

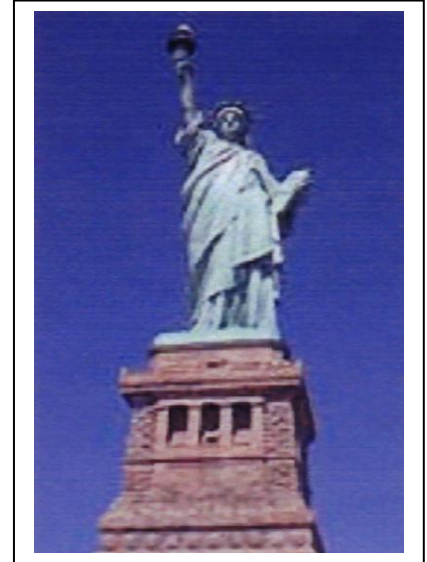
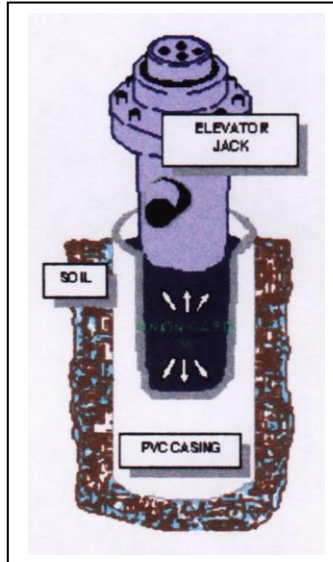


Union-Gard 160

Corrosion Preventative System for Buried Hydraulic Elevators



*When Safety
Is
Top Priority!*



Union-Gard 160 is a thick, liquid compound that provides corrosion protection to buried hydraulic elevator cylinders. When placed between the cylinder and the casing, **Union-Gard 160** provides the following advantages:

- + **EASY TO INSTALL** - **Union-Gard 160** can be transported and pumped into place with simple inexpensive equipment.
- + **COST EFFECTIVE & READILY AVAILABLE** - Most orders are shipped within 24 hours.
- + **CALCULATION GUIDE** - Estimate how much will be needed to provide protection for your installation.
- + **PROTECTS** against chemical and electrolytic corrosion.
- + **HEAVIER THAN WATER** - Prevents water from entering the casing.
- + **IMPROVES TEMPERATURE CONTROL** by optimizing thermal stability.
- + **SAFE** - Manufactured using environmentally safe ingredients.

PROVEN PROTECTION SINCE 1978

Union-Gard
P.O. Box 1493
Globe, AZ 85502

A Division of Enduratech L.L.C.
Toll Free: (888) 299-GARD
Fax: (928) 425-0163
Email: protection@uniongard.com



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Calculation Guide

Information required to complete this calculation:

1. Depth of hole (feet) - A
2. Diameter of hole or casing (inches) - B
3. Diameter of jack cylinder (inches) - C

Formula:

1. $A \times 0.0408579 = D$
2. $B^2 - C^2 = E$
3. $E \times D = \text{Gallons of Union-Gard 160 required.}$

Installation Methods

1. Pour Method

Union-Gard 160 can be gravity poured into a relatively dry drill hole. However, when more than five feet of water is standing in the drill hole the water should be removed before installing the Union-Gard 160. If it is not possible to remove the water first, then the product should be pumped to the bottom of the drill hole. Union-Gard 160 will displace the water from the drill hole into the elevator pit floor where it can be removed by bailing or pumping.

2. Pump Method

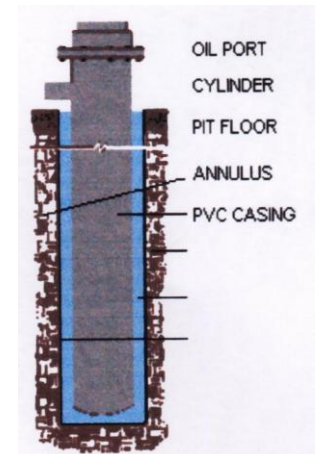
Obtain a gear pump that is powered by a two horsepower (minimum) electrical motor. You will need either a non-collapsing hose or PVC piping no less than $\frac{3}{4}$ " in diameter and extend from the discharge side of the pump to the bottom of the drill hole. Connect the pump to the two" bung cap on the drum. Lay the drum on its side in the doorway of the pit. Set pump on the pit floor if possible. (Avoid priming the pump with water, as water is not compatible with Union-Gard 160. Pump the Union-Gard 160 until the product appears at the pit floor. (We suggest cleaning any spills with a citrus-based cleaner such as D-Limonene.)

3. Sealing the Annulus

Backfill on the outside of the casing, (PVC, etc) with sand. The sand will provide a vertical column on the outside of the casing. This helps prevent stretching of the PVC piping. It is recommended that the annulus be sealed by using quick setting cement. An orifice should be installed for inspection purposes.

Installation Specifications

1. The cylinder must be encased in an assembly of PVC pipe. The pipe wall thickness must be less than 0.03 inches. The inside diameter of the pipe should be large enough to allow not less than 1" of Union-Gard 160 to completely surround the cylinder.
2. The PVC pipe assembly must be capped at the bottom and all joints solvent welded according to the pipe manufacturer's recommendations to insure water-tightness.
3. The elevator shaft must permit cylinder and PVC casing to be set plumb in the proper location.
4. Install the pipe and cylinder assembly in the shaft and obtain set plumb location. Backfill the outside of the PVC casing with clean sand and simultaneously fill the inside of the annulus with Union-Gard 160. These operations must be performed simultaneously to maintain pressure equilibrium on the PVC wall. The hydraulic cylinder may touch the PVC pipe to obtain vertical plumb.
5. Seal the well opening at the pit floor with hydraulic quick-setting cement. An inspection orifice must extend through the cement seal into the annulus between the PVC pipe and the elevator cylinder.



Properties

- **Resistivity:** 1 to 2 mega ohms at ambient temperature.
- **Electric Stability:** The voltage required to initiate flow of current is greater than 200 volts.
- **Rheology:** Product viscosity is low enough to pump with pressure equipment. Gel strength is high enough to suspend fine solids indefinitely when static.
- **Filtration:** High colloid concentration prevents filtration at ambient temperature and acts with the gellant to resist seepage.
- **Temperature Control:** Insulating properties manage operating temperatures of the hydraulic oil by storing peak temperatures throughout the underground assembly.

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