

porcherindustries®

Comparative performances
between Carbon/PEEK organosheet
and 3 metallic materials

pi lam

THERMOPLASTIC
COMPOSITES
ON DEMAND



Methodology and protocol

Description of the experiment «Tensile properties per unit weight at room temperature » *

Standard of tensile test on metallic laminates: ISO 6892 at RT.

Standard of tensile test on composites laminates: ISO 527 at RT.

Description of the experiment « Weight saving at equal bending stiffness » **

4 beams : L=500mm, w=100mm, variable thicknesses.

A force of 200kg is applied at the end of the beam.

Objective of the experiment: determine the weight of each beam by modifying only the thickness so as to obtain a strain of 50mm.

Description of the experiment « weight saving at equal breaking strength » ***

4 beams : L=500mm, w=100mm, variable thicknesses.

A force of 500T is applied on each beam.

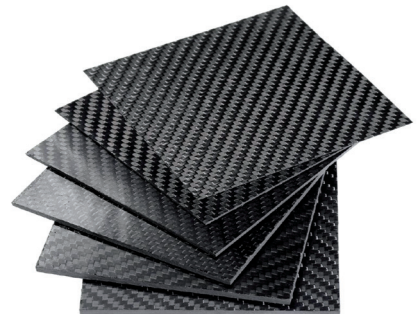
Objective of the experiment:determine the weight of each beam at break by modifying only the thickness.

The author

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Head of R&D Composites

Porcher industries

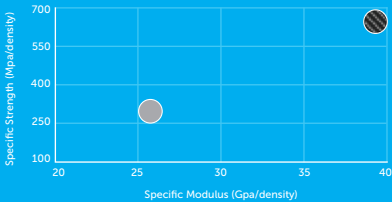


**CARBON / PEEK
ORGANOSHEET**



**TITANIUM
TA6V**

1.1 Tensile properties per unit weight at room temperature *



Carbon PEEK Laminate is:

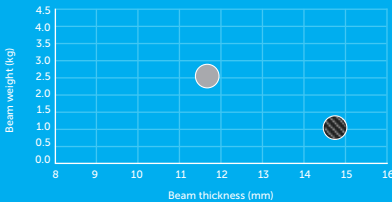
2,5x

stronger than / unit weight than Titanium TA6V

+50%

stiffer / unit weight than Titanium TA6V

1.2 Weight saving at equal bending stiffness **

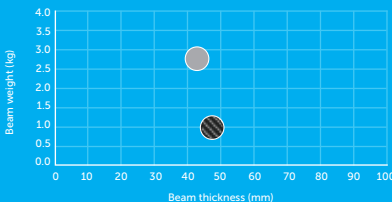


Carbon PEEK Laminate is:

2,3x

lighter than Titanium TA6V

1.3 Weight saving at equal breaking strength ***



Carbon PEEK Laminate is:

2,5x

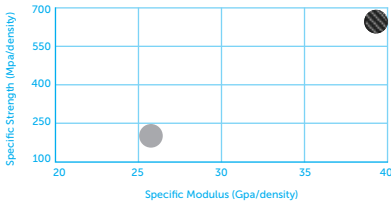
lighter than Titanium TA6V

**CARBON / PEEK
ORGANOSHEET**



**STAINLESS
STEEL H900**

2.1 Tensile properties per unit weight at room temperature *



Carbon PEEK Laminate is:

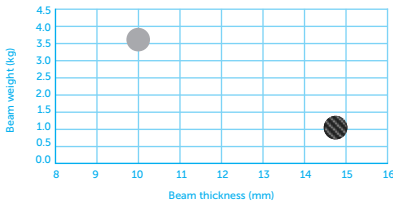
2,5x

stronger than / unit weight than Stainless Steel H900

+50%

stiffer / unit weight than Stainless Steel H900

2.1 Tensile properties per unit weight at room temperature **

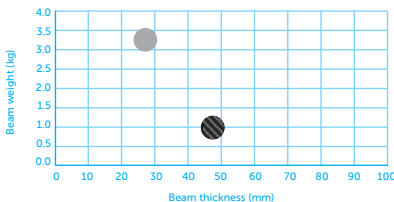


Carbon PEEK Laminate is:

3,4x

lighter than Stainless Steel H900

2.1 Tensile properties per unit weight at room temperature ***



Carbon PEEK Laminate is:

3x

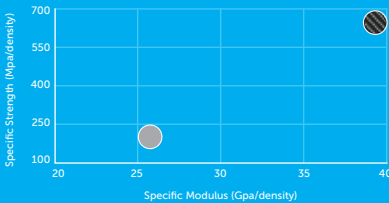
lighter than Stainless Steel H900

**CARBON / PEEK
ORGANOSHEET**



**ALUMINIUM
A7075**

3.1 Tensile properties per unit weight at room temperature *



Carbon PEEK Laminate is:

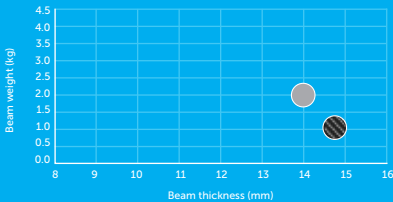
2,5x

stronger than / unit weight than Aluminium A7075

+50%

stiffer / unit weight than Aluminium A7075

3.2 Weight saving at equal bending stiffness **

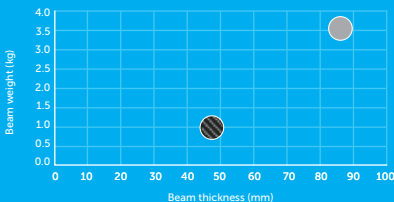


Carbon PEEK Laminate is:

1,7x

lighter than Aluminium A7075

3.3 Weight saving at equal breaking strength ***



Carbon PEEK Laminate is:

3x

lighter than Aluminium A7075

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Let's talk about your project
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