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Royfill casing filler

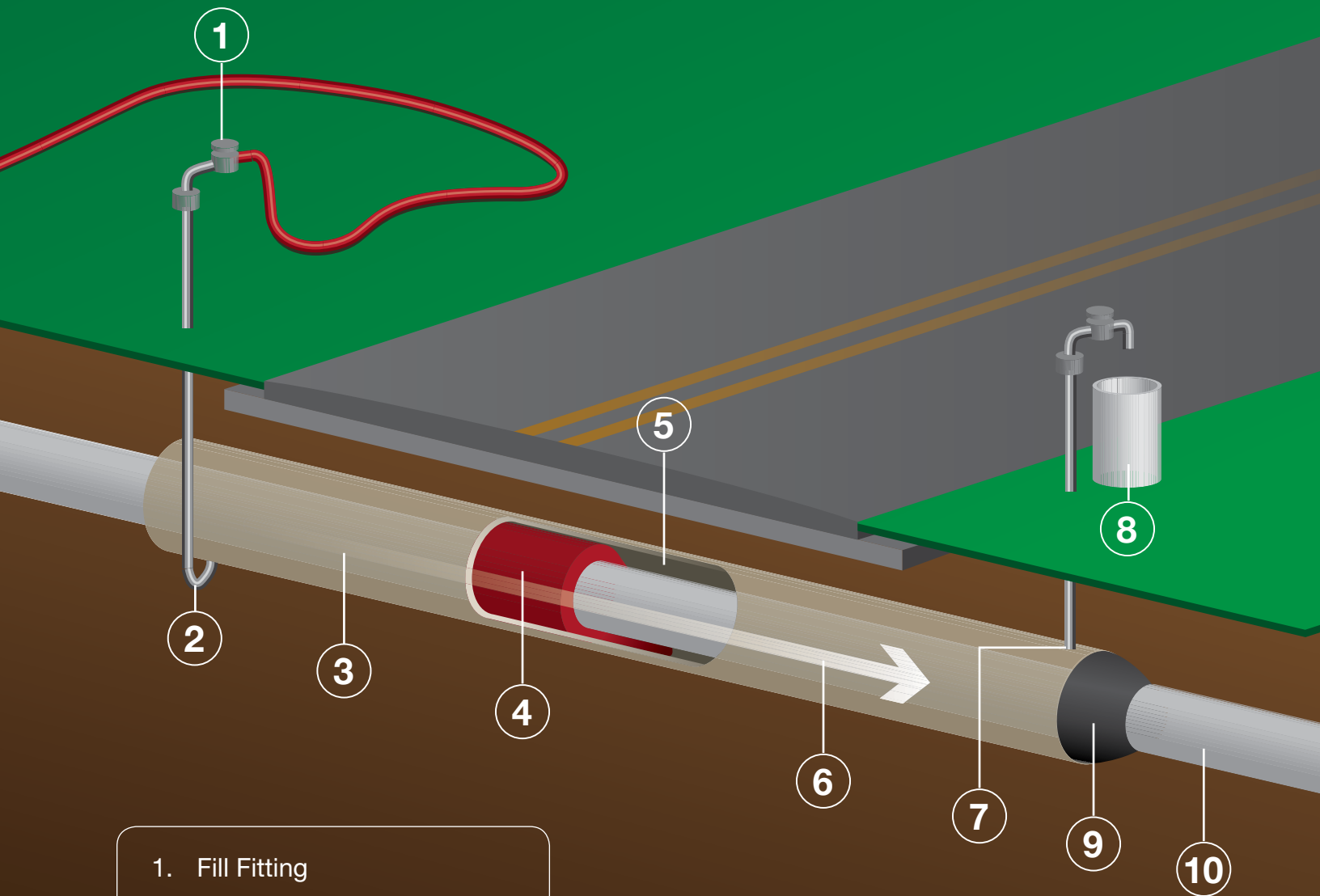
Filling casings since 1976

ROYSTON ROYFILL H - Hot Applied

ROYSTON ROYFILL C - Cold Applied



Royfill Casing Filler Process Overview



1. Fill Fitting
2. Bottom Casing Vent
3. Casing
4. Casing Filler
ROYFILL H Hot Fill or
ROYFILL C Cold Fill
5. Annular Space
6. Flow Direction
7. Top Casing Vent
8. Fitting and Overflow Bucket
9. EnviroSeal End Seal
10. Pipeline

Royston can provide complete turn-key service

Royston Casing Fillers are petroleum based, corrosion-inhibitive compounds used to fill the annular space between the carrier pipe and the casing which surrounds it, Pipe casings are commonly used at highway crossings, railroad crossings and similar locations, Casing filler is a widely used method of complying with Federal DOT Regulations (Title 49, Part 192, Subpart I, Paragraph C of Section 192.467) to minimize pipe corrosion, The benefits of using filler include its long life, low maintenance, and success in dealing with corrosion and shorts.

With Royston's knowledge and support you can mitigate corrosion and effectively prevent shorted casings with ease, in fact, in some instances the filler has corrected shorted casings. Formulated with inhibitors, Royston Casing Fillers need no pre-treatment, Royston services include experienced crews and temperature-controlled tanker trucks for hot installation.

Royfill is a complete one-step inhibitor

Royston's casing fillers are formulated with corrosion inhibitors; there's no need to pre-treat. Should small amounts of water be entrapped after filling, the filler will prevent any further oxidation and corrosion.

ROYFILL H

Hot-Injected Installed into the casing from a Royston hot tanker truck, Royfill H is ideally suited for the multi-casing project where economics, time, labor and pipe-casing sizes are factors.

ROYFILL C

Cold-Injected Ideal for smaller jobs, Royston C Cold-Injected Casing Filler is pumped directly from 55-gallon drums.

Royston: specialists in corrosion protection technology since 1941

For over half a century, Royston chemists have been leading the field in the development of corrosion protection products. Royston has continued to be a dominant figure in manufacturing and providing the necessary products to combat corrosion in pipelines, highways and bridge applications. Royston research is committed to developing the technology and products required to fight corrosion in the future.

Royfill Casing Filler

Experience and dependability you've come to expect

Formulated with one-step inhibitor

Effectively mitigates corrosion

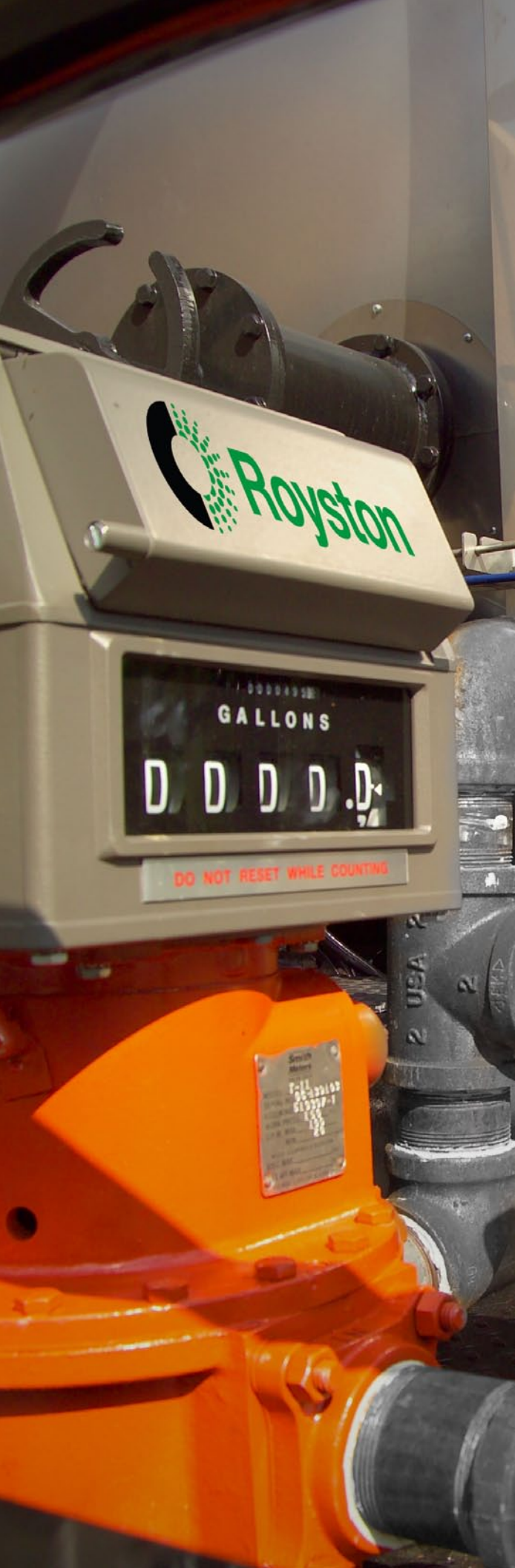
Offers a long-life, low maintenance method to meet DOT requirements

Made in U.S.A.



We are the experts in filling casings.

Dave and Kelley, two members of the Royston team. With 48 years of combined experience, and over 11,000 casing fills between them, they define the word experience.



ROYSTON ROYFILL CASING FILLER

Process Overview

Follow these steps for best results

DETERMINING QUANTITIES:

The amount of filler required is based on casing size, carrier size and pipe length, The Royston Estimating Chart will assist you in determining approximate quantities needed to fill the annulus. Royston's experienced personnel are available to determine required quantities.

DEVELOPING A PRICE:

Royston will prepare an accurate and cost efficient bid based on the number of gallons required, number of casings, locations and accessibility. A price per gallon will be submitted which will, include material, delivery and installation.

PRE-FILLING PREPARATION:

Royston offers these suggestions to ensure best results:

- 1) Use new end seals preferably EnviroSeal, which can withstand the heat and pressures requires of installation
- 2) Install 2" vents that are clear and open to the casing
- 3) Conduct a pressure test to ensure that end seals are in place and there are no leaks.

INSTALLATION:

Royston's experienced installation crew will handle the installation. All equipment required will be supplied by Royston, The casing filler will be delivered in insulated tankers containing an independent heat source, compressor/pump, meter, pressure gauge, thermometer, hoses and various gauges and valves, A sufficient quantity of product will be delivered to the field to assure complete filling,

COMPLETION:

In the event of an occasional spill, Royston personnel will remove spilled or vented material. The quantity of injected material will be verified with a ticket print-out for each casing showing date, location and number of gallons installed. Surplus material will be returned to Royston's inventory.

ROYSTON ROYFILL H

Hot applied one step casing filler

For large or multi-casing projects

PRODUCT DESCRIPTION

ROYSTON ROYFILL H hot applied Casing Filler for large or multiple casing projects. This casing filler is a specially formulated, blend of corrosion inhibitors, petrolatum wax and inert solids, installed by a custom heated pumping tanker. ROYFILL H provides an effective protective environment for preventing and eliminating active corrosion and electrolysis from the annular space between the carrier pipe and casing.

BASIC USE

For the prevention of galvanic and atmospheric corrosion in casings with new or existing pipe. This ONE STEP, hot injected, wax blend fills and coats the pipe and casing, re-coating areas of damaged coating and eliminating electrolytic shorts by totally encompassing these areas with a high dielectric, non-conductive, protective barrier of wax and corrosion inhibitors. As the casing is injected with ROYFILL H's time proven formula, oxygen and moisture are eliminated from the casing and are prevented from being re-introduced into the protected space.

APPLICATION

CASING END SEALS

EnviroSeal End Seals are the preferred product to use in conjunction with Royfill H. They are designed to take the heat and pressure associated with hot fills. In the absence of EnviroSeal End Seals, good quality casing end seals should be installed and tested. End seals should have the ability to handle the pressure and high temperature of the application.

ONE STEP APPLICATION

No need for pre-treating casings prior to application. The corrosion inhibitor is already in the casing filler blend.

TANKER TRUCK INSTALLATION

ROYFILL H hot injected casing filler is pumped into the low end, bottom casing vent with the use of an insulated, heated tanker truck and factory trained installers.



TECHNICAL DATA

Color:	Dark Brown
Service temp:	-30°F to 120°F (-35°C to 49°C)
Drop Melt	Above 143°F (62°C)
Congeaing Point	Below 115°F (46°C)
Flash Point	275°F (135°C) C.O.C min
Volume by Weight	7.0 to 7.3 lb/gal @120°F (49°C) 0.1429 to 0.1370 gals/lb
Properties	High Dielectric Strength Anti-corrosive Inert and Non-toxic

ROYSTON ROYFILL C

Cold applied one step casing filler

Economical Solution For Small Casing Projects

Quick and easy installation to keep your job running smoothly. High-pressure resistance to protect your work in the future. Royfill C is the ideal product for smaller casing projects

PRODUCT DESCRIPTION

ROYSTON ROYFILL C is a cold applied casing filler designed for smaller or shorter length casings. This casing filler is a specially formulated, petroleum based compound with corrosion inhibitors and inert solids; pumped cold from 55 gallon drums. ROYFILL C provides an effective protective environment for preventing and eliminating active corrosion and electrolysis from the annular space between the carrier pipe and casing.

BASIC USE

For the prevention of galvanic and atmospheric corrosion in smaller or shorter length casings (200 feet or less) with both new and existing pipe. This ONE STEP mastic, pump injected, petroleum based formulation fills and coats the pipe and casing, re-coating areas of damaged coating and eliminating electrolytic shorts by encompassing these areas with a high dielectric, non-conductive, protective barrier. As the casing is pump injected with ROYFILL C's time proven formula, oxygen and moisture are eliminated from the casing and are prevented from being re-introduced into the protected space.

APPLICATION

CASING END SEALS

EnviroSeal End Seals are the preferred product to use in conjunction with Royfill C. In the absence of EnviroSeal End Seals, good quality casing end seals should be installed and inspected. End seals should have the ability to handle the pressure of the drum injection pump application.

ONE STEP APPLICATION

No need for pre-treating casings prior to application. The corrosion inhibitor is already in the casing filler blend.

INSTALLATION

ROYFILL C cold injected casing filler is pumped into the low end casing vent from 55 gallon drums with a pneumatic mastic pump, available from Royston Laboratories.

OVERVIEW: MASTIC PUMP

The GRACO-ROYSTON Casing Filler Pumping Unit is specifically designed for pumping ROYSTON ROYFILL Casing Filler from 55-gallon drums into pipeline casings without heating, even at temperatures encountered during winter operations. It may also be used for pumping any high viscosity material of similar consistency, or for pumping liquids of lower viscosity which are usually pumped with units of lesser capability.

The assembly is designed to operate with a compressed air unit capable of at least 105 cubic feet per minute output. It is also designed to utilize readily available equipment for lifting and moving the pump assembly rather than devices designed specially for this purpose

TECHNICAL DATA

Color:	Dark Brown
Service temp:	-30°F to 100°F (-35°C to 38°C)
Installation Temperature	29°F to 160°F (-1.6°C to 71°C)
Specific Gravity	1.11
Flash Point	160°F (71°C)
Seta-Flash	ASTM D3243-73
Weight / Gallons	9.21 Pounds
Properties	High Dielectric Strength Anti-corrosive Inert and Non-toxic
Casing length	200 feet or less

CASING FILLER ESTIMATING CHART

Quick and easy estimating

Use chart to determine quantity of Casing Filler required

1. Using casing size O.D., find casing capacity.
2. Using inner pipe size O.D., find displacement value.
3. Casing capacity, minus displacement value = no. gals/lin. ft.
4. Multiply gallons/lin. ft. X length of casing for total gallons required.

Nominal Casing Size 0.0	Wall Thickness	Casing Size 1.0	Casing Capacity Gallons per Lineal Foot	Inner Pipe Size 0.0	Displacement Value Gallons per Lineal Foot
4 1/2"	0.250"	4.00"	0.65	43/8"	0.83
6 5/8"	0.280"	6.06"	1.50	63/8"	1.79
8 6/8"	0.322"	7.98"	2.60	83/8"	3.03
10 3/4"	0.344"	10.06"	4.13	103/8"	4.71
12 3/4"	0.344"	12.06"	5.93	123/8"	6.63
14"	3/8"	13.25"	7.16	14"	8.00
16"	3/8"	15.25"	9.49	16"	10.44
18"	3/8"	17.25"	12.14	18"	13.22
20"	3/8"	19.25"	15.12	20"	16.32
22"	3/8 "	21.25"	18.42	22"	19.75
24"	3/8"	23.25"	22.05	24"	23.50
26"	3/8"	25.25"	26.01	26"	27.58
28"	3/8"	27.25"	30.29	28"	31.98
30"	3/8"	29.25"	34.90	30"	36.72
32"	3/8"	31.25"	39.84	32"	41.78
34"	3/8"	33.25"	45.10	34"	47.16
36"	3/8"	35.25"	50.69	36"	52.87
38"	3/8"	37.25"	56.61	38"	58.91
40"	3/8 "	39.25"	62.85	40"	65.27
42"	1/2"	41.00"	68.58	42"	71.97
44"	1/2"	43.00"	75.43	44"	78.98
46"	1/2"	45.00"	82.61	46"	86.33
48"	1/2"	47.00"	90.12	48"	94.00
50"	1/2"	49.00"	97.95	50"	101.99
52"	1/2"	51.00"	106.11	52"	110.31
54"	1/2"	53.00"	114.60	54"	118.96
56"	1/2"	55.00"	123.41	56"	127.94
58"	1/2"	57.00"	132.55	58"	137.24
60"	3/4 "	58.50"	139.62	60"	146.87
62"	3/4"	60.50"	149.33	62"	156.82
64"	3/4"	62.50"	159.36	64"	167.10

Note: If wall thickness of the casing is greater or less than that shown in the table, adjust the figure accordingly.

Figures given are based on volume at 77°F. No allowances made for waste, spacers, insulators, end seals or coatings on the carrier pipe

For Additional Technical Data and Project Quotations:



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and below ground applications.

ROYSTON LABORATORIES DIVISION

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