HEALTH AND SAFETY

A
Follow all appropriate health and safety requirements and use appropriate PPE.

B
When cutting fiberglass skirts, use cutting tools that are designed for use on fiberglass or composites. Failure to use appropriate cutting tools or blades may damage the fiberglass frame or skirt.

REQUIRED TOOLS

Concrete Saw
White Lithium Spray Grease
FL7A Lifting Handle
Jigsaw
Concrete Mortar or Epoxy Grout

DO NOT THROW, ROLL OR DROP THE COVERS

ROLLING COVERS ON THEIR EDGE WILL DAMAGE GASKETS AND POTENTIALLY THE COVER ITSELF

SUCH DAMAGE WILL NOT BE COVERED UNDER WARRANTY
SITE PREPARATION

Contractor excavates the roadway to create a square opening around the existing cast iron frame. Depth should be 18” or down to the surface of existing concrete utility vault.

**FL90** = 6’ x 6’

Remove the existing cast iron frame and any brickwork or loose debris used to connect the cast iron frame to existing concrete utility vault.

Thoroughly abrade the flat surface in order to remove scale or loose impediments. This will ensure a proper seal between the cover system and the flat section on top of the vault.

Run string lines at roadway grade level.
Measure from the string line down to the flat surface on top of the vault or round concrete riser surface to determine if an adjustment riser is required and if so how many.

Pre-install the required number of adjustment risers and frame to ensure that the top of the frame sits at the correct height.

Trace a circle around the perimeter of frame/riser on the concrete as a guide for placing the sealant.

Using grease pen, chalk or spray paint, make 1 or 2 vertical lines across frame and rings (inside or outside). These will be used to reinstall the components in the correct orientation.
While the frame is in position, using 9/16” spade drill bit, drill 4 No. holes through the flange of the frame and risers. Ensure to score the concrete.

Thoroughly clean the dust from the holes. Brush off the concrete surface.

Remove the components and using a hammer drill and 1/2” concrete bit (5/8” for threaded rods), drill at least 3” for anchor bolts, 4-1/2” for rods, into the concrete at the scored locations.

If using anchor bolts, place in all drilled holes. Do not set them yet. If using threaded rods, first fill holes with 1/4” to 1/3” of 2-part epoxy. Place rods in holes and let set for 15 min. Spread displaced epoxy around rods to eliminate high spots.
Install the tape as shown above, in the grooves of the adjustment risers using two strips of butyl tape – 1 near the outer edge of the frame and 1 near the center of the frame.

If Using Butyl Tape Sealant

Apply two continuous 1/2" beads of the butyl on the structure 1" from opening and 1" from the traced line on the concrete.

If Using Liquid Butyl Sealant

Install the adjustment risers and frame, applying sealant to every layer as per the previous step and tapping down with a mallet. For the adjustment risers, apply the sealant into the surface grooves.

Wipe the inside of the adjustment risers or frame.
If using anchor bolts, use a hard rubber mallet or carefully with hammer, tap the anchor bolts until firmly set into the structure. Using a \(\frac{3}{4}\)" open end or box wrench, tighten the anchor bolt nuts with washers until firmly in place.

**CONCRETING**

Once the frame has been installed, clean the frame and cover’s mating surface using white lithium spray grease and clean rags.
**INSTALLATION INSTRUCTIONS**
FL90 Municipal Roadway (40 MPH and under) Manhole Cover Installation Details

18. Place the cover into the frame so that it seats. The locks should be in the “Open” position.

19. Cover the top of the manhole cover with a round sheet of plastic and tape it to the outer edge of the frame. This will protect the surface of the cover and frame from concrete during the installation process.

20. Fill with pea gravel up to a minimum of 8" from the top of the pea gravel to grade level. This will be the thickness of the concrete pad.

21. Insert two layers of 6” x 6” W4/W4 wire mesh reinforcement (ASTM 185).
INSTALLATION INSTRUCTIONS
FL90 Municipal Roadway (40 MPH and under) Manhole Cover Installation Details

**PLAN VIEW**

- Minimum 4" MIN
- CONCRETE REINFORCED WITH 2 LAYERS OF 6" X 6" W4/W4 WIRE MESH REINFORCEMENT (ASTM 185)

**SIDE VIEW**

- Minimum 8"
- CONCRETE REINFORCED WITH 2 LAYERS OF 6" X 6" W4/W4 WIRE MESH REINFORCEMENT (ASTM 185)

**Instructions**

22a
The concrete pad must be a minimum of 6ft square for the FL90.

22b
Insert 1/2" Rebar Dowels as shown.

22c
The concrete pad must be a minimum 8" deep.

22d
There must be a minimum length of 20" from the outside of the frame to the end of the concrete pad.
Pour the concrete. Use a spade or shovel to thoroughly agitate the concrete.

Using a steel trowel, finish the concrete so that the concrete pad is level with the top edge of the frame.

Allow the concrete to cure and remove the protective plastic sheet and tape by using a razor knife to cut it away.

Remove the cover using the FL7A lifting handle.

Clean the frame and cover's mating surface using white lithium spray grease and clean rags.
Replace the cover into the frame and ensure that it is securely seated.

Installation complete.

Operate the locks to ensure that they are working correctly. Turn the locks into the closed position and attempt to remove the cover from the frame using the FL7A lifting handle. The cover should not be able to be removed.