

GLM Lasermeßtechnik GmbH – steel arch

3D measurement: sections of a steel arch

During the 2010 World Cup, the German opening match of the DFB team against Australia was held in Durban (South Africa), a stadium spanned by a 350m long, 65m wide and 93m high steel arch. The roof construction is suspended from this steel arch with steel cables. This resulted in an accuracy requirement of 10mm (for each point in all three dimensions) in the production for the later assembly.

The 58 (3mx4mx4m) individual sections were produced in a German steel construction company and measured with a 3D measuring system (from GLM). The industrial tachymeters NET1200 and NET1 were used. With these accuracy requirements, not only the 3D measurement itself is important, but also the data processing.

With the software 3-DIM a 3D adjustment was calculated. This was the basis for the „virtual coupling“ of the individual segments. This ensured that there would be no unpleasant surprises on site

On the pictures below you can see how the head piece was inserted, it fitted right away. There was no need to make costly corrections to the steel sections on site, so the timeline was right and the contractor was extremely satisfied.