



DSI References

Reference Details

Contracting Authority Région Réunion-Direction d'Opération Route des Tamarins, Saint Denis, La Réunion +++ **Prime Contractor** ARCADIS ESG, Sèvres, France; Cotéba, La Plaine Saint-Denis, France +++ **Architect** Strates/Berlotier Architectes, Bourg-en-Bresse, France +++ **General Contractor** Eiffage TP, Neuilly sur Marne, France ; Matière, Groupe Razel SA, France

DSI Units DSI Group Headquarter Operations, Munich, Germany; DSI-Artéon, BU Post-Tensioning, Dagneux, France

DSI Scope Supply of 34 pieces of DYNA Grip® DG-P37 anchorages; supply of 352 DYWIDAG Post-Tensioning anchorages types MA 6812 and MA 6819 and 36 anchorages VC 6819 for external Post-Tensioning



environmental protection.

The project's total cost is estimated to be more than 970 Million Euro and construction works are scheduled to be finished at the beginning of 2009. DSI contributed to one of three sub-projects classified as exceptionally artful structures: the bridge crossing the broad Trois Bassins gorge. Construction work was executed by a consortium consisting of Eiffage TP, Groupe Razel and Matière. Trois Bassins is an extradosed bridge. Extradosed post-tensioning (French "extradossée", literally "out from the back") is characterized by the fact that the tendons of a hyperstatic structure are "lifted out" from the bridge deck and deviated over an intermediate compression member, thus increasing the lever arm. The vertical reaction is directly transferred into the bridge pier below. Like stay cables, extradosed tendons can withstand long-term atmospheric influences including sunlight.

The bridge has a total length of 375m and a width of 22m. The impressive sub-project required a total of 14,000m³ of concrete, 1,800t of steel and 400t of prestressing steel. DSI supplied 352 DYWIDAG Post-Tensioning anchorages, types MA 6812 and MA 6819 as well as 36 VC 6819 anchorages for external Post-Tensioning. In addition, DSI supplied 34 DYNA Grip® DG-P37 anchorages, tendon sheathing and approximately 105t of galvanized, waxed and PE-sheathed strands.

A special feature of these stay cables is the fire protection that was applied over their entire length. According to specifications, the strands are designed to reach a maximum temperature of 100°C with a fire temperature of 1,100°C. This is achieved by enveloping the installed strand bundle into a double-layered fire protection mat. Subsequently, PE half shells are assembled on top of the double-layered mats. Due to the small inclination of the stay cables and the small diameter of the pylons, cradles, which were also included in the delivery, were installed in the pylon instead of individual anchorages.

One of DSI's experienced installation engineers was at hand during installation.

The installation of the DYNA Grip® stay cables with fire protection was successfully completed in spring 2008. The French island La Réunion, situated in the Indian Ocean, is noted for its many steep gorges. At one time, the island's jagged structure made the construction of a modern road network seem almost impossible. However, in 2002, a decision was made to substantially improve the island's poor coastal road network in order to attract more tourism.

The ambitious construction project "La route des Tamarins" includes the construction of a 33.7km long expressway. The route is to lead through the island's fissured and mountainous regions, traversing more than 120 canyons along the way.

Due to difficult geological conditions, the route will include three tunnels and a total of 23 bridges. The project is exceedingly challenging because of climate

A Case for DYNA Grip®: Trois Bassins Bridge on La Réunion Island

DSI supplies DYNA Grip® Stay Cables for Bridge on La Réunion Island, France

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 **For more information please call: + 49.89.309050.200 or fax: + 49.89.309050.252 or e-mail: DSI Munich**