



Foundation slab for Semi-Vital health Centre in Kemnath, Germany

Project overview >

A hybrid reinforced structural foundation slab and elevator shaft for one of Kliniken Nordoberpfalz AG's many health care facilities. The project was constructed using steel mesh with ArcelorMittal steel fibre reinforced concrete.

ArcelorMittal Fibres solution >

- TAB®House

Construction contractor: Strabag AG - Pöhner Bau

Concrete supplier: Kulm Beton

Fibre type: HE 1/60

Dosage: 30kg/m³

Concrete class: C25/30

Performance class: L1.2/1.2

Slab thickness: 400mm

Additional reinforcement: 2x Q535 mesh

“The foundation slab for the Semi-Vital Health Centre in Kemnath is an excellent example of how the combination of traditional reinforcement and steel fibre reinforced concrete can deliver a cost-effective structural foundation slab and elevator shaft.”

Martin Spindler (VDB)

Head of Fibre Business Germany, Austria,
Switzerland and Slovenia. ArcelorMittal Fibres

The challenge >

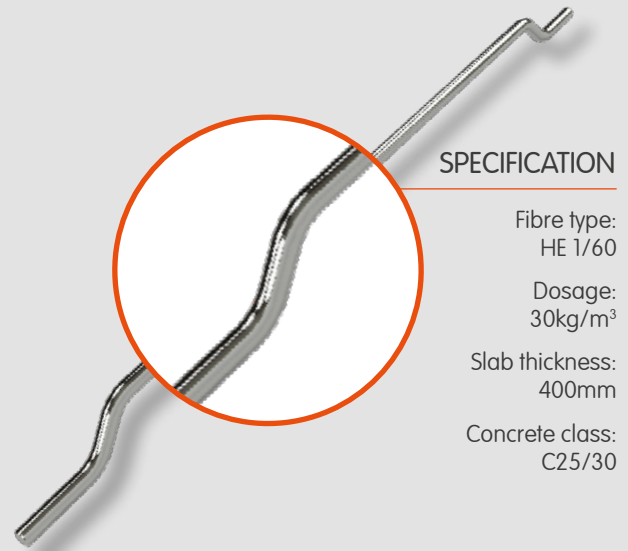
The pre-design for the foundation slab specified several layers of steel mesh arranged on top of one another with minimal space between them. This layered arrangement of steel mesh presented potential issues for the pour and the steel fibre reinforced concrete's ability to flow through and around the mesh. The challenge was not only to reduce labour time but also to improve the workability and flow of the concrete mix through the layers of steel mesh.

Executed to the highest standards, our engineering team worked closely with the architects, construction contractors and concrete suppliers to collate and process all the necessary data before undertaking a detailed study of the parameters affecting the design, based on the DAFStb Guideline "Stahlfaserbeton".

The solution >

A 40cm load bearing foundation slab was laid using a C25/30 L 1,2/1,2 SFRC performance class (30kg/m³ HE 1/60).

On-site advice and support was provided by ArcelorMittal Fibres' Engineers who ensured that the reinforced concrete specification was implemented correctly, quickly and safely.



SPECIFICATION

Fibre type:
HE 1/60

Dosage:
30kg/m³

Slab thickness:
400mm

Concrete class:
C25/30

The result >

The steel fibre reinforced hybrid slab provides the load bearing foundation for the building structure.

The use of ArcelorMittal steel fibre reinforced concrete has meant that the volume of steel reinforcement that would ordinarily be used has been reduced.

ArcelorMittal Fibres' Engineers specified a design solution which is compliant with the DAFStb Guideline "Stahlfaserbeton" (2010) (2012) for steel fibre reinforced concrete and additional reinforcement.

The elevator shaft was constructed using HE 1/60 steel fibres with constructive rebars used only in the corners of the elevator shaft.

By using the TAB®House solution, the construction process has delivered significant savings in time, material and costs for stakeholders without compromising the safety of construction workers or the integrity of the building.

The world is building on our expertise.

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