The Middachterbrug is a bridge in the A348 highway; the Dutch Ministry of Infrastructure and the Environment was interested in the current state of its asset because the structure is nearing its design lifetime of 50 years. The Strain Gauge Method was implemented to determine the actual preload force within the bolts in a bottom flange connection. The connection consists of two cover plates \( t = 26 \text{ mm} \) and an intermediary beam flange \( t = 32 \text{ mm} \), providing a total clamping length of 92 mm (including 2 washers). The connection consists of 84 bolts (M24 grade 10.9 bolts, \( L = 120 \text{ mm} \)), 16 of which are instrumented with strain gauges (4 per quarter of the connection). The location of the instrumented bolts was chosen such that insight was obtained in (1) differences in actual preload in bolts in the same row, and (2) the influence of (un)tightening a bolt on the neighbouring bolts (see pp. 282–286). (Photo: Peter de Vries)