

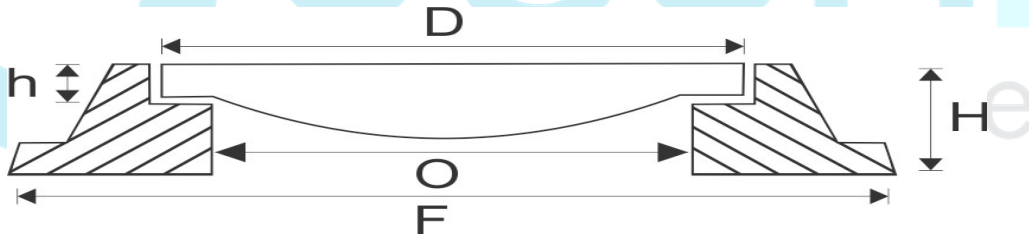
INSTALLATION INSTRUCTIONS

Before Installation:

- All parts must be checked to ensure perfect working order. Never install damaged parts!
- Use suitable lifting device for loading and offloading, and for transporting parts on site.
- Use appropriate tools for lifting out and/or inserting covers to avoid damage. Before inserting the cover, always clean the bearing surfaces and – if it exists – check the seal for cleanliness and correct seating, and ensure that the closing device is in perfect working order and serviceable.
- Before installation clean and wet the underside of the frame.
- The civil engineering contractor is responsible for the correct installation of manhole covers! Observe all technical regulations.
- The planner is responsible for choosing a suitable installation method, mortar quality and the manhole cover position with respect to driving direction.

Size Selection:

- Clear Opening of the frame should not be smaller than the drain clear opening size.
- Shape of frame should be same as shape of drainage opening.
- If possible, always design drain according to industry standard sizes.



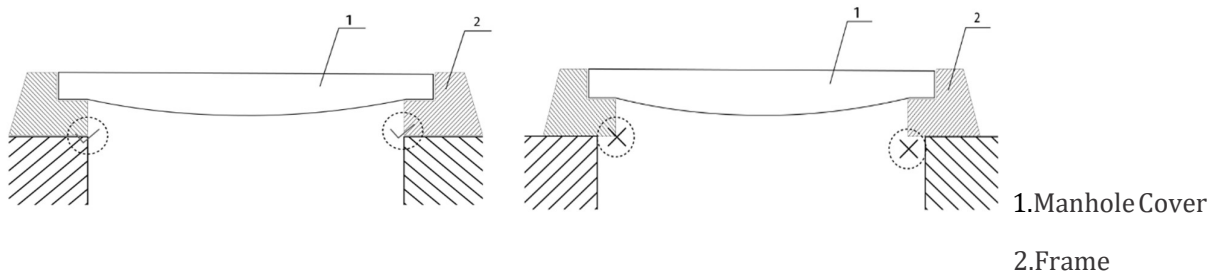
Installation Instructions:

Transport:

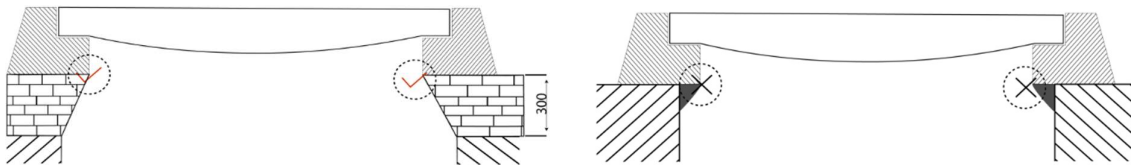
During the transportation of manhole cover, it should avoid massive strike of uncertain part. Manhole cover should adjust correctly to the frame.

How to choose the dimension of manhole cover?

The clear opening (co in short) of the frame should be equal to the manhole co, or larger than the manhole diameter, which can avoid the part of the frame hang in the air, the wrong transfer of loading pressure.



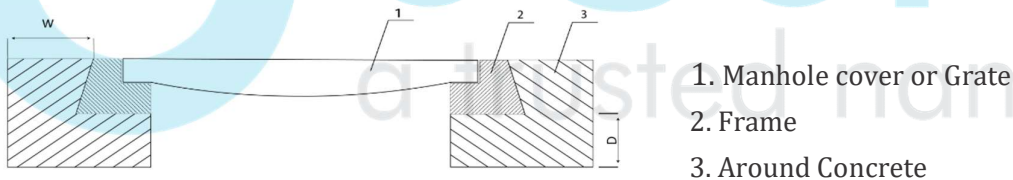
Measures of Remediation:



Notice : The basic level of the manhole should be compacted and level to avoid subsides of the manhole cover after massive pressure. The masonry wall should be integrity, the close up should be uniform.

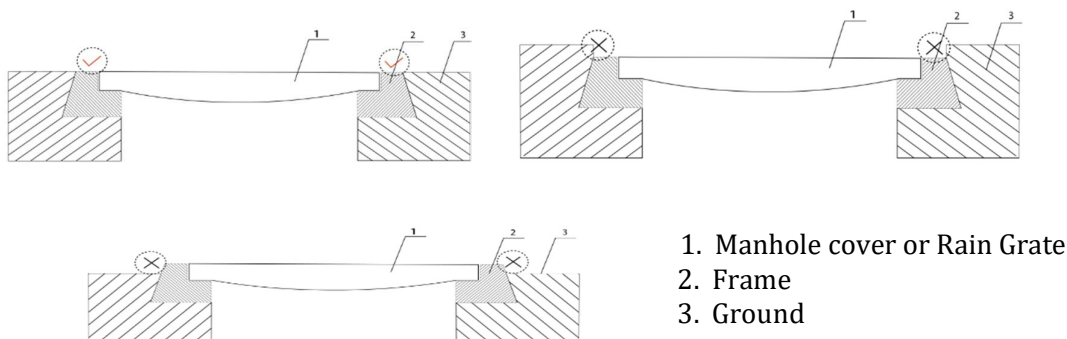
The frame should be fastness well:

The frame bottom should be casting the concrete C25 or even better, the frame around concrete width (w) should be more than 300 mm. the bottom (D) concrete should be more than 200 mm.



The manhole cover surface should be highly consistent with the ground:

Estimation error range <+/- 2mm



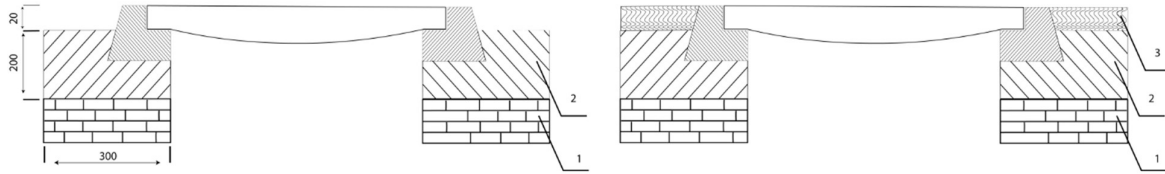
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Asphalt pavement construction program:

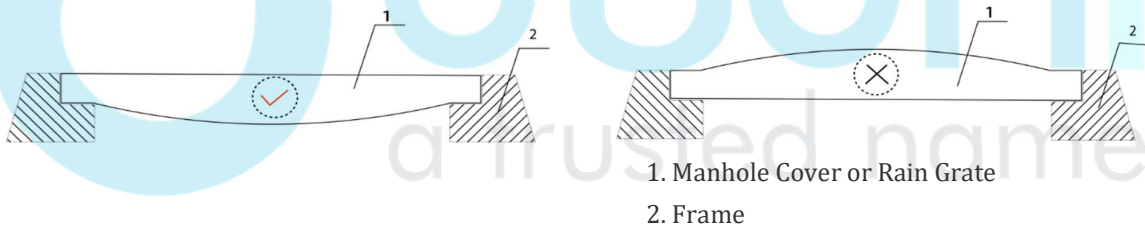
Fasten the frame by pre-cast concrete (c25, c30, c35), and maintain the pre-cast concrete more than 72 hours, then pave the asphalt. The cover frame should avoid the large-scale construction achinery rolling on.



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|---|---|
| <p>A. To support and fasten, there must be 10-20mm cement paste under the frame.</p> <p>B. The frame should be surrounded by concrete with 300 mm width, and 200mm height.</p> <p>C. The Frame can be 20mm above the ground for asphalt pavement.</p> | <p>1. Manhole co should be equal or less than the frame co.</p> <p>2. Concrete base. Asphalt material</p> |
|---|---|

Manhole cover right side up:

Reverse side up will easily broken and reduce the loading capacity.



Expansion Backup Gap:

If the cover or grate have no frame, we should guarantee the expansion backup gap. (total gap width normally be 3-5 mm.)

Precautions Before/After Installation:

- Ensure that the frame is completely resting in concrete on all 4 sides.
- If it is continuous channel, ensure that the frame is completely resting in concrete on 2 sides.
- Ensure that right capacity cover is installed as per EN 124 classification. Always install cover of proper load capacity recommended by company's technical person.
- Don't throw/drop the cover or frame on ground; else it will cause heavy damage to FRP covers.
- choose a suitable manhole cover as per the required Load Bearing Capacity as mentioned in the technical datasheet.

- Do not try to insert pry bars, and don't use hammer. It can damage the covers.
- Use all the lifting slot while lifting the DUDHI FRP covers.
- Dudhi FRP Manhole covers can be lifted using lifting keys provided which engage in key-slot in cover. FRP Gully Covers/Gratings can be lifted using bare hand.
- Although first, they may need to loosen the cover if it jammed in the frame, usually the result of compacted dirt, corrosion and traffic impact.
- Always keep the plastic wrap intact on cover till the time of finalisation of the site work to reduce hazardous operational damages.
- Don't stand/park a vehicle on stacked covers; else it can cause heavy damage on cover. It will also void the warranty.
- Please avoid direct contact with chemicals, acids, fire with the FRP Covers.

Maintenance/Cleaning:

Dudhi FRP covers are durable, and repel stains, bacteria, mould and mildew growth. But, like SFRC/RCC and CI/DI covers, FRP covers are not immune to dust and dirt build-up. You don't need a specialized cleaner to remove debris from the covers. Cleaners you already have in your home or business, along with several other basic household supplies, are all you need to keep your FRP covers stain-free.

Step 1:

Mix in a bucket 1/2 cup (150 ml) of liquid soap and 2 litre of warm water. Wear latex gloves to keep your hands clean. Stir the mixture with a sponge or soft scrub brush. Fill another bucket with 1/2 gallon of warm water and set the bucket off to the side.

Step 2:

Move any vehicles, rugs or accessories next to or on the FRP covers to another area.

Step 3:

Wring out excess mixture and scrub one FRP covers with the mixture-soaked sponge or scrub brush. Re-dip the sponge or scrub brush in the mixture, wring out the excess and continue scrubbing the covers until it is clean. For stubborn stains, spray the stain with a general-purpose household cleaner / NC Thinner and let it stand for five to 10 minutes. Scrub the stain vigorously with the damp sponge or soft brush.

Step 4:

Dip a large, soft cloth or rag in the bucket of warm water you set off to the side in Step 1. Wring out the excess and wipe the FRP covers you just cleaned to remove any mixture residue and remaining debris.

Step 5:

Re-dip the sponge or scrub brush in the bucket containing soap mixture and repeat Steps 3 and 4 for the next FRP covers that needs cleaning.

Step 6:

Let the covers dry naturally or if required dry the covers with a clean, large cloth or rag.