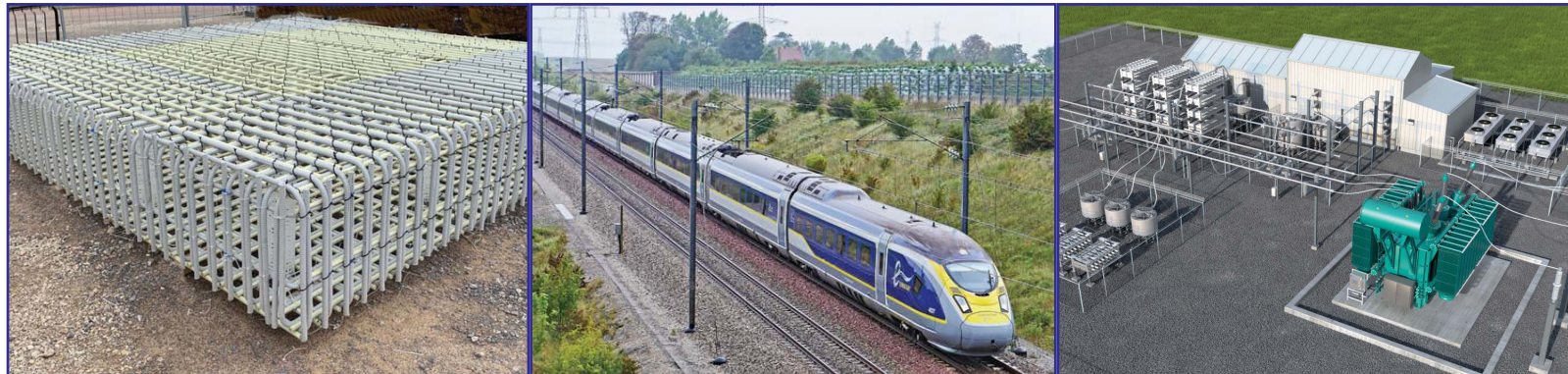


## Folkestone Converter Station Concrete Base with GFRP (Combar) Reinforcement



### Schöck Ltd

<b>Location</b>	Folkestone Converter Station, Channel Tunnel Terminal, CT18 8XX, Folkestone
<b>Description</b>	Eurotunnel, running almost 400 trains a day, is constantly experiencing a growing potential in traffic, where constant flow of electricity is vital. A new converter station was constructed in Kent and it required substantial concrete ground - bearing base units. Traditionally used, carbon steel reinforcement has been replaced here to glass fibre reinforced polymer (GFRP). It was the preferred material for its superior properties.
<b>Client</b>	2018 Royland Contractors Limited
<b>The challenge</b>	Eurotunnel had to increase the power and stability of its network substantially to ensure a constant flow of electricity. It was especially important during the peak times. As a result, Eurotunnel awarded GE Grid Solutions a contract to supply a static synchronous compensator (STATCOM), to improve the stabilisation of power supply on the catenary traction system of the Channel Tunnel. Used on alternating current (AC) electricity transmission networks, this regulating device provides grid operators with reactive power compensation and an improved range of operational voltage. The Folkestone converter station required substantial concrete ground-bearing base slabs, with non-corrosive, non-magnetic reinforcement.
<b>The solution</b>	Inductive currents are generated within the carbon reinforcing steel. If located too close to these coils there will be a loss of strength as the steel reinforcement bar heats up. The GFRP elements Schöck Combar were chosen as non-magnetic reinforcement to protect against inductive current.
<b>Material used</b>	GFRP- Schöck Combar
<b>Specific design details</b>	The GFRP elements involved on the project are all part of the Schöck Combar range. Ribbed GFRP reinforcing bars are made of corrosion resistant glass fibre bound by a vinyl ester resin. The reinforcement cages incorporated a combination of prefabricated bent bars, straight bars, tubes and spacers. All installed within the concrete ground-bearing base unit slabs – a total area of around 416m <sup>2</sup> .
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• 100-year design lifetime</li> <li>• Non- conductive, non- magnetic</li> <li>• 3.66 times lighter than carbon steel</li> <li>• Reduced concrete cover</li> <li>• Reduced work on site</li> <li>• H&amp;S benefits</li> <li>• Easy machinable material</li> <li>• Lighter</li> <li>• Less material vs Carbon steel</li> </ul>
<b>Further details</b>	<a href="http://www.schoeck.com">www.schoeck.com</a>