



Fill-Coat® #1

Hot-Installed Casing Filler System for installation in pipeline casings



Fill-Coat #1 is delivered to the job site via Trenton's 3000- and 6000-gallon tank trucks that are heated and insulated.

Fill-Coat® #1 Casing Filler is a petrolatum-based corrosion preventative compound used to fill the annulus of casings. It prevents corrosion by displacing water that is present in the casing and by preventing water from re-entering the casing. Water or water vapor is present in most pipeline casings, making possible galvanic corrosion of the carrier pipe. Also, a "water short" can occur through the water in the casing, allowing cathodic current to flow through the water and onto the pipe in the casing. Under these circumstances, cathodic current is increased and the casing is sacrificed as well. Casing filler prevents this from occurring. Further, in some instances the pipe may be shorted to the casing through a direct metal-to-metal contact and filling the casing might correct this condition on some occasions. In any case, it is difficult, if not impossible, to cathodically protect pipe in casing, so that filling of the casing will protect the pipe from corrosion regardless of the circumstances.

When the casing is filled with Fill-Coat #1 it displaces accumulated water from the casing and prevents new water from re-entering through leaks in the seals or through condensation. Thus, corrosion that might have been occurring is prevented, cathodic current to protect the pipeline in the casing may be

reduced, and the sacrifice of the casing by cathodic current flowing through casing water is halted. Hot, liquefied casing filler material can, in some instances, penetrate corroded, scaly pipe to allow a film of casing filler material to coat the shorted contact surfaces of the pipe and casing.

After being pumped into the casing, the hot casing filler cools and sets up as a firm gel and remains pliable enough to allow the carrier pipe to be removed if necessary. It is essentially inert and nonvolatile and will remain unchanged indefinitely.

Fill-Coat #1 Casing Filler is delivered to the job site by our own insulated and heated tank trucks. It is installed as a heated liquid through one casing vent, until the casing void is filled and material discharges out the other vent. Adequate openings through the casing must be present where the vent is attached so that the flow of Fill-Coat is not unduly restricted. As the casing is being filled, air and water are purged out the opposite vent. It is preferable that casing vents be installed with the low-end vent attached to the bottom of the casing and high-end attached to the top of the casing. This makes it possible to remove water from the casing prior to installation of casing filler by blowing it out with an air compressor

or pumping it out with a suction pump. However, the casing may be filled from either end depending on which is most advantageous.

The Trenton Corporation has been installing casing filler for multiple decades. Our experience gives us the know-how to handle the variety of new circumstances that can arise even in the most routine installations. Additional casing filler material is brought to the job site to ensure that there is enough material on hand, and extra material is returned to our facilities at no extra charge to the customer. Meters are provided on each tank truck so that the installation operation can be monitored and the quantities installed can be compared to estimated requirements for each casing. Upon completion, any discharge from the vents is cleaned up and removed.

Installation of Fill-Coat #1 Casing Filler is an acceptable "other measure" under the code requirements of the Department of Transportation. The DOT code under Regulations for the Transportation of Natural and Other Gas by Pipeline, Title 49 of the Code of Federal Regulations, Part 192, Subpart I, Section 192.467, Paragraph C states, "Except for unprotected copper inserted in ferrous pipe, each pipeline must be electrically

isolated from metallic casings that are a part of the underground system. However, if isolation is not achieved because it is impractical, other measures must be taken to minimize corrosion of the pipeline inside the casing." Fill-Coat #1 Casing Filler installed as an "other measure" to minimize corrosion is much less expensive in the long term than increasing cathodic protection current or attempting to clear the short by other construction methods.

Trenton personnel will be present to perform the work. This includes a team leader, truck drivers and/or technicians. Additional personnel are provided when necessary. Complete equipment required for installation is always on hand, as well as basic utility tools.

Trenton maintains bulk storage facilities for casing filler material in Ann Arbor, Michigan, in order to have an adequate supply of casing filler materials readily available. In addition, depending on job requirements, Trenton maintains and has available additional tank trucks. We also have the ability to transport bulk amounts via railroad tank cars.

In summary, Trenton Fill-Coat #1 Casing Filler provides protection against corrosion for pipes in casings and Trenton provides the service of installing this material.

Trenton's multiple decades of experience gives us the know-how to handle the variety of new circumstances that can arise even in the most routine installations.

Description:

Fill-Coat #1 is a low melt point, hot-installed petrolatum compound that sets up relatively firm at ground temperatures commonly found in normal pipeline operations. It has good "wetting" and adhesion characteristics and prevents possible corrosion of pipe in casings. Fill-Coat #1 meets the Department of Transportation requirements for shorted casings, and is expertly installed from readily available inventories by Trenton personnel.

End Use:

Fill-Coat #1 is used to displace water that may otherwise be present in the annular space between a casing and internal carrier pipe.

Application Procedures:

Fill-Coat #1 is delivered to the casing site in Trenton insulated tank trucks and pumped through an opening at the top of the casing vent until the annulus between the casing and the carrier pipe is filled.

Packaging:

Pumped directly into the casing from Trenton heated tankers.

Specifications:

Color	dark brown
Specific Gravity @ 60°F	.80 — .90
Pour Point	100 — 120°F
Flash Point	300°F min.

Advantages:

- Prevents galvanic and atmospheric corrosion within casings
- Has good "wetting" and adhesion characteristics
- Displaces and prevents re-entry of water in casings
- Corrects "water shorts"
- Protects casing from deterioration
- Reduces cathodic protection current drain
- Possibly corrects "metallic short"
- Satisfies DOT requirements for shorted casings
- Carrier pipe can be removed
- Inert and nonvolatile
- Relatively inexpensive
- Delivered and installed by heated tank trucks
- Extra material brought to job site
- Surplus material returned to our facilities at no extra charge
- Material installed through meters
- Experienced personnel to perform work
- Equipment available for small and large jobs
- Storage facilities to ensure material availability

Fill-Coat Estimated Quantity Requirement:

Pipe x Casing Size (in inches)	Gallon/Foot
4 x 8	1.8
6 x 10	2.3
8 x 12	3.0
10 x 14	2.5
12 x 16	2.9
14 x 20	7.2
16 x 20	4.8
20 x 24	5.9
22 x 26	6.0
24 x 30	11.4
26 x 30	7.3
30 x 34	8.3
30 x 36	14.1
36 x 42	16.4
40 x 46	18.3
42 x 48	19.1
48 x 54	21.7



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