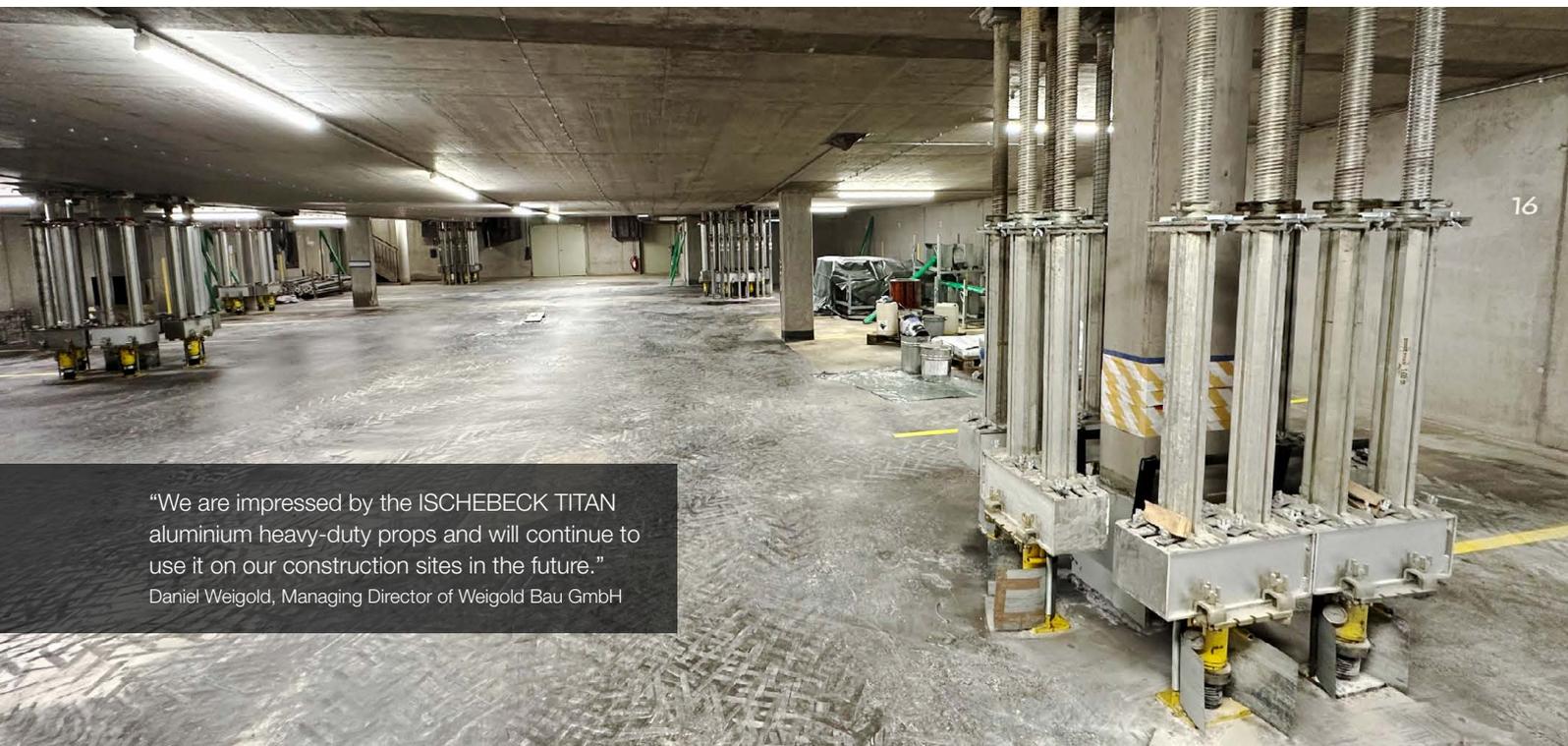


Construction in Existing Buildings: Refurbishment of an Underground Car Park

Safe support and repair of load-bearing columns with TITAN aluminium heavy-duty props



“We are impressed by the ISCHEBECK TITAN aluminium heavy-duty props and will continue to use it on our construction sites in the future.”
Daniel Weigold, Managing Director of Weigold Bau GmbH

The renovation of underground car parks is becoming increasingly important: Ageing processes in the concrete, moisture and chloride attacks caused by road salt severely affect the structures. Sustainable repairs not only extend the service life of buildings, but also make an important contribution to the conservation of resources. In many cases, preservation is the more economical and environmentally friendly alternative to a new construction.

The challenge

One example is the underground car park under the retirement home in Lossburg in the northern Black Forest, with an area of 450 m². There, the structure was first examined for chloride and corrosion damage. The results showed that the reinforcement in the columns was already heavily affected by advanced corrosion. At the same time, the chloride values in the concrete were well above the permissible limits. The decision was therefore made to comprehensively renovate the underground car park columns.

The solution

TITAN aluminium heavy-duty props were used to safely carry the building load during the work. According to the structural engineer's specifications, loads of up to 1,000 kN per column had to be supported, depending on the position. Firstly, the damaged concrete was removed using ultra-high-pressure water jets. This was followed by encasing and reconstructing the columns by pouring new concrete and finally applying a protective coating.

The adjustable pre-tensioning of the TITAN aluminium heavy-duty props was a decisive advantage during the renovation. This could be precisely controlled via a pressure gauge on the hydraulic spindle jack. This meant that the props, each of which can bear loads of up to 250 kN, could be precisely adapted to the respective columns. Thanks to their aluminium construction, the props were also easy to handle and could be erected quickly on site. With swivel head plates, they could be easily and securely fixed to sloping slabs.

Project:

Underground car park renovation under the retirement home in Lossburg, Germany

Construction period:

October - December 2024

Client:

Gebrüder Hehl-Stift Lossburg
Owners' Association,
Germany

Contractor:

Weigold Bau GmbH, Glatten,
Germany

Products used:

- 12 TITAN aluminium heavy-duty props consisting of:
 - 12 x hydraulic jacks
 - 24 x 1,20m aluminium spindles
 - 24 x 0,40m aluminium spindles
 - 19 x 1,250mm aluminium extensions



Secure fixing, even on sloping slabs, thanks to swivel head plates (special application)



Precise pre-tensioning with full control via the pressure gauge



Temporary support with TITAN aluminium heavy-duty props during the renovation of underground car park column

Would you like to find out more about the TITAN aluminium heavy-duty props?

We would be happy to advise you about your project. Simply get in touch with us. We look forward to hearing from you.