

Doha, Qatar Green Line Underground

Anchor load monitoring



Excavation, just started, with first row of anchors

The Doha Metro now under construction is part of the Qatar Integrated Rail Programme. The JV Porr Bau GmbH (Austria) - Saudi Binladin Group Company Ltd - Hamad Bin Khalid Contracting Co. W.L.L. (Qatar) secured the EUR1.69 billion contract for Design and Build Package 4 the Green Line Underground of the Doha Metro. It will build the 15 km-long underground section for the Green Line, which runs north-south through the city of Doha.



Sisgeo's anchor load cell

Geodetic and geotechnical monitoring: The JV VMT (Bruchsal Germany) and Noack Ingenieurgesellschaft (Passau Germany) have been contracted to perform geodetic and geotechnical monitoring. This includes supply and installation but also data acquisition of anchor load cells installed on selected ground anchors.

For this project Sisgeo's load cells have been selected. Since begin 2014 more than 100 load cells have been installed at different metro station excavations.

Sisgeo's anchor load cells have, compared to other load cells, the big advantage of a relative small height of only 40mm (without the load distribution plate) and an outstanding good performance to accuracy and robustness.

Most of the anchor load cells are measured with the portable readout / datalogger the New Leonardo. This readout device can be used to read and operate all Sisgeo's analogue and digital sensors. Also sensors of other

manufacturers can be operated.

The prominent feature of this unit is, that it works as a portable data logger. A working list with all the sensors name and sensor configuration is prepared (SMART manager software) on your office pc and downloaded to the New Leonardo. In the field the readings are then taken based on the working list, stored and directly validated. After completion of all the instrument readings data is transmitted via Bluetooth or USB-port to the office

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pc and are then integrated into the data base.

Multiplexers installed to connect several anchor load cells (up to 24 channels can be operated per unit) greatly optimize the readings. On the New Leonardo just select and connect the specific multiplexer to take the readings of all connected sensors within a few seconds.

Anchor load monitoring, together with geodetic deformation monitoring and inclinometer readings is one of the important physical quantity to control so to ensure stability of the excavation retaining walls. Sisgeo International is happy to have been contracted as supplier of Sisgeo's anchor load cells.



Anchor tensioning with the installed anchor load cell

LINKS:

VMT GmbH
NOACK INGENIEURGESELLSCHAFT
SISGEO