Ancamine® R 215 is a new solution for composite reinforced bars that combines the advantages of polyamines in epoxy systems.

Evonik has developed a new amine hardener for hot cured epoxy composite bars. Compared to common solutions, composite rebars based on Ancamine® R215 exhibit an outstanding performance profile with regard to both mechanical and chemical properties leading to low lifetime costs.

### Rebar properties

<table>
<thead>
<tr>
<th>Ancamine R 215</th>
<th>Standard GFRP*</th>
<th>Steel*</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength</td>
<td>1250</td>
<td>483-1600</td>
<td>483-690</td>
<td>MPa</td>
</tr>
<tr>
<td>Tensile modulus</td>
<td>60</td>
<td>35-51</td>
<td>200</td>
<td>GPa</td>
</tr>
<tr>
<td>Tensile modulus after alcali</td>
<td>95 / (175)</td>
<td>75 / (361-1200)</td>
<td>-</td>
<td>% / (MPa)</td>
</tr>
<tr>
<td>Tensile modulus after alcali</td>
<td>95 / (57)</td>
<td>-</td>
<td>-</td>
<td>% / (GPa)</td>
</tr>
<tr>
<td>HDT</td>
<td>140</td>
<td>65-120</td>
<td>-</td>
<td>°C</td>
</tr>
<tr>
<td>Density</td>
<td>2,1</td>
<td>2,1</td>
<td>7,85</td>
<td>g/cm³</td>
</tr>
</tbody>
</table>

* values taken from literature (ACI 440.1R-06)

### Benefits at a glance

**Processing**
- Easy handling/Low viscosity
- High reactivity
- High speed process
- Low energy costs

**Application properties**
- Excellent alkali and chemical resistance
- High temperature resistance
- No corrosion
- High tensile strength
- Very low magnetic and thermal conductivity

### Applications

- Concrete exposed to de-icing salts
- Concrete exposed to marine salts
- Tunneling and mining applications
- Electromagnetic applications
- Masonry strengthening
- Housebuilding
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