



FORTH BRIDGE, SCOTLAND, UK

CASE STUDY

Alimak construction products at work on Unesco world heritage site

Access anytime, anywhere

ALIMAK

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Alimak supplied a construction hoist and transport platform during repair work to the Forth Rail Bridge in Scotland, with an additional construction hoist installed permanently.

HISTORY

The Forth Rail Bridge, which is the sixth World heritage site in Scotland, opened in 1890 and was the world's first major steel structure. With a double railway track allowing passenger trains to travel from North Queensferry to Dalmeny, it's overall length is 2,467 metres and at its highest point stands at 110 metres.

CONSTRUCTION HOIST & TRANSPORT PLATFORM

Alimak construction hoists have been successfully used on the Forth Rail Bridge for the last 25 years, including the major recoating work in 2012. This meant the client was already aware of the benefits of using Alimak products, so when they were looking for a reliable supplier, Alimak was the first choice.

During the repair works, an Alimak Scando 650 construction hoist and an Alimak TPL 1000 transport platform were installed on the bridge's granite columns. These provided vertical access for personnel and materials during the works.

An additional Scando 650 construction hoist has been installed permanently. This provides access for regular maintenance.

PROJECT CHALLENGES

As the Forth Rail Bridge is a listed structure, the mast tie fixings had to be carefully selected so as not to cause damage to the granite columns. To do this, Alimak used specially selected chemical anchors.

The permanently installed Scando 650 construction hoist is required to sit at a 9-degree incline, to follow the angle of the bridge. This created several challenges for Alimak's engineers to overcome: the starting point of the slab position had to be changed to allow the hoist to be installed safely, a difference cable trolley system needed to be designed, a bespoke hoist surround was created and a second floor was created in the hoist cage to ensure the floor remains level.





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OTHER BRIDGE PROJECTS

Examples of other bridge projects that have used Alimak products include:

- Viaduc de Millau, France
- Chung Sin, Taiwan
- Pont de Normandie, France
- Sunshine Skyway Bridge, USA
- Second Severn Crossing Bridge, UK
- Honshu Shikoku Bridges, Japan
- Tsing Ma/Ting Kau/Kap Shui Mun Bridges, Hong Kong
- Great Belt Bridge, Denmark
- Øresund Bridge, Sweden-Denmark
- Megyeri Bridge, Budapest, Hungary



HOIST DETAILS

Location:	Forth Rail Bridge, Scotland, UK
Applications:	Bridge
Product category:	Construction hoists
Hoist model:	2 x Alimak Scando 650 20/32
Capacity:	2,000 kg
Hoist car size:	1.50 m x 3.20 m x 2.30 m (WxLxH)
Lifting height:	38–110 m
No. of landings:	1–3

TRANSPORT PLATFORM DETAILS

Location:	Forth Rail Bridge, Scotland, UK
Applications:	Bridge
Product category:	Mast climbing work platforms
Platform model:	Alimak TPL 1000
Capacity:	1,000 kg
Platform size:	1.40 m x 1.60 m (WxL)
Lifting height:	35 m
No. of landings:	1