

Channel System Specifications

RELINER® CHANNEL SPECIFICATIONS

Reliner US Patent # 5553973 Canadian Patent # 2176074 8/26/16

1. PRODUCT NAME

RELINER® Channel System

US Patent 5,553,973 Canadian Patent 2,176,074

Our RELINER products are all proudly made in the USA

2. MANUFACTURER

RELINER®/Duran Inc.

9 Matthews Drive, Unit A1/A2

East Haddam, CT 06423

Phone: 800-508-6001 (860) 434-0277

Fax: (877) 434-3197

3. PRODUCT DESCRIPTION

Basic Application: RELINER® channels are a plastic composite castable form system for creating lined invert flumes in manholes, thus producing factory quality flumes in the field regardless of site conditions or skill level of the installer. Historically, this has been an area of sewer construction that has relied on traditional artisan skills executed under extreme conditions and minimum supervision.

Advantages of RELINER®:

- Adaptable to most field conditions
- Minimum tools required
- No chemicals to mix
- High corrosion resistance
- Minimizes service disruption
- Easy to maintain
- Fast and easy to install
- Simple to inventory
- Permits last minute changes due to field problems
- Smooth flow characteristics
- Full depth channels allow higher design flows
- Predictable quality inverts independent of masonry skills
- Shipped direct to site

Composition and Materials: RELINER channels (flumes) are hand fabricated in the USA from marine grade fiberglass and PVC pipe using fixed molds that provide consistent high quality and dimensional control.

These materials have extremely high resistance to sewer acids while providing a very smooth, low maintenance, low friction flume.

The full depth configuration allows the engineer to design for substantially higher

flows in smaller pipe diameters without fear of surcharging the manhole or generating excess turbulence and the resulting H₂S emissions.

RELINER channels are compatible with virtually all current manhole construction and rehabilitation technologies and materials.

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4. TECHNICAL DATA

Standard RELINER components consist of a fiberglass flume section molded into one of several stock shapes and lengths, and a fiberglass pipe end (pipe sizes vary), which bolts onto the flume section. The basic shapes for single flumes are straight, 45° sweep right and left, 22.5° sweep right and left, standard and short versions of these options.

Intersections are resolved with 45° and 22.5° wyes, 4-ways and tees left and right. Flumes are available without pipes or with optional molded hemispherical drop or dead ends. Selection tables are available which provide the user with easy to read diagrams of typical manhole intersections.

RELINER components are hand and chopper gun laminations of these properties:

Physical Properties of Unsaturated Polyester Resin Reinforced Laminates

(33 / 66 Glass / Resin 1.5 oz mat Laminates .125 in.)

Flexural Strength (psi) ASTM D-790 27,100

Flexural Modulus (psi) ASTM D-790 1,157,000

Tensile Strength (psi) ASTM D-638 16,700

Tensile Modulus (psi) ASTM D-638 1,457,000

Tensile Elongation (%) ASTM D-638 1.54

Hardness, Barcol 934.1 ASTM D-2583 55 - 60

Physical Properties of ISO Gel Coat

Room Temperature Cured Post Cured at

for 45 hours 50_ for 24 hours

Tensile Strength 6,218 6,581

Elongation, % 2.70 1.90

Flexural Strength, psi 11,363 11,329

Heat Distortion, °F 0.544 x 10⁶ 0.713 x 10⁶

Mandrel Flex, Mandrel

Diameter in Inches -- 1.0

Sample Specification for RELINER®:

All new and / or existing manhole structures shall be outfitted with RELINER plastic composite invert components. All channels shall be at least the same depth as the pipe diameter and shall be field trimmed and assembled as per manufacturer's instructions using supplied stainless hardware. Concrete backfill shall be properly placed and graded so as to provide smooth well-drained sloping benches. Pipe alignment shall be maintained by use of external adapters, inflatable plugs or other manufacturer approved methods. Contractor shall inspect each manhole structure and verify components

required to outfit each structure. RELINER is manufactured in the USA by Duran Inc. (800-508-6001, www.reliner.com).

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5. INSTALLATION

1. Remove the existing brick and mortar invert in the flume path.
2. Lay out and align the flume parts.
3. Trim pipe extensions to fit the existing pipes.
4. Drill 4 holes in each flange for the 1/4" stainless steel bolts (supplied).
5. Bolt channels and pipe end parts together
6. Locate a long style inflatable line plug in each line (inlets and outlet) so that the plug is 1/2 in host pipe and 1/2 in RELINER pipe. (Use by-pass plugs for high flow conditions.) OR Locate channels using split pipe technique (call for faxed instructions or visit our website.)
7. Inflate line plugs and brace entire assembly to prevent flotation.
8. Backfill with concrete
9. When concrete cures, remove plugs.

6. AVAILABILITY AND COST

RELINER® is manufactured by Duran Inc. of East Haddam, CT and is sold nationally through:

RELINER® / Duran Inc.

9 Matthews Drive, Unit A1/A2

East Haddam, CT 06423

860-434-0277

877-434-3197 fax

7. WARRANTY

Contact sales at 800-508-6001 for copy of warranty.

8. MAINTENANCE

Normal maintenance consists of routine inspection and flushing with a hose or pressure washer.