

**EASY TO HOLD  
TOUGH TO BEAT**



## ABOUT US

THERMOSET POLY PRODUCTS (I) PVT. LTD. (ISO 9001 : 2008)

THERMOSET POLY PRODUCTS (I) PVT. LTD. (ISO 9001 : 2008) is a Design and Manufacturing Company located in Navi Mumbai, Maharashtra, India. The company is established in 1993 with industrial equipments being Manufactured for the corrosive industry in India and abroad. Backed with a strong Design, R & D and technical team, we have successfully developed products like windmill nacelle covers in FRP for the wind power industry, THERMOWOOD manmade artificial wood with zero wooden ingredients (yet to be launched) and FRP/GRP/Composite THERMODRAIN solid top & recess manhole covers, STP tank covers, water gully covers, water tank covers, gratings and septic tanks for the sewerage, electrical and telecom chambers.

With a strong technical team and in-house testing facility, we have been engaged in developing new products at regular intervals. Our R & D department has enabled us to develop technically superior and cost effective products. Our consistent and technically superior products has enabled us to export and establish our products in different countries. Our team strength of 250 people includes a well spread marketing team in India and abroad.

Our Manufacturing facility of 40,000 sq. ft. is spread over a factory area of 1,60,000 sq. ft. With an intent to manufacture quality products on consistent basis we have been stringently testing our products under third party agencies as per relevant testing standards like BS EN 124, 1994, IS 1726, BS 4994 and AASHTO.

## PROPERTIES OF FRP/GRP

- FRP as a material is resistant to sunlight, water, chemical water, sewerage water.
- UV stabilizer is added to the raw material to impart UV resistance.
- Density of FRP Manhole Covers is 2 kgs/m<sup>3</sup>.
- FRP has high impact resistance as it is flexible and not brittle. Hence, in case of excess load the FRP Covers /gratings do not disintegrate into pieces like Cast Iron or Ductile Iron.
- The strength to weight ratio in FRP is much higher than other materials. Hence, the strength is higher even with lesser weight of FRP.
- During manufacturing, FRP cures at a self exotherm temperature of 175 degree C.
- FRP is a thermoset material (non reversible and cannot be melted) and not a thermo plastic (reversible and can be melted). Hence, the non reprocessability protects it from theft and extreme sunlight does not soften the material.
- FRP is a suitable material under extreme hot and cold conditions.
- FRP can be destroyed by burning in incinerator.

## FEATURES OF THERMODRAIN FRP/GRP/COMPOSITE MANHOLE COVERS

- Due to non presence of metal or any other reprocessable material in the cover, our covers are not prone to theft.
- Top 7mm surface is a high abrasion surface.
- All THERMODRAIN covers are available with double seal arrangement.
- The lifting area i.e., the rod type lifting or key hole type (Glass Filled Nylon, socket type) is closed from the bottom. Hence, it does not allow mosquito breeding in the chambers.
- THERMODRAIN FRP Manhole Covers are available in standard granite finish and are also available in any other colour specified by client.
- All THERMODRAIN Covers are self pigmented and hence, does not require painting. However, if wanted they can be painted.
- All THERMODRAIN products are UV stabilized and hence, there is no effect of sunlight.
- Due to poor heat transfer properties of FRP, FRP Covers do not absorb heat and remains at normal temperature under sunlight. Hence, it is convenient to handle THERMODRAIN FRP Manhole Covers under extreme hot conditions.
- As the FRP Manhole Covers are flexible and do not disintegrate into pieces due to excess load bearing imparted on the cover, accidents on roads are avoided as the chambers are not left open even incase of cracking of cover.

## APPLICATIONS OF FRP/GRP/COMPOSITE MANHOLE COVERS

- Sewerage chambers
- Storm water drain chambers
- Cable Trench chambers
- Gas valve chambers
- Telecom chambers

**Note: Applicable for Residential, Commercial, Road infrastructure, Airports and Industrial projects.**

## COMPARATIVE CHART

<b>THERMODRAIN" FRP/GRP/COMPOSITE MANHOLE COVERS</b>	<b>CAST / DUCTILE IRON MANHOLE COVERS</b>
<p>HIGH STRENGTH TO WEIGHT RATIO</p> <p>NO SCRAP VALUE HENCE NO THEFT</p> <p>LIGHT WEIGHT - EASY TO HANDLE</p> <p>CORROSION RESISTANT, NO EFFECT OF SEA/SEWAGE WATER</p> <p>HIGH AESTHETIC VALUE, AVAILABLE IN GRANITE FINISH OR ANY DESIRED COLOR</p> <p>SELF PIGMENTED. NO PAINTING REQUIRED</p> <p>LESSER FRIEGHT &amp; HANDLING COST DUE TO LESS WEIGHT</p> <p>NO EXTRA GRP PLATE IS REQUIRED TO PROTECT FROM CORROSION</p>	<p>LOW STRENGTH TO WEIGHT RATIO</p> <p>RISK OF THEFT DUE TO SCRAP VALUE</p> <p>HEAVY - NEEDS MORE MANPOWER</p> <p>GETS CORRODED DUE TO SEA/SEWAGE WATER</p> <p>STANDARD APPEARANCE</p> <p>PAINTING REQUIRED AT REGULAR INTERVALS</p> <p>HIGHER FREIGHT AND HANDLING COST DUE TO MORE WEIGHT</p> <p>EXTRA GRP PLATE IS REQUIRED BELOW THE COVER TO PROTECT FROM CORROSION</p>
<b>THERMODRAIN FRP/GRP/COMPOSITE MANHOLE COVERS</b>	<b>CONCRETE MANHOLE COVERS</b>
<p>NO STEEL CONTENT, NO RESALE VALUE HENCE NO THEFT</p> <p>HIGH STRENGTH TO WEIGHT RATIO</p> <p>LONG LIFE (20-30 YEARS)</p> <p>LIGHT WEIGHT - EASY TO HANDLE</p> <p>EXCELLENT ABRASION RESISTANCE NO EROSION DUE TO RAIN WATER AND MOVING VEHICLES</p> <p>NO EFFECT OF SEWAGE WATER &amp; CHEMICAL WATER</p> <p>NO ENVIRONMENTAL DEGRADATION</p>	<p>THEFT HAPPENS DUE TO PRESENCE OF STEEL INTERNALLY</p> <p>LOW STRENGTH TO WEIGHT RATIO</p> <p>SHORT LIFE (2-3 YEARS)</p> <p>HEAVY - NEEDS MORE MANPOWER</p> <p>POOR ABRASION RESISTANCE GETS ERODED DUE TO RAIN WATER AND MOVING VEHICLES</p> <p>POOR RESISTANCE TO SEWAGE WATER AND CHEMICAL WATER.</p> <p>HIGH ENVIRONMENTAL DEGRADATION</p>

**SIZES OF FRP/GRP/COMPOSITE SOLID TOP / RECESS MANHOLE COVERS**

SHAPE	FRAME CLEAR OPENING SIZE
	AVAILABLE FROM 2.5 Tons to 60 Tons (E-600) load bearing
Circular	500 mm
	600 mm
	762 mm
	900 mm
	1000 mm
	1400 mm
Rectangular	600 mm x 450 mm
	900 mm x 450 mm
	900 mm x 600 mm
	990 mm x 1220 mm
Square	300 mm x 300 mm
	450 mm x 450 mm
	600 mm x 600 mm
	675 mm x 675 mm
	750 mm x 750 mm
	900 mm x 900 mm
	1000 mm x 1000 mm
	1200 mm x 1200 mm
1500 mm x 1500 mm	

**FRP/GRP/COMPOSITE SOLID TOP/ RECESS MANHOLE COVER**



With a better performance than cast iron, ductile iron and RCC covers and being lighter and superior, this product is an industrial revolution. They have been thoroughly tested for loadbearing & permanent set as per BSEN124 1994 & AASHTO M306 standards for drainage and utility services. Our covers meet all the requirements of the code. Our covers are available in all standard sizes with load bearing capacity from 2.5 tons To 60 tons (E600). They are circular, square, rectangular and double triangular in shape available with double sealed arrangements.

**SALIENT FEATURES**

- All covers are available with double seal.
- All lifting keyholes are in Glass Filled Nylon, socket type to avoid wear & tear in the lifting area.
- All keyholes have closed bottom (not thru & thru).
- If required the covers are made available with bolt locking arrangement.
- Permanent set is zero in all sizes & load bearing.
- Self pigmented/non painted.
- Non brittle

## PRODUCT DESCRIPTION OF GRATINGS

### SALIENT FEATURES

- Self pigmented / non painted.
- Zero filler
- High flexural modules / non brittle
- Maximum size of Grating is 1 Mtr X 2 Mtrs. Hence any size as per dimensions in mm (as mention below can be provided.)

## RECOMMENDATION OF CORRECT LOAD APPLICATIONS OF GRATINGS

M.O.C. of Gratings - FRP  
M.O.C. of Angle frame - MS or FRP

<u>Channel width</u>	<u>Out to out grating size (30mm)</u>	<u>Load bearing</u>
250mm	303mm x 1006mm x 30mm	Light & heavy duty vehicles
350mm	414mm x 1006mm x 30mm	Light & medium duty vehicles
400mm	488mm x 1006mm x 30mm	Only light duty vehicles
450mm & above	525mm x 1006mm x 30mm	Only pedestrian movement
<u>Channel width</u>	<u>Out to out grating size (40mm)</u>	<u>Load bearing</u>
250mm	326mm x 1001mm x 40mm	Light & heavy vehicles
350mm	406mm x 1001mm x 40mm	Light & heavy vehicles
400mm	485mm x 1001mm x 40mm	Light & medium duty vehicles
450mm	525mm x 1001mm x 40mm	Only light duty vehicles
500mm & above	564mm x 1001mm x 40mm	Only pedestrian movement

**For any channel width above 450mm, our product recommendation for vehicular movement will be water gully covers.**

**Angle size for 30mm ht. grating : 35mm x 35mm x 5mm thk.**

**Angle size for 40mm ht. grating : 45mm x 45mm x 5mm thk.**

## SIZES OF GRATINGS

40mm HEIGHT GRATING	30mm HEIGHT GRATING	40mm HEIGHT GRATING	30mm HEIGHT GRATING
48	44	1240	1134
88	81	1279	1191
128	118	1319	1228
167	155	1359	1265
207	192	1399	1302
247	229	1438	1339
286	266	1478	1376
326	303	1518	1413
366	340	1557	1450
406	377	1597	1487
445	414	1637	1524
485	451	1677	1561
525	488	1716	1598
564	525	1756	1635
604	562	1796	1672
644	599	1836	1709
684	636	1875	1746
723	673	1914	1783
763	710		1820
803	747		1857
843	784		1894
882	821		1931
922	852		1968
962	895		
1001	932		
1041	969		
1081	1006		
1121	1043		
1160	1080		
1200	1117		

**PICTURES OF GRATINGS**



**SIZES OF FRP/GRP/COMPOSITE WATER GULLY COVERS**

THERMODRAIN FRP/GRP/COMPOSITE WATER GULLY COVERS WITH/ WITHOUT FRAME	
SHAPE	FRAME CLEAR OPENING SIZE
	Available from 2.5 Tons to 60 Tons (E-600) load bearing
Square	450 mm X 450 mm
	600 mm x 600 mm
Rectangular	640 mm X 240 mm
	385mm x 317mm
	500mm x 600mm
	900mm x 600mm



## PRODUCT DESCRIPTION OF FRP/GRP/COMPOSITE STP TANK COVERS

### SALIENT FEATURES

- STP Tank covers are available with locking & gasket arrangement.
- The gasket can be replaced locally in the long run incase ever damaged.
- **WATER & AIR TIGHT**, hence no foul smell and water seepage.

### SIZES OF FRP/GRP/COMPOSITE STP TANK COVERS

THERMODRAIN FRP/GRP/COMPOSITE STP TANK COVERS WITH FRAME	
SHAPE	FRAME CLEAR OPENING SIZE
	Available from 2.5 Tons to 60 Tons (E-600) load bearing
Square	600 mm x 600 mm
	750 mm x 750 mm

### FRP/GRP/COMPOSITE STP TANK COVERS



## PRODUCT DESCRIPTION OF FRP/GRP OVERHEAD/ U.G WATER TANK COVERS

THERMODRAIN FRP/GRP/COMPOSITE Water Tank Covers serve a dual purpose. They are not only superior to conventional cast iron and ductile iron covers but are also light Weight. They are tested as per BS EN 124 1994. Our covers are even immune to algae and rusting contaminants. They meet all the requirements of the code and are available with load bearing of 500kgs, 10 tons & 20 tones.

## SIZES OF OF FRP/GRP/COMPOSITE OVERHEAD/UG WATER TANK COVERS

THERMODRAIN FRP/GRP/COMPOSITE WATER TANK COVERS WITH FRAME / U. G. TANK COVERS WITH FRAME	
	FRAME CLEAR OPENING SIZE
	Available in 500 Kgs , 10 Tons & 20 Tons load bearing
Circular	600 mm
Square	600 mm x 600 mm



## PRODUCT DESCRIPTION OF SEPTIC TANKS



### **THERMODRAIN FRP/GRP Anaerobic Septic Tank**

Our Anaerobic Septic Tank is finely fabricated for an anaerobic digestion. Herein, bacteria treats waste under favorable conditions. This process safeguards accumulation of sludge as well as suspended solids that pass through the system without treatment. Besides, the precision-engineered design of inlet-outlet short circuit of unpurified water that is prevented to make sure long retention time for perfect treatment. Consequently, the waste is free from all sorts of solid which can clog up the pipe lines.

### **Components**

- No. of Chambers : Two / Three depending on the length of the tank (which gives more solid removal, performs the dual role of grease trap and settling tank)
- Baffles, manhole opening, inlet & outlet
- Horizontal Cylindrical Type
- Depth Minimum 2 Meters
- Internal Rough Surface helps bacteria grow faster

## PRODUCT DESCRIPTION OF FRP/GRP CHAMBERS

### Specifications:

- "THERMODRAIN" FRP Chambers are very strong made out of specially prepared Resins
- "THERMODRAIN" FRP Chambers are UV stabilized to protect from Sun radiation
- "THERMODRAIN" FRP Chambers Will take any type of Traffic Loads
- "THERMODRAIN" FRP Chambers are load tested up to 60 Tons, Can be increased if required
- It can withstand all type of earth vibrations due to Traffic movement
- As per ASTM D 3753 & IS 12592-2008 standards

### Advantages of FRP Chambers.

- 100 % Corrosion Free
- Can be readily mounted by digging the earth Making the concrete at the bottom & fixing it
- Completely leak proof
- Will take all types of traffic loads
- All sizes are available
- THERMODRAIN chambers are Re-locatable
- Can Also be used as Inspection Chambers
- As per the ASTM D 3753 & IS 12592-2008 standards

### PICTURES OF ONE PIECE CHAMBER



### PICTURES OF DISMENTABLE CHAMBER



# LOAD TESTING

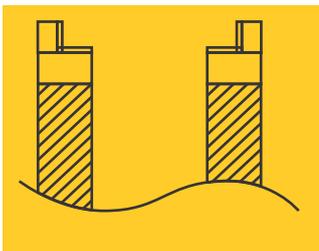
**THERMODRAIN FRP/GRP/COMPOSITE** Manhole Covers are tested for load bearing and permanent set as per BSEN124 :1991 and IS1726. BSEN124 is a testing code worldwide for Manhole Covers in cast iron, ductile iron and other materials also. Permanent Set is a multiple loading test to determine the permanent deformation in cover after Multiple loading within a short time as specified in the code.



## DO'S & DONT'S

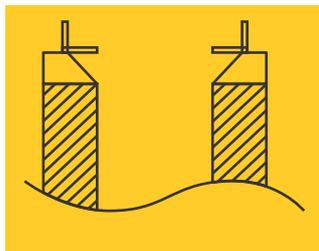
### Installation

#### Do's



Correct installation of frame with complete civil support

#### Don't



Load on the frame to be applied only after grouting is completed

### Handling

#### Do's



Handle with care

#### Don't

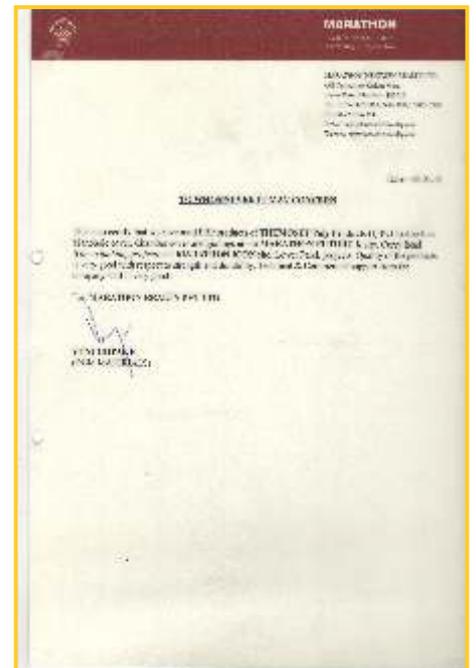


Do not through the material

## FACTORY PICTURES



## PERFORMANCE CERTIFICATE





## CONTACT US

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