


Composite Road Bridge SHM

Project	Monitoring of strain and temperature on the UK's first motorway bridge built from FRP deck sections. The SHM program will be used to obtain feedback on the design performance of the bridge.
Client	Straininstall Ltd
Date	2006 – 2007
Location	M6 motorway, Lancashire UK
Sensors	SmartPatch and SmartTemp
Attachment	Surface mounted
Interrogator	W4 (long term quasi-static tests) and W3 (dynamic testing)
Images	 <p>Above: Composite motorway bridge</p> <p>Right: Instrument cabinet housing W4, alongside its solar panel power source</p>
Results	<p>The bridge is to be monitored for a 12-month period by approximately 100 FBG strain and temperature sensors, along with conventional electrical strain gauges and laser levelling targets. Sensors are mounted on both the FRP deck sections and steel support beams. A solar powered W4 interrogator permanently installed onsite allows continuous quasi-static monitoring and the client is able to see real-time data from the bridge using a GSM modem.</p> <p>In addition to the long-term static monitoring program, two dynamic load tests are to be performed at the beginning and end of the test period. A W3 interrogator will be brought to site for each of these load tests enabling dynamic strain data to be collected at a rate of 125 Hz.</p> <p>At the time of writing, the data is customer confidential.</p>
Further information	To follow when released by client