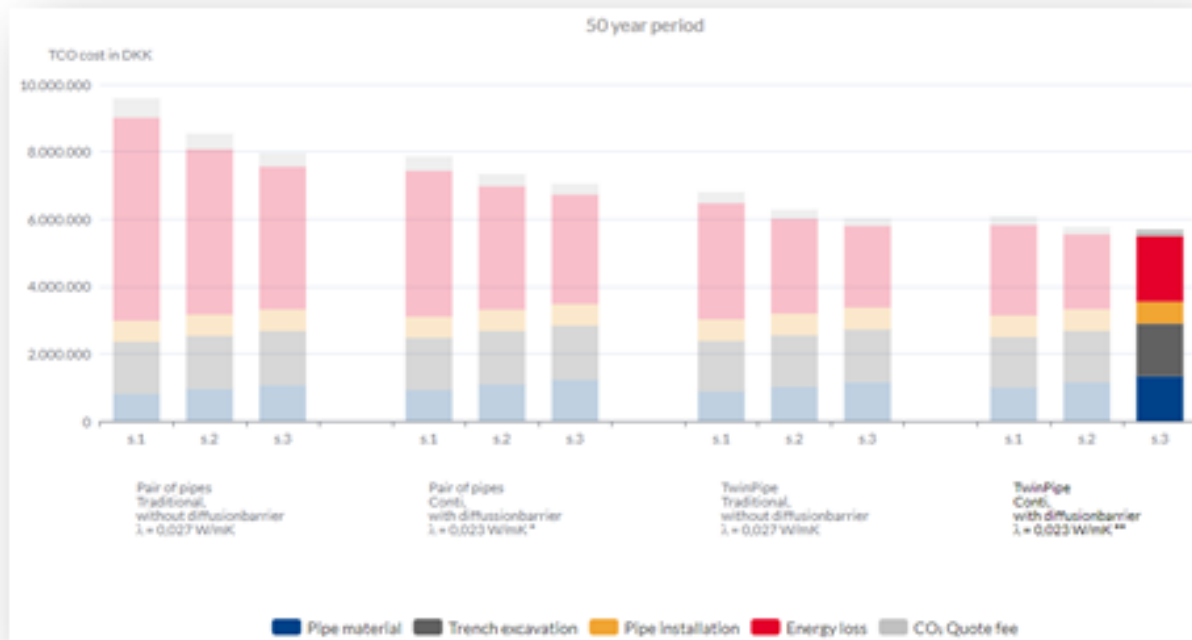
The new calculation program is available on our website: <https://www.logstor.com/service-support/tools>. First logon requires that you register as a user, which subsequently grants you free access to the tool. We look forward to reviewing the new tool with you.

The Total Cost of Ownership calculation takes into account investment costs for pre-insulated materials, excavation works, 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 per dimension of pipework
- Design data such as flow and return temperature in summer and winter, ground temperature, laying depth etc.
- Period for the calculation and energy price
- Fuel mix and carbon allowance price



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

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

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

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

WeldMaster 5.0 - New updates leading to even higher security for long flawless lifetime

Our concept for welding of casing joints with WeldMaster/WeldMaster Light is perceived as the best in our business.

The reason for this are the features and advantages in relation to the welding process and the strong documentation that contribute to securing a long and flawless lifetime.

We are now launching WeldMaster 5.0 with new updates leading to even higher security for long and flawless lifetime. With WeldMaster 5.0 the installer will immediately receive information on the PDA if the welding process is performed within the accepted criteria or not - approved or not approved.

The new updates and features

A clear information on the PDA that will appear immediately if the welding process is approved or not approved

- ✓ "Welding process approved" - the file number is green

According to the accept criteria about effect, temperature, time, and pressure in the welding zone

Accept criteria are implemented in the PDA



- ✓ "Welding process not approve" - the file number is red and information about "welding criteria not reached" will pop up

The fitter gets an immediate message on the PDA if the welding criteria are not reached

It can be wrong welding time or power or both



In case of that the welding process is not approved the installer has three options

1. Re-weld the joint according to instruction and get the approval

WeldMaster secures the reference between the file number of the re-welded joint and the file number of the joint that was not approved



In the drop menu select the file no. to be re-welded



A text will come on the PDA after choice of file no. to be re-welded

2. Remove the joint and install a new joint if re-welding is not within the accepted criteria

3. Make a corrective action like extruder weld, seal with shrink wrap, e.g.

- ✓ The corrective actions must be agreed with the customer
- ✓ The installer describes the corrective action in the comment field on the PDA
- ✓ It must be the installer's superiors that signs off for the corrective action
- ✓ The color in the documentation on the portal will change to orange (On a joint with corrective actions the color can never change back to green as the welding process was not approved)

The Installer must actively sign off four manual checks on the PDA

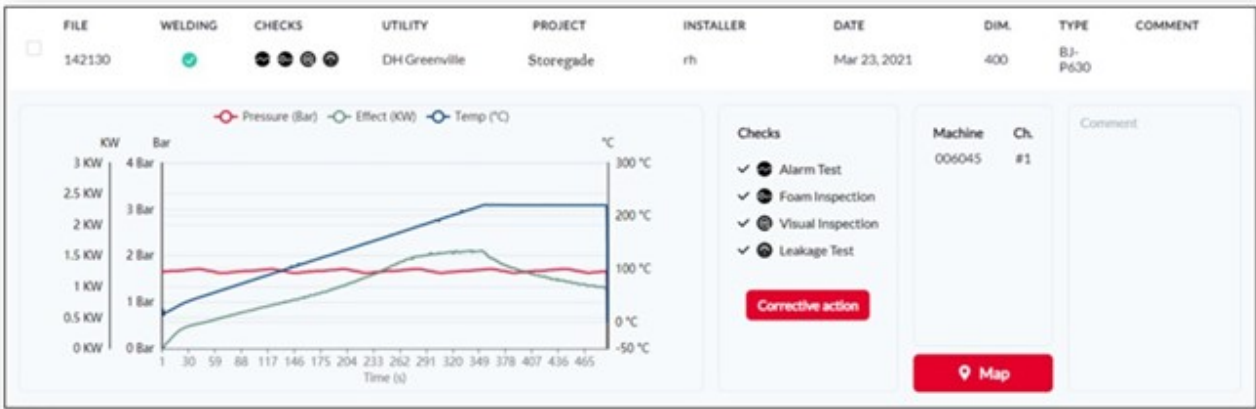
- ✓ "Alarm" - that alarm wires in the joint are checked for wire resistance and insulation resistance
- ✓ "Foamed" - it has been inspected that foam is appearing at the ventilation plugs
- ✓ "Pressure test" - leakage test is done and there are no leakages
- ✓ "Visual inspected" - final visual inspection of the joint is done including the weld plugs



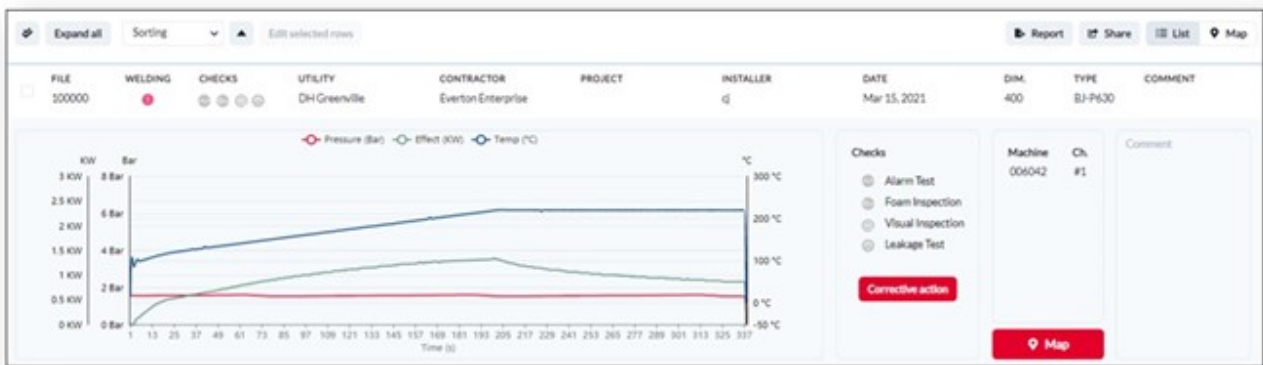
Strong documentation tool that can be used in the installation period, at handover, in the warranty period and in the lifetime

Below, please see pictures from the WeldMaster portal as examples of the strong documentation:

Approved welding process:



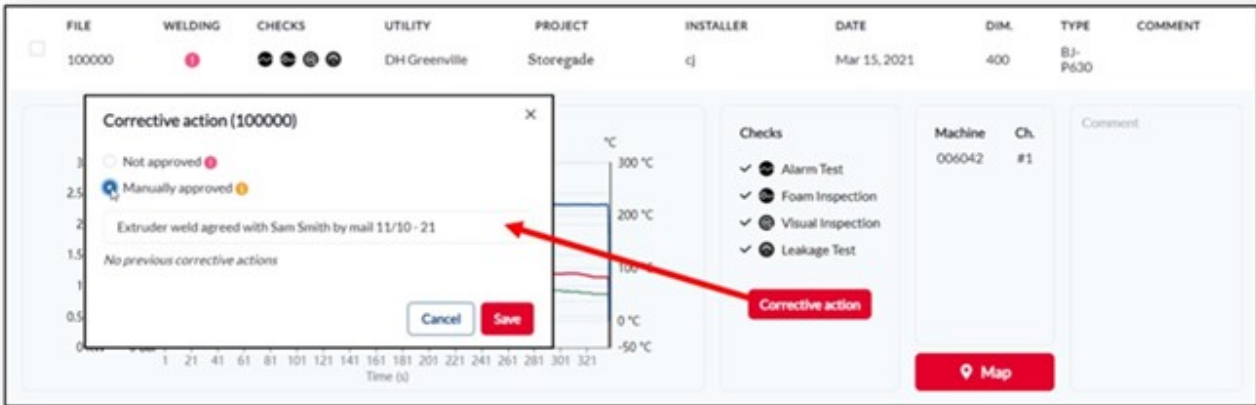
Not approved welding process:



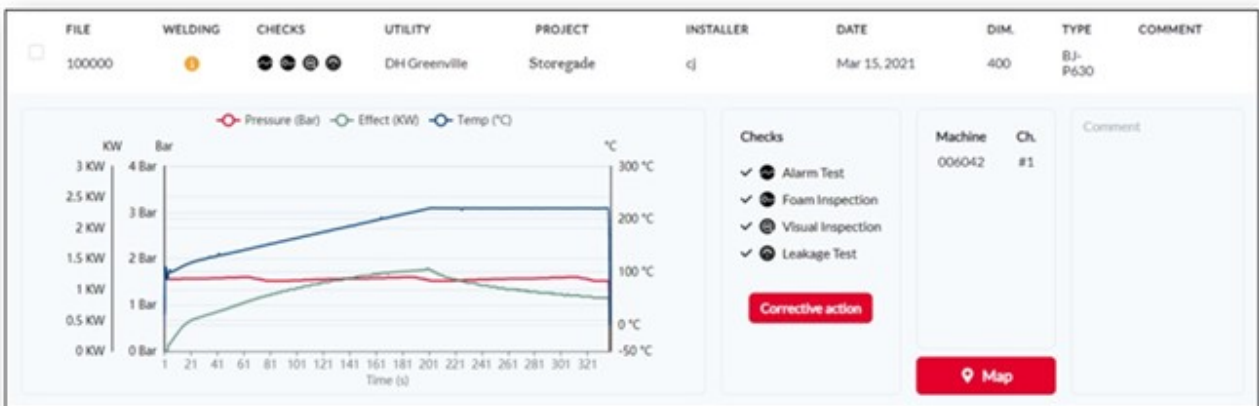
Rewelding of not approved welding:



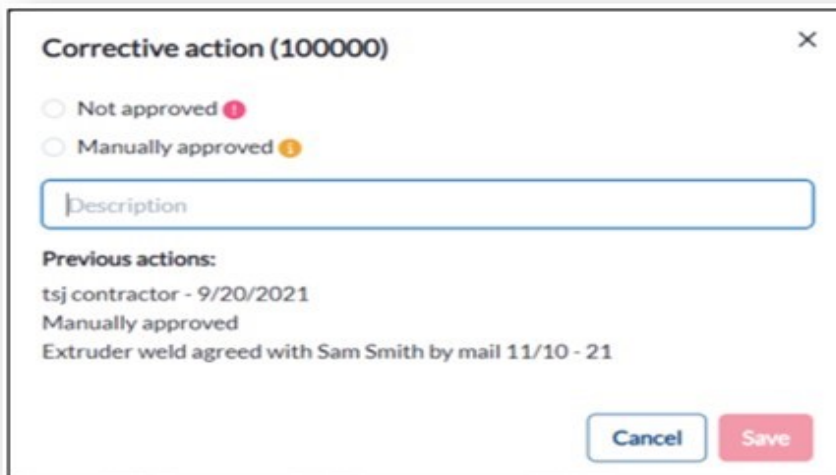
Adding a remark to "Corrective action":



Joint approved via "Manual approval":



Approval history, for "manually approved flow"



Documentation

Above pictures are part of the documentation on the WeldMaster portal.

In the documentation it will be possible for the Pipe Owner (Energy Company/Utility) or Contractor to search according to:

- ✓ Approved welding processes, not approved welding process and manual approved joints
- ✓ Project name
- ✓ Dimension of weld joint
- ✓ Joint type
- ✓ Dates or a period for the installation
- ✓ Machine number
- ✓ Channel number
- ✓ Installer initials
- ✓ File number (each welding has a unique file number)
- ✓ Customer (e.g., Energy company/Utility)
- ✓ It is possible on the map to draw a polygon on the map and make a report of the joints within this selected area (e.g., a street)
- ✓ Overview of number of welds in a specific period

It will be possible for e.g., the contractor or the utility to make a documentation for a specific project which includes what is relevant for the specific project.

Dashboard

On a dashboard, the user can create favorites according to above and get the following information:

- ✓ Total number of weldings
- ✓ Number of weldings the last 24 hours
- ✓ Number of weldings the last week

Onboarding the new portal

In the new portal we introduce a set of roles to manage search options and editing rights: Contractor, Installer, Utility and Advisor. Though all users will look at the same data and registrations, certain changes can only be performed by selected users.

This is thoroughly described in our Onboarding Guide that you can find on our homepage, but you will also find online instructions when you register your user account.

In the Onboarding Guide you will also find more information on how to use a colleague to help set-up your account in no time.

For any further questions please contact WeldMasterAdmin@logstor.com

Implementation

Update of the PDA software to the new version WeldMaster 5.0 will happen automatically and will be controlled by LOGSTOR Service Department. All installers will get the information on the PDA the first time they start the PDA from 29th November.

The Weld Joint manual is updated with the new features in WeldMaster 5.0.

If any questions, please contact Tim Stoltenberg Jensen or Troels F. Hansen from our Service department.

New closed pressure connection for AluFlextra

We have introduced a new closed pressure coupling for our AluFlextra program with Alupex media pipes. See screen shots from the product catalog below.

The closed press coupling is available in dimensions 16 - 32 mm.

Press coupling, straight, closed

Press coupling for straight Alupex - Alupex closed joints.

The O-ring for the closed press end is delivered in a bag. The O-ring is installed at the end, when the closed end has been cut off.

