

## **Annex 2**

### **Process Instruction**

# **Anti-corrosive protection of carrier pipes in casings using Inover Casing Filler**

**CONTENTS:**

1. Preparation
2. Place and work accessibility
3. Preparation of casing pipe
4. Fill and vent pipe
5. Drain pipe
6. Sealing of the casing and carrier pipe transition
7. Flexible sealing sleeve
8. Use of filler
9. Filler consumption
10. Method for marking of crossing after the introduction of filler

## 1. Preparation

The casing and carrier pipe must be excavated suitably on both sides so that the inspection and relevant activities provided for in the filling technology can be carried out.

Activities to be carried out:

- make the excavation to uncover the ends of casings,
- make a drainage (if necessary),
- protect the place of works against rain,
- in case of using a tent, provide suitable ventilation taking the dew point into consideration.

## 2. Place and work accessibility

The tank truck with casing filler weighs approx. 20-40 t.

Therefore, it is necessary to provide suitable excavation shoring and hard-surfaced road to allow the tank truck to drive to the filling point at a safe distance, which is agreed on individually in each case.

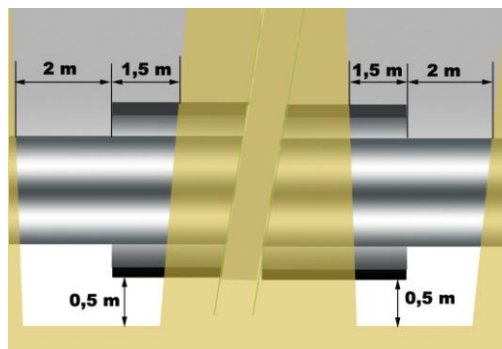
## 3. Preparation of casing pipe

The interior of the casing, free space over its entire length, should be dried and cleaned of sand, earth and mud as much as possible.

The line pipe should be aligned as far as possible.

The ends of the casing pipe should be cleaned up to such a condition that installation of sealing bands is possible.

Figure 1



## 4. Fill and vent pipe

The fill and vent pipes are mounted on both ends of the casing. The pipes cannot protrude into the interior of the casing.

The above-mentioned stipulation does not apply when both the protecting tube and the fill and vent pipes are made of plastic.

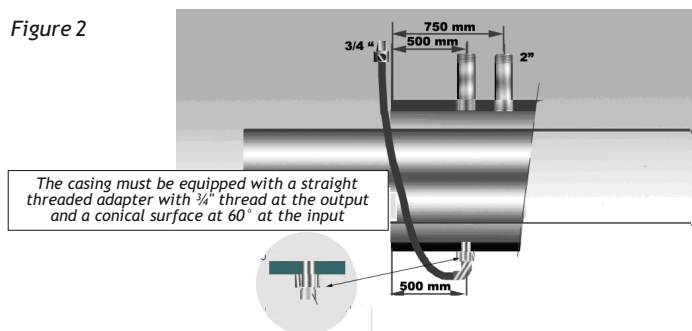
- the fill connection is installed at 500 mm away from the edge of the casing, from the top,
- the fill and vent connections should be 200 mm in length, 2" in diameter and closed with a gas valve of 2",
- when filled up and after the filler has bound, the connection pipes should be properly plugged.

## 5. Drain pipe

The drain pipe is supplied by the contractor.

The drain pipe should be installed at 500 mm away from the end of the casing as shown in Figure 2.

Figure 2



The drain pipe should be 3/4" in diameter, with attached plastic hose the end of which protrudes 0.5 m above the ground level.

A plug of 3/4" must be installed at the end of the hose.

## 6. Sealing of the casing and carrier pipe transition

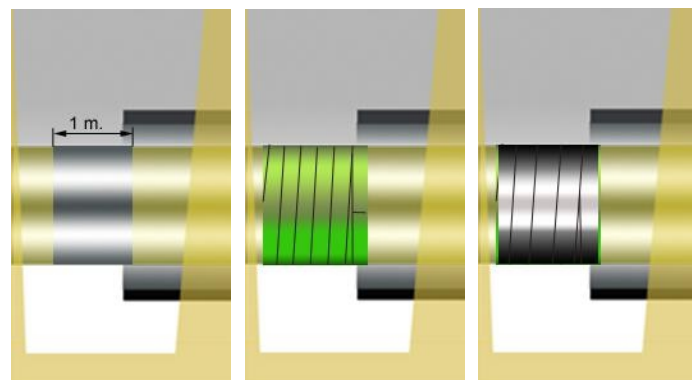
The contractor must seal the transition between the casing and carrier pipe.

Both sides of the casing must be cleaned over the length of 1 m. If the casing insulation is damaged, the investor must be notified to determine the requirements for anti-corrosion repair materials.

The insulation should be repaired using the agreed materials. ATAGOR offers heat-shrinkable materials by CANUSA as well as its own materials, all resistant to high filler temperatures when filling.

Attention should also be paid to condition of the casing's insulation over the length uncovered by excavation. When damaged, proceed as for repair to the insulation of the casing.

Figure 3



## 7. Flexible sealing sleeve

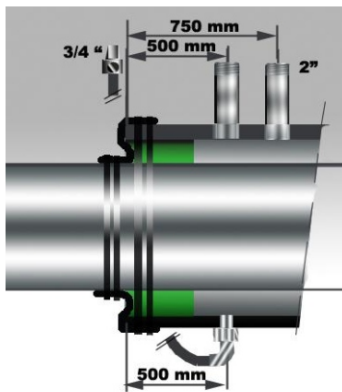
The insulation surface structure should be smooth so that proper installation of the flexible sleeve is possible and its impermeability is ensured.

The casing and the carrier pipe should remain in a stable position. In stable position, the horizontal and vertical movements of the casing and the carrier pipe are prevented.

To protect the joint between the flexible sleeve and the casing, it should be closed with polyurethane foam and filled with Inover F2 Mass over the length of 100-150 mm on both sides.

The closing flexible sleeve is bent into an S-shape (see Figure 4).

Figure 4

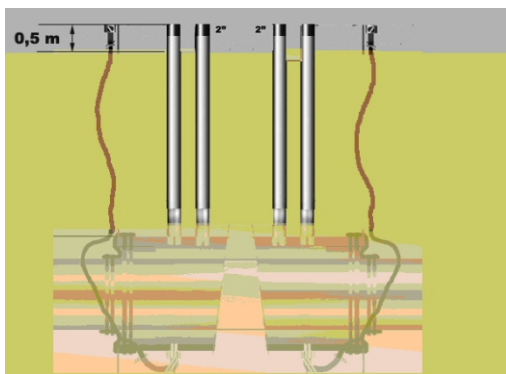


The instructions for putting on flexible sleeves should be complied with.

In case of using the heat-shrinkable band, the casing should be closed in accordance with the proper instruction.

When the band has been installed on the pipe insulation, the excavation should be filled in with sand up to the ground level, paying attention to the fill and vent connections as well as the drains (see Figure 5).

Figure 5



## 8. Use of filler

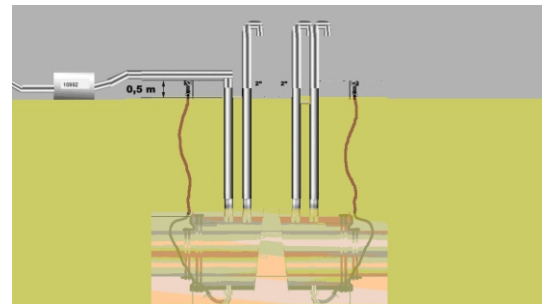
While filling, the vent should be checked repeatedly.

Fully filled vent lines are the indication that space between the casing pipe and the carrier pipe is filled up completely.

When required, a drain pipe can be used when filling the casing to remove water from the inside.

The casing is filled up from the highest point. The location of this point is decided by ATAGOR's specialist.

Figure 6



In the event when filler gets into the environment, proceed as per the MSDS, collect it from the ground or water surface and utilise.

## 9. Filler consumption

The ATAGOR's representative calculates the quantity to be used for filling the space and submits his or her calculation to the Investor.

After the filling process has been completed, the Investor receives the printout which confirms the amount of the filler pumped in.

When the filler is cooled down, the contractor removes the attached fill connections and the vent pipe and then closes other fill and vent connections with relevant plugs. At the end, the plugs are insulated.

## 10. Method for marking of crossing after the introduction of filler.

After the protecting tube has been filled in, the data plate including the date of filling and the name and quantity of the filler should be mounted to the blow pipe.

The inscription on the plate, made of metal or plastic, should be weatherproof. The fastening should be made using a clamping ring located at a height preventing from unauthorised removal.