**TECHNICAL REQUIREMENTS**

**Filling the Casing Pipe of the Crossing of Polotsk - Ventspils Trunk Oil Products Pipeline at the 308th km Under** **Pilsrundale–Svitene–Klieni (V1033) Highway with Preservative Mastic**

1. **Work purpose**

Filling the casing pipe of the crossing of the Polotsk – Ventspils trunk oil products pipeline at the 308th km with preservative mastic (*Casing Filler* or analogue), restoration of leak proofness of the casing pipe ends, thus extending the service life of the casing pipe.

1. **Site characteristics**
   1. The Polotsk – Ventspils trunk oil products pipeline ensures transportation of light oil products in the amount of up to 8 million tonnes annually, the design pressure is 6.4 MPa.
   2. The work site is located in Rundale district, Rundale region, LV-3921 (the work site is crossing the real estate properties with land plot cadastral designation 40760040057, 40760030642, and 40760030098);
   3. Key data on the Polotsk – Ventspils trunk oil products pipeline:

- the Polotsk – Ventspils trunk oil products pipeline was commissioned in 1972;

- un underground pipeline (at the depth of 0.8m from the ground to the pipeline upper generating line);

- pipeline outer diameter – 529mm;

- pipeline wall thickness – 8.0mm;

-pipeline material – longitudinally welded pipe with section length up to 11.7m, metal structure conforms to the standard LVS EN ISO 15608:2006, sub-group 1.2., steel grade 17GS, mutually welded sections;

- insulation type – bitumen insulation MBR-90 (МБР-90);

- the pipeline with its casing pipe is installed under the Pilsrundale–Svitene–Klieni (V1033) highway;

- In 2020, a metering and instrumentation point was installed for control of protection potential of the pipeline and its casing pipe;

- supplementary information on the pipeline can be obtained from the Customer upon request.

* 1. Key data on the casing pipe of the Polotsk – Ventspils trunk oil products pipeline:
* Casing pipe outer diameter – 720mm;
* Casing pipe length – 22.7m;
* Casing pipe wall thickness – 9.0mm;
* Casing pipe material – steel St3 kp according to GOST 380-60, the pipes meet the requirements of the standard GOST 10704-63.

1. **Principal phases of works**
   1. Works by the Customer:

3.1.1. to obtain approval from the owners of the neighbouring utility facilities: Tet SIA (LLC under the laws of Latvia), Sadales tīkls A/S (JSC under the laws of Latvia), Latvijas Valsts Ceļi A/S (JSC under the laws of Latvia), and landowners;

3.1.2. To excavate and uncover the casing pipe ends, to arrange the trench according to the specifics of the works to be performed;

3.1.3. To remove the old sealing from the casing pipe ends;

3.1.4. To drain subsoil waters from the casing pipe body;

* + 1. To sandblast the casing pipe and the carrier pipe metal surface in the places of new ends sealing installation;
    2. To ensure electric supply of ~ 230V 16A during works for the Customer;
    3. To perform control measurements of the protection potential for the trunk oil products pipeline and its casing pipe after filling with preservative mastic;
    4. To fill the trench when finished.
  1. Works by the Contractor:

3.2.1. To supply the preservative mastic (*Casing Filler* or analogue) to the work site. The Contractor shall calculate the required volume of filler based on the dimensions of the pipeline and the casing pipe, as well as physical property of the material (including heat shrinkage coefficient);

3.2.2. To install 2 pcs. of thermo-shrinkable sealing on the casing pipe ends (*Canusa* heat shrinkable sleeve or analogue);

3.2.3. To install fill pipes for the preservative mastic and vent pipes for air exhaust out of the casing pipe cavity;

3.2.4. To fill the cavity between the trunk oil products pipeline and its casing pipe with preservative mastic.

1. **Performance Requirements:**
   1. During excavation of the Polotsk – Ventspils trunk oil products pipeline, the pipeline internal pressure shall not exceed P≤25bar;
   2. To manufacture pipeline thermo-shrinkable sleeve and to clean the casing pipe and the trunk oil products pipeline surface using sandblasting method (before installing thermo-shrinkable sealing and anticorrosion insulation). Surface treatment degree – Sa2 ½(uniform grey colour) as per the standard LVS EN ISO 8501-1:2007;
   3. To provide bitumen or bitumen-polymer strip for the damaged parts of external insulation of the pipeline and the casing pipe (LVS EN 12068:2001 “Cathodic protection - External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials). Hot or cold coating methods are admissible depending on the insulation coating type and manufacturer’s requirements. For insulation strip installation, one shall use manufacturer’s recommended ground coating, as well as use protective tape or other relevant analogue materials depending on its properties and characteristics. Reinforced external insulation shall be provided for the pipeline (two layers of antirust strip and one layer of protective tape) such that the total thickness of insulation material is ≥3.6mm. One layer of the casing pipe external insulation shall be installed (one layer of antirust insulation strip and one layer of protective tape);
   4. The protective coating shall be tested using non-destructive testing according to the standard LVS ЕN 13018:2001/A1:2004 “Non-destructive testing - Visual testing - General principles”. Integrity of the installed protective coating shall be tested using spark defect detector (5 kV per 1mm of total thickness including the protective tape, but not more than 25 kV for the total thickness). The test shall be performed by the Customer along with drawing up an inspection report.
2. **General Guidelines:** 
   1. Before making a financial offer, the Contractor shall visit the work site, understand the site geographical location aspects and protective zones of other engineering structures, as well as assess the specifics of the works planned;
   2. During performance, one shall respect the below documents:
      1. The Protective Zone Act of the Republic of Latvia dated 11.04.1997;
      2. Cabinet Rules No. 238 „Fire Safety Requirements” dated 19.04.2016;
      3. Labour Safety Act of the Republic of Latvia dated 20.06.2001;
      4. Directions and instructions by LatRosTrans SIA;
      5. LatRosTrans SIA safety regulations for contracted works approved by LatRosTrans SIA order No. 37 of 10.05.2019 and available on LatRosTrans SIA website [www.latrostrans.lv](http://www.latrostrans.lv)
      6. Other regulatory enactments of the Republic of Latvia and internal instructions and rules of LatRosTrans SIA.
3. **Annexes:**
   1. Technical report by Belpromizolaciya OOO dated 31.08.2016 on the status of the trunk oil products pipeline external insulation (to be received from the Customer upon request);
   2. Cartographical scheme of the Polotsk – Ventspils oil products pipeline crossing under the Pilsrundale–Svitene–Klieni (V1033) highway (Annex No. 1);
   3. Anti-corrosive protection of carrier pipes in casings using *Inover Casing Filler* according to Atagor Sp. z o.o. *Inover* casing technology (Annex No. 2);
   4. Inspection report of 23.09.2019 on the casing pipe at the 308th km of Polotsk – Ventspils MOPP under V1033 highway (Annex No. 3).