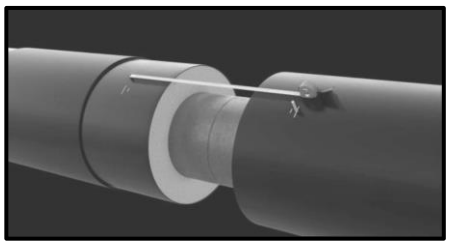
MEZ

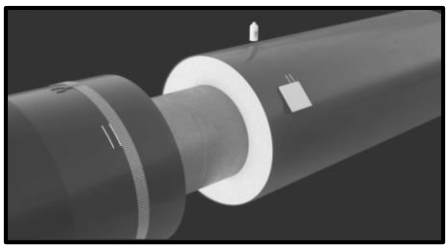
The assembly instruction
of the heat-shrinkable, electro-welding joint

Necessary materials and equipment:
- a heat-shrinkable sleeve with dimension adequate to jacket pipe diameter,
- driller and reamer Ø24mm,
- welding unit for welding plugs,
- hammer for impaling the venting plugs,
- propane-butane gas burner BN40 (or similar) for diameters 90-315mm and BN60 for bigger diameters, gas tank, pressure reducer, connection hose,
- an abrasive canvas (granularity 40-60),
- an acetone or ethylic alcohol (90%) and cleaning cloth,
- heating elements adequate to jacket pipe diameter,
- an electro-welding unit, tensioner to heating elements, metal clamping rings with tensioners, staple gun
- protecting goggles and gloves,
- other protecting equipment required by law,
- an umbrella or tent in case of rain and/or snow and/or heavy sunshine

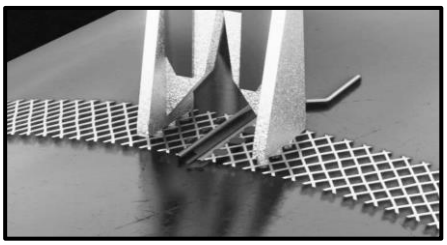
Caution: The heat-shrinkable sleeve shall be placed on the pre-insulated pipe before steel pipe welding. The protecting foil shall not be removed from the sleeve as long as its installation starts.



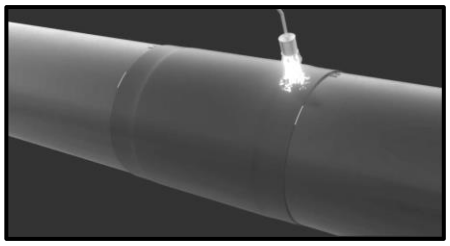
1. Put the sleeve centrally on the pre-insulated pipe junction. Mark both ends of the sleeve on the surface of the jacket pipe. Move the sleeve on side along the jacket pipe for a distance allowing to prepare the installation space. Mark the installation location of the heating tape at a distance of 2 cm from the marked edge of the sleeve.



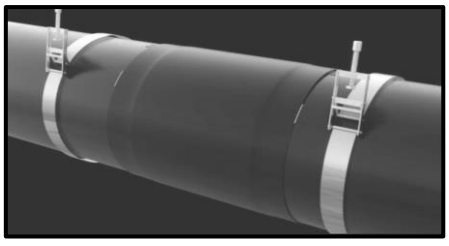
2. Clean the external surface of the jacket pipe and the internal surface of the sleeve by the cloth with acetone or alcohol, tarnish both a.m. surfaces by the abrasive canvas (gran. 40-60).
The cleaned and tarnished area of the jacket pipe shall be a few cm wider than earlier marked at step 1 and the internal surface of the sleeve shall be ca 2 cm wider than the width of the heating elements.



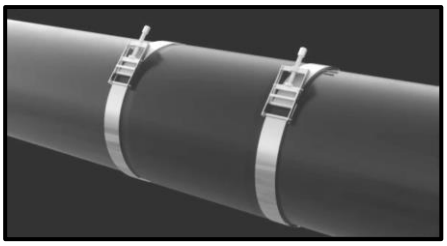
3. Place two heating elements around the jacket pipe keeping distance of min 1cm from the marks made earlier at step 1 in a way that two connecting wires of the heating element are directed outside the junction, tense them by the tensioner and the end of the tape is placed in the hooks of the mounting clip. To prevent the tape from moving (short-circuiting), attach it around the jacket to the jacket using a stapler (taker).



4. Remove protecting foil from the sleeve and move the sleeve along the jacket pipe to a position between the marks made earlier at step 1.
Start shrinking the sleeve on both of its ends above the heating elements. The soft yellow flame shall be used.
Both ends of the sleeve shall be heated up around to its total shrinkage so both ends of the sleeve shall tightly adhere to the surface of the jacket pipe at its entire perimeter.



5. After shrinking the sleeve on the heating tape, metal clamps with tensioners should be placed on the shrunk ends of the sleeve as quickly as possible.



6. Place metal clamps with tensioners on the shrunken ends of the sleeve and use them to tighten the clamps around the shrunken ends of the sleeve. Before proceeding with further activities, wait until it cools down completely (at least 30-40°C).

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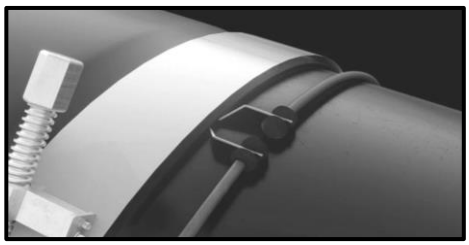
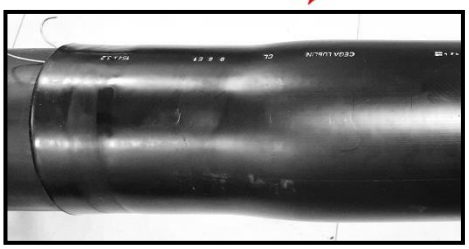


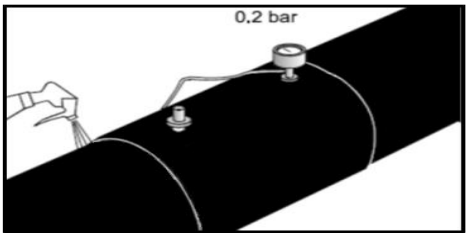
7. The connecting wires of the heating element(s) shall be connected with two ends of the cable of the electro-welding unit.

8. Start the welding programme of the electro-welding unit and perform the fusion.



9. The metal clamping rings can be removed only after cooling down of the electro-welding (min 30-40°C). Now a heavy-duty fusion between the jacket pipe and sleeve is ready.

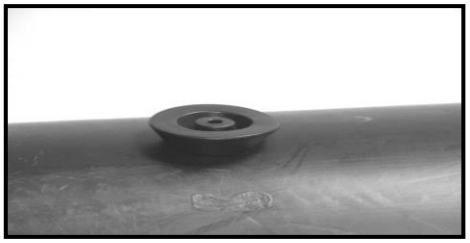
10. Make two filling holes in the top of the sleeve by using driller Ø24mm.
Caution: When the filling holes are ready it is recommended to perform the air pressure leakage test according to EN 489.



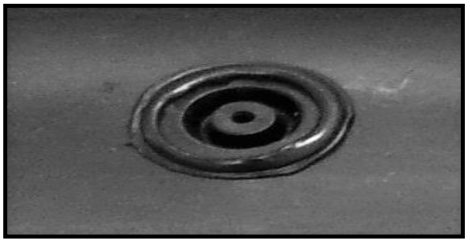
11**. The air pressure leakage test according to EN 489**.
The air pressure leakage test shall be performed after shrinking of the sleeve and its cooling. One of the joint's filling hole shall be closed by the plug, while in the other hole the pump set with the manometer shall be placed. Both ends of the joint shall be splashed by the lathery liquid (for instance water soap solution), please note however this liquid shall not negatively affect the casing pipe and the joint nor environment. The test shall be performed using the air with a pressure of 20 kPa (0,2 bar) at temperature ≤ 40°C and duration of at least 2 minutes. During the test there shall be monitored whether the bubbles are not appear at any of the joint's end. No bubbles means proper installation, so the foaming can be started. In case of bubbles are seen at any end of the joint the shrinking shall be repeated.

12. The PUR shall be filled into the sleeve through one of the filling holes.

13. Immediately after filling the PUR into the holes , the holes shall be bunged by impaling the venting plugs. The plugs shall be placed in a way that their "tales" are perpendicularly to the axis of the pipe.



14. The venting plugs shall be removed after degassing and cooling down of the PUR foam and the sleeve, than if needed the filling holes shall be broached up to Ø24 mm to enable installation of the welding plugs.



15. Install the welding plugs according to instruction of the welding unit. Parallel heating up of one of the hole and one of the plug for 30 sec with 230^{0}C of the heater, and later regular pressing of the plug up to the cooling down of this joint is recommended. Repeat this operation with the second filling hole and plug.

INSTALLATION COMPLETED

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