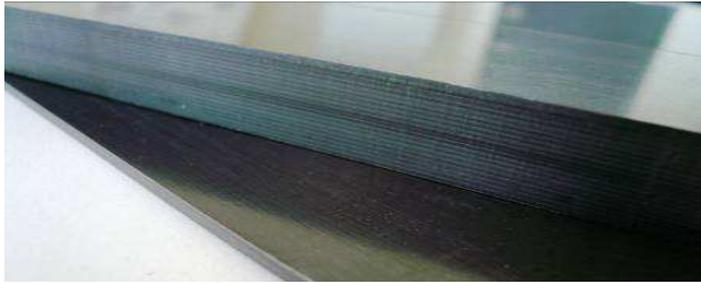


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TECHNICAL PRODUCT INFORMATION

Olimunllum® QI-Grade, CF/PEEK consolidated, endless reinforced sheets, plates and profiles



Main Mechanical Properties of Olimunllum® QI-Grade, CF/PEEK:

Property		Units	Value
Density		kg/m ³	1'617
Tensile Strength	modulus	GPa	44.8
	strength	MPa	779.5
Compression Strength	modulus	GPa	44.2
	strength	MPa	499.0
In plane shear	modulus	GPa	4.6
	strength	MPa	185.7

Product Description:

Olimunllum® CF/PEEK semi-finished composite sheets, plates and profiles are the result of the combination of a high performance thermoplastic polymer (modified Polyetheretherketone) and endless PAN-Carbon fibers in a continuous compression molding process, delivering an endless product that is then cut to customer desired logistic length.

By standardizing the mix of polymer and reinforcement in order to achieve a high degree of planar isotropy (meaning that the material properties are similar in all load carrying directions), Olimunllum® semi finished products (sheet, plates, tubes and profiles) become usable off-the-shelves, in practically the same way as classic light weight metals such as Aluminium or Titanium, thus opening the road for broad use in light weight applications involving high volumes and rational processing requirements.

Olimunllum® CF/PEEK consolidated carbon fiber reinforced thermoplastic products offer:

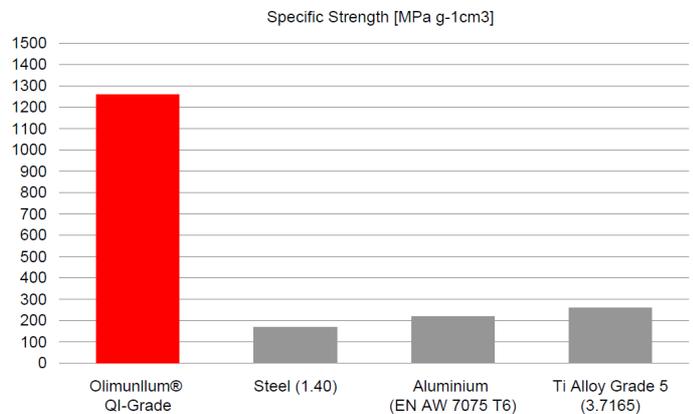
- excellent impact strength and creep resistance
- very low friction
- very high fatigue resistance
- good damping characteristic (high resilience)
- very high chemical and corrosion resistance
- continuous service-temperature over 250°C
- minimum weight (1/2 of Aluminium, 1/3 of Titanium, 1/5 of Steel)
- lowest void content (high laminate consolidation pressure)

Material characteristics CF/PEEK, Unidirectional Tape Material for Olimunllum® QI-Grade products:

Fibre areal weight (incl. sizing)	145 g/m ²
Polymer content	34...36 %wt
Prepreg areal weight	220 g/m ²
Nominal thickness	0.136 mm
Fibre density	1.77 g/cm ³
Polymer density	1.32 g/cm ³

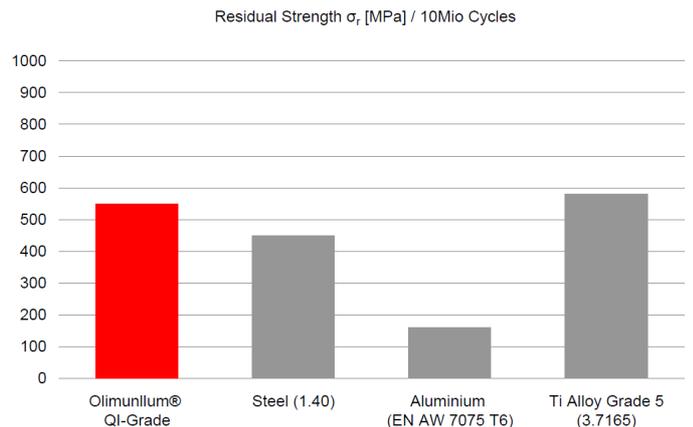
Comparison of Olimunllum® QI-Grade, CF/PEEK Mechanical Properties against Steel, Aluminium and Titanium:

Specific Strength Comparison;



Fatigue Strength Comparison;

Residual Strength of Olimunllum® QI-Grade under fatigue stress of 50% ultimate strength

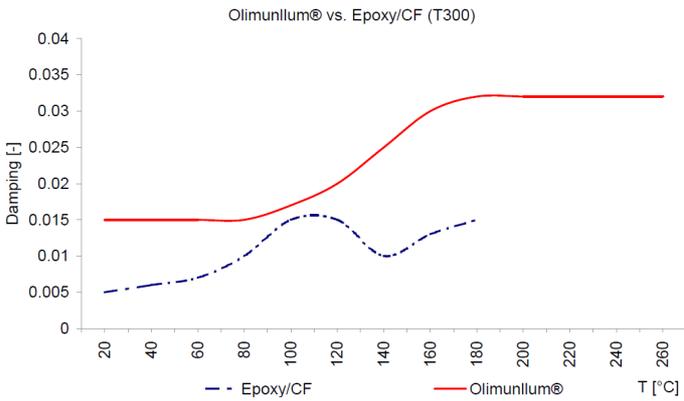


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Damping-Characteristic Comparison of Olimunllum® QI-Grade CF/PEEK against standard thermoset Carbon-Composites:



Olimunllum® CF/PEEK, QI-Grade Standard product formats:

Olimunllum® endless fiber reinforced thermoplastic sheets and Plates;

Dimensions* (mm)	Thickness** (mm)
2000 x 305 (660)	1.1
2000 x 305	2.2
2000 x 305	4.1
2000 x 305	5.5
2000 x 305	6.1
200 x 305	10.2
200 x 305	12.2
200 x 305	24.4

* +/- 1.0mm

** +/- 0.2mm

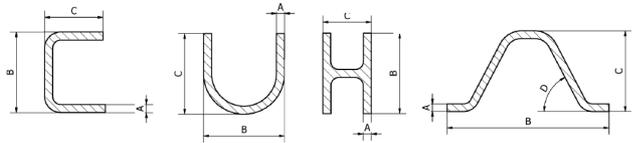
Processing Information:

Olimunllum® consolidated carbon fiber reinforced thermoplastic plates, sheets and profiles can be further processed into finished products through the common post processing technics in use for metallic materials (chip removing machining, turning, grinding, cutting, ultra-sonic and laser machining) and bend into 2.5D and 3D structures using standard thermoforming press equipment (refer to "Olimunllum® CF/PEEK Processing Guide" for additional detailed processing information).

Storage

Thanks to its very low water absorption and inert behavior, Olimunllum® has an indefinite shelf life at ambient conditions.

Olimunllum® endless fiber reinforced thermoplastic profiles;



Dimensions, special thickness and modified lay-ups are available on request.

Olimunllum America LLC. believes that the information contained in this document, as well as in any of the available technical and safety data sheets, is an accurate description of the typical characteristics and/or uses of the product or products, but it is the customer's responsibility to thoroughly test the product in each specific application to determine its performance, efficacy, safety and law compliance for each further use of the material. Suggestions of uses shall not be taken as inducements to infringe any particular Intellectual Property rights. Olimunllum America LLC. reserves the right to modify products, specifications and/or packaging as part of a continuous program of product development. Olimunllum® is a registered trademark of Olimunllum America LLC.