Compounds
Carbon Fiber products
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EMEA

Polynt Composites Germany GmbH
Polynt Composites Poland Sp. z o.o.
Polynt SpA (Italy)
Polynt Composites Korea Co., Ltd.
Polynt Composites

Polynt Composites is known for its superior quality and impressive range of products, including Polyester and Vinyl Ester Resins, Compounds, Gel Coats, Low Profile/Low Shrink Additives, Tooling Systems, Bonding Pastes, Catalysts, and Cleaning Agents.

Polynt Composites products are produced on all continents, and with our excellent distribution network we can provide first-class service to our customers whatever their market. Polynt Composites Customer Service and Technical Service teams are renowned for their customer focus, offering the best service even after our products have left manufacturing. We strive to keep our customers satisfied, assisting them in producing premium quality products every time they use our products.

Product innovation is important for our business and it is the reason for which we constantly work with customers to find solutions to problems. Introducing new or improved products ensures that we continue not only to deliver what the market wants and needs, but also when it is wanted and needed.
Polynt Composites offers a wide product range to meet the needs of the Carbon Fibers market, focusing its attention on the most important product properties - high performance, good aesthetics, and varied technologies.

Carbon Fiber Compounds is a product family based on vinyl ester or epoxy resins reinforced with carbon fiber, which gives the material exceptional stiffness and resistance properties.

This family includes:

- Polynt-SMCarbon®
- Polynt-BMCarbon®
- Polynt-RECarbon®
- Polynt-UDCarbon®
- Polynt-TXTCarbon®

Because it is possible to use different technologies, Polynt’s main sectors for carbon fiber reinforced compounds are automotive, aircraft, industrial, sport and leisure.
Product Mechanical Properties Overview:
flexural modulus vs flexural strength
This photo shows luggage made using carbon fiber
Photo by Teknomonster
Polynt-SMCarbon®

Polynt-SMCarbon® is a sheet molding composites material reinforced with carbon fibers with lengths ranging from 12mm to 50mm. It is produced in sheets of 1000 mm width and 2-3 mm thickness, and it can be packaged in rolls or boxes per customer specifications. Polynt-SMCarbon® is particularly suitable for compression molding of flat medium to large specifications.

Polynt-SMCarbon® main features are:

- the new chopped aesthetic surfaces
- versatility of technology (compression molding and autoclave)
- ability to adjust the formula in order to optimize the product for specific requests
## Polynt-SMCarbon® Product Family

### Polynt-SMCarbon® Family

<table>
<thead>
<tr>
<th>Resin Type</th>
<th>Series</th>
<th>CF Towtex</th>
<th>CF Content</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl Ester</td>
<td>24 Series (Unfilled)</td>
<td>3K</td>
<td>50% - 60%</td>
<td>Compression Molding</td>
</tr>
<tr>
<td></td>
<td>12K</td>
<td>40% - 50% - 60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50K</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26 Series (Filled)</td>
<td>12K</td>
<td>30% - 40% - 50%</td>
<td></td>
</tr>
<tr>
<td>Epoxy</td>
<td>90 Series (Unfilled)</td>
<td>3K</td>
<td>50% - 60%</td>
<td>Autoclave</td>
</tr>
<tr>
<td></td>
<td>12K</td>
<td>40% - 50% - 60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50K</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80 Series (Unfilled)</td>
<td>3K</td>
<td>50% - 60%</td>
<td>Compression Molding</td>
</tr>
<tr>
<td></td>
<td>12K</td>
<td>40% - 50% - 60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50K</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For further information please contact us

The photos on the left show two new chopped aesthetic surface using 50K-12K or 3K with different length fiber 25mm-50mm
Polynt produces Polynt-SMCarbon® at the German site of Miehlen by using two different resin systems: Vinyl Ester Resin and Epoxy Resin. Both charts show the most important Polynt-SMCarbon® peculiarity: modulus increases with CF content, strength increases with lower CF towtex.
Chopped carbon aesthetic on Aston Martin DB11: Polynt-SMCarbon® 90 CF60-12K processed by MATA Automotive
Luxury seats produced with Polyn-SMCarbon® 90 CF60 -12K using autoclave technology

Photo by Mastelements srl (Italy)
Model of guitar produced with Polynt-SMCarbon® 90 CF60 - 3K using autoclave technology

Photo by Mastelements srl (Italy)
Polynt-BMCarbon®

Polynt-BMCarbon® is a bulk molding composite material reinforced by short carbon fibers (6mm, 12mm).

It is produced in granular and homogeneous bulk using Vynil Ester or Epoxy resin, it is packaged in bags and it is particularly suitable for compression, transfer and injection molding.

Compared to the more common thermoplastic polymers, Polynt-BMCarbon® is a thermosetting compound with superior technical characteristics and performance:

- high mechanical properties in terms of rigidity and resistance
- dimensional stability at high temperatures, due to the intrinsic nature of the thermoset materials
- chemical and weathering resistance, especially formulated for outdoor applications
- countless customization possibilities for specific requests

Watch-case and cover made of Polynt-BMCarbon®
Photo given by 15.48 WATCHES (Italy)
## Polynt-BMCarbon® Product Family

<table>
<thead>
<tr>
<th>Resin Type</th>
<th>CF Type</th>
<th>CF Content and Length</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl Ester</td>
<td>Virgin Fibers</td>
<td>60% - 6mm</td>
<td>Compression Molding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60% - 12mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recycled Fibers</td>
<td>60% - 12mm</td>
<td></td>
</tr>
<tr>
<td>Epoxy</td>
<td>Virgin Fibers</td>
<td>45% - 6mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>45% - 12mm</td>
<td></td>
</tr>
</tbody>
</table>

For further information please contact us

These photos show details of Polynt-BMCarbon® production and a chopped random aesthetic.
Polynt-RECarbon®

Polynt-RECarbon® is the family of composites reinforced with fleece made of recycled carbon fiber with different surface weights (200 or 400 gr/m²).

These materials have been developed in response to the growing need for sustainability and recycling. Recycling is achieved by reusing carbon fiber residue from various sources.

Polynt-RECarbon® can be used as semi-structural materials and veil for optimized surfaces, and it is available for Compression Molding and Autoclave technologies.

Detail of recycled carbon fiber fleece
## Polnyt-RECarbon® Product Family

<table>
<thead>
<tr>
<th>Polnyt-RECarbon® Family</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resin Type</strong></td>
</tr>
<tr>
<td>Vinyl Ester</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Epoxy</td>
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</tbody>
</table>

For further information please contact us
Polynt-UDCarbon®

Polynt-UDCarbon® is the family of composites reinforced by continuous and aligned carbon fibers, characterized by extreme mechanical properties, high stiffness on 0° direction and the possibility to combine with Polynt-SMCarbon®. Because of its high mechanical properties (modulus and strength), Polynt-UDCarbon® composites are used in purely structural applications in the automotive and industrial sectors.

On the top detail of mechanical test
The graph on the right shows the high stiffness of Polynt-UDCarbon®
### Polynt-UDCarbon® Product Family

<table>
<thead>
<tr>
<th>Resin Type</th>
<th>CF Towtex</th>
<th>CF Content</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl Ester</td>
<td>12 K</td>
<td>60%</td>
<td>Compression Molding</td>
</tr>
<tr>
<td>Epoxy</td>
<td>12 K</td>
<td>60%</td>
<td>Compression Molding and Autoclave</td>
</tr>
</tbody>
</table>

For further information please contact us

Detail of a production line
Polynt-TXTCarbon®

Polynt-TXTCarbon® is the family of carbon reinforced materials developed for the prepgs market. They are used in autoclave and low compression molding; they feature good aesthetics, good mechanical properties, and fast curing with Vinyl Ester resin. They are cured by applying heat and pressure to provide quality laminates with high stiffness and strength at low weights, and they are supplied in rolls.

The exceptionally high stiffness provided by Carbon fiber prepgs can make them a cost-effective option as blades can be made stiffer while using less material.
## Polynet-TXTCarbon® Product Family

<table>
<thead>
<tr>
<th>Polynet-TXTCarbon® Family</th>
<th>Resin Type</th>
<th>Fabric Type</th>
<th>CF Surface weight</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vinyl Ester</td>
<td>Twill 2/2</td>
<td>200 gr/m²</td>
<td>Compression Molding</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>600 gr/m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plain</td>
<td>120 gr/m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>300 gr/m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Epoxy</td>
<td>Twill 2/2</td>
<td>200 gr/m²</td>
<td>Compression Molding and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>600 gr/m²</td>
<td>Autoclave</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plain</td>
<td>120 gr/m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>200 gr/m²</td>
<td></td>
</tr>
</tbody>
</table>

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The photo on the left shows a detail of fabric twill 2/2 - 200 gr/m²
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This brochure is intended to provide a comprehensive list of the Carbon Fiber Composites materials and services available from Polynt Group.

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