

From the Editor's desk

Quite a few changes have taken place since the publication of our last issue-the most discerning of these (which obviously cannot be missed!) is the new logo and, of course, the new Company name (Saint-Gobain Vetrotex India). These have come about consequent to a Corporate decision to align the Saint-Gobain name more closely with the individual Companies in the Group on a global basis.

We have also completed the plant rebuild with a new furnace of enhanced capacity in place. While the range of products from the new plant has not undergone significant change, what is of relevance is the incorporation of the latest Vetrotex technology after the rebuild.

After an encouraging first half, the second half of the year has witnessed signs of an overall industrial slowdown-of particular significance is the recession in the automobile sector since July. The unabated demand for rovings for cable manufacture coupled with the demand for reinforcements for thermoplastics has been the silver lining as far as the composites industry is concerned, for the past few months.

Vetrotex India's commitment to serve the interests of the composites industry in India continues with a

dedicated market development team working closely with customers on a regional basis. The need of the hour is to help customers make a gradual shift to automated processing techniques and to help them make quality products - it is here that Vetrotex India finds the greatest challenge, which is definitely surmountable!

Our commitment also extends to periodic introduction of new forms of reinforcements. Towards this goal, we have introduced a range of stitch bonded reinforcements, unidirectional fabrics and combination mats in a wide range of densities up to 1500 grams/sq. metre. Our close association with the Indian Railways continues to chug along-the most recent development being the design and development of a prototype GRP sleeper berth that has successfully installed in an ICF rail coach in July.

Vetrotex India will continue to work as not only a raw material supplier but also as an effective provider of a package of technical services that is so essential for the growth of the composites industry in the country.

Happy reading!

Sundaram
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Exports

30th August was a red letter day for Vetrotex India. The FIRST export consignment of FIVE containers was flagged off within 4 weeks of the plant start up after rebuild. The reinforcements were on their way to Asia-Pacific Rim and marked the beginning of regular monthly shipments hereafter. The shipment put Vetrotex India on the regional map as an exporter of reinforcements.



JEC, Paris

Worlds biggest **"Composites Show - JEC"** was held during 18-20th April, 2000 at Paris. The main focus was on new products, new reinforcements, thermoplastic prepegs, computer controlled machines, advanced shop floor tool kits, specially additives, low styrene emission gel coats & resins for better performance and to reduced part cost. 700 exhibitors from 85 countries participated in the show.



Saint-Gobain Vetrotex Stall



Saint - Gobain Technical Fabrics Stall



Truck Bonnet with Stitched Core Mat



*Cycle Frame made by RTM
(Glass & Carbon)*



Door made by RTM



Truck Front end made by Hand Lay-up

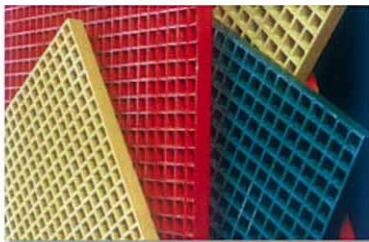


Recent advances in RTM - MIT (Plastech)

GRP Moulded-in-Grating - A Closer Look

GRP gratings are a proven superior option in the chemical industry due to highly corrosive environment. However, even in milder atmosphere gratings are very often constantly exposed to water. GRP gratings are ideal even in these conditions. The project engineers are unaware of GRP, and very often take a decision on use of MS gratings without a proper analysis of all factors influencing this decision.

Apart from lack of awareness, the main concern which restricts the project engineers using GRP is its after sales service and difficulty in repairing. MS gratings are easy to weld, cut & fabricate, while GRP gratings are perceived as difficult material for working. In the present day world where customer necessities are given high priority, GRP moulders have started providing the required services to propagate the usage of GRP gratings. We present here, a case study to justify the use of GRP gratings under the Indian conditions and help in this cause.



GRP Moulded-in-grating (MIG) is a single piece fibre glass reinforced grating composed of fibre glass rovings combined with resin system, suitable for highly corrosive environments. These gratings are made by RTM process. The resin choice is a function of the environment and the high resin content (up to 65%) provides long maintenance-free performance.

The advantages of GRP gratings over the MS gratings are: corrosion resistance, light weight, easy to fabricate, maintenance free, uniform load bearing

CONCLUSION

From the above cost analysis it is clear that Moulded-in-gratings score over the MS gratings even within 15 years (whereas the life of the grating is more than 25 years). Apart from this, these gratings will remain as good as new all the time and are easy to maintain.

characteristics, non-conductive, good aesthetics & non-slip walking.

It is well known that the life of GRP products much more than 25 years, and over this period their cost can be easily justified. However, an average engineer wants to evaluate the cost over a much shorter time horizon. Hence, we are considering 15 years, which would be the realistic life of any project. Though the initial cost of the MIG is more than the conventional MS gratings, the higher cost is justified with the inherent advantages of GRP. A simple comparative economics are worked out and given below:

Description	Unit	GRATING	
		GRP	MS
Life	Years	15	7
Weight	Kg. per sq. mtr.	10	62
Cost	Rs. per Kg.	250	15
Area	Sq. mtr.	50	50
Wt. of Grating	Kg.	500	3100
Cost for 50 sq. mt.	Rs.	125000	46500
Painting cost	Per time	0	13020
Life span (yrs)		15	7
No. of times replaced		1	2
Grating cost (in Rs.)		125000	59520
Interest (in Rs.)		56250	26784
Total cost of the Grating (in Rs.)		181250	86304
Painting cost @ Rs. 250 per lt. (5 times)		0	39060
Scrap Value @ Rs. 7 per kg. (2 gratings)		0	17360
Net Value (in Rs.)		181250	108004
Total cost for 15 years (in Rs.)		181250	216008
Saving			19.18%

Assumptions

- 15% simple interest and no inflation
- 100% finance by loan repayable in 5 years
- MS gratings - painting every 2 years with epoxy paint
- Scrap value of Rs. 7/- per Kg. for MS.

Applications

Chemical plant
Off shore oil platforms
Petroleum Industry
Waste treatment plants

Pharmaceuticals
Food Processing Industry
Dairy
Paper & Pulp plants

Amusement Parks
Swimming Pool
Textile industry
Power Plants

New Products

Texturised reinforcements

Texturised Roving/Yarn have found a wide range of new applications - from High-tech Automotive to Home decorative applications. Fibreglass is replacing Asbestos in Friction facings, Insulating braids and ropes etc. Friction Facings made with Texturised Reinforcements have replaced Asbestos in EURO- II compliant vehicles. Fabrics made of Texturised reinforcements are being used for filtration cloth, welding curtains, smoke screen, paintings, wall claddings etc. Fabric with Metallic wire reinforcements is being used as bellows in power stations. Since the replacement cycle at continuous service temperature (550°C) of conventional products comes down drastically, the fabrics, braids and ropes made with Texturised Reinforcements are commonly used.



TECH TIPS

- ✓ PVA drying time can be eliminated by use of solvent based release agents.
- ✓ A vertical flange around the periphery of the pattern avoids trimming operation after the mould lay-up.
- ✓ 3D reinforcements are now available for making low weight, high rigidity structures.
- ✓ Glass fibre needled mat in various thickness are available for heat insulation and sound proofing.
- ✓ In case of GRP closed moulds, cavity can be built-up with thickness wax, which gives proper cavity dimensions.
- ✓ Placement of PU foam under the rigid ribs in the moulding stage eliminate sink mark and also increases rigidity.
- ✓ The variation of cavity in closed moulds can be determined by placing bees wax between the two mould halves.
- ✓ Electrical & thermal conductivity of the product can be achieved by addition of fillers like aluminium powder, carbon black, graphite etc.
- ✓ Use of surface mat in chemical application increases the product life as it gives a resin rich surface to the product.
- ✓ Storage of glass fibre reinforcements in polyethylene bags in humid conditions at the work place avoids moisture absorption, which eliminates problems like gelcoat pull out, dry patches, internal dry patch, etc.
- ✓ It is always advisable to take out gelcoat / resincoat layer from a new mould before going ahead with commercial production to eliminate the chance of mould sticking in PE moulds.

If you are interested in more details on any of the subjects covered in this publication, please contact:

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