




DENSOLID®-TLC (Pipe Ramming and Driving Methods)

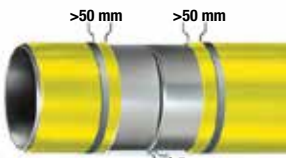
DENSOLID®-HDD (Horizontal Directional Drilling and pipe-plough method)

Attention




- The blasting must be carried out with sharp-edged blasting material.
- The DENSOLID® coating is to be carried out immediately, but max. 2 hours after surface preparation.
- Activation of the factory coating in the coating area by means of contact with the propane gas flame.

1. Applying the sealing tapes



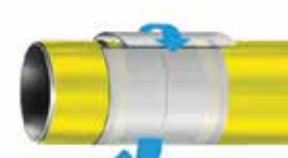
Apply the sealing tapes (DENSOLEN® 2-layer band) 50 mm next to the transitional edge of the factory coating. Select the height to ensure that the subsequent coating will achieve an overlap of min. 2.5 mm over the welding bead.

2. Positioning spacers
Optional (recommended >DN500)




Position the spacers on the surface of the pipe to the right and the left of the welding bead with DENSOLID®-FK2 C. The thickness of the layer will be higher than the adjacent welding bead. After hardening, immediately proceed with the next steps in the work process.

3. Positioning the casing



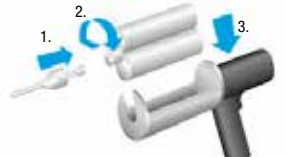
Cut the casing to the required length (circumference + approx. 10 cm). Position the overlap of the casing at the top of the pipe (12 o'clock position) and secure with lashing or pipe clamps.

4. Reinforcing the casing
Optional (recommended >DN500)




For large nominal values (>DN500), it is recommended to reinforce the casing. In addition, wind DENSIT®-FT over the full width of the casing with 1 cm overlap in a spiral format.

5. Preparing the cartridge



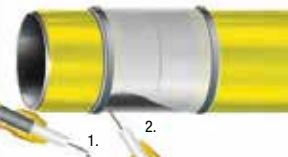
- Position the static mixer on the cartridge and affix using the ring. The cartridge can then be inserted into the discharging device, DENSOMIX®.
- Working pressure of the discharge device: ≥ 6bar
- ideal material temperature for the DENSOLID®-TLC: 20 - 35 °C

6. Opening for injection




Using a cordless screwdriver (drill bit 5.5 mm) on the underside of the pipe near to the transitional point with the factory coating (approx. 2 cm), drill a hole in the casing and affix the attached sticker halfway underneath the hole. Ensure there is enough space to manoeuvre on the ground for injection purposes.

7. Injection




- Discard the mastic which comes out first (approx. 5 ml).
- Inject DENSOLID® from the cartridge into the hole uninterrupted. If the cartridge is empty and the material is no longer moving, close the hole using the adhesive patch.

8. Filling the casing




Drill a second hole on the opposite side, directly above the flow limit (approx. 2 cm next to the factory coating). Continue to position further filling holes alternating right-left-right until the casing is completely filled. Fill from the bottom to the top so that the overlap in the casing is closed last (ventilation).

9. Removing the casing



Until the necessary hardness for pipe installation has been achieved, the casing provides protection against precipitation. Keep the material temperature at > +5°C (+41°F) during curing. Now remove the casing and the sealing tapes. Casing which is free from residues can be re-used for other welding seams.

10. Chamfering the edges



Chamfer any edges in the coating to 30°, therefore avoiding damage to the factory coating. Repairs may be carried out using DENSOLID®-FK2 C immediately afterwards. To avoid damage, install the pipe timely.

Product	Processing temperature			Pot life at ambient temperatures			Inspection prior to pipe installation	Storage temperature °C (°F)
	Material °C (°F)	Surface °C (°F)	Air humidity (%)	+5 °C (+41 °F)	+20 °C (+68 °F)	+40 °C (+104 °F)		
DENSOLID®-TLC	+10 to +35 (+50 to +95)	+10 to +50 (+50 to +122) and min. +3 (+5.4) above dew point	< 80	approx. 5 min.	approx. 4 min.	approx. 3 min.	Shore D > 65 Porosity inspection 8 KV/mm max. 20 KV	+15 to +30 (+59 to +86) store upright
DENSOLID®-HDD				approx. 8 min.	approx. 6 min.	approx. 4 min.		
DENSO® work materials	DENSOLEN® 2-layer tape (e.g. DENSOLEN®-R20 HT), DENSOLID®-casing, DENSOMIX®-400 P and as an option DENSOLID®-FK2 C and DENSIT®-FT							
Surface preparation	Use an abrasive cloth #40 in a peripheral direction to roughen neighbouring work surfaces and chamfer at an angle of < 30°. Surface cleanliness: Blast cleaning min. Sa 2½ (ISO 8501-1), surface roughness 40 µm to 100 µm, dry and free from grease, dust etc.							
Health, safety & environmental protection	The installation must take place in accordance with customary and local environmental and safety standards. The safety and environmental notes which accompany DENSO products must be heeded. Personal protective equipment such as safety glasses, safety gloves and fastened work garments must be worn.							