

Technological instructions on application of insulation coating on the basis of ASMOL mastic in field conditions

Instruction establishes the norms and rules of coating on the basis of oil-polymer mastic Asmol - coating PALT (hereinafter referred to as coating) during overhaul and construction of main gas and oil product pipelines with diameter up to 1420 mm inclusive, in spring-summer period (hereinafter referred to as summer) at ambient temperature up to 0 °C and in autumn-winter period (hereinafter referred to as winter) at ambient temperature up to - 25 °C.

The coating corresponds to the reinforced type coating according to GOST R 51164-98 "Steel pipe mains. General requirements for corrosion protection" (structures No. 6, 8, 13).

The application of an anticorrosive coating to the pipeline consists of the following technological operations:

1. Pipe heating (as needed) – in summer;
Heating and removal of ice and snow from the pipe - in winter;
2. Pipeline cleaning;
3. Preparation of ASMOL mastic;
4. Application of an asmol primer;
5. Application of insulating coating;
6. Checking the quality of the insulation coating.

1. THE DESIGN OF THE PROTECTIVE COATING OF THE PALT

1.1 The coating of the PALT must comply with the requirements of GOST R 51164-98

Table 1

Coating structure	Thickne ss, not less than, mm
PALT-820 coating - asmol primer - mastic undercoat at least 3.5 mm thick - wrapping tape* at least 0.7 mm thick in 1 layer	4.2
PALT-1420 coating - asmol primer - mastic undercoat at least 4.0 mm thick	4.7

- heat shrink tape with a thickness of at least 0.7 mm in 1 layer	
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*Instead of wrapping tape, it is allowed to use heat shrinkable tape in agreement with the customer.

2. ASMOL MASTIC PREPARATION

2.1. ASMOL mastic composition TU 0258-037-16802026-2009 is delivered to the place of work in metal drums.

2.2. Before starting work the mastic is removed from the metal drums, a layer of releasing agent applied to the metal makes it easy to do so.

2.3. The mastic is crushed and loaded into the melt unit of the KAPE boiler.

2.4. The boiler melt unit is heated to a temperature of 180-190 ° C and new portions are added as the mastic melts.

Note. The level of melted mastic in the boiler should be lower than 3-4 cm level of melting unit heating elements.

2.5. The temperature of the mastic in summer before application should be 110-120 ° C, in winter 120-130 ° C.

Heat conditions for the insulation machine:

	In winter	In summer
- Upper boiler	145 ° S $\pm$ 5 ° C	125 ° S $\pm$ 5 ° C
- Extrusion machine	155 ° S $\pm$ 5 ° C	135 ° S $\pm$ 5 ° C
- Pallet	150 ° S $\pm$ 5 ° C	125 ° S $\pm$ 5 ° C

Heat conditions for the boiler:

	In winter	In summer
- Asmol melting unit	190 ° S $\pm$ 5 ° C	180 ° S $\pm$ 5 ° C
- Heated Asmol maintenance unit	130 ° S $\pm$ 5 ° S	130 ° S $\pm$ 5 ° S
- Boiler heating unit	130 ° S $\pm$ 5 ° S	130 ° S $\pm$ 5 ° S

It is forbidden to raise the temperature of mastic in the boiler above 160 °C, as at this temperature there is destruction, coking of the material and deteriorate the properties of the mastic.

If the mastic boils, stop heating and reduce the temperature to 110 - 130 °C.

2.6. The mastic can be stored at 100°C for 24 hours.

2.7. If there is a need to use small volumes of molten mastic, it is allowed to melt it in a small metal container filled initially with ½ volume of finely pounded mastic with constant stirring and temperature control.

3. PALT COATING

3.1. The structure of the PALT protective coating is shown in Table 1.

3.2. The metal surface of the pipeline is pre-dried before applying insulation, cleaned with steel brushes from earth, rust and scale. The cleaned surface shall correspond to the 4th degree of purification according to GOST 9.402-80. In winter, snow and ice are removed from the pipe surface and the pipe is subsequently heated to a temperature of + 10 - 15 °C.

3.3. On the surface of the pipeline being repaired, it is allowed to have remnants of difficult to remove old bitumen insulation left in the pipe granulations.

3.4. After cleaning, the dry and clean surface of the pipes shall be coated with asmol primer in a continuous even layer. Primer consumption 160-200 g/m², the primer must be dried before peeling-off.

3.5 Asmol mastic should be heated in the range of 130-135 ° C immediately before application, depending on the ambient air temperature.

3.6 Asmol mastic should be applied in an even layer, and the thickness of the mastic layer should be in accordance with the table. Asmol mastic is applied with the MIAB insulation machine. The thickness of the applied mastic layer is adjusted by means of thickness regulators located in the extrusion chamber of the insulation machine.

3.7 The wrapping tape is applied to the hot mastic in a spiral pattern with an overlap of at least 25 mm to ensure a continuous layer. When applied, the tape shall fit tightly with force, without creases or corrugations around the pipe with the mastic layer. There should be no voids under the tape.

3.8 Quality control of coating according to GOST 51164.