



■ **Repair & Strengthening**

Reference Details:

Owner Roads and Traffic Authority (RTA), NSW, Australia +++

Contractors Nelmac Pty Ltd., Yackandandah, Victoria, Australia;

Fernandes Constructions Pty Ltd., Denman, NSW, Australia +++

Consulting Engineers Sinclair Knight Merz Pty Ltd., Sydney, NSW, Australia

DSI Unit DYWIDAG-Systems International Pty Ltd., NSW, Australia

DSI Services Supply of pre-grouted 36mm THREADBAR[®] System; Expertise and equipment.



Innovative solution using pre-grouted THREADBAR[®] in Australia

Once again DSI has introduced technology and Know-how to improve the design life of bridges in Australia

Throughout the eastern seaboard states of Australia typical regional bridge construction consisted of reinforced concrete decks with insitu concrete and asphalt overlays, however a recent revision to the bridge design code has resulted in a re-evaluation of all bridges throughout the country.

Current designs utilize pre-stressed concrete planks with transverse posttensioning bars, however the construction methodology diminish the lifetime of the transverse bars and limit the amount of pre-stress applied. Simply the transverse bars substitute the need for a reinforced concrete deck, however with no deck in place (asphalt only) the joints between the planks act as a passage for moisture/water to work its way through the grouted joints and ultimately affect the performance of the bar.

To overcome this DSI Australia has been working closely with the RTA and contractors to develop an economical solution.

The solution was to integrate DSI's geotechnical Know-how into a structural application and as a result the Company developed a double corrosion protected THREADBAR[®] for transverse post-tensioning. The system is a design using pre-grouted bars in a PVC corrugated sheath with a PVC smooth sheath over the entire length of the bar. End anchorage connections consist of an anchor nut and bearing plate with a guide pipe welded to provide a tight seal to the sheath ends. Caps are also provided for additional corrosion protection.

The benefits of the system enabled the contractors to fully grout the precast plank joints including all voids in and around the pre-grouted transverse bars, stress the bars without any secondary grouting operation thereby providing a simplified construction method and long term corrosion protection.

DSI Australia has now successfully integrated the system into 4 bridges for the RTA in NSW and was recently recognized by Queensland Main Roads (QMR) for their bridge replacement program.