



## Steak out of factory installation

### Overview

This project was about the steak out of a new industrial installation in the aluminium industry.

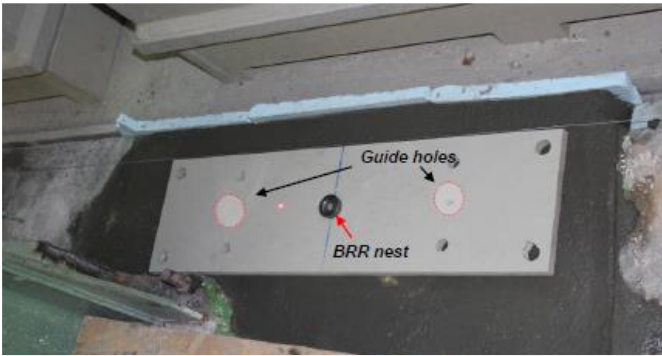
Our team realized geodetic, and alignment measurements to precisely guide the machine's installation and accurately align the rolls that move the aluminium sheets, a very high accuracy application. Inspection and establishment of the unit's reference line also took place. We carefully selected measurement equipment and methodology to comply with the prescribed tolerances from the constructor side.

#### Measurement services

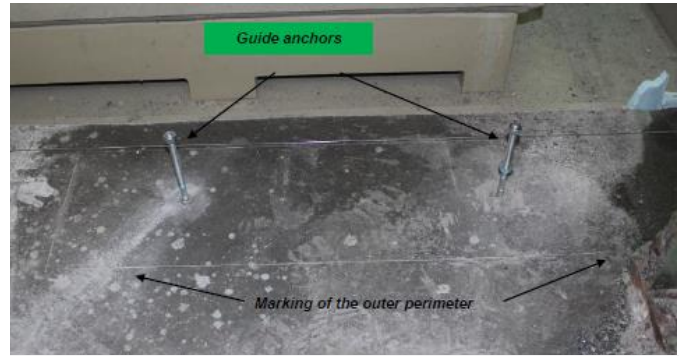
- Establishment of the position of the whole installation
- Establishment and inspection of the unit's reference line.
- Survey support of all geometrical issues.
- Foundation plates installation (squeeze rolls, dip tray tanks, skid pumps, motor drives)
- Squeeze rolls fine alignment

#### Benefits

- High accuracy and repeatability during fine alignment - levelling procedures
- Real-time data, on the fly cartesian coordinates results & dimensional deviations
- Automatic target recognition & locking
- Portability with the usage of reflectors and retro-reflective targets
- State-of-the-art instrumentation and experienced staff
- Special jigs designing (footprint marking, plates alignment, squeeze roll alignment)
- Uninterrupted measurement services (24-hour coverage)



Plastic jig for the marking of the squeeze rolls foundation plates. With red circles are highlighted the two guide holes which were used for the further accurate drilling of the outer holes. On the center was placed the Break Resistant Reflector (positional accuracies better than  $\pm 0.3$  mm)



The result after the drilling of the two guide holes. It can be seen the marked outer perimeter of the plate

## Fieldwork

We worked in four measurement groups, nine working days on marking the foundation plates of squeeze rolls, motor drives, dip tray tanks and pump skids and the fine alignment of the totally 21 squeeze rolls (10 for pre-clean and 11 for clean units).

### Services we provided:

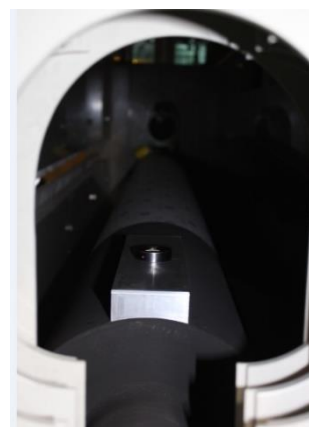
- Definition of the desirable tolerances - accuracies for each mechanical part and construction stage.
- Inspection of the existing working line which was shaped from totally 8 benchmarks. More specifically, 6 benchmarks were checked and adjusted for colinearity conditions and two new benchmarks were installed and measured.
- Main Clean and Pre – Clean Center Lines were calculated and marked (piano wires installation)
- Positioning and installation of special metal shims for dip tray tanks and skid pumps basements with level accuracy better than  $\pm 0.5$ mm.
- Horizontal and vertical positioning of squeeze rolls and motor drive foundation plates (alignment with accuracies better than  $\pm 0.5$ mm)
- Fine alignment (horizontal and vertical) of squeeze rolls (tolerances better than 0.05 mm/m – 21 squeeze rolls)



Drilling of the outer holes for further anchors installations. It was used a special metal jig to be ensured the verticality of the holes.



Squeeze rolls foundation plates on Main Clean Unit. The next step was the final alignment of the plate (orientation – position – height)



1. Metal jig for leveling measurements
2. Swing – Arm Pointer (On the outer edges of the jig was positioned the Break Resistant Reflector. Measurements were taken on two places – front and back)

### Instrumentation / Software

- Industrial Total Station TDRA6000
- Industrial Total Station TDA5005



**Do you have a similar project?**

Contact our team at [info@metrica.gr](mailto:info@metrica.gr)