

# INSTALLATION INSTRUCTIONS

FL90 Municipal Roadway (40 MPH and under) Manhole Cover Installation Details

**FIBRELITE** 

PART OF OPW A DOWDER COMPANY

## HEALTH AND SAFETY



Safety  
Gloves



Eye  
Protection



Dust Mask



Ear  
Protection



Dry

Refer to the  
Health and Safety  
Data Sheets for  
further details



**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



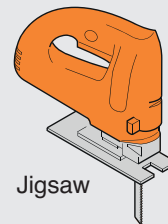
Concrete  
Saw



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**



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## SITE PREPARATION

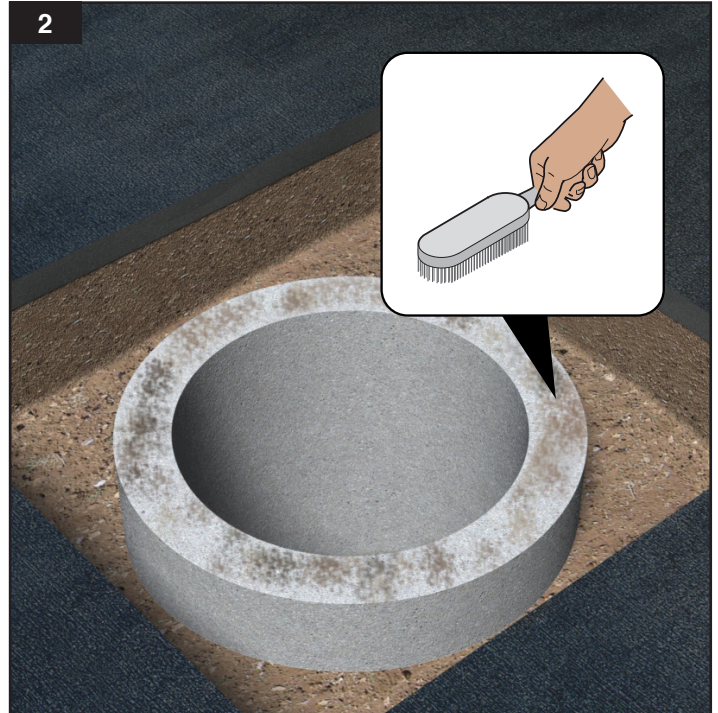
1



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.

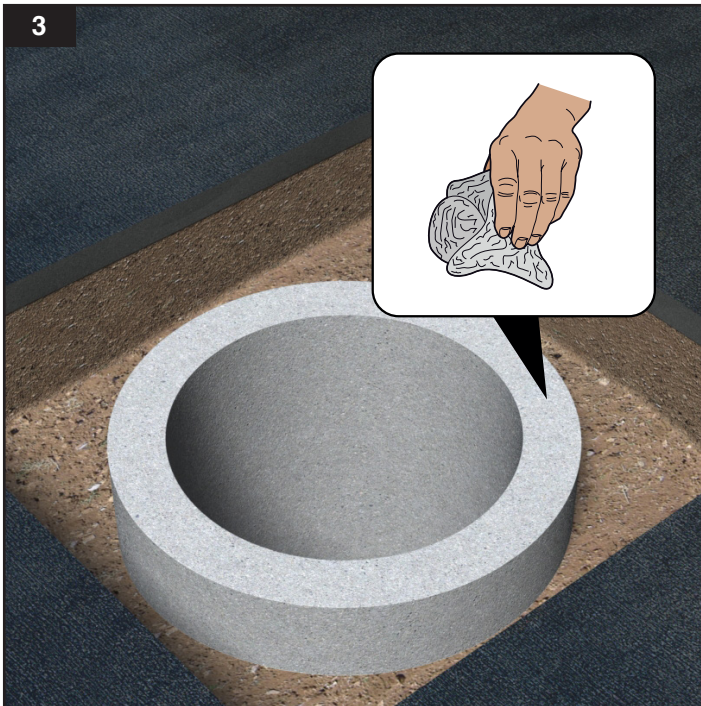
**FL90 = 6' x 6'**

2



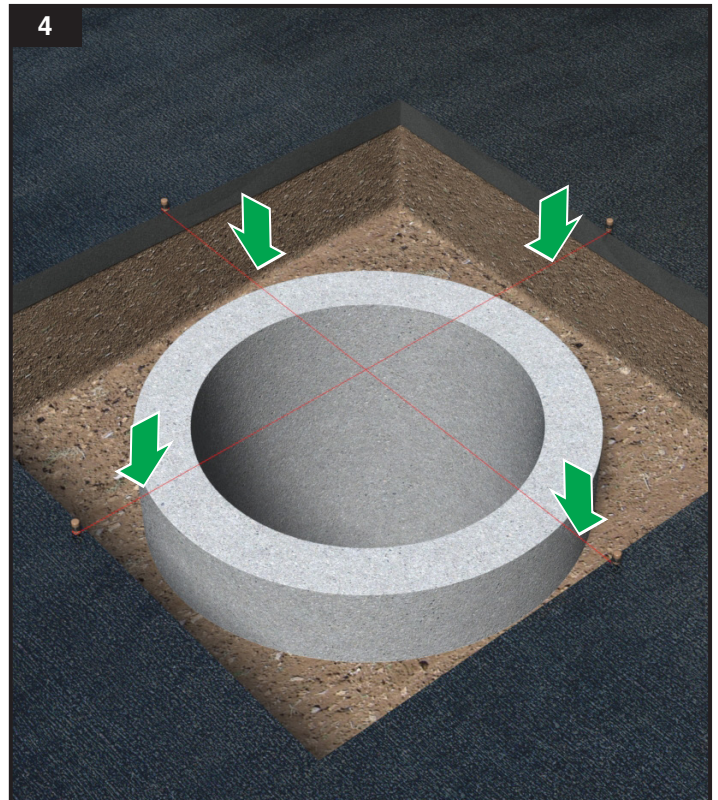
Remove the existing cast iron frame and any brickwork or loose debris used to connect the cast iron frame to existing concrete utility vault.

3



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.

4



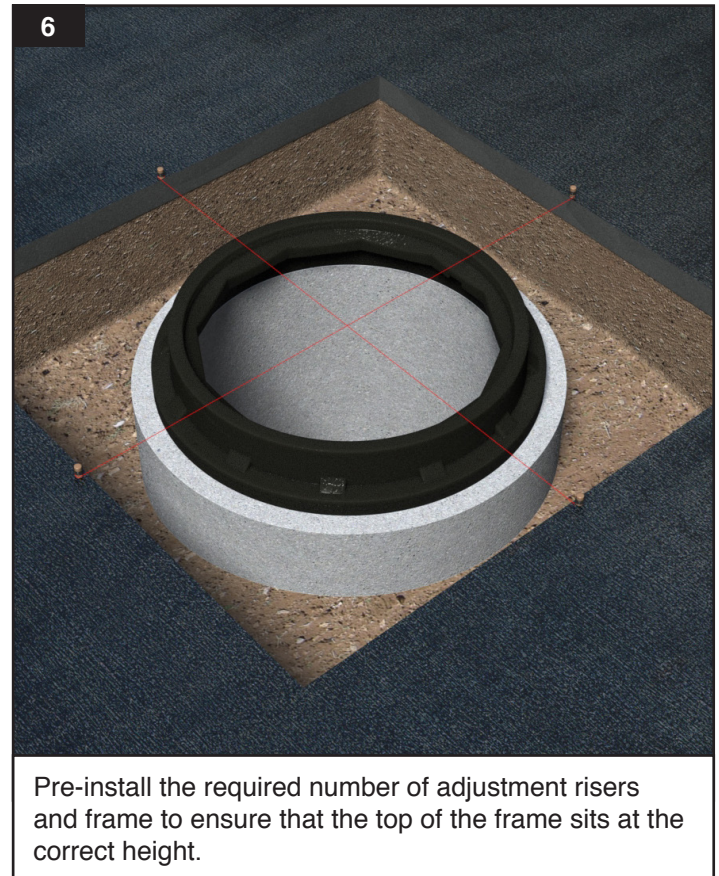
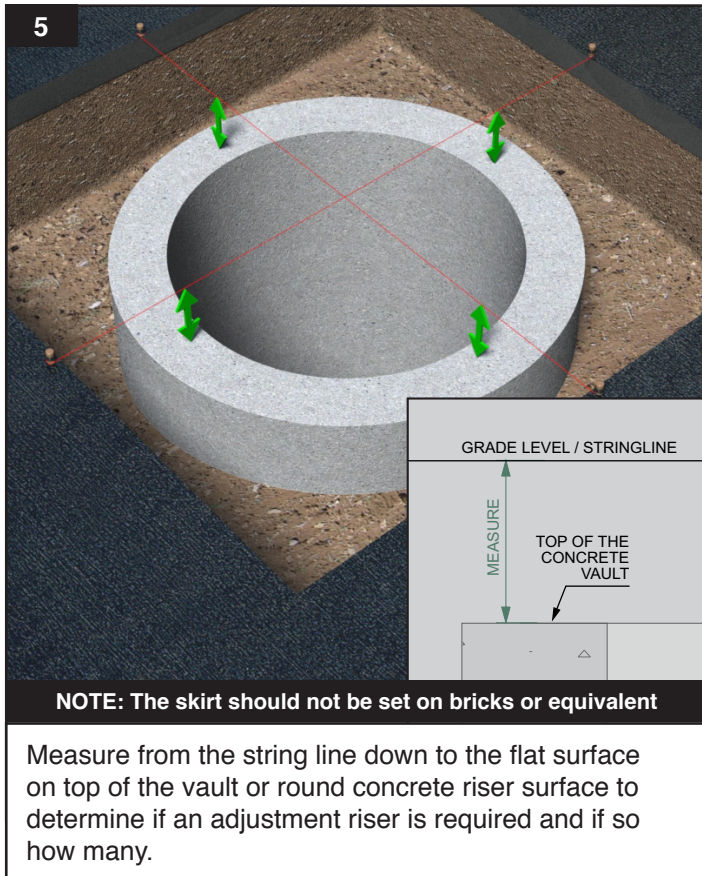
Run string lines at roadway grade level.



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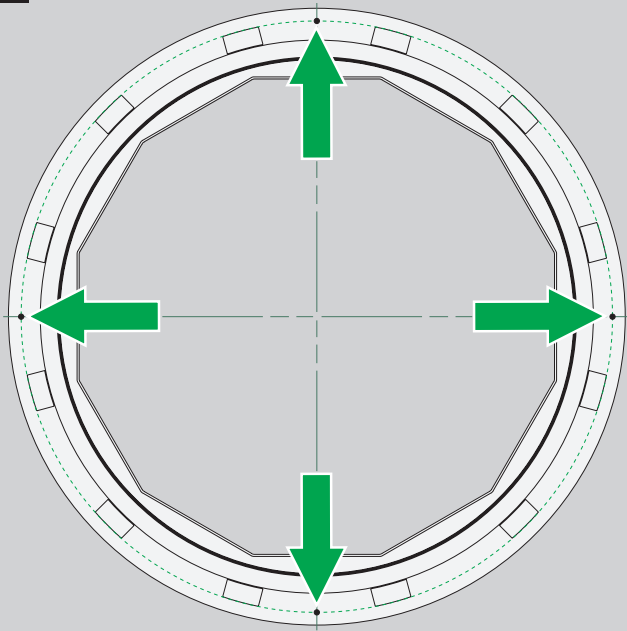


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9



Plan View

While the frame is in position, using  $\frac{9}{16}$ " spade drill bit, drill 4 No. holes through the flange of the frame and risers. Ensure to score the concrete.

10



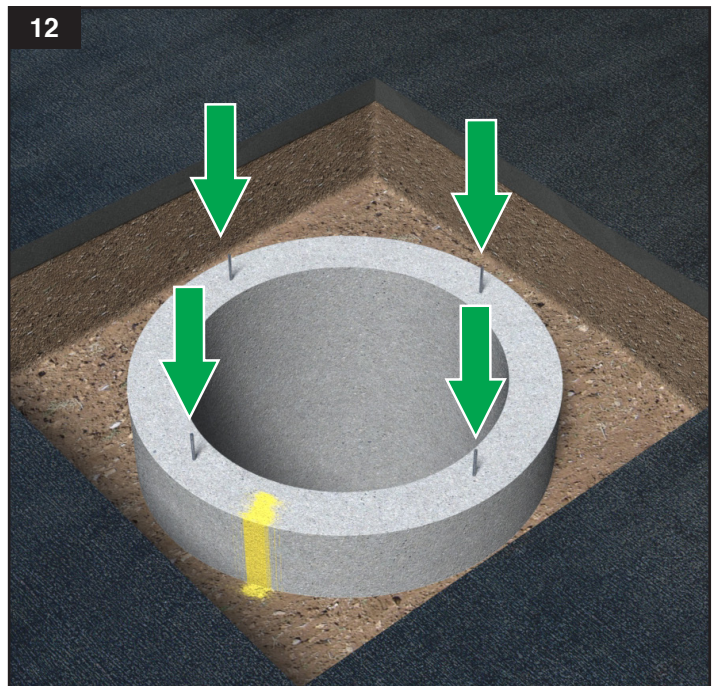
Remove the components and using a hammer drill and  $\frac{1}{2}$ " concrete bit ( $\frac{5}{8}$ " for threaded rods), drill at least 3" for anchor bolts, 4- $\frac{1}{2}$ " for rods, into the concrete at the scored locations.

11



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

12



If using anchor bolts, place in all drilled holes. **Do not** set them yet. If using threaded rods, first fill holes with  $\frac{1}{4}$ " to  $\frac{1}{3}$ " of 2-part epoxy. Place rods in holes and let set for 15 min. Spread displaced epoxy around rods to eliminate high spots.

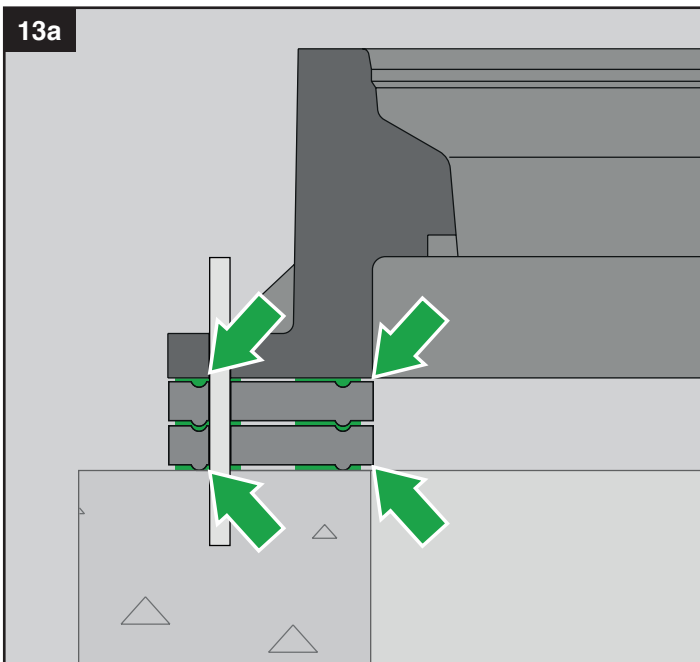


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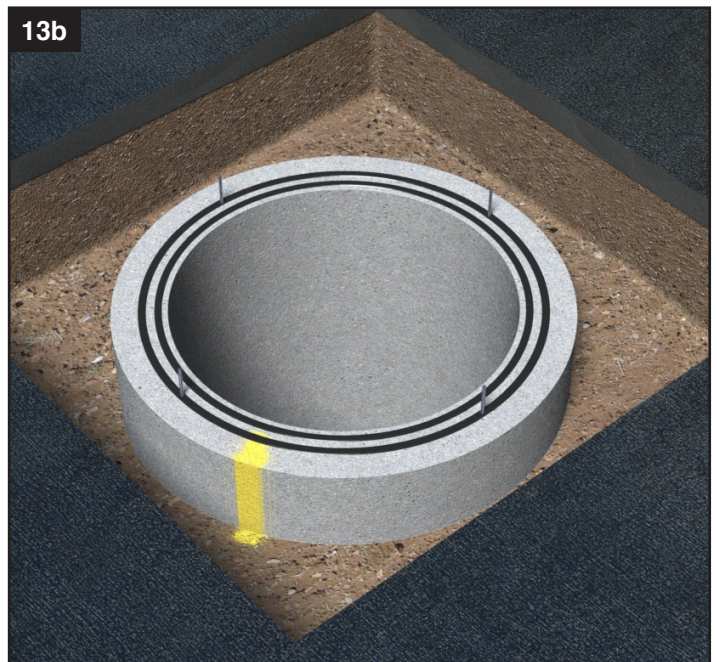
13a



**If Using Butyl Tape Sealant**

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.

13b



**If Using Liquid Butyl Sealant**

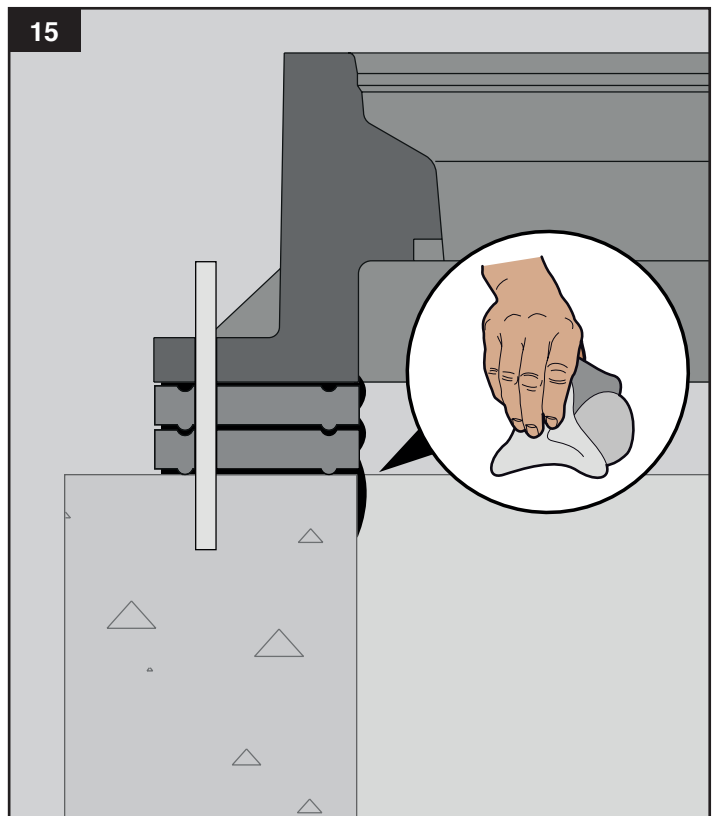
Apply two continuous 1/2" beads of the butyl on the structure 1" from opening and 1" from the traced line on the concrete.

14



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.

15



Wipe the inside of the adjustment risers or frame

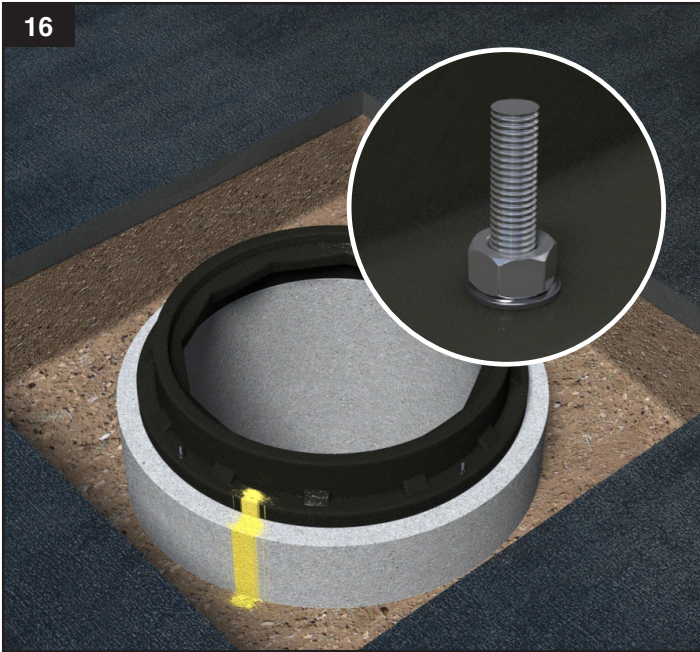


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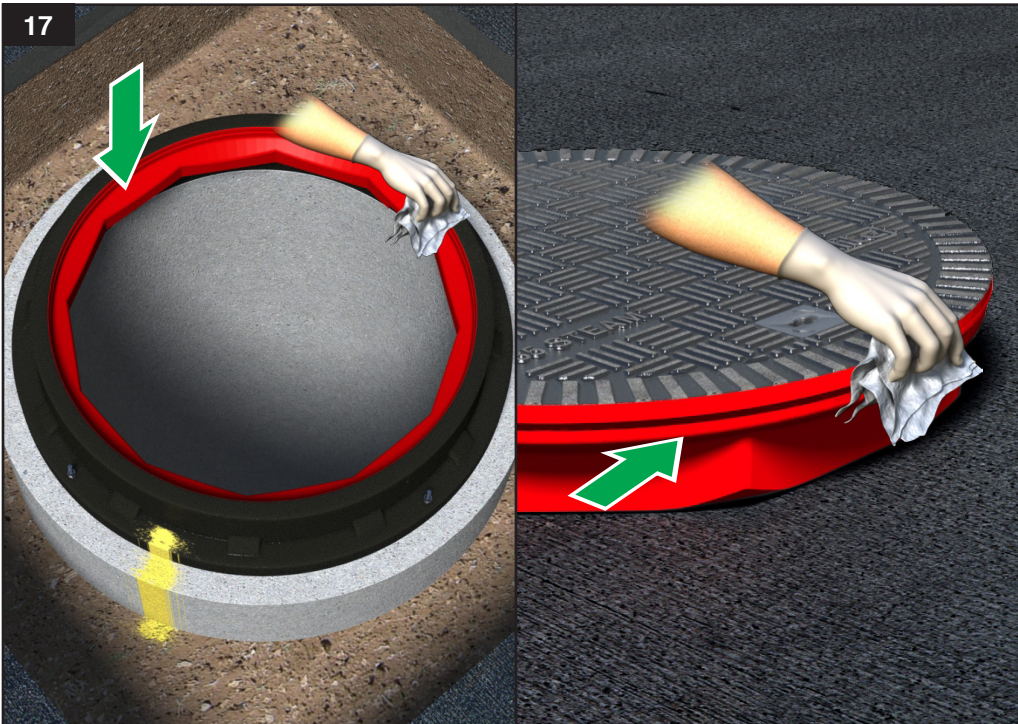
16



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

17



Once the frame has been installed, clean the frame and cover's mating surface using white lithium spray grease and clean rags.



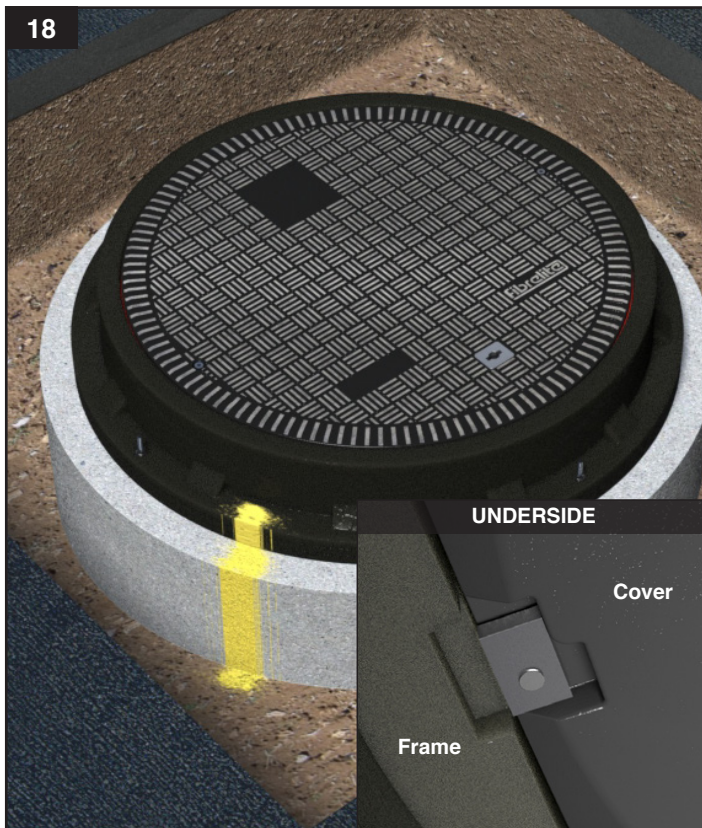


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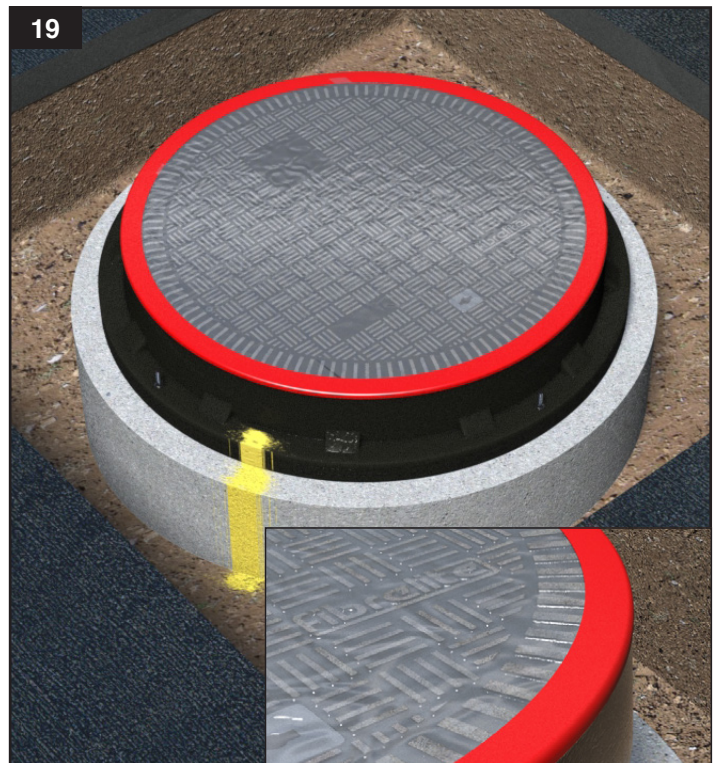
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18



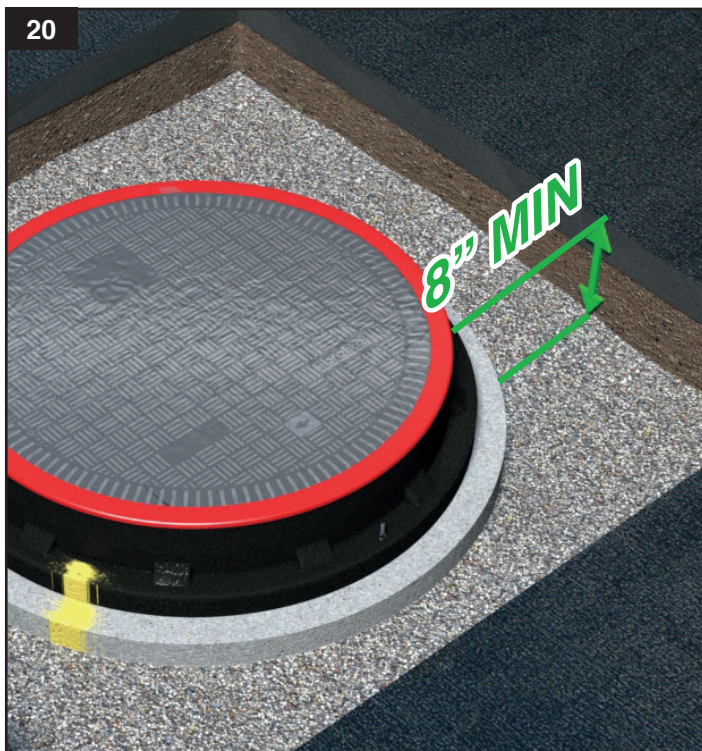
Place the cover into the frame so that it seats. The locks should be in the "Open" position.

19



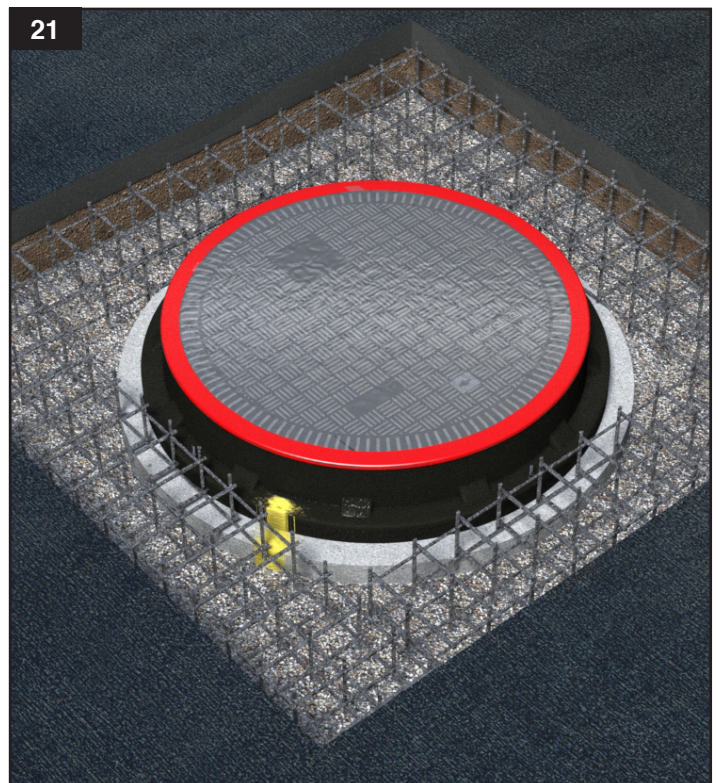
Cover the top of the manhole cover with a round sheet of plastic and tape it to the outer edge of the frame. This will protect the surface of the cover and frame from concrete during the installation process.

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).



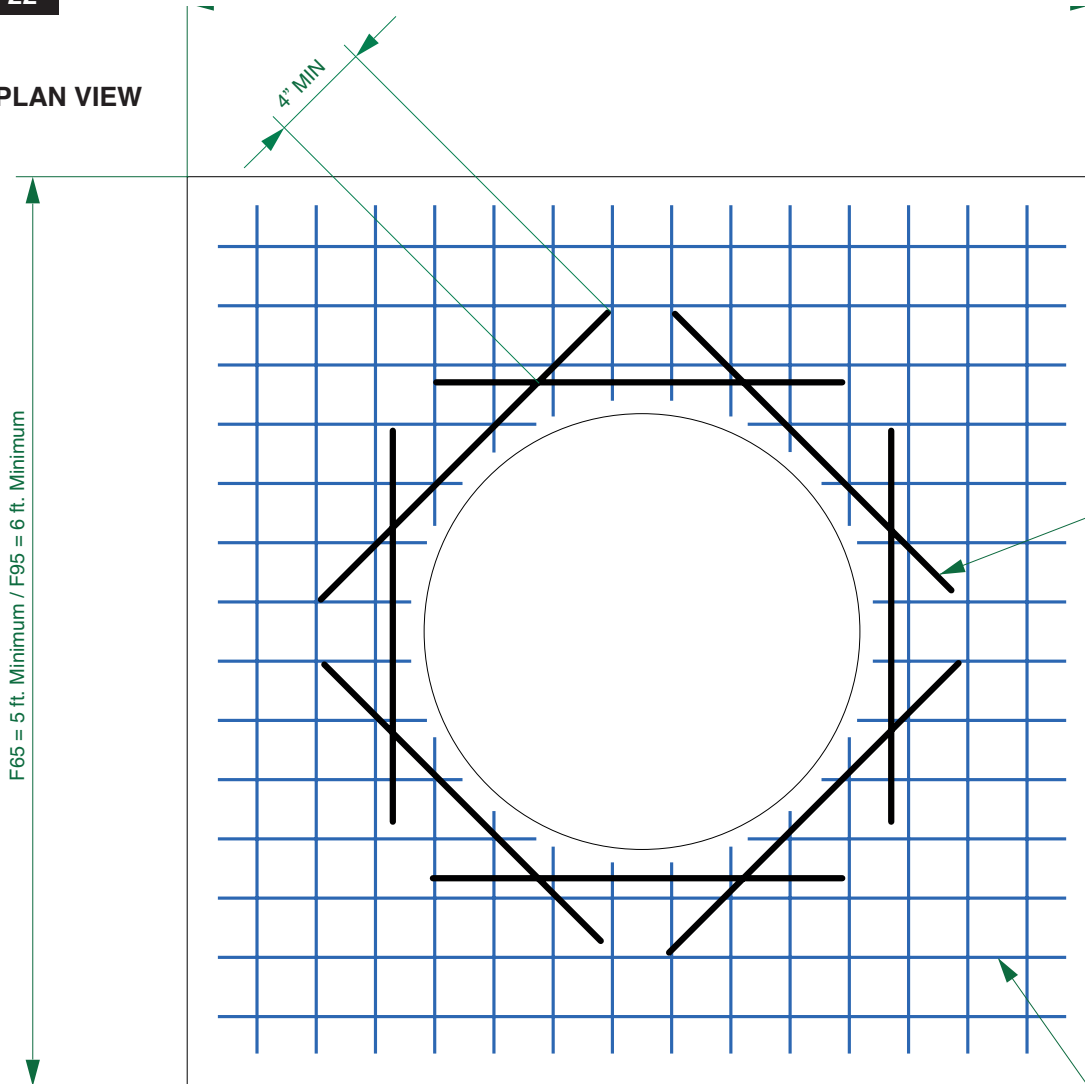
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22

## PLAN VIEW



F65 = 5 ft. Minimum / F95 = 6 ft. Minimum

4\" MIN

22a

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

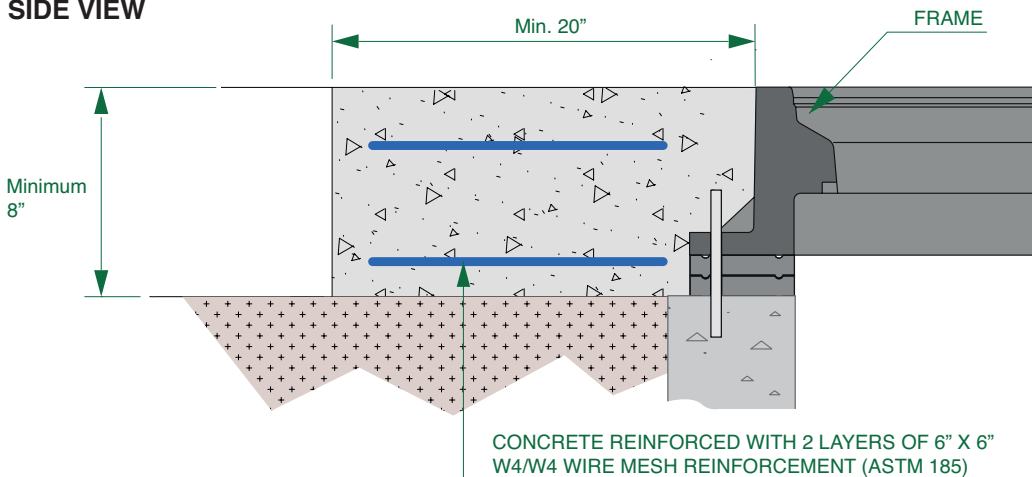
22b

Insert 1/2\" Rebar Dowels as shown.

1/2\" REBAR DOWELS TO BE PLACED AS SHOWN

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

## SIDE VIEW



Min. 20"

FRAME

Minimum 8"

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

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.



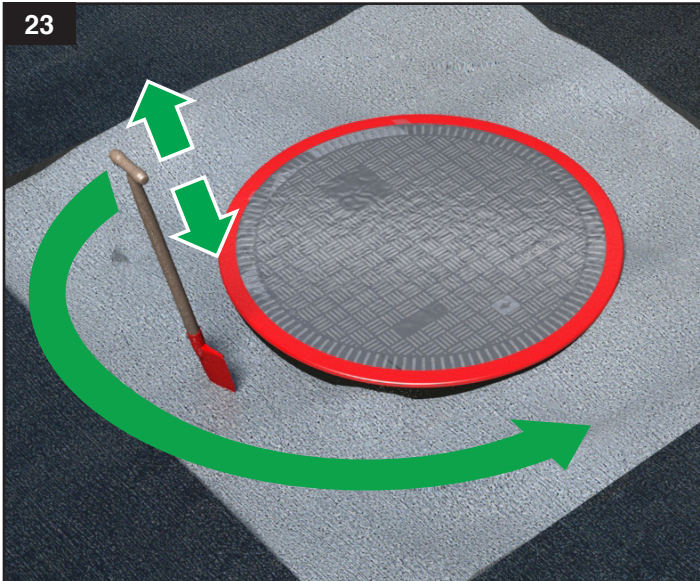
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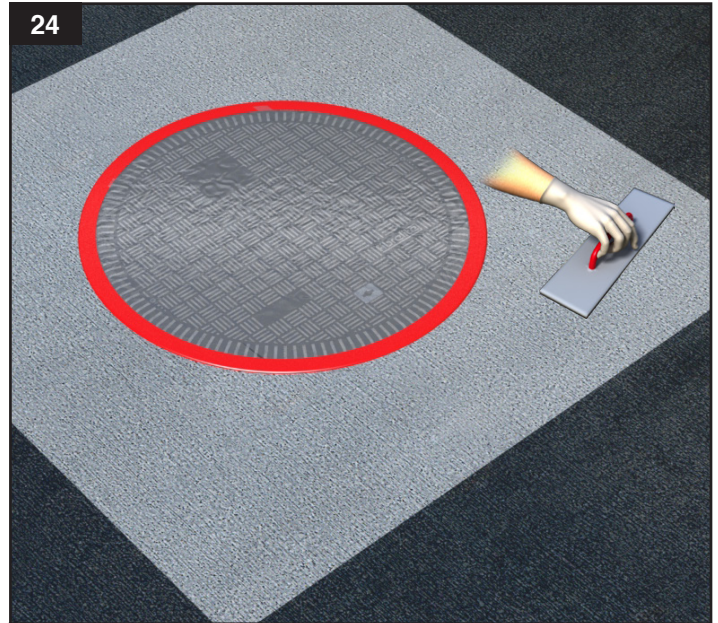
23



**Concrete Specifications: C40P Air Entrained to 5%**

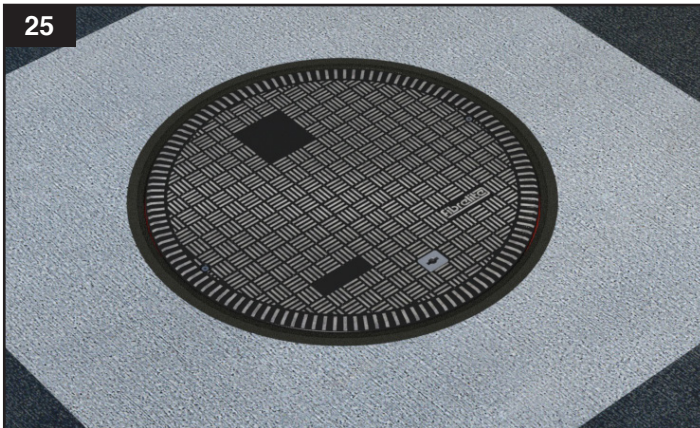
Pour the concrete. Use a spade or shovel to thoroughly agitate the concrete.

24



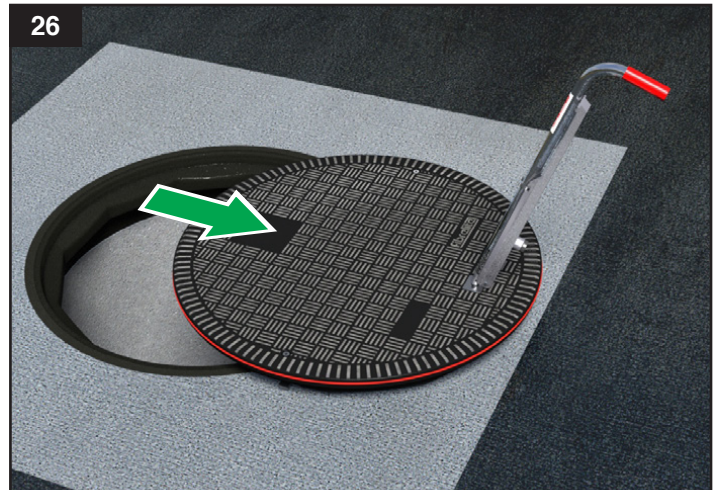
Using a steel trowel, finish the concrete so that the concrete pad is level with the top edge of the frame.

25



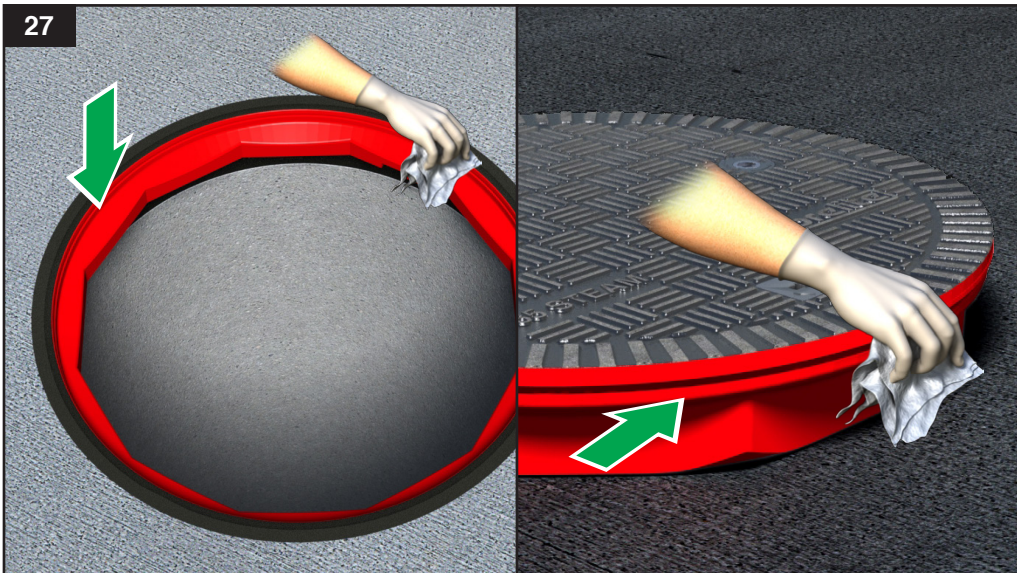
Allow the concrete to cure and remove the protective plastic sheet and tape by using a razor knife to cut it away.

26



Remove the cover using the FL7A lifting handle.

27



Clean the frame and cover's mating surface using white lithium spray grease and clean rags.





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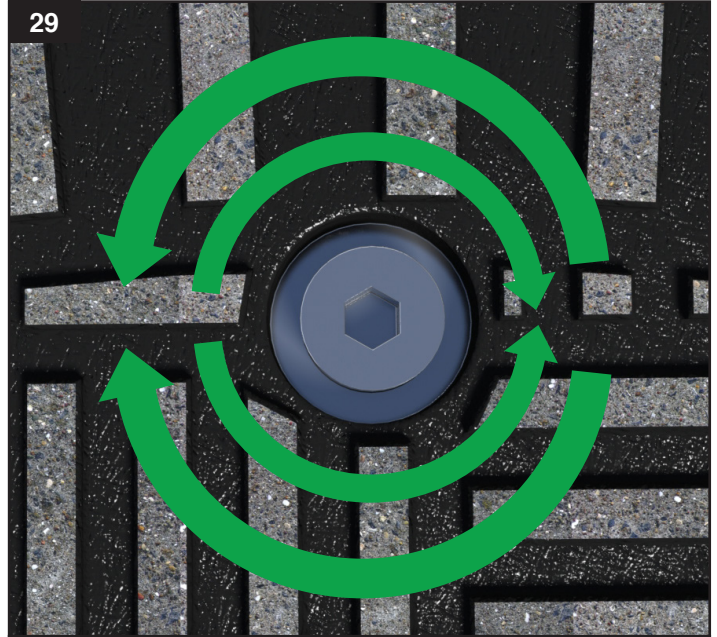
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28



Replace the cover into the frame and ensure that it is securely seated.

29



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.



Installation complete.