HiTape®
A new efficient composite solution for Primary Aircraft Structures

HiTape® key technology benefits

- Cost & production rate
- Prepreg-like mechanical performance

High performance
High throughput
Out of autoclave

Reinforcement
HiTape®
Dry UD Reinforcement
Automation
Dry Fibre Placement
Part
Infusion/Injection, Cure & NDI
Standard Processes
Reinforcement

HiTape® physical properties

<table>
<thead>
<tr>
<th>Width in mm (inch)</th>
<th>HexTow® AS7 Areal weight in gsm</th>
<th>HexTow® IMA/IM7 Areal weight in gsm</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35 (1/4)</td>
<td>126 - 252</td>
<td>140 - 210 - 280</td>
</tr>
<tr>
<td>12.70 (1/2)</td>
<td>126 190 252</td>
<td>140 175 210 245 280</td>
</tr>
<tr>
<td>Up to 500 (20)</td>
<td>Standard areal weights</td>
<td></td>
</tr>
</tbody>
</table>

HiTape® dry preform lay-up

- Automated fibre placement head
- Controlled heat
- Direction of travel
- Compaction roller
- Lay-up process principle
- Mould surface
- HiTape® dry preform

HiTape® dry preform lay-up

<table>
<thead>
<tr>
<th>Areal weight versus width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areal weight in gsm</td>
</tr>
<tr>
<td>134</td>
</tr>
<tr>
<td>150</td>
</tr>
<tr>
<td>194</td>
</tr>
<tr>
<td>268</td>
</tr>
</tbody>
</table>

Other areal weights available on demand

HiTape® is made from a whole number of carbon tows. No cut filaments = no fuzz

HiTape® is made from a whole number of carbon tows.

No cut filaments - no fuzz

High performance UD

No paper or polyethylene film

Room temperature storage

No cut filaments - no fuzz

Heat-activated binder

Designed for HexFlow® resins

Permeability - formability

Unlimited shelf life

Suitable for ATL & AFP equipment

HiTape® is made from a whole number of carbon tows. No cut filaments = no fuzz

No AFP/ATL head cleaning

Cold and hot forming of dry preform

Automated placement

First ply positioning

No splice

Machine and creel at room temperature

No intermediate compaction

Low bulk factor

High throughput

Low roller compaction force
**HiTape® out of autoclave infusion with HexFlow® RTM6 resin**

Typical vacuum infusion process (single face tool)

Vacuum bag
HiTape® platform
Vacuum
Caused plate
Flow media
Mould

Atmospheric pressure

Infusion and injection processes

Typical injection process (low pressure injection)

Vacuum
HiTape® platform
Vacuum bag
Vacuum
Caused plate
HiTape® platform

Applied pressure

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**Micrograph of HiTape® AFP - 6.35 mm (1/4")**

**No autoclave**

Prepreg-like mechanical performance with HexFlow® resins

Liquid composite moulding: infusion, injection

Very low void content

Outstanding G¹c

Complex structures

60% fibre volume content

Integrated design

Reduced assembly time

Standard NDI equipment

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**Mechanical properties**

**HexTow® IMA 134 gsm**

**CAI**

EN 6038 - 30 J

HexTow® IMA 194 gsm

<table>
<thead>
<tr>
<th>MPa</th>
<th>Prepreg</th>
<th>UD RTM6</th>
<th>HiTape® RTM6</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
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</table>

**G¹c**

EN 6033

HexTow® IMA 194 gsm

<table>
<thead>
<tr>
<th>MPa</th>
<th>Prepreg</th>
<th>Prepreg With adhesive</th>
<th>HiTape® RTM6</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
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</table>
Hexcel worked with Aerolia SAS (Stelia Aerospace) to design and manufacture an aircraft fuselage panel demonstrator. It's a self-stiffened skin made by vacuum infusion using Hexcel's innovative HiTape® reinforcements and HexFlow® RTM6 resin.

Please contact our team for further information:
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Business Development Manager Henri.Girardy@Hexcel.com

HiTape® is a Hexcel registered trademark - Several patents granted and pending - More information on: www.hexcel.com