

Dudhi FRP (Fiber Reinforced Polymer) Drain Cover

Description



Dudhi is a leading manufacturer, and supplier of Fiberglass (FRP/GRP) products, with the state of the art technology and constant Research & Development. Dudhi Industries Pvt. Ltd. is an ISO 9001: 2015, ISO:14001:2015, certified company.

Fiber Reinforced Polymer (FRP) manhole cover is a composite material made of a polymer matrix reinforced with Fibres. The type of fiber sheet is woven mesh randomly arranged into the core of polymer in multiple layers. To provide extra strength, a special type of aggregate is added in sequence in the core of the polymer. The composite molded sheet is manufactured with special Technology of engineered process and shapes in various patterns which are called Manhole covers, Sewer Grates, and Lawn covers. This material is having the ability to take the heavy vehicular load as required for all vehicles like motorbikes, cars, buses, trucks, and even fire tenders.

Application Areas:

The range of FRP products offering by us as per the requirement of Infrastructure activities such as building premises and roads drain water management segments.

- 1. Manhole cover:** – Various patterns in circular, Square, Rectangular and double door for bigger sizes.
- 2. Tank Cover:** – Specially designed Air proof tank cover which is useful for hygienic purpose ie- prevent from rain/outside dirt water enter inside the tank.
- 3. Gully Grating:** – Available in Square and Rectangle sizes for Rain/waste water management system. Dudhi Gully Grating offers an innovative grating which is meant for continuing drainage channel like location of ramps and peripherals of basement and building premises. Due to sleek and good length the aesthetics of drain and Ramps are enhance so more.
- 4. Recessed Manhole cover:** – To maintained seamless of floors where the floor rendering with Stone, tile or pavers this recessed cover is better solution for the purpose.
- 5. Lawn cover:** – In green area to keep continuation of grass, this lawn cover can solve the requirement of water ventilation along with the continuation of grass/green ability.
- 6. Tree Grating:-** Tree Grating is recommended to save tree from RCC Structure.
- 7. Composite Manhole Covers can be widely used in :**
 - Inspection chambers for sewerage
 - Underground Electrical Cabling,
 - Telecom Cabling,
 - Water drainage system
 - Gas and Petroleum Installations,
 - Beautification of Landscapes and Gardens.

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फैक्टरी I : M.No.- 56/4, Chak 6PRM, पुगल रोड, दनतौर, तहसील - खाजुवाला, जिला - बीकानेर - 334004 (राजस्थान)
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Standard Compliance

- FRP/GRP/Composite manhole covers are tested for load bearing and permanent set as per BS EN 124:1991 and IS 1726. BS EN 26 is testing code worldwide for Manhole covers in Cast iron, Ductile iron and other materials also. Permanent deformation in cover after multiple loading within a short time as specified in the code.
- HSN Code : 392690
- GST : 18%

Comparison - Performance among CI, RCC and Dudhi FRP Manhole cover

Description	CI	RCC/SFRC (Steel fiber reinforced concrete)	Dudhi FRP
Life Span	Moderate	Low	High
Strength	Moderate	Very Low	Very High
Cost	Moderate	Low	Comparable to CI
Weight	Light	Heavy	Light
Manufacturing System	Manually Casted	Manually Compress	Molecular Binding Technique
Material	Cast Iron	Steel Fiber Reinforced Concrete	Glass Fiber Reinforced Polymer
Water Absorptive/24hours	High Water Absorptive	High Water Absorptive	10-30 grm
Carbon Content	5-10 %	--	Carbon Free
Scrap Value	High	Low	Nil(Zero Value)
Anti Acid/Alkaline	Affected	Affected	Not Affected
Colour Range	Black	Concrete Grey	Range Available
Logo Embossing	Not Available	Not Available	Possible
Flexibility	Bend with load	Bend with load	Come back in bending
Custom Design/Size	Not Available	Not Available	Possible
Handling	Difficult	Very Difficult	Easy
Compressive Strength	Not mentioned	Not mentioned	300-600 Mpa
Thermal Expansion	High	Negligible	Nil
Noise(vehicle movement)	Noise Generate	Noise Generate	No Noise Generate
Break Elongation Ratio	More than 10%	More than 30%	1.3-10%
Corrosion Resistance	Affected with short span	Affected with short span	No Corrosion Affected
Abrasion Resistance	None	None	Yes

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Features & Benefits

Glass Fibre Reinforced Polyester (FRP / GRP) technology is a next-generation technology that is fast replacing the use of traditional materials like C.I., D.I., Concrete, PVC, M.S., etc. due to its superior properties. Just to mention a few, FRP products have zero scrap value, non-corrosive and weatherproof, are light in weight, Watertight, odourless & can be manufactured in several decorative designs, colours & finishes. The specialty of GRP / FRP products: - They are Anti-theft, Anti-Skid & Anti Rust, unlike CI, DI& Concrete. Acid, alkali, weather & UV resistance.



Apporval:

- Central Public Works Department, Government of India (CPWD)
- Public Works Department, Govt. of NCT of Delhi (PWD)
- Airport Authority of India
- Meets standards of Green Pro certification and qualifies as green product

Technical & Physical Parameters

Longitudinal Strength	250-600 Mpa
Compressive Strength	300-600 Mpa
Stretch Modulus	25-35 Gpa
Break Elongation Ratio	1.3-10.0%
Bending Strength	700-1400 Mpa
Poission-Ratio	0.35
Relative Density	1.11-1.15
Water-Absorptive (24h)	10-30 mg
General Application Temperatures In	-40c~120c

Chemical Composition

Composition is formulated from Polymer, silica sand, Glass Fiber and other miner ingredients

Available Sizes

Manhole Cover Circular – 300 mm, 450 mm, 530mm, 600 mm

Manhole Cover Square – 225, 300, 450, 600, 750, 900, 1200 mm

Manhole Cover Rectangular – 300X450, 450X600, 450X900, 600X750, 600X900, 750X900 mm

Water Tank Cover Square – 450, 600, 750, 900 mm

Gully Grating Square – 300, 450, 750, 900 mm

Gully Grating Rectangle – 150X1000, 200X1000, 250X1000, 300X1000, 450X600, 450X900, 600X900 mm

Lawn Cover Square – 450, 600 mm

Recessed Cover Square – 225, 300, 450, 600, 750 mm

Tree Grating Square – 450, 600, 750, 900 mm

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How to choose a suitable manhole cover Load Bearing Capacity

Category	Description
A. Load 2.5T (Point Load/Wheel load 0.8T)	Areas where can be used by footways, pedestrians areas, side walking ways, or pedal cyclists.
B. Load 5T (Point Load/Wheel load 2.5T)	Suitable for use in areas with light Motor vehicle traffic underground parking decks in residential areas.
C. Load 10.0 T (Point Load/Wheel load 3.0 T)	Areas where can be used by footways, car parks, driveways etc.
D. Load 20.0 T (Point Load/Wheel load 5.0 T)	Roads for relatively slow moving traffic, i.e minor residential, cul-de-sacs and frequent traffic area.
E. Load 40.0 T (Point Load/Wheel load 11.5 T)	Areas such as power stations, carriageways, hard shoulders, parking areas for all vehicle types. For high density traffic conditions we recommend the use of vibration resistant locking system.

Shelf-life time

FRP manhole covers have long durability Approximately 50 Years.

Storage & Handling

Transportation: Lay in flat of manhole cover with a pair of Frame and cover plate during transportation.

Handling: Bigger size of manhole cover is heavier in weight so engage two persons at least to carry in loading or unloading. To avoid damage of corners and edges, keep the cover plate in safe place during fixing of frame.

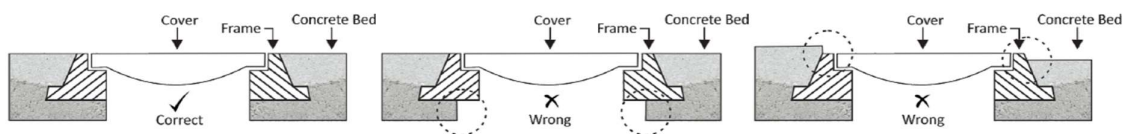
Background Preparation

The foundation of the chamber should be casting the concrete C-30 or even better, the frame around the concrete width should be around 300 mm. **For more specification Follow instruction of Do or Do'N**

Application

- Make sure that top level of the frame should match the road.
- Prepare concrete bed considering height of the frame
- Frame should be allowed to set in concrete for a minimum time of 48 hrs, before its use.

Please note frame is not load bearing and therefore has to be completely supported from all sides. **For more specification follow instruction of installation.**



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Precautions

Do not choose under load capacity it may get damage or harm full during traffic movement.

During the process if any traffic run on the frame or cover will get damage.

Do not use hammer or any other tools to open cover from frame

During fixing the frame have to fixed on chamber with proper position not along with cover plate. The cover plate should lay on the frame after completion of flooring work. **For more specification Follow instruction of Do or Do'N.** The information herein should not be read in isolation as it is meant only as guidance for the user, who should always ensure that they are fully conversant with the products and systems being used and their subsequent installation prior to the commencement of work.

Backed by Superior Service

- Technical Service team offers solutions for application methodology.
- Intermediate site inspections and feedback
- Recommend appropriate sizes for fixing and finishing.
- Large distributed manufacturing capacity hence easy available in time.

know more about us and our range of products, you can log on to our website <http://www.dudhi.in/> or simply write us on info@dudhi.in



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