

Lagen Bridge Cables Installation and Tensioning

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Silvia Geyer, born 1981, received her Civil Engineering degree from the University of Florence, Italy. She worked for Maritime Division of Force Technology, Denmark, before becoming Project Manager at Redaelli. Her main area of expertise is tensile structures and aerodynamic.

Daniela Lombardini, born 1976, after studying in Cagliari, joined Politecnico of Milan postgraduate degree in Design of Reinforced Concrete Structures. She always worked on infrastructures, after ten years as Project Manager in Redaelli she is now Head of the Engineering Division.

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Abstract

The Lagen Bridge is the first application of prefabricated HDPE sheathed full locked coil cable stays on a Norwegian bridge. The structure is located in Kvam, about 100 km North from Lillehammer, and it is part of the development project of route E6 between Biri and Otta. Redaelli supplied the complete set of stay cables and performed cable installation and tensioning on site. This paper addresses the advantages of using HDPE sheathing with respect to cables durability, as well as the entire process of installation and tensioning of stay cables and all related challenges.

Keywords: Cable-stayed Bridge, Full Lock Coil cables, Vibration method, HDPE.

1 Introduction

The cable-stayed Lagen Bridge has a 105-meter long main span. The back span, connecting the structure to the approaching tunnel, has a length of 52 meters, the deck is 14,3 meters wide to accommodate for two carriageways, one for each traffic direction. The pylon is made of two masts 64-meter high, connected by a transverse beam. Bridge deck and mast are made of reinforced concrete poured on site. Redaelli was appointed

by the main contractor (Implemia Norge AS) to supply, install and tension the cable-stay system.

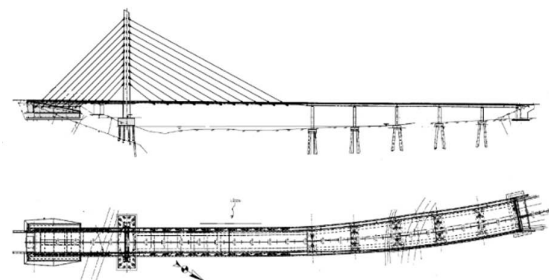


Figure 1. Side and top view of Lagen Bridge