

Technological instruction for isolation of pipeline welded joints zones in trace conditions

Insulation of welded joint zones of gas pipeline sections with different types of coatings (extruded polyethylene, polymer adhesive tapes, bituminous mastics, etc.) in route conditions is allowed to be made with coatings based on LIAM mastic tape, provided that the maximum operating temperature of this gas pipeline section will not exceed 60 °C.

Insulation of welded joints by hand should be carried out in dry seasons. Application of the insulation coating during rain or snow is allowed only if the surface to be insulated is protected from moisture and the gas pipeline surface is dry. Depending on the ambient air temperature, insulation works should be coordinated with the brand of LIAM tape (winter or summer LIAM tape).

Рекомендуемая конструкция комбинированного покрытия сварного соединения:

- ✓ Asmol primer
- ✓ LIAM tape (one or two layers depending on diameter)
- ✓ Wrapper (on customer's request)

1. Preparation of the welded joint surface

1.1 Before coating it is necessary to clean the surface of the welded joint and adjacent areas at a distance of at least 200 mm from foreign contaminants.

1.2 The surface of the welded joint should be cleaned to grade 4 according to VSN 008-88 using a grinder and dedusted.

1.3 On coatings adjacent to the welded joint area, smooth out sharp lumps of factory insulation at an angle of at least 30° to the pipe axis or provide a smooth transition from the coating to the pipe using LIAM tape or asphalt mastic.

1.4 The factory coating at a distance of at least 100 mm from their edges should be lightly treated with a metal brush or coarse-grained abrasive sandpaper to roughen the surface layer, followed by dedusting. Otherwise, wetting of asphalt primer coatings will not be ensured.

1.5 Asmol primer should be applied to the joint prepared for insulation with a roller or brush, covering the adjacent areas with the factory coating. The layer of primer shall be continuous, even and free of clots, drips and bubbles.

1.6 If the coatings adjacent to the area of the mounting joint are thicker than 1.5 mm, the surface of the mounting joint must be levelled before insulating it so that it becomes of the same thickness. To do this, measure in advance a piece of LIAM tape equal in length to the circumference of the mounting joint. The width of the cut piece of aggregate must exactly match the width of the installation joint.

Attach the beginning of the LIAM tape to the mounting joint, having previously separated the releasing agent from the edge. Gradually remove the releasing agent from the mastic layer of the tape and wrap the primed metal surface of the joint with tension. Carefully press down the applied coating by hand, ensuring that the adjoining areas are filled with asphalt filler. The surface of an installation joint filled with asphalt reinforcement material must be aligned in thickness with the adjoining surfaces of adjacent sections.

1.7 If the thickness of the coating adjacent to the installation joint area is less than 1.5 mm, the insulation of the installation joint area is carried out without preliminary levelling.

2. Application of insulating coating

2.1 The application of the insulation coating shall be performed by spiral winding from the roll.

2.2 The application of the insulation coating by spiral coiling from the roll is carried out as follows:

- Before starting work it is necessary to set the required angle of winding of LIAM mastic tape and overlap of coils not less than 20-25 mm. This is done by pre-winding it from the roll onto the pipe without removing the releasing agent.

- LIAM mastic tape should be applied over an undried ("wet") layer of primer. The beginning of the roll of the LIAM mastic tape should be unwound, freed from the releasing agent and fixed to the section prepared for insulation in the upper part of the pipe at the 1-2 h (10-11 h) position, ensuring the overlap of the factory insulation coating by at least 75 mm along the entire perimeter of the pipe. In winter, in order to fix the strip, the mastic layer should be carefully heated with a soft flame of a gas burner at a distance of 150-200 mm from the edge until it softens. The secured end of the tape should be additionally rolled with a solid roller.

- At least one and a half turns of LIAM mastic tape should be made on the factory coating.

- Mastic tape should be applied with the required tension in a spiral, wrapping the roll around the pipe and ensuring overlap between the coils of tape not less than 20-25 mm. When applying LIAM tape in two layers, the overlap should be 50 % of the width plus 2 cm. The releasing agent must be removed during the application process.

- Insulation of the welded joint area of the section should be carried out until the overlap of LIAM tape over the adjacent section with the factory insulation by at least 75 mm.

- Use a sharp knife to cut the roll and secure the end of the webbing to the pipe in the 1 - 2 h (10 - 11 h) position. The attached end of the tape should be additionally rolled with a roller.

- A wrapping layer should be applied on top of the LIAM mastic tape.

When sticky polymer tapes are used, the beginning of the wrapping tape should be fixed in position 1 - 2 h (10 - 11 h) on the previously applied insulation layer of LIAM tape by rolling the fixing point with a roller or pressing the end tightly with a hand wearing a heat-resistant glove.

3. Quality control of coating according to GOST 51164.