## **Underground Tunnel Line 1**

### Quito





Transport von Tübbingen im Werk © www.maxfrank.com

MAX FRANK Spain supplied fibre concrete spacers for the production of precast concrete parts for the Quito subway tunnel. A total of 30 containers were supplied.

The following product properties were essential for the selection of the fibre concrete spacers:

- High loads
- Low water absorption
- Reduced tolerances in the vibrating formwork

The Quito Metro is an underground rail mass transit system consisting of a single line in Quito, the capital of Ecuador.

The length of the underground tunnel of line 1 is 19 kilometres. Three tunnel milling machines worked in parallel on different tunnel openings. Seven different segment moulds were used for tunnel construction, a total of 42. The progress of the machine allowed a laying speed of one ring with seven segments per hour.

### Type of building:

**Clients and Developers:** 

Stadtverwaltung Quito

**Engineers/ Specialist Planners:** 

Acciona Ingemey

**Building contractor:** 

Acciona Odebrecht
<a href="https://www.odebrecht.com.ec/">https://www.odebrecht.com.ec/</a>

**Completion:** 

2017

Project link:

http://www.metrodequito.gob.ec/

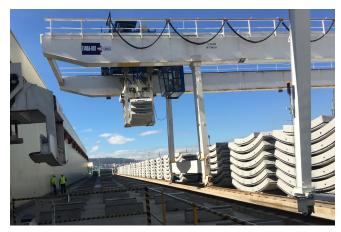
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#### **Products used:**





Transport of segments in the plant © www.maxfrank.com



Introduction of reinforcement with fixed spacers into the vibrating formwork

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Fibre concrete spacer with wire and clamp © www.maxfrank.com



Stacked tubbings in the outdoor area © www.maxfrank.com