MTM

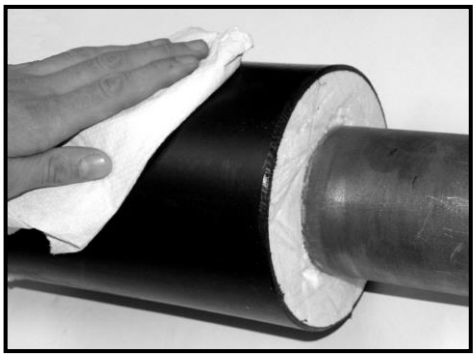
The assembling instruction of the heat-shrinkable joint with mastic sealing

Necessary materials and equipment:

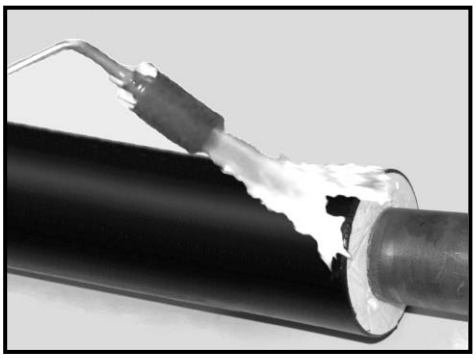
- MTM sleeve of dimension adequate to jacket pipe diameter,
- driller and reamer Ø24mm,
- welding unit for welding plugs,
- hammer for impaling the venting plugs,
- propane-butane gas burner BN40 (or similar) for diameters 90-315mm and BN60 for bigger diameters, gas tank, pressure reducer, connection hose,
- an abrasive canvas (granularity 40-60),
- an acetone or ethylic alcohol (90%) and cleaning cloth,
- 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 MTM sleeve shall be placed on the pre-insulated pipe before its welding. The protecting foil shall not be removed from the sleeve as long as its installation starts.

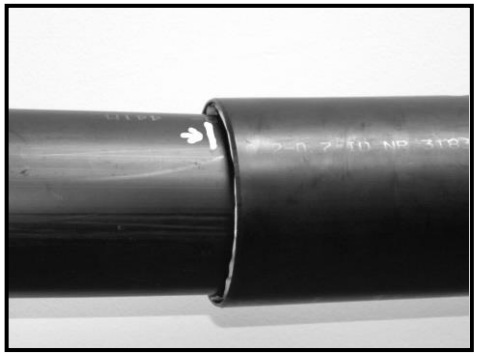
1. Put the sleeve centrally on the junction of the pre-insulated pipe. Mark both ends of the sleeve on the surface of the jacket pipe. Move the sleeve on side along the jacket pipe for a distance allowing to prepare the installation space.



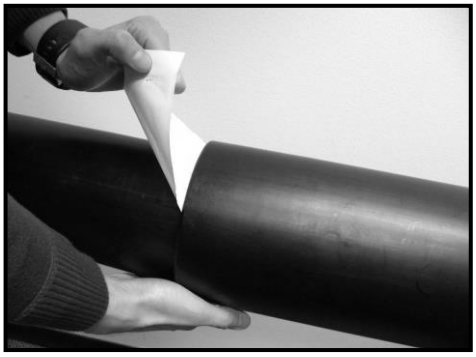
2. Clean the surface of the jacket pipe by the cloth with acetone or alcohol. Tarnish the surface of the jacket pipe by the abrasive canvas (gran.40-60).
The movements of the abrasive canvas during tarnishing shall be circumferential around the jacket pipe, not longitudinal along the jacket pipe. The cleaned and tarnished area shall be a few cm wider than previously marked at step 1 both ends of the sleeve.



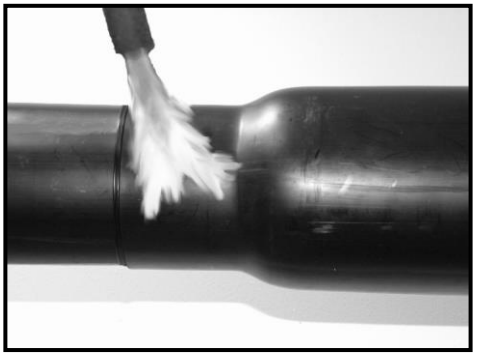
3. The jacket pipe shall be with ca 60°C, if not it shall be heated up by the gas burner.



4. Remove the protecting foil from the sleeve and move the sleeve along the jacket pipe to a position between the marks made earlier at step 1.



5. From inside the sleeve remove the foil protecting the mastic sealing strip.



6. Start shrinking the sleeve on both of its ends. The soft yellow flame shall be used.

Both ends of the sleeve shall be heated up around to its total shrinkage so both ends shall tightly adhere to the surface of the jacket pipe at its entire perimeter.

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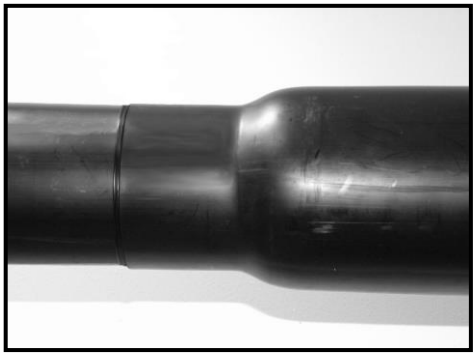
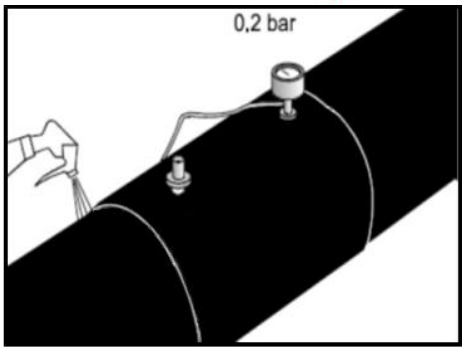


7. The surface of the sleeve shall be soft but not scorched. Soon minor efflux of the mastic shall be seen around the ends of the sleeve.
Caution: In case of joints diameter 315mm and bigger if the supported area by the jacket pipe underneath of the joint is too short (below 12cm), there could occur deformation of joints during cooling by raising their edges, in such case it is recommended to use the metal clamping rings with tensioner (same as to be used for the electro-welding joints). These clamping rings with tensioner shall be placed around the joint on its edges just after shrinking, tighten and removed after 15-20 minutes.

8. After total cooling down of the sleeve make two filing holes in the top of the sleeve by using driller Ø24mm.
Caution: When the filling holes are ready and the sleeve is cooled down it is recommended to perform the air pressure leakage test according to requirements of EN 489.

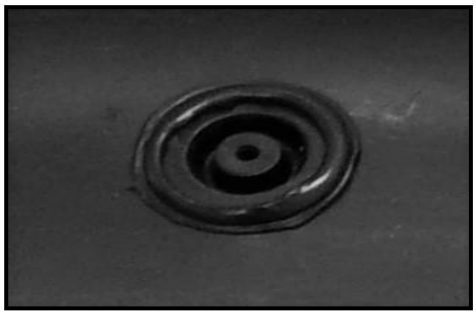


9. The air pressure leakage test according to EN 489.
The air pressure leakage test shall be performed after shrinking of the sleeve and its cooling. One of the joint's filling hole shall be closed by the plug, while in the other hole the pump set with the manometer shall be placed. Both ends of the 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.

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

11. 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.

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



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

INSTALLATION COMPLETED

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