

Stuttgart-Ulm railway project

Stuttgart



Einzelabstandhalter auf der Schalung der Kelchstützen
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Type of building:

Clients and Developers:

[Deutsche Bahn AG](#)

Architect:

[Ingenhoven Architects GmbH](#)

Engineers/ Specialist Planners:

[Schießl Gehlen Sodeikat](#)
[Werner Sobek Group GmbH](#)

Building contractor:

[Züblin-Direktion Stuttgart](#)

Completion:

2025

Project link:

<http://www.bahnprojekt-stuttgart-ulm.de/aktuell/>

As part of the “Stuttgart 21” transport infrastructure project, Stuttgart’s existing main railway station is being converted into an underground through-station flooded with light. For the chalice-shaped pillars on the future railway platforms, MAX FRANK is supplying fibre-reinforced concrete single spacers.

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The eye-catching architectural feature of the future main railway station is provided by the roof, designed by the firm, Ingenhoven Architects, and supported by 28 chalice-shaped pillars. The pillars direct the daylight through the circular openings, so-called ‘light eyes’, from outside directly into the platform hall.

The first pillar weighing tonnes with an exposed concrete surface was erected at the end of 2018. At 12 metres high, it stands on a narrow base and widens towards the top to a diameter of 32 metres. The concreting for the third chalice-shaped pillar was completed in April 2019.

The enormous pillar structure with a curved exposed concrete surface places high demands, not only on the statics and design, but also on the materials used

Spacers for exposed concrete surfaces

Achieving accurate concrete cover is essential for the durability of reinforced concrete structures. MAX FRANK fibre-reinforced concrete

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spacers ensure correct concrete cover before and during concreting. They are characterized by high compressive strength and excellent chemical and physical resistance.

With formed, exposed concrete areas – such as those on the chalice-shaped pillars used for the Stuttgart-Ulm railway project, the aim is to prevent the supporting points of spacers from being visible on the concrete surface. Single spacers with a minimum support surface are therefore recommended to keep the contact with the formwork as low as possible. The systematic planning and installation of the spacers also contributes towards a visually appealing result.

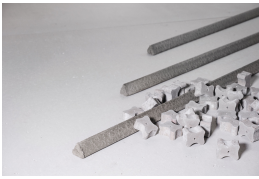
In order to prevent them from standing out, the colour of the spacers was adapted to the light, exposed concrete surface of the chalice-shaped pillars. For an optimal colour result, MAX FRANK carried out concreting trials beforehand and, in coordination with the customer, thereby achieved the right colour for the spacers.

MAX FRANK offers a comprehensive range of spacers. In this case, for fastening the single spacers to the reinforcement, the version with clips was selected. The spacers thus remain in position, at right angles to the reinforcement, and ensure compliance of the concrete cover.

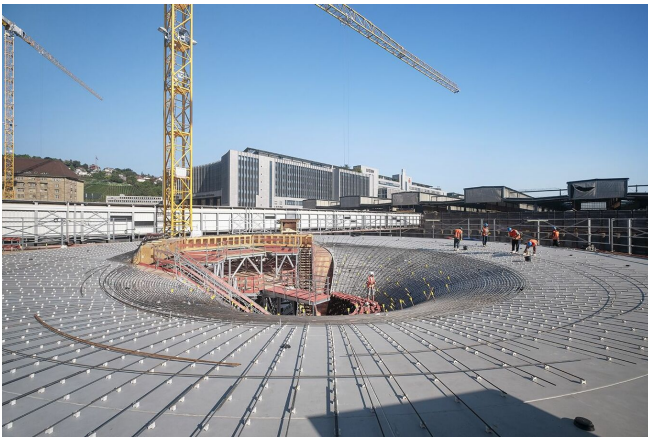
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Products used:



Fibre concrete spacers



Spacers on formwork for the first chalice-shaped pillar
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Spacers on formwork for the first chalice-shaped pillar
© Bahnprojekt Stuttgart-Ulm, Fotograf: Achim Birnbaum



Single spacer on curved component
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Demoulded chalice-shaped pillar with exposed concrete surface
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