

# Modification Procedures

For FRP Manhole Base Liners

Step by Step Guide to Adding a New Lateral  
PVC Pipe Connection to an Existing Perfect Lined  
Manhole FRP Base in the Field



## STEP BY STEP GUIDE:

# Adding a New Lateral PVC Pipe Connection to an Existing Perfect Manhole FRP Base in the Field

**THIS PROCEDURE IS FOR USE WITH SOLAREZ COATING**

## 1 Core a new hole and invert channel

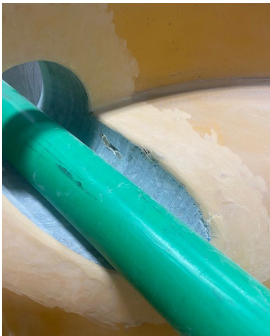


Establish the alignment and elevation of the new connection that is to be made. Core an opening through the outside of the manhole into the main channel. It is recommended to make the opening 2" larger than the OD of the new connecting pipeline. Coring bit should be long enough to reach the main channel (be  $\frac{1}{2}$  the inside diameter of the manhole plus the manhole wall thickness.) If a coring machine is unavailable, create a rough core using a grinder with a masonry blade and a roto hammer.

### Supplies Needed

- ✓ Core Drill Machine
- ✓ Coring Bit

## 2 Dry fit the PVC pipe and boot



Insert a short section of PVC pipe thru the cored hole past the shelf on the interior of the FRP manhole base. The length of the new incoming PVC pipe should allow the pipe to be inserted beyond the shelf on the interior of the manhole and extend beyond the OD of the manhole base by at least 6". From the outside of the manhole place the boot around the pipe and slide it into the core drilled hole to verify fit. Using a sharpie pen, mark the area of the top and end of the pipe where it needs to be trimmed.

### Supplies Needed

- ✓ PVC Pipe
- ✓ Boot
- ✓ Marking Pen

## 3 Trim the PVC pipe



Using an angle grinder with a cut off blade or a keyhole saw trim the PVC pipe along the marked area of the top and end of the pipe.

### Supplies Needed

- ✓ Angle Grinder or Keyhole Saw

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**4** Abrade the shelf of the lined manhole parallel to the perimeter of the channel.

Using an Angle grinder with an abrasion wheel, abrade a 2" width of the FRP manhole on the bench shelf along the edges and above the core drilled pipe channel.

**Supplies Needed**

- ✓ Angle Grinder with Abrasion Wheel

**5** Grout new pipe connector in manhole wall.

Inset the PVC pipe into the manhole and place a spacer under the pipe to create a consistent flow line and create an annular space for the grout. On the inside end of the manhole shelf place a piece of cardboard against the channel and secure it with duct tape to dam the ends of the cavity for grout. Install the boot on the outside of the manhole. On the inside of the manhole pack grout around the PVC pipe and finish the top of the grout with a damp sponge. Allow the grout to dry.

**Supplies Needed**

- ✓ Card board
- ✓ Duct tape
- ✓ Boot, Sponge
- ✓ Bucket
- ✓ Water
- ✓ Electric drill
- ✓ Mixing paddle
- ✓ Trowel
- ✓ Portland Cement Expanding Non-shrink Unsanded Grout Approved by Local Agencies

**6** Trim strips of woven FRP sheets to cover the grout and extend ½" into the interior of the pipe.

Measure the area of the grout to be covered and add ½" per side. Mark and cut the woven FRP sheeting to size. It is recommended to cut the FRP sheet into four separate pieces.

**Supplies Needed**

- ✓ Tape Measure
- ✓ Sharpie
- ✓ Woven FRP sheet
- ✓ Knife

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## 7 Apply the Solarez Vinyl Ester coating over the FRP, around the inside edges of the PVC pipe, grouted areas, and the abraded surface of the FRP.



Use a damp sponge to clean the area where the coating will be applied and remove all debris. Next spray Acetone on the surface area. Apply tape around the perimeter of the area to be coated. Apply the Solarez Vinyl Ester coating per the manufacturer's recommendation. Use a paint brush to apply the coating on the top and bottom of the woven FRP sheets. Apply two coats until the FRP is completely saturated with the coating. Brush the coating over the abraded surface of the FRP manhole liner, the grouted surface and the inside edge of the PVC pipe. Use a UV light to dry the Solarez Vinyl Ester coating per manufacturer's recommendation.

### Supplies Needed

- ✓ Sponge
- ✓ Bucket
- ✓ Water
- ✓ Spray Bottle with Acetone
- ✓ Paint Brush
- ✓ Trimmed Woven FRP Sheets
- ✓ Solarez Vinyl Ester Coating
- ✓ UV Light Stand

## 8 Apply gelcoat over the Solarez Vinyl Ester.



After the Solarez Vinyl Ester coating has dried, inspect all coated surfaces and ensure that the area is completely sealed with the coating. If there are gaps reapply the coating and cure it with UV light. Use a paddle wheel mixer and gallon size plastic pail to mix the A&B parts of the gelcoat resin supplied together with the color. The resin is supplied in correct portions and mix all of the products supplied together. Use a paint brush to apply the gelcoat over coating and abraded surface of the manhole shelf and allow to dry.

### Supplies Needed

- ✓ Plastic Pail
- ✓ Electric Drill
- ✓ Mixing Paddle
- ✓ Paint Brush

## 9 Inspect and put into service.



Inspect all coated surfaces and ensure that the area is completely sealed with the gelcoat coating. If correctly sealed, tighten the boot and return the manhole to service.

### Supplies Needed

- ✓ Flathead Screwdriver

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! Note: PVC riser accepts ASTM F477-compliant connector

