Description
Hexcel’s HiMax™ DPA (Dot Pattern Adhesive) products are designed to help composite manufacturers maintain the desired position of the reinforcement prior to resin introduction, particularly in closed mould processes such as vacuum infusion and resin transfer moulding.

HiMax™ DPA was developed to provide the optimal level of tack while keeping additional weight to a minimum. The novel application process allows just 3 grams per m² of adhesive to be applied to the specified fabric. Using DPA in conjunction with HiMax™ fabrics allows the user to easily position and re-position the individual layers of their laminate stack before resin is introduced. Conformance to tight radii and complex mould geometry is also aided by DPA.

Current methods of tackifying fabrics often involve spray adhesives that have been shown in tests to have a detrimental effect on the mechanical properties of the composite. The amount of spray applied can vary greatly across the layup and from user to user. The effect this has on the cured laminate cannot therefore be predicted by engineers. Aside from the effect on the composite there are health concerns caused by the aerosol nature of the spray. HiMax™ DPA is optimised for each of these factors, allowing laminators to work more efficiently and in a safer environment.

As bonding effectiveness is depending various factors like lay-up stack, weight, tool surface and geometry, all potential users should test HiMax™ DPA in representative conditions.

Product benefits
- Controlled tackifying process
- Easy and time efficient handling
- Consistent weight of adhesive across any given area
- Superior mechanical properties compared to conventional tackifying methods
- Reduced resin flow interference
- Siliconised PET release film with excellent tear resistance and bright colour
Effect of DPA on interlaminar shear strength. Tested to ISO 14130.

Mechanical characteristics

- Testing has shown that interlaminar shear strength (ILSS) was not adversely affected by the presence of DPA vs. a control glass fabric in polyester resin*.
- It is strongly recommended that all potential users of DPA conduct mechanical testing using resin systems, fabrics and cure cycles relevant to their product.

Tested properties

<table>
<thead>
<tr>
<th>Tested properties</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILSS knockdown in glass + polyester*</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>Adhesive weight</td>
<td>3</td>
<td>g/m²</td>
</tr>
<tr>
<td>Release liner weight</td>
<td>53</td>
<td>g/m²</td>
</tr>
</tbody>
</table>

* Using Reichhold Polylite® 506-647 resin at 58% fibre volume fraction, ISO14130.

Storage and Handling

Rolls of DPA and DPA coated fabrics should be stored horizontally to avoid “slippage” of the adhesive and subsequent loss of performance. Shelf life is 6 months at 21°C.

Typical products

Hexcel’s DPA technology is available with a broad range of different Non-Crimp Fabric structures. Such standard structures are +/-45, 0/90, UD and quad-axial fabrics in both glass and carbon.

For quotes, orders and product information call +44(0) 1162 752 200. For other worldwide sales office telephone numbers and a full address list, please go to [www.hexcel.com/contact](http://www.hexcel.com/contact)