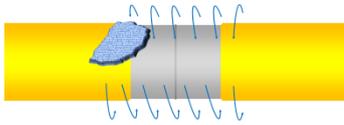


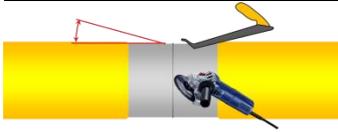
Kebutyl[®] Tape Systems

1.Cleaning



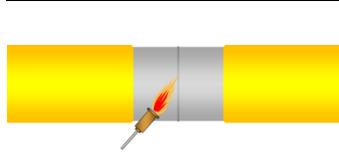
- The surfaces to be coated (steel surface and adjacent factory coating) must be clean, dry and free from grease and dust
- All contaminations which might act as a release agent (e.g. grease, oil, temporary protection paints or coupling agents) have to be completely removed prior to tape application. If necessary use a suitable solvent.

2.Transition to factory coating



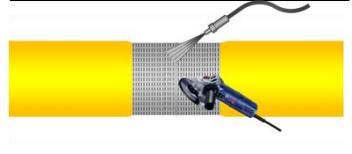
- The transitions to the adjacent factory coating should be beveled to an angle of app. 30°. Ideal tools for this are a semi-circular rasp or a mechanical grinder. Remove grinding dust.

3.Drying



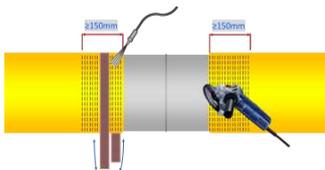
- The surface must be dry with no humidity and ice. If necessary dry the surface by using a propane torch.

4.Surface preparation



- Preparation of steel surface can be done with emery cloths, a mechanical grinder or by grit blasting.
- Any mill scale must be grit blasted to SA 2 ½ in accordance to ISO 8501-1.

5.Preparation of factory coating



- Adjacent factory coating has to be cleaned in a width of min. 150 mm. If necessary use a suitable solvent.
- Cleaned factory coating has to be circumferentially roughened with emery cloths, a mechanical grinder or by grit blasting. Remove grinding dust.

6.Priming



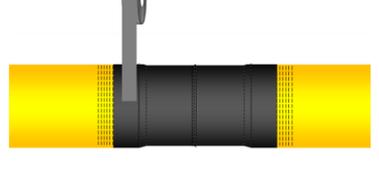
- Thoroughly stir Kebutyl[®] Primer in original drum until any bottom settings are dissolved.
- Apply a thin even coat of primer to the cleaned and dried surface by using a brush or roller.
- The factory coating has to be primed in the width of preparation (slide 5; min. 150 mm) on each side.
- After use immediately close and seal the primer drum. Clean the brush or roller with a suitable solvent.

7.Drying of priming



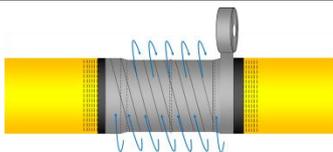
- Let the primer dry until it is tack free.
- The drying time depends on ambient temperature and air movement (app. 3 - 10 min.).
- The primed surface should be wrapped in a timely manner (maximum 4 h). Otherwise or in case of containment (e.g. dust and humidity) the primer coat has to be renewed.

8.Manual inner wrapping



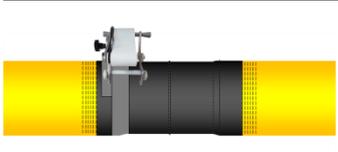
- In case of hand wrapping (tape width max. 50 mm) start with one circumferential wrap before spirally wrapping the tape (start of wrapping: min. 50 mm on factory coating).
- Tape tension is sufficient, if tape width is narrowed by app. 1 % during application.

9. Inner wrapping



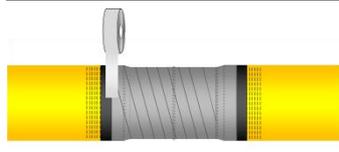
- Spirally wrap the inner wrap under tension with min. 50 % overlap around the pipe.
- Remove release film during wrapping.
- The tape wrapping should cover the full circumference of the adjacent factory coating by a width of min. 50 mm.

10. Kebumat inner wrapping



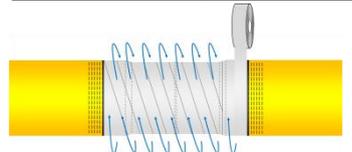
- When using Kebumat wrapping devices, wrapping can start in spiral motion instead of one circumferential wrap. Start of wrapping on factory coating: min 1.5 times of tape width.
- The primed area on the factory coating has to be tape width + min. 80 mm.

11. Outer wrapping



- Start with one circumferential wrap before spirally wrapping the tape.
- The outer wrap must fully cover the inner wrap. It is recommended to start wrapping by covering the inner wrap and the primer by 50 % of tape width.
- Spirally wrap the outer wrap under tension with min. 50 % overlap around the pipe.

12. Outer wrapping



- Tape overlap: min 50 %
- Tape tension is sufficient. If tape width is narrowed by app. 1 % during application.
- Remove release film during wrapping.
- The tape wrapping should cover the full circumference of the inner layer by a width of min. 50 mm.

Application Temperature

Pipe surface	min. +3 °C (+5 °F) above dew point up to 65°C
Ambient	- 40 °C (-40 °F) up to +60 °C (+140 °F)
Kebutyl [®] -Primer	-10 °C (+14 °F) up to +40 °C (+140 °F)

In order to avoid wrinkling due to thermal elongation of the PE carrier film, the temperature difference between pipe surface and tape roll should be max +30 °C (+54 °F).

Surface condition

Cleanliness (ISO 8501-1)	ST 3
Roughness (ISO 8501-1)	50-100 µm

For achieving best results for the surface preparation we recommend grit blasting in accordance to ISO 8501-1 (SA 2 ½).

Testing

- No wrinkles are allowed on the finished wrapping
- The wrapping has to be tested for pores with holiday detection (5 kV + 5 kV per mm of coating thickness, max. 25 kV).

Recommendation

It is highly recommended to use Kebumat wrapping devices for tape width of 50 mm or higher.

The application instruction can also be used for the wrapping of full pipe length or pipe bends. The application of the Kebulen tape systems shall be in accordance with DVGW GW 15