

# PMB COMPOSITE

Progressing with You

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**Product Portfolio**



# COMPANY PROFILE

## Who and where we are:

PMB Composite is a German company located in Hamburg and established by leading east european composite product manufacturers with storage networks in Germany, Poland and Russia - that allows us to **offer direct manufacturer prices and efficient logistics.**

Our Philosophy is based on the added values composite materials have.

“ Strength. Durability.  
Lightness.

## What we do:

Every member of our team is committed to provide state of the art composite solutions to our customers in West Europe, North and South America.

Fiber-reinforced polymer (FRP) composite materials have developed into economically and structurally viable construction materials for buildings and bridges over the last 20 years.

FRP are best suited for any product that demands weight savings, precision engineering, finite tolerances, and the simplification of parts in both production and operation.

We at PMB-Composite believe that this development evokes a new age of building materials and we feel ourselves responsible to share these achievements with our valued customers.

Progress with us.





# NANOFIBAR®

## High Performance Reinforcement

NanoFiBAR® is a Fiber-Reinforced Polymer (FRP) Rebar that has been proven to be the better and economically viable alternative to conventional steel reinforcement. This high strength rebar is composed of fiberglass and thermosetting epoxy resins covered with a noble black nanotube coating. The latter functions as a fire retardant protection and increases the bonding between concrete and NanoFiBAR®.

- ✓ NanoFiBAR® outdoes Basalt Polymer and Steel Rebars in its mechanical and chemical properties
- ✓ Low cost prices comparable with steel
- ✓ Diameters from 4mm to 32mm
- ✓ Tensile Strength up to 1500MPa
- ✓ Officially licensed and certified in European Union (Latvia, Poland) and Russia

# NANOFIBAR®

## High Performance Reinforcement

Get an overview about more advantages of NanoFiBAR®:



### It is lighter and stronger

**NanoFiBAR®** have the tensile strength of steel at a fraction of the weight. In fact it weights 75% less than steel and 30% less than aluminum, considering a guaranteed three times higher tensile strength of over 1200 MPa.



### Over 80 years of serving life

Resulting in longterm reduction of reparation works **NanoFiBAR®** structural solution guarantees increased durability of your concrete construction and cuts your operating expenses.



### Corrosion proof

**NanoFiBAR®** solution assures full elimination of concrete cracks and destruction due to corrosion. It can work in highly aggressive environment where steel rebar will not withstand.



### Radio transparency

**NanoFiBAR®** FRP rebar is a suitable solution where it comes to magnetic and radio transparency. NanoFiBAR® perfectly fits for high-end equipped hospitals, radio stations, industrial facilities and other applications where electromagnetic interference is possible.



### Fire retardancy and thermal expansion

**NanoFiBAR®** has the same thermal expansion factor like concrete, which assures that there will be no structural damage due to rebar thermal expansion. Outstanding fire retardancy properties are cultivated by a special nano-coating, which gives our product this noble black color.



### Start to save your companies money!

By using **NanoFiBAR®** structural solutions you'll reduce costs not only for material purchase, but also for transportation, installation and operation!



### Wide range of lengths and diameters

**NanoFiBAR®** can be delivered as a roll with the Diameters 4mm, 6mm, 8mm and 10mm or for bigger diameters as precut rods of various lengths.

# NANOFIBAR®

## Technical Parameters

We value Quality Control!  
 NanoFiBAR® are regularly tested in our laboratories!

	Steel Rebar	INOX-steel	Average FRP Rebar*	NanoFiBAR®
	BST 500	BST 500 NR		
Corrosion vulnerability	high	low	very low	<b>very low</b>
Tensile Strength N/mm <sup>2</sup>	300	300	1000	<b>1350**</b>
Concrete coverage mm	DIN 1045-1	ds + 10	ds + 10	<b>ds + 10</b>
Thermal conductivity W/mK	60	15	<0,5	<b>&lt;0,5</b>
Electromagnetic interference	yes	low	no	<b>no</b>
Electrical conductivity	yes	yes	no	<b>no</b>
Density g/cm <sup>3</sup>	7.85	7.85	2.2	<b>2.1</b>
E-Modulus N/mm <sup>2</sup>	200.000	160.000	50.000	<b>58.000</b>
Maximum elongation %	20	15	2.2	<b>2.3</b>

You need more technical data?  
 Request the full laboratory tests from us!

\* Comparing with average FRP Rebars in US, Europe and China

\*\*since August 2015 we achieve 1500 MPa tensile strength for rebar diameters less than 8 mm

# COMPOSITE MESH REINFORCEMENT FOR SCREED WORKS

Placement issues and corrosion phenomena of steel grids used in screed works have led to degradation of cementitious screeds. That's why PMB Composite offers more versatile materials made of thin Composite Bars which are composed together to a functional, lightweight composite mesh.



Get an overview about some more advantages of Composite Mesh Reinforcement:

- ✓ **High integrity**  
Composite reinforcement mesh is more resistant to external mechanical impacts than its metal analogue and in case of concrete structural damage it preserves the initial shape of a construction.
- ✓ **Saves money**  
Make your screed not only more durable than steel analogues but also cheaper!
- ✓ **Light-weight**  
Weight saving can be essential and where an ordinary steel mesh will create unacceptable load, composite or a hybrid solution can become the better choice.
- ✓ **Easy handling and installation**  
Roughly estimated composite mesh is 6 times lighter than its metal alternative, that makes it easier for your employees to handle and install it on spot.
- ✓ **Corrosion proof**  
Composite reinforcement mesh fully utilizes one of the main advantages of composites - it is insensitive to a wide range of chemicals and it is corrosion proof. It can be a worthy steel mesh substitute in your construction project even in a tropical country.

# COMPOSITE MESH REINFORCEMENT

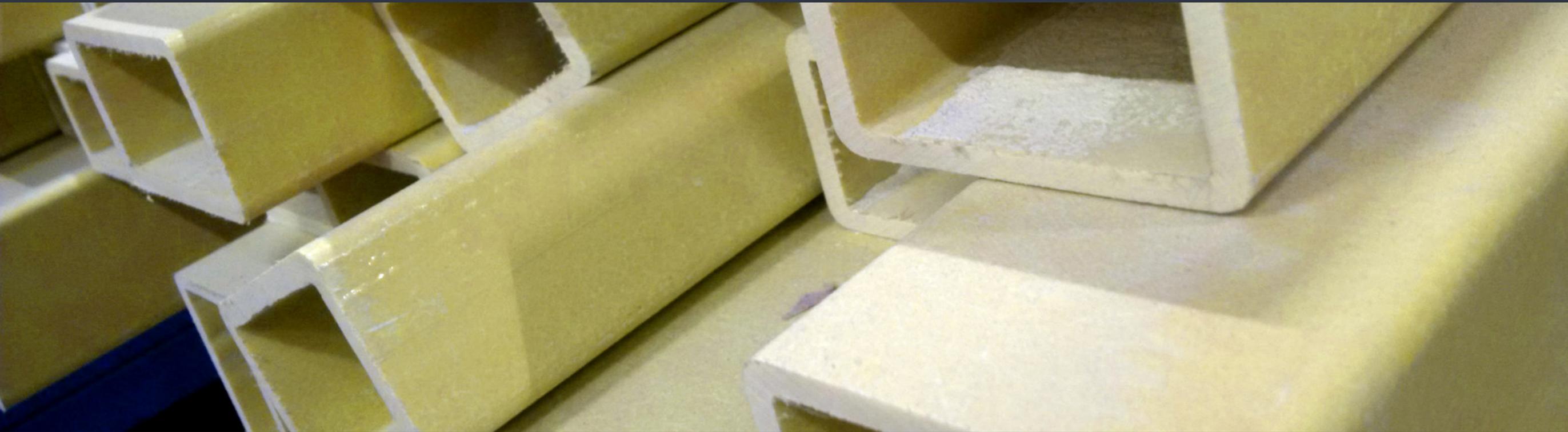
## Technical Information

Description	Unit	Composite Mesh	Steel Mesh
Tensile strength	N/mm <sup>2</sup>	1300	<b>350</b>
Corrosion resistance	-	stable	<b>corrosive</b>
Heat conductivity	W/mK	< 0.5	<b>56</b>
Electric conductivity	-	non conductive	<b>conductive</b>
Weight	g/m <sup>2</sup>	370	<b>2400</b>

Available composite mesh sizes – **On Stock**

FRP Mesh Ø 2	FRP Mesh Ø 2.5	FRP Mesh Ø 3	FRP Mesh Ø 4	FRP Mesh Ø 6
50x50x2	<b>50x50x2.5</b>	50x50x3	50x50x4	50x50x6
100x100x2	<b>100x100x2.5</b>	100x100x3	100x100x4	100x100x6
150x150x2	<b>150x150x2.5</b>	150x150x3	150x150x4	150x150x6

# CUSTOM FIBERGLASS STRUCTURAL PROFILES



PMB Composite offers various FRP profiles being produced with a full automated and highly efficient pultrusion process in which materials like fibers, woven or braided strands are impregnated with resin, possibly followed by a separate preforming system, and pulled through a heated stationary die where the resin undergoes polymerization. This process enables high precision and economically viable production.

- ✔ over 50 various molds on stock!
- ✔ in less than 4 weeks from order to production
- ✔ from little to large scale profiles doable
- ✔ taking your product from concept to design, to tooling manufacturing and finally to production

# COMPOSITE PROFILES

## Fields of Application



### Agriculture and Chemical Industries

For manufacturing of chemically resistant to aggressive media slatted floors with enhanced strength characteristics used in the construction of livestock facilities, chemical plants, etc.



### Construction Industry

For the production of glass-fiber reinforcement, profiles, carcasses, stiffening bars for PVC-windows, etc.



### Sports and Tourism

For manufacturing of equipment exhibiting enhanced strength properties: skis, ski poles, golf course flagsticks, tent and hovel constructions, etc.



### Electrical Power Engineering

For manufacturing of dielectric structures, fiberglass rods used in composite insulators and as supporting structures for elements of signaling blocks, and fiberglass profiles used in manufacturing of transformers and electric motors.



### Commercial Production

Using grains of long-fiber molding material (LLM) as a raw material for subsequent manufacturing of structures and products with enhanced strength and chemical properties.



### Various Industries

Generally composite profiles are used in many industries and plants where it comes to mechanisms, structures and materials, which meet high standards of chemical, dielectric and strength stability.

# COMPOSITE PIPE POSTS

for Traffic Signs

Already over **5000 FRP** traffic sign posts placed in Siberia, Bulgaria and Poland!

Pultruded composite post pipes are becoming a popular solution in both rural and urban applications. PMB Composite provides a non-corrosive post that is cheaper, longer lasting, lighter and easier to install than galvanized steel pipes. Beside that a FRP post outdoes its steel analogue in mechanical and chemical properties like tensile strength or chemical resistance! Request the full data sheet and try the FRP alternative!

The scope of delivery for a custom length 60x4 post pipe includes a FRP rod of 100mm length and 8mm dia. for ground fixation.



- ✓ Service life of over 50 years
- ✓ High corrosion resistance
- ✓ Higher tensile strength than steel
- ✓ Resistant to extreme temperatures from -70 up to +180 degrees
- ✓ Lighter in transportation
- ✓ Does not conduct electricity or magnetic fields

# COMPOSITE SHEET PILE

Composite Large Scale Profile



PMB-Composite offers a high performance FRP sheet piling, which was designed and build as an alternative to steel sheet piling without the issues associated with steel. Our engineers believe that the most important factor when designing with any composite product is to ensure that your supplier fully understands the materials and has a complete and broadly tested set of performance parameters. Just request the data sheet and easily check your requirements!

- ✓ World's strongest and most durable synthetic piling product
- ✓ Wallthickness from 4mm to 9mm
- ✓ 60cm wide with customised length
- ✓ Reasonable upfront material costs
- ✓ Lower exposure to job site risks
- ✓ Little to no maintenance upon installation
- ✓ Little transportation cost due light weight
- ✓ High strength to low weight ratio

# PMB DELIVERY

- ✓ PMB storages are located in Hamburg, Warsaw and Koenigsberg. An outstanding connection to infrastructure and little distance to the sea allows us to cut down on delivery times and costs for our clients.
- ✓ We are shipping our composite products by **truck, train, sea** and **air** - if required DDP to your selected point of destination all over the world!
- ✓ Want to know the shipping conditions to your destination? Contact our logistic experts from PMB Composite under the following number +49 176 / 3864 36 36 and receive your rates right away!





**Progressing with You**

[www.pmb-composite.com](http://www.pmb-composite.com)

**PMB Investition GmbH**

Frauenthal 7

20149 Hamburg/Germany

Tel.: +49 (0) 40 / 236 08 862

**Mobil.: +49 (0) 176 / 3864 36 36**

Fax.: +49 (0) 40 / 236 08 863

E-Mail: [info@pmb-composite.com](mailto:info@pmb-composite.com)