

## Sundøy Bridge Norway



The Sundøy Bridge is a 2-lane road bridge designed as one of the world's longest concrete cantilever bridges with a main span of 298 m and a total length of 538 m. The main span is designed in high strength lightweight aggregate (LWA) concrete LC60, the side spans in normal density (ND) concrete C65. The bridge is high level, providing for a ship channel of 43.5 x 80 m. The bridge location is in the county of Nordland, close to the Arctic Circle with a very severe wind climate.

The structure is fully continuous, with flexible piers and large foundations 9x14m of solid rock at level -16.0 and -19.0 respectively. Expansion joints are provided at each abutment. In the design of this long span both Normal Density (ND) and Light Weight Aggregate (LWA) concrete were investigated. As the side spans were limited in length by the road curvature on the Dagsvik side and rock topography on the Sundøy side, a design with high strength LWA concrete LC60 in most of the main span was found to provide for the best solution. Compared to a design with ND concrete C65 in the main span, the savings were in the order of 2.500.000,- NOK.

Auxiliary piers were required to stabilize the freestanding pier/balanced cantilevers during construction. Also alternative designs with cabled stayed and suspension bridges were investigated in the preliminary design

*Built with*

