

# JEPCO NEWS

WINTER ISSUE

by Ed Pennypacker

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## VACUUM TESTING SEPTIC TANKS

Jolley Precast does it. United Concrete does it. Maybe you will be doing it soon. Vacuum testing of septic tanks is coming to Connecticut. It is already a requirement in several states. If your state requires it are you ready?

One target is mid-seam septic tanks. In 1995 and 1996 Colin Bishop reports on "Mohave County Environmental Health Division tests of 500 septic tanks. Of 415 mid seam tanks; 108 failed. At first, half failed. Roofing tar in the joints was replaced with butyl. "which did a better job of sealing the joints" he reports.

Orenco, a manufacturer of filtering systems is actively pursuing the testing requirements. Terry Bounds writes a veritable Bible of cautions, standards and expectations on Orenco Letterhead in December 1996. His message is clear: The cheapest tanks may not be the best buy. He calls for thick walls and floors, 4000psi concrete, butyl gaskets, and on-site testing. He also cites "differential settling." A case where the top and bottom separate when the ground around the tank subsides. The solution? Mechanical straps or plates to hold the tanks together. Helping (or not helping) the NPCA Best Practices Manual shows "Mechanically Pinned

Joints for Sectional-Split Septic Tank" which translates into a stainless steel plate across the joint held by half inch coil inserts.

That old saying: "those little leaks will seal themselves in a few days" is not going to cut it for very much longer. These guys are serious. Are you ready?



Ed Wagman and John Wagman of Monarch Products did it!

## Conseal Runs Vacuum Tests

ASTM 1227 calls for 2 inches of mercury, NPCA calls for 5 inches. The idea is, "If the tank can hold a vacuum it can hold water." Several precasters volunteered to be "guinea pigs" and test their septic tanks with this new equipment. Special thanks to Modern Concrete, Ottsville, PA, Monarch Products, York Haven, PA, Mayer Brothers, ElkRidge, MD, Babylon Vault, New Windsor, MD, Atlas Concrete, Wallingford, CT, Jolley Precast, Danielson, CT, Arrow Concrete, Granby, CT and Woodards Concrete, Bullville, NY.

What we discovered:

- Once you learn how, it is easy. A test, done right, takes about twenty minutes.
- Clean-outs and manholes need to be sealed. Try tire lube. Use plenty. Drain holes and pipe seals must be plugged.
- The top must be troweled smooth as a side walk. Rough surfaces will not seal.
- Green concrete is not strong enough, days old tank cracked. None of the fully cured did.
- Make sure to mold together any lap joints in the Con Seal. On at least two tanks, the vacuum leak occurred there. To find a vacuum leak, listen for the hissing. Caulk will seal it.



Dennis Jolley routinely vacuum tests his septic tanks. He smears tire lube on manhole cover.

## HOW TO INSTALL BULKHEADS WITHOUT LEAKS



Bob Flores and Rick Terrill proudly show off new bulkhead form at Shea Concrete.

Rick Terrill works for Perm Entry. He has seen a thousand installations. Yet he admits, "We are still learning how to do it. Remember," he says, "the Wright Brothers did not invent the jet plane." In 1993 Terrill called ConSeal asking for some technical advice. From that moment a partnership formed. JEPCO's Ed Pennypacker and Rick witnessed many installations. Not to instruct, but to learn why some installers rarely have "leakers." Excellence in installations is the goal. Everyone knows what a terrible advertisement it is to have a leaky joint in cellar entries. When the installation is poor the results are poor. Even worse, by the time the home owner finds out he has a problem, it is too late to fix it correctly. Hence a lot of rigged up patches involving fast set mortar are tried. Usually, they do not last. Precasters often blame the problem on backfill techniques. True or not, it is not the backfill guy who gets the phone call. It is you

### Step 1: Surface Preparation

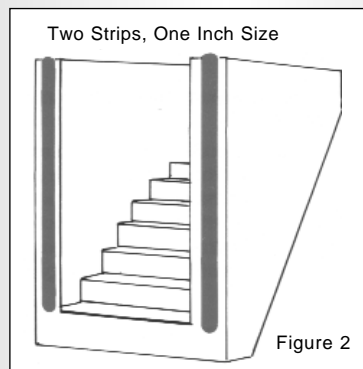
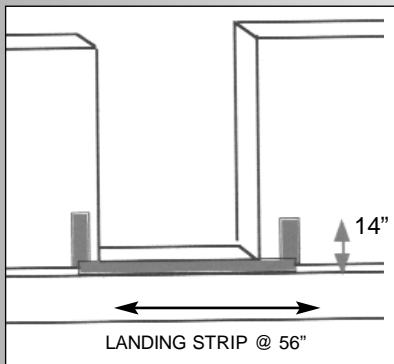
It is important that all surfaces be clean. This includes the basement wall as well as the precast. Use a wire brush and whatever is needed to prepare a clean, dry surface.

### Step 2: Priming

Primers can make the difference between "leakers" and good ones. Conseal CS300 works in all kinds of weather and it makes for a great bond between the wall and the bulk head.

### Step 3: Sealing

Only a continuous gasket of conseal will ensure a water tight seal against leakage. Note that the area around the bottom and up to the first bolt holes is a problem area. We suggest a wide thick bead of conseal called a "landing strip." It crosses the opening at the bottom and extends 14" up the sides. On the bulkhead, run 1" strips outside the bolt holes from top to bottom. Add conseal to any "low" spots.



### Step 4: Installation

Push the threaded rods through the wall from the inside. The other way tends to drag dirt into the joint, ruining an otherwise good installation. Once connected, tighten evenly for the best seal.

### Step 5: Caulk the Inside

C1500 quick cure polyurethane caulk makes a good seal. Put a plastic bag over your finger and smooth the caulk. Caulk the customer side only. Since you cannot get under the precast you cannot seal the bottom from the outside. Tar and grout are ineffective leak protection.

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