

ASSEMBLY INSTRUCTIONS FOR CPSM SLEEVES

1. General installation information

1.1 Sleeve of the CPSM brand are mounted on pipes/parts in the weld zone manually without special devices.

1.2 The annular space is sealed using a special two-component sealant of the grades G-039 Zimniy, Ch-5A, Butler, etc., which can be supplied separately or as a set, as noted in the passport for the batch of sleeves.

1.3 The prepared and mixed sealant is applied to the inner surface of the pipe/part with any available tool or a special spatula according to the sketch, and then leveled with a special leveler. A special spreader is applied one per batch of sleeves.

1.4 The amount of sealant prepared depends on the number and diameter of welds prepared for installation, as well as the pot life of the prepared sealant. The required amount of prepared sealant for the installation of sleeves is given in the table of sealant consumption.

Sealant consumption table, kg	
Pipe/part diameter, mm	Sealant consumption, kg
89	0,1
114	0,15
133	0,2
159	0,25
168	0,26
219	0,35
273	0,43
325	0,51
377	0,6
426	0,68
530	0,85

2. Entry control sleeve

2.1 Check the accompanying documentation for the sleeve.

2.2 Check the integrity of the sleeve packaging:

- Integrity of the carton
- Integrity of the polyethylene sleeve wrap
- Integrity of sleeve detents

Sealant consumption, kg 0.1 0.15 0.2 0.25 0.26 0.35 0.43 0.51 0.6 0.68 0.85

2.3 Visually check the integrity and quality of the anti-corrosion coating. Coating defects (chips, through porosity, individual swellings) are not allowed on the inner and end surfaces of the sleeve.

4. Preparing the sealant for sleeve installation

4.1 Check the integrity of the sealant package. If damage to the container with sealant is detected during transportation or storage, do not use the sealant.

4.2 Check the condition of the sealant. Base and hardener must have a homogeneous mass.

4.3 A hard film or plasticizer may be released on the surface of the base and hardener. In this case, before mixing the components, they must be additionally mixed until a homogeneous mass is formed.

4.4 In case of work on the installation of pipes / parts at sub-zero ambient temperatures, the mixing of the mastic components must be carried out in a heated room.

4.5 If not provided by the technology, conduct additional heating of the pipe ends to $+20 \div +50$ °C. Warming up is carried out using an induction heater or a gas flame burner.

4.6 Mix the required amount of components in accordance with the instructions for use of the sealant in a clean, dry container until smooth.

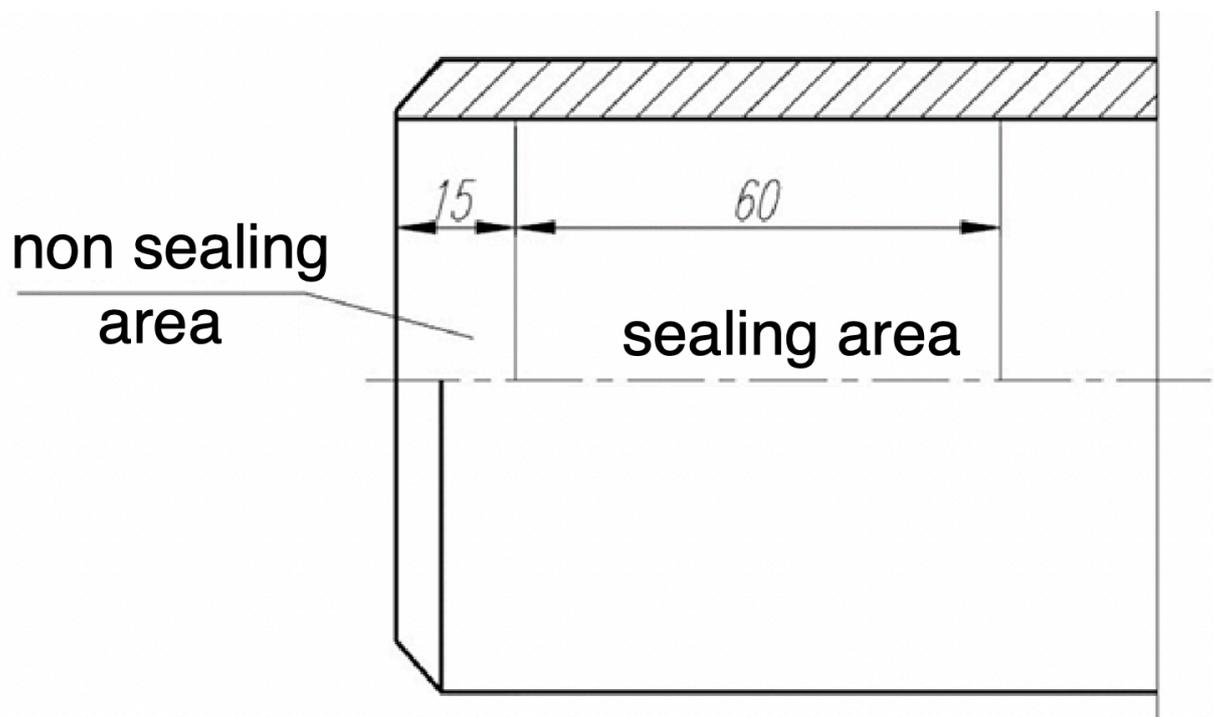
5. Preparing the sleeve for installation

5.1 Remove the sleeve protective wrap.

5.2 Clean the inner cavity of the pipes in the area of the ends from dust and other contaminants. If there is an internal burr on electric-welded pipes, the burr should be removed to the depth of the zone without insulation.

5.3 Degrease with acetone the inner cavity of the pipes in the area of the ends to a depth of 100 mm.

5.4 Apply the prepared sealant to the inner surface of the pipe/part according to the sketch



6. Installing the sleeve in the pipe/part

6.1 Installation of the sleeve begins with installation in a pipe against the flow of liquids.

6.2 Insert the sleeve into the pipe up to the stop, avoiding thermal insulation burrs. During installation, it is allowed to use a percussion tool through a wooden gasket.

6.3 To ensure the longitudinal stability of the sleeve, tack all (!) detents of the sleeve to the pipe.

6.4 After tacking the detents of the installed sleeve, it is required to visually check the formed bead of sealant using a mirror with illumination or a video camera. In the event of a discontinuity in the sealant bead between the sleeve and the pipe, it is necessary to correct the bead by hand.

6.5 Repeat the procedure for applying sealant to the second pipe and use a pipelayer to bring it onto the sleeve.

6.6 Using an external centralizer, align the axes of the pipes to be connected, providing the gap required by the pipe welding technology and tack the pipes to be connected.

6.7 Using an angle grinder, cut off the protruding parts of the sleeve detents until the welded edges of the pipes are dulled and clean the tacks according to the sketch

7. Welding pipe/parts connection

7.1. Pipe welding shall be carried out according to the current technology approved by the contractor.

7.2 When welding the root joint, it is required to avoid burn-through (!) of metal and forcing (!) of the electrode or welding wire into the pipe cavity. The height of the back roller should not exceed 1 mm.

7.3 When welding circumferential joint, it is required to leave an unwelded area of about 10 mm. at the top of the pipe/piece for welding gases to escape. After the joint has cooled down to 50 0C, weld the non-welded area with an overlap.

7.4. After the weld joint has cooled, it takes time for the sealant to cure. The pipeline is not ready for operation for at least 24 hours. At negative ambient temperatures, this time may increase in accordance with the instructions for use of a sealant of a particular brand.

7.5. If single defects in the weld are detected, it is allowed to repair the weld without dismantling the sleeve installed earlier.

