



Our Design Your Safety



ABOUT US

R.X. FRP manhole cover and grating is an innovative product for Indian building Industry in the sewerage application. FRP (Fiber Reinforced Polymer) is a composite material made of a polymer matrix with reinforced by Glass Fiber. This product has having world wide acceptance since decades and the basic manufacturing technology has compressed molding system with the woven fiber fabrics are randomly arranged in it, which provides more strength and flexibility to the product within complex shapes. This product is having ability to sustain all type of load from pedestrian to heavy load vehicular traffic moving on it.

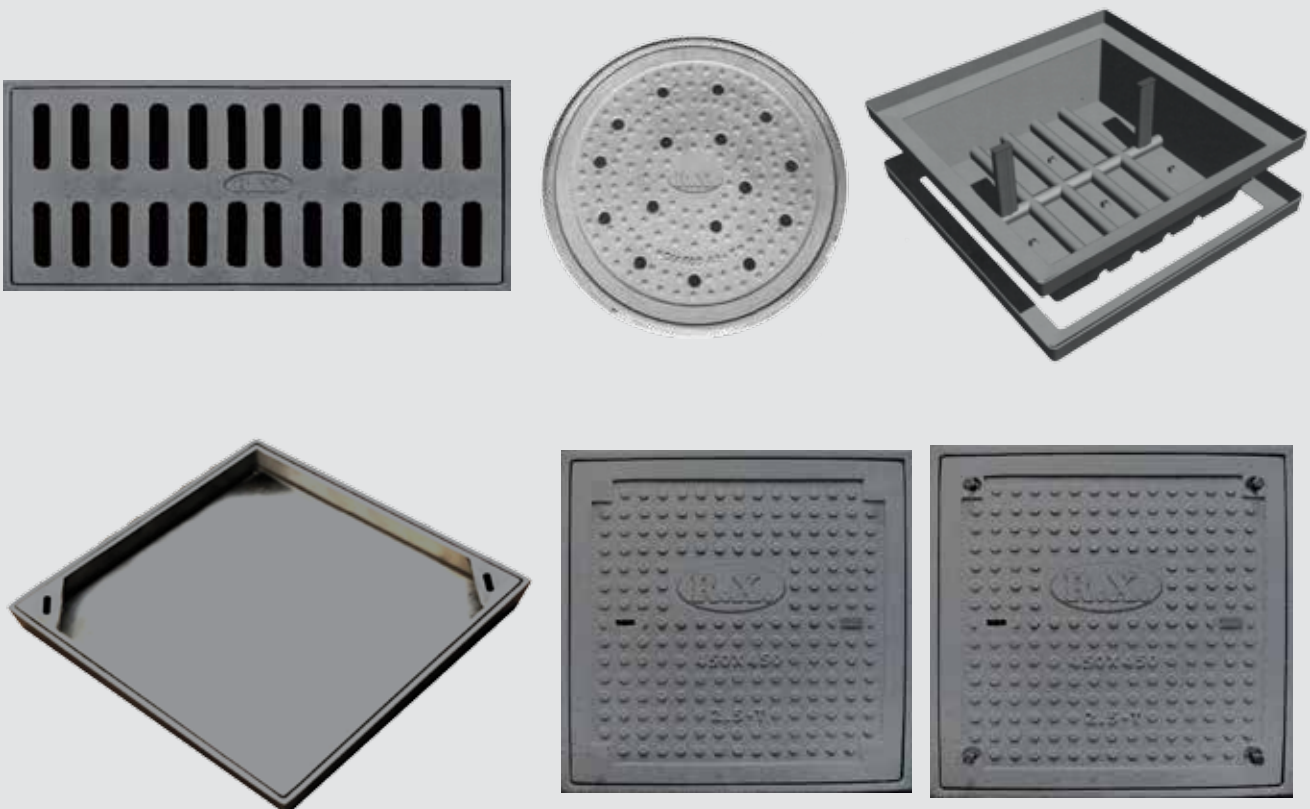
Being an ISO (9001:2008) Certified Company our sincere efforts towards consistent quality products by using the best quality raw materials, certified and state of the art manufacturing facilities and automization production process has helped us to win the trust of our clients and made the most preferred brand in the industry. At regular intervals, our strong technical team and in-house testing facility help us to develop new products. The effective Research and Development system has enabled us to develop technically superior and cost effective products.

Why FRP Manhole Products

Fiber reinforced polymer (FRP) is the next generation polymer made of a polymer matrix reinforced with fibers. These polymers are considered to be the strongest one and most resistive to deforming forces.

Our Offerings

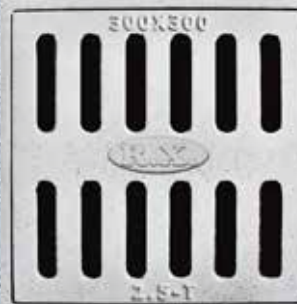
The range of products we have developed which include, R.X. solid top manhole covers, Recess manhole covers, Air tight water tank covers, water gully covers, gratings and tree gratings. All these products are available in different patterns & shapes, including customization of products can be possible as per the requirement of the customer.



FRP Gully Grating

R.X.Gully grating is an attractive product with its double slitting rows provide an aesthetics view when it fixed on chamber. The special design in various pattern such as square / rectangle / circular in sizes are suitable to the areas like basement, ramps and around the green lawn or path ways. The rectangle gratings have its own space with special feature maintain with continuity of water drainage chamber which has an attractive view.

Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)	Cover Thickness (H)	Aprox. Weight (Kg.)
Square	2.5/5/10	300x300	360	400	45	25	13
	20/40	300x300	390	440	70	40	24
	2.5/5/10	450x450	490	550	45	30	18
	20/40	450x450	510	580	70	45	35
	2.5/5	600x600	645	710	45	30	27
	10/20/40	600x600	665	730	70	45	50
	10/20/40	750x750	825	925	75	45	90
	10	900x900	960	1060	60	30	110
	20/40	900x900	980	1080	80	50	160
Rectangle	5/10	150x1000	210x1060	300x1100	55	30	25
	20/40	150x1000	230x1080	340x1120	70	40	35
	5/10	200x1000	260x1060	350x1100	55	30	28
	20/40	200x1000	280x1080	380x1120	70	40	40
	5/10	250x1000	310x1060	360x1080	55	30	24
	20/40	250x1000	330x1080	450x1140	70	40	46
	5/10	300x1000	370x1060	425x1090	55	30	28
	20/40	300x1000	380x1080	480x1140	70	40	55
	10/20/40	450x600	520x670	620x770	65	40	40
	10/20/40	450x900	520x980	620x1010	70	45	52
	10/20/40	600x900	670x970	780x1080	70	45	74
Circular	2.5/5/10	600	680	780	70	40	45
	20/40	600	690	790	80	50	50



FRP Manhole Cover

Mostly the manhole cover used in variety in sizes as square / rectangle / circular as comfortable to customer's choice. These patterns are accepted in global level due to its impressive design. The frame and cover plate is specially designed and fitted properly in between as not to allow foul smell to emanate from the chamber or does not permit foreign particles to enter the chamber. The key holes, providing on top of cover plate helps to easy lifting by the time of service as required. Generally the square / rectangular / circular manhole cover is preferred for the buildings like school, hospital, shopping mall, corporate towers, factories, housing apartments and individual bungalows and goverment buildings, apartfrom roads as highways, sector roads & service roads.

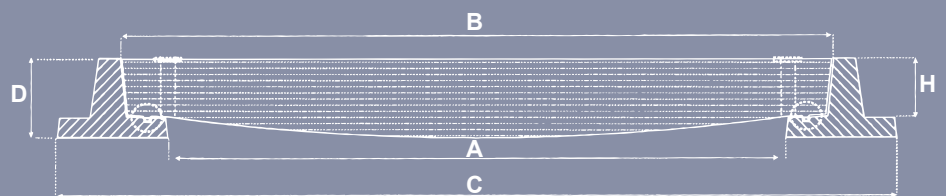
Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)	Cover Thickness (H)	Weight (Kg.)
Square	2.5/5	225x225	250	320	40	15	6
	10/20/40	225x225	290	375	50	20	10
	2.5/5	300x300	325	390	40	15	7
	10/20/40	300x300	375	425	50	30	24
	2.5/5	450x450	475	540	40	15	14
	10/20/40	450x450	490	570	60	40	40
	2.5/5	600x600	640	710	50	25	28
	10/20/40	600x600	660	740	60	40	60
	10/20/40	750x750	830	930	80	40	90
	20/40	900x900	1000	1120	90	50	110
	40	1200x1200	1320	1440	100	60	130
Rectangle	2.5/5/10	300x450	330x480	390x540	35	15	8
	20/40	300x450	370x520	410x580	60	40	12
	2.5/5	450x600	490x640	560x710	40	15	30
	10/20/40	450x600	520x660	600x750	60	40	48
	2.5/5	450x900	510x960	610x1040	40	25	46
	10/20/40	450x900	520x965	615x1065	90	50	75
	10/20/40	600x750	680x830	780x930	80	50	80
	10/20/40	600x900	680x980	780x1080	90	60	100
	20/40	750x900	840x990	960x1110	90	60	120
	Circular	2.5/5/10	300	360	460	40	25
20/40		300	360	460	75	40	16
2.5/5/10		450	510	610	40	25	18
20/40		450	520	620	75	40	28
2.5/5/10		530	590	690	40	25	26
20/40		530	610	710	80	40	47
2.5/5/10		600	660	760	50	25	30
20/40		600	670	770	80	45	55



Air Tight Water Tank Cover

R.X. Water tank cover is specially designed and developed with considering safety and hygienic point of view. It consists of double frame and a special type of seal is used in between the frame and cover. then fastening with 12 mm special coated bolt on all corners as the cover plate tight with frame to make the cover air proof though the outside water is not allow inside the tank.

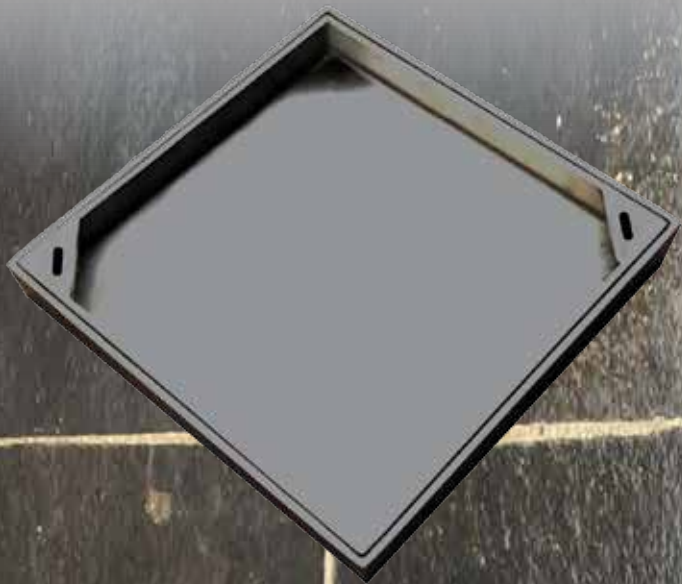
Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)	Cover Thickness (H)	Weight (Kg.)
Square	2.5/5/10	450x450	510	610	50	25	30
	20/40	450x450	550	650	80	40	53
	2.5/ 5/10	600x600	660	760	50	25	44
	20/40	600x600	690	790	80	40	85
	20/10/40	750x750	840	940	80	40	100
	40	900x900	1000	1100	80	40	110



Recessed Cover

FRP Recessed manhole cover is having an extra-ordinary feature that it helps to continuity of floor finish. Generally the floor renderings are stone, tile or pavers. Hence to maintain the same finish the recessed manhole is very use full. Rather the cover is easy to handle during service and most durable compared to fabricated or casted alloy materials.

Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)	Cover Thickness (H)	Recessed Height (h)	Weight (Kg.)
Square	2.5/5/10/20	300x300	375	480	90	70	40/100	23
	2.5/5/10/20	450x450	530	630	90	70	40/100	34
	2.5/5/10/20	600x600	670	770	90	70	40/100	53
	10/20/40	750x750	830	930	110	80	40/100	95



Tree Grating

R.X. Tree grating is a decorative pattern of modular grating with frame and cover which is suitable to maintain tree area sanitization. Generally tree roots required moisturized water. It helps to allow watering to the root and oxidization support as the tree can grow and flourish. So this tree grating will provide the necessary aspects apart from an aesthetics look. This is strong, durable and not to get damage in normal condition. The application areas are trees within boundary of residential apartment, Firm house, malls, restaurant, club house, commercial building and corporate office complex.

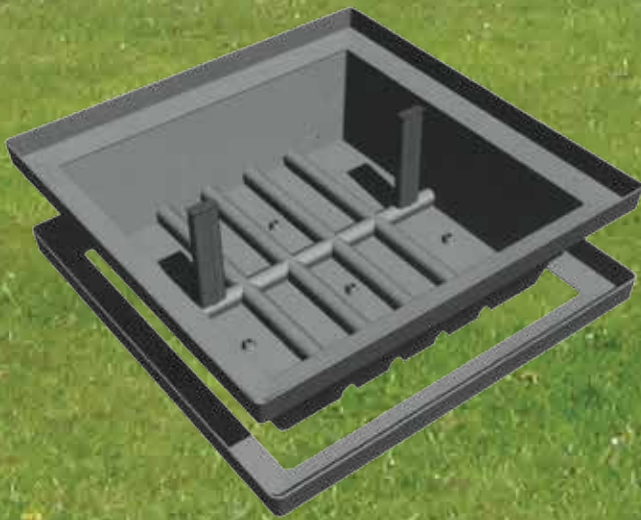
Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)	Cover Thickness (H)	Weight (Kg.)
Square	2.5/5/10	450x450	495	555	45	30	15
	2.5/5	600x600	645	710	45	30	25
	10/20/40	750x750	825	925	75	45	90



Lawn Cover

R.X. FRP Lawn cover is recommended for green area application. It helps to continuation of green grass in lawn-area and basically it is a readymade pit which carries the soil and grass on top and having ability to pass out the excess water from the lawn. It consists the frame and cover pit which is easy to carry out with the help of key, during the service and as necessity.

Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)	Cover Thickness (H)	Weight (Kg.)
Square	200kg	450	530	550	150	30	4
	500kg	450	530	550	150	30	4
	750kg	450	530	550	150	30	4
	200kg	600	675	695	150	30	10
	500kg	600	675	695	150	30	10
	750kg	600	675	695	150	30	10



Mesh Gratings

R.X. FRP Gratings combines high chemical and corrosion resistance and durability. It can be fitted with 'L' angle of iron or any material. Light weight, fancy and easy to handle by nature and mostly preferred to non traffic area. The locations like walkways, water treatment plant, swimming pools, footpath, green belt corridor and basement where vehicles are not in movement are suitable for this product. Besides industrial use as Chemical & petroleum, oil, gas plant, food & beverage plants are preferred this product for their use.

An aesthetic concern it looks very nice with its small grids and with various colors. Self pigmented in manufacturing process assure the life and sustainability of colour without fade.

Item	Load Capacity (M.Ton)	Clear Opening (A)	Cover Size (B)	Frame Size (C)	Frame Height (D)
Grating-30	5	30x30	8	1120x2262	20
Grating-32	10	32x32	8	1160x2430	23
Angle-35	5	35x35	4		
Angle-45	10	45x45	4		



CHEMISTRY OF FORMULATION

Top Layer

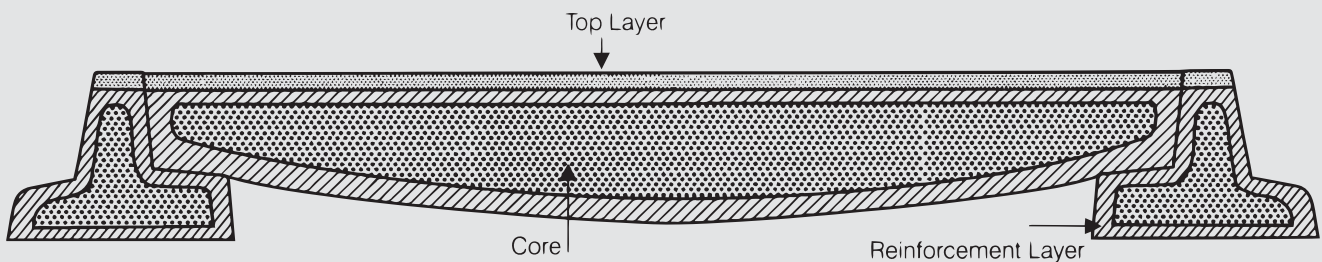
R.X.FRP manhole cover products are specially designed and formulated with an advance technology. The composite product consists of frame and cover plate to perform correct outcome which is required as per system. The top layer of the product consists of a mixture of UV Stabilized resin and Isophthalic based Gelcoat which provides high abrasion resistance.

Reinforcement Layer

This layer is specially designed and arranged the multiple layers of fiber glass reinforcement depending on the required load bearing strength to the product. This sustains the tensile load applied on the cover.

Core

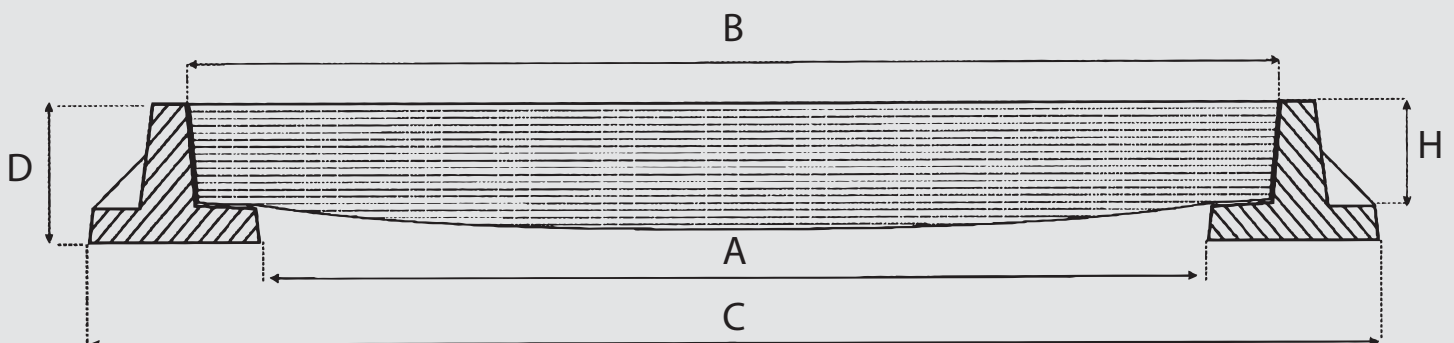
The core of the product consists of a specially formulated mixture of resin and polymer concrete. Functionally this treated core provides rigidity and bears the compressive load applied on the cover.



CHEMISTRY OF INSTALLATION

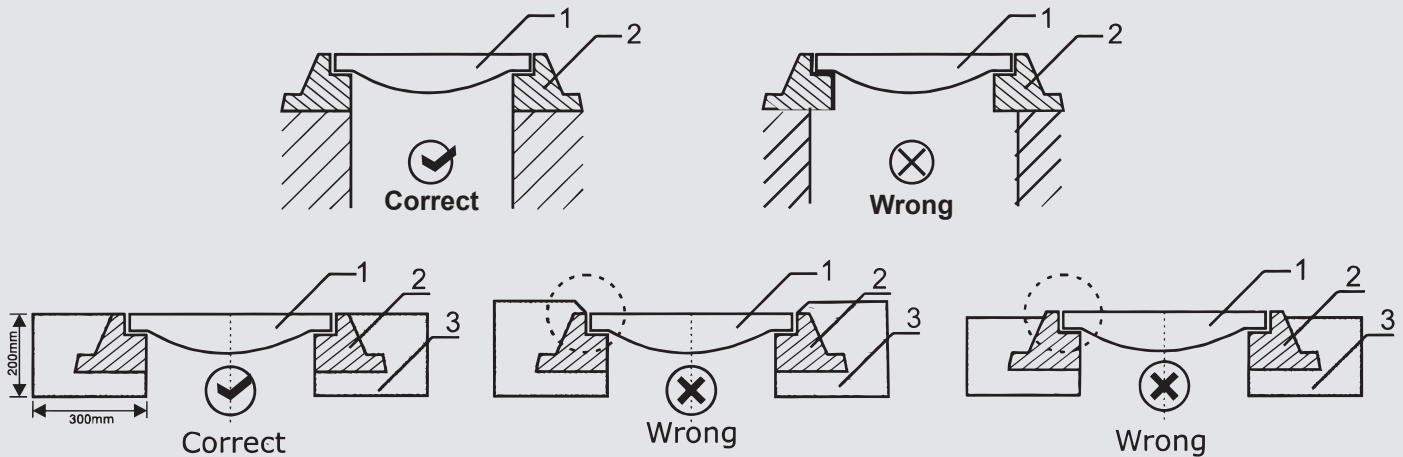
Size selection:

- The size of manhole cover or grating determines to the clear opening of the frame.
- The shape / size of the clear opening of manhole cover should be same as clear finished of the chamber.
- If possible the chamber opening must be finished after consideration of size and pattern of man hole cover or grating.



Installation procedure:

- To fix the frame, a concrete bed is mandatory and it should not be minimum M-20 Grade concrete mixture.
- The concrete bed to be prepared after considering the height of the frame.
- The chamber where the frame to be rest should be level properly so that the frame is uniformly supported.
- If the concrete bed is not available then a RCC beam to be casted to support as a solid back ground and it should be minimum 100 mm in height of M-20 grade concrete.



Handling

- To carry the material with care and not to detach the cover plate and frame before use.
- Do not through the material.
- Always carry and stack the pieces in flat.
- Do not allow to hit the corner it may get damage.
- Do not impose load or trial test before properly fixing on the appropriate chamber.

COMPARISON WITH R.X. FRP VS CI & SFRC MANHOLE COVER

Description	R.X.FRP	CI/DI	SFRC
Life Span	High	Moderate	Low
Corrosion Resistance	High	Poor	Medium
Thermal Expansion	Negligence	High	Low
Streth & Weight ratio	Very High	Moderate	Low
Colour Range	Availble	Not Availble	Not Available
Finishing	Exellant	Normal	poor
Customization	Offering	NO	No
Locking System	Availble	Not Availble	Not Available
Scrap Value	Nil	High	Low
Cost	Very High	Moderate	Low
Handeling	Easy	Difficult	Very Difficult
Logo Embossing	Availble	Not Availble	Not Available
Abrasion Resistance	Yes	None	None

LOAD CAPACITIES AND GRADATION AS PER IS : 1726 (1991)

Grade	Grade Designation	Recommended Application
Light Duty	LD-2.5 (Wheel load 0.8T)	Suitable for use within residential boundary, walking path ways, pedestrian areas and pedal cyclist.
Light Duty	LD-5.0 (Wheel load 2.5T)	Recommended areas like traffic of light moter vehicle (less than 3 tons), basement parking and parking decks in residential areas.
Medium Duty	MD-10 (Wheel load 3.0T)	Areas as service lanes/roads, on pavements with medium weight moter vehicle traffic including car parking .
Heavy Duty	HD-20 (Wheel load 5.0T)	Suitable for use in city trunk roads, bus terminal, areas where heavy duty moter vehicle traffic, cul-de-sacs and fequent traffic area.
Extra Heavy Duty	EHD-40 (Wheel load 11.5T)	For high density traffic area and all type of vehicles like loaded trucks, containers, trailers upto fire tender. Suitable for areas like Industrial Park, warehouses, Godowns and roads as main roads, sector roads and national highways.

PRODUCT FEATURES

1. Anti-slide
2. Anti-Theft
3. Customized sizes
4. Durable (Aprox-30-40years life)
5. Acid, Alkali, Weather Resistance

PHYSICAL CHARACTERISTICS

Shape available	Circle, Square, Rectangle and Customized
Working Temperature	-10 TO 120 degree centigrade
Noise	Reduced noise and vibration
Conduction	Non - Electricity and heat conduction
Colour	Standard gray and facilitated as per customer choice.
Surface treatment	Anti - slip, anti - UV
Technique	Mould Pressing
Packing	Card board or as customer's need.

TECHNICAL SPECIFICATION

Description	R.X.Manhole cover performance
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
Poisson - ratio	0.35
Relative Density	1.11 - 1.15
Water absorption(24 h)	10 - 30 mg

LOAD TESTING

FRP/GRP/COMPOSIT products are tested for LD (2.5/5 Mt) MD (10 Mt), HD (20 Mt) & EHD (35 Mt above) load bearing and permanent set as per BS EN: 124 , IS: 1726 (1991). BS EN: 124 is a testing code worldwide for manhole covers in cast iron, ductile iron and other materials also. Permanent Set is a multiple loading test to determine the permanent deformation in cover after multiple loading within a short time as specified in the code.

We have in-house testing facility where we are conducting regular test in batch to batch for the confined to quality consistency in the product.



Impact On SFRC/CI Manhole Cover



R.X. FRP Product





R.X. FRP Dustbin Single Pattern

Weight : 16 kg Approx.

Capacity : 60 Ltr

Size L24" x B16" x H32"

R.X. FRP Dustbin Double Pattern

Weight : 20 kg Approx.

Capacity : 60 Ltr x 2

Size L32" x B16" x H32"



R.X. FRP Dustbin Triple Pattern

Weight : 28 kg Approx.

Capacity : 60 Ltr x 3

Size L47" x B16" x H32"



BUILDING SOLUTION

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