

danbay

PIPE RENOVATION

Simple, Effective Man Entry Circular & Non-Circular
Wastewater Infrastructure Rehabilitation



THE DANBY PIPE RENOVATION SYSTEM

The Danby System is a man-entry pipe renovation technology; that is simply a smarter, less disruptive and more economical solution to repairing large diameter pipe, culverts and odd shaped sewer infrastructure.

Developed in Australia in 1984, and patented in the U.S in 1987, Danby has been used successfully in the Americas, Asia, Europe, Japan, and the Middle East ever since. Time and again, The Danby System has proven itself to be one of the most effective large diameter sewer infrastructure rehabilitation technologies in the industry today. Here are just a few of the advantages of The Danby System:

- Combines the corrosion resistance of PVC and the strength of cementitious grout
- Classified as a Grouted-In-Place Liner (GIPL)
- Repaired structure will have improved hydraulics
- Will repair virtually any shape and size (36" and above) structure
- Can be used to rehabilitate: corrugated metal, brick, concrete and clay
 - pipe, culverts and other non-circular structures
- Provides a structural rehabilitation
- 100% Trenchless solution - a man-entry system with no access pits required
- Small installation footprint



DID YOU KNOW?

The global rehabilitation market for wastewater infrastructure consists almost entirely of gravity sewers and laterals. The U.S. represents nearly 50% of that market. There are more than 200,000 miles of sewer lines, over 40 years old, in need of repair.

THE DANBY SYSTEM DETAILS

The Danby System is a Grouted-In-Place Liner (GIPL) and is manufactured in-situ with corrosion resistant plastic. Its primary components consist of extruded 12 in. [300 mm] wide, rigid PVC strips that are manufactured in profile heights of 0.57" or 1.0".

The Danby outer surface is ribbed, while the inside surface is smooth. The ribs, when curved to the contours of the host pipe, impart a hoop strength that provides the support to hold the liner in place and resist the grout pressure. The ribs also become the mechanical anchor when it bonds to the grout that is injected to fill the annular gap. The grout provides critical structural enhancement. The Danby System will extend the rehabilitated pipeline's useful life by another 50 to 100 years.

HOW IT WORKS

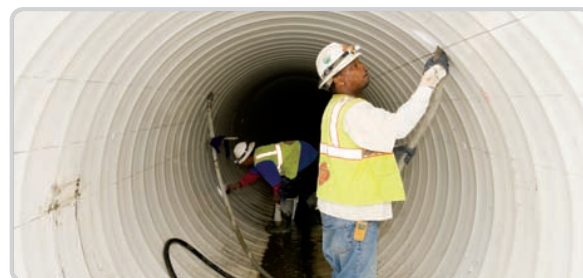
1) For circular or near circular structures requiring 360° protection, Danby is typically extruded in coils in lengths ranging from 150 to 300 ft, then delivered to the job site. In partial lining applications and for non-circular structures, the 12" wide panels are pre-cut to specified lengths, then delivered to the job site.



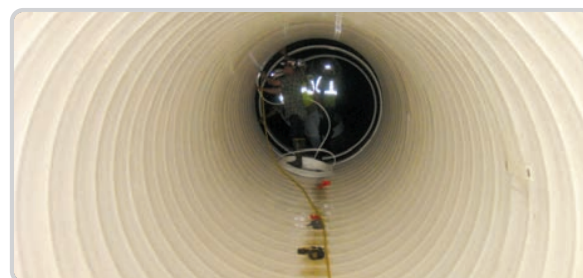
2) After the deteriorated structure has been cleaned and prepped, Danby strips are lowered through a manhole and put into place (if coiled it is manually unspooled in continuous lengths). Once inside the pipe, the PVC panels are joined by incorporating male and corresponding female double locking edges. These edges form a circumferential joint which is then locked together using a smaller joiner strip made with an elastomer gasket, co-extruded to ensure the seams and joints are both gas and water tight.



3) Grout is then injected into the annular space from multiple injection points. Most any grouting material, ranging from high strength cementitious materials to light-weight foam can be injected without undue restrictions due to flow characteristics.



4) When complete, the newly relined pipe is more structurally sound and possesses greater flow characteristics than the original.



THE ENGINEERING BEHIND THE DESIGN

The Danby Pipe Renovation process is a classic case of where the sum is greater than its parts. Danby's Rigid PVC strips, or panels, provide corrosion protection and improved flow characteristics. They also serve as the "form" that contains the grout. The cementitious grout, in turn, provides the anchoring system and structural strength.

KEY ASTM STANDARDS MET

ASTM F1698-02

Standard Practice for Installation of Poly (Vinyl Chloride) (PVC) Profile strip Liner and Cementitious Grout for Rehabilitation of Existing Man-Entry Sewers and Conduits

ASTM F1735-02 (Re-approved 2008)

Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Strip for PVC Liners for Rehabilitation of Existing Man-Entry Sewers and Conduits



The Danby System eliminates the need for costly and disruptive "dig and replace" methods in many applications.



The versatility of The Danby System allow it to be tailored to address extremely unique shapes and project requirements.

The **Danby Pipe Renovation** system has been successfully installed in pipes and structures ranging in diameters as small as 36" to 144"+. Since **Danby** can be supplied in either coils or pre-cut strips, it can conform to practically any shape;

- Circular (360°)
- Partial lining (270°, 240°, etc.)
- Box structures
- Manholes
- Oval, arch, semi-elliptical, horseshoe and egg-shaped lines
- Wet wells
- Tunnels



For more information, email:
info@danbyrehab.com



www.danbyrehab.com

Danby, LLC
8904 Fairbanks N.Houston
Houston, TX, 77064
Phone: 281-598-1126
Fax: 281-598-1127

EXPERIENCED NETWORK OF CERTIFIED AND MANUFACTURER-TRAINED INSTALLATION CONTRACTORS

We understand our technology and products are only as good as our installers. That's why every Danby Pipe Renovation installation contractor must complete our comprehensive product training and education course, and then pass a field installation test. We also provide around the clock technical and field support to make each and every installation a success.



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