



# LIGHT WEIGHT TEXTILE-REINFORCED CONCRETE

**A strong composite for trendsetting construction**

**CHT**  
SMART CHEMISTRY  
WITH CHARACTER.

# Sustainable building with textile-reinforced concrete

Textile-reinforced concrete is the future building material but in this field the future has already started.

Using textile-reinforced concrete delicate profile concrete parts with superior load-bearing capacity yet a low tare weight can be manufactured. The decisive benefit of these constructions is that they are durable even under extreme conditions and that they require much lower maintenance cost. These benefits result from the substitution of the heavy steel reinforcement, which is prone to corrosion, by a lightweight, resistant textile reinforcement which offers at least an equal load-bearing capacity.



In order to create strong, durable structures using textiles and concrete, the different materials must be combined to form a load-carrying unit. Two essential parameters are fundamental for the full exploitation of the performance of these composites:

- Expertise in the fields of construction auxiliaries and mineral systems as well as technical textiles
- Know-how for formulating and applying coating materials to optimise the fibre-cement composite

The CHT Group is a worldwide active company applying solutions and optimising technical textiles as well as developing and selling chemical auxiliaries for the construction industry which offer the ideal prerequisites for meeting this challenge. For more than 5 years the CHT Group has dealt with textile-reinforced construction and has intensively contributed to the success of this composite.

On the basis of our in-house expertise and the innovative ideas generated from our various development groups the material characteristics can be controlled and adjusted for various requirements.

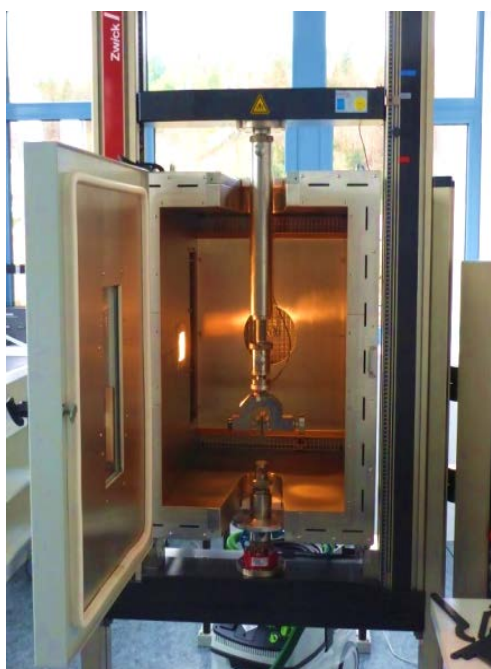


## CHT - your innovative partner for realising textile-reinforced concrete projects

A great number of skills and proficiencies are required for making a textile-reinforced concrete project successful. It is essential to know the full potential of high-performance fibres such as carbon, glass-fibre or basalt in order to exploit the concept to the full. At the same time, the various organic and inorganic interfaces in the concrete must be adjusted and coated with suitable components.

In joint cooperation with its customers and partners CHT develops customised concepts. CHT simultaneously supports the technological implementation of these concepts and assists in the development of their applications. In accordance with recognised standards and guidelines CHT offers the following in-house tests:

- Temperature-dependent yarn tension test
- Alkali depositing and tests
- Temperature-dependent textile-reinforced concrete composite tests
- Test of the adhesion to concrete
- Concrete test device (compressive and flexural strength)
- Alternating climate tests



## Existing solution approaches

In addition to the joint development of new concepts and suitable components for load-bearing composites, CHT already offers high-performance components for reinforcements made of carbon, basalt or glass-fibres. These aqueous, easily applicable dispersions give the following characteristics:

- Stiff as well as drapeable textile reinforcements to meet any requirement
- Roving strengths of up to 4000 MPa
- Very high alkali resistance
- Temperature resistance up to 100 °C
- Excellent bond strengths
- Reference material within the C<sup>3</sup> framework for exterior applications up to 80°C

Continuous developments are ongoing to develop a range of durable and high-performance solutions.

CHT is driving developments forward working together with their innovative university partners such as the Carbon Concrete Composite C<sup>3</sup> research project, or with other industrial partners within the company association TUDALIT.



Foto: Solidian GmbH

