**FIBERGLAS™ DOWEL BARS**

For Load Transfer Between Concrete Slabs

Glass Fiber Reinforced Polymer (GFRP) Dowel Bars

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**Physical and Mechanical Properties**

<table>
<thead>
<tr>
<th>Dowel Bar Diameter</th>
<th>Nominal Cross Sectional Area</th>
<th>Unit Weight/Length</th>
<th>Longitudinal Shear Strength per ASTM D4475 Short Beam Shear</th>
<th>Transverse Shear Strength per ASTM D7617 Double Shear</th>
<th>Transverse Shear Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>in²</td>
<td>lbs/ft</td>
<td>psi</td>
<td>MPa</td>
<td>psi</td>
</tr>
<tr>
<td>16</td>
<td>(\frac{5}{8})</td>
<td>0.307</td>
<td>0.3</td>
<td>447</td>
<td>7252</td>
</tr>
<tr>
<td>19</td>
<td>(\frac{3}{4})</td>
<td>0.442</td>
<td>0.38</td>
<td>566</td>
<td>7252</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>0.785</td>
<td>0.65</td>
<td>967</td>
<td>7252</td>
</tr>
<tr>
<td>32</td>
<td>1 (\frac{1}{4})</td>
<td>1.227</td>
<td>1.05</td>
<td>1563</td>
<td>7252</td>
</tr>
<tr>
<td>38</td>
<td>1 (\frac{1}{2})</td>
<td>1.767</td>
<td>1.65</td>
<td>2456</td>
<td>7252</td>
</tr>
</tbody>
</table>

Values in the above table are Mean Ultimate Values. Transverse shear test is per ASTM D7617. We reserve the right to make improvements in the product and/or process which may result in benefits or changes to some physical-mechanical characteristics.

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**Material Properties** per ASTM D7205-06

- The "Shear Strength", typically the "Transverse" or "Double Shear" strength of the Fiberglas™ Dowel Bars product is determined using the ASTM D7617 method. "Longitudinal Shear" or "Short Beam Shear" subjects the bar to a three point loading fixture and measures the shear strength along the axis of the bar. This testing is performed per ASTM D4475.

**Glass Fiber Content**

70% by weight per ASTM D2584

**Moisture Absorption**

24 hour absorption at 122°F (50°C) ≤ 0.25%, per ASTM D570

**Sealing of Ends**

Not necessary

**Greasing of FRP Dowels**

Not necessary

**Glass Transition Temperature**

230°F (110°C) per DSC method

**Applications**

- High speed tollways
- Jointed concrete paving
- Canals and water ways
- Connections to Mechanically Stabilized Earth Structures
- Industrial flooring needing electromagnetic transparency

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**Product Data Sheet | Fiberglas™ Dowel Bars | October 2020**
Fiberglas™ Dowel Bars

Handling and Placement

Field cutting of Fiberglas™ Dowel Bars is generally not necessary. However, if required use a fine blade saw, grinder, carborundum or diamond blade. We use a diamond blade in wet bath for cutting the dowels. Sealing of Fiberglas™ Dowel Bars ends is NOT necessary. Greasing of Fiberglas™ Dowel Bars is NOT necessary (the bond strength to concrete is sufficiently low.)

When installing Dowel Bars in the DBB1500-10-6 basket:

- Press fit the dowel bar into the opening.
- Tap the dowel bar into the basket from the end to secure the dowel into place.
- Attach the dowel bars and baskets to the runners at required spacing.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>CONCRETE THICKNESS</th>
<th>DOWEL BAR HEIGHT</th>
<th>DOWEL BAR SPACING*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>mm</td>
<td>cm</td>
</tr>
<tr>
<td>DBB1500-12-5</td>
<td>254</td>
<td>127</td>
<td>305</td>
</tr>
<tr>
<td>DBB1500-10-6</td>
<td>305</td>
<td>152</td>
<td>254</td>
</tr>
<tr>
<td>DBB1250-12-6</td>
<td>305</td>
<td>152</td>
<td>305</td>
</tr>
</tbody>
</table>

*Dowel bar spacing is easily adjusted by nesting support chairs on a second #3 rebar runner or spacing dowel bars further apart.

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https://www.owenscorning.com/rebar

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