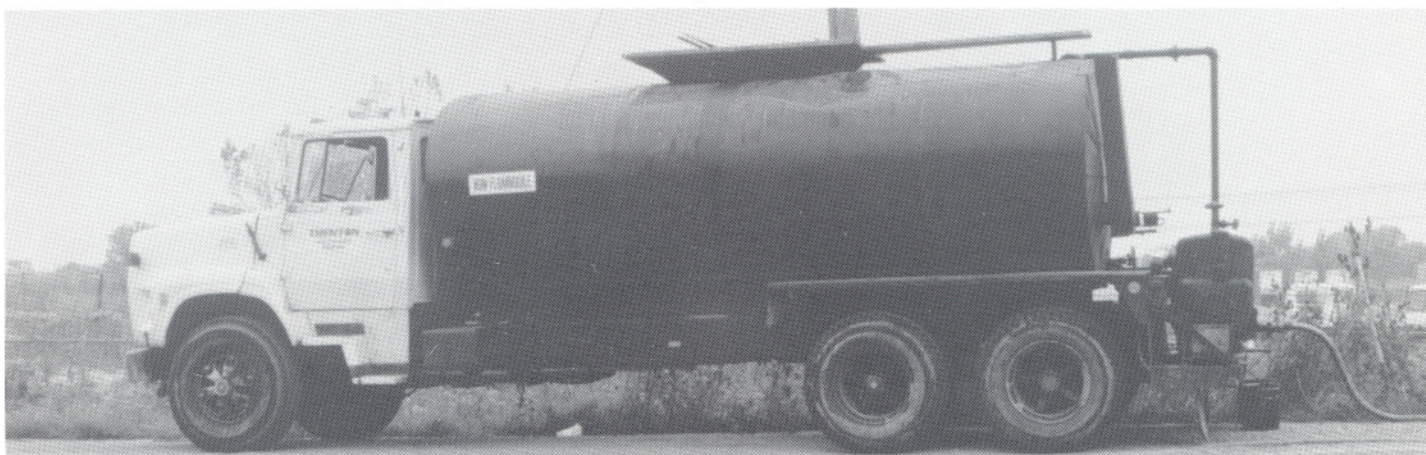


TRENTON™

Fill-Coat #1

Hot-Installed Casing Filler System
for installation in pipeline casings



Fill-Coat #1 being pumped directly into casing from heated and insulated 3000 gallon single unit tank truck.

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 on to 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. In some instances, the carrier pipe will be "floated" off the casing bottom by the liquid casing filler. This allows a film of casing filler material to coat the shorted contact surfaces of the pipe and casing. Since Fill-Coat #1 is electrically non-conductive, a metallic short may thus be corrected.

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 non-volatile and will remain unchanged indefinitely.

Fill-Coat #1 casing filler is delivered to the jobsite 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 possible the removal of water prior to installation of cas-

Fill-Coat #1



Fleet of heated and insulated tank trucks for transport and installation of Fill-Coat #1.

ing filler either 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.

Trenton's 15 years of experience gives us the know-how to handle the variety of new circumstances that can arise even in the most routine installations.

The Trenton Corporation has been installing casing filler for over 15 years. 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 jobsite to assure 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.

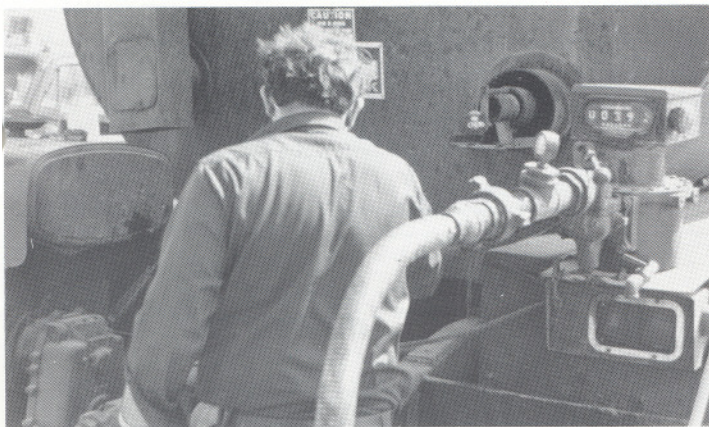
Installation of Fill-Coat # 1 casing filler is an acceptable "other measure" under the code requirements of the Department of Transportation. The DOT code under Regulations for the Transportation of Natural and other Gas by Pipeline, Title 49 of the code of Federal Regula-

tions, Part 192, Subpart I, Section 192.467, Paragraph C which 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 superintendent, truck drivers and 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, and Chicago, Illinois, 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, railroad tank cars, utility trucks and steam generators.

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.



Fill-Coat #1 being installed from tank truck equipped with variable speed pump, meter and pressure gauges.



Personnel pick-up truck carries hoses and fittings for installation of Fill-Coat #1. Pick-up truck also carries heating, safety and cleaning equipment.

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:

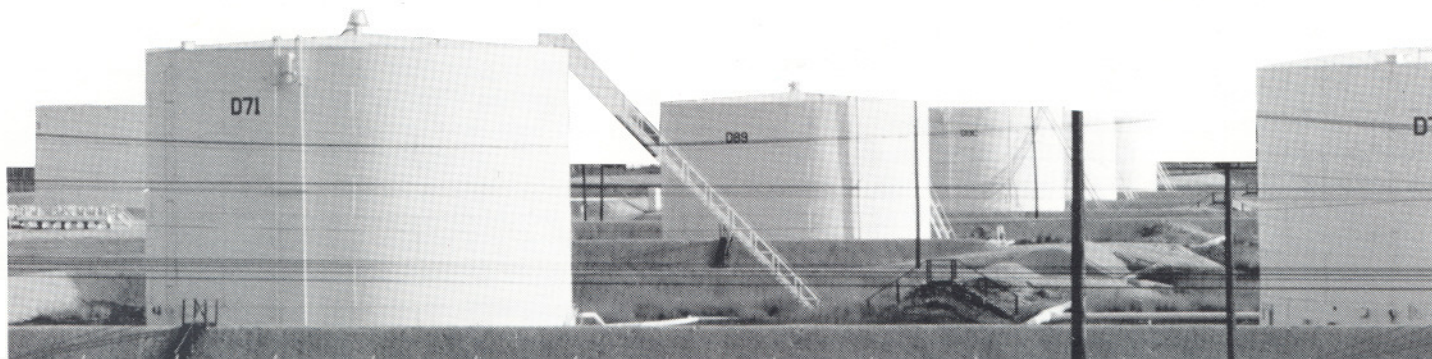
Pumped directly into the casing from Trenton heated tankers.

Specifications:

Color:	dark brown
Specific Gravity at 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 non-volatile
- Relatively inexpensive
- Delivered and installed by heated tank trucks
- Extra material brought to jobsite
- 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 insure material availability



Heated and insulated tankage for storage of bulk Fill-Coat #1 casing filler.

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

The Trenton Corporation

