

Young Jong Bridge, Korea Cable Tensioning

Main Contractor: Samsung Heavy Industries Co. Ltd.



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Fagioli PSC were awarded three separate contracts on this double-deck bridge, being constructed as part of the infrastructure for the new Incheon Airport in Korea.

The 1,375 metre long bridge consists of eastern and western approach sections linked by a 550 metre span suspension bridge. Fagioli PSC were awarded contracts for span lifting on the western approach section by Hyundai Heavy Industries Co. Ltd., and on both approach sections by Hanjin Engineering & Construction Co. Ltd. The Hanjin contract also included 15 loadouts to take place from the fabrication yard onto barges for transport to the jobsite.

On the suspension bridge section the contract for cable tensioning was awarded to Fagioli PSC by Samsung Heavy Industries Co. Ltd.

The cable tensioning was performed by 80 No. Fagioli PSC L100 Strand Jacks, each with a capacity of 105 tonnes. Arranged and operated in synchronised groups of four, with loads monitored by computer, the



jacks were inverted under the top deck of the double-deck bridge, and used to tension the main suspension cable hangers. (see right).

The method involved each group of four jacks being connected to both ends of two hanger cables, two ends of which rise up through the deck and permanent anchors, pass over the suspension cable and pass back through their opposed anchors (see left). Thus all four jacks operating together, pulling on the cables and reacting against the underside of the deck and the suspension cable, are then able to tension the hanger cables to very tight tolerances, facilitated by the minute adjustments that Strand Jacks can accommodate, before the cables are finally anchored to the deck.



Working outwards from the lowest points of the suspension cables in the centre span section and on each side of the main pylons, each group of jacks was adjusted to pre-determined tolerances before moving on to the next set. By having several crews working simultaneously and with many of the jacks reaching operational loads of 100 tonnes, the entire tensioning operation was completed in six weeks.

