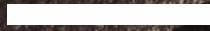


solidian•kelteks



**We build
with concrete
durable for
100 years**



[/solidian-kelteks.com](https://solidian-kelteks.com)

2025

Non-metallic Reinforcement

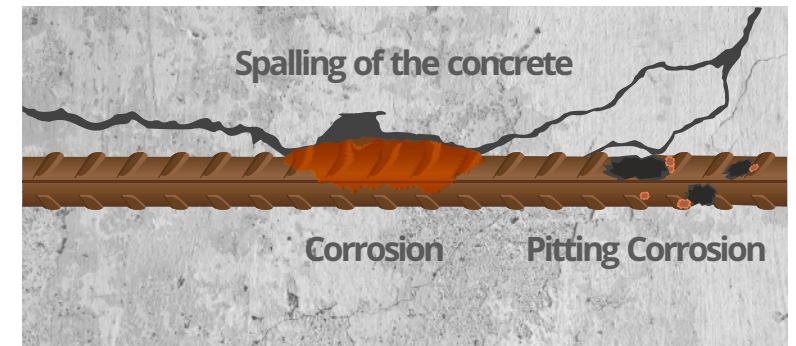
- Proven high-performance material carbon fiber composite plastic (CFRP)
- Unrestricted corrosion resistance
- Guaranteed service life for over 100 years
- Products approved by the DIBt, Germany
- Plannable according to regulations

Our materials are completely resistant to corrosion!



Ambient air
Carbon dioxide

Salt
Chlorides



Steel
Reinforced
Concrete

- Different types of corrosion lead to different types of damage (visible / not visible)
- Loss of load-bearing capacity due to reinforcement damage
- As a result: component failure with and without prior notice

Ambient air
Carbon dioxide

Salt
Chlorides



Carbon
Reinforced
Concrete

- No corrosion
- No damage
- No component failure
- Carbon reinforcement is demonstrably resistant to almost all media and the most extreme conditions

Corrosion-free brings advantages



Greatly reduced lifecycle costs



Unrestricted use of demolition materials as aggregates in concrete



Use of cement-free concretes, which mean a considerable reduction in CO₂



Risk minimization through exclusion of corrosion-related component failure, e.g. in bridges



Minimal use of resources thanks to thin and filigree design

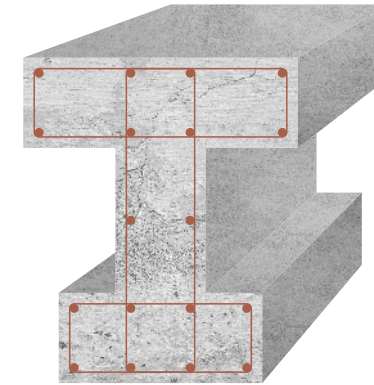


At least 100 years service life of components/structures, e.g. bridges

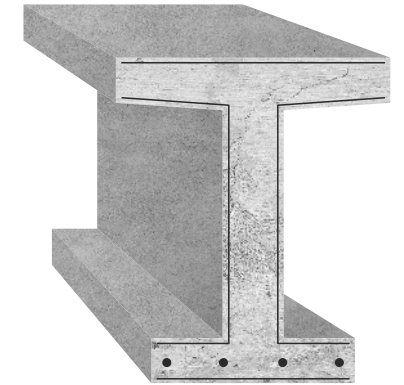


Lowest maintenance and repair costs

We don't need to protect our reinforcement!



Steel Reinforced Beam



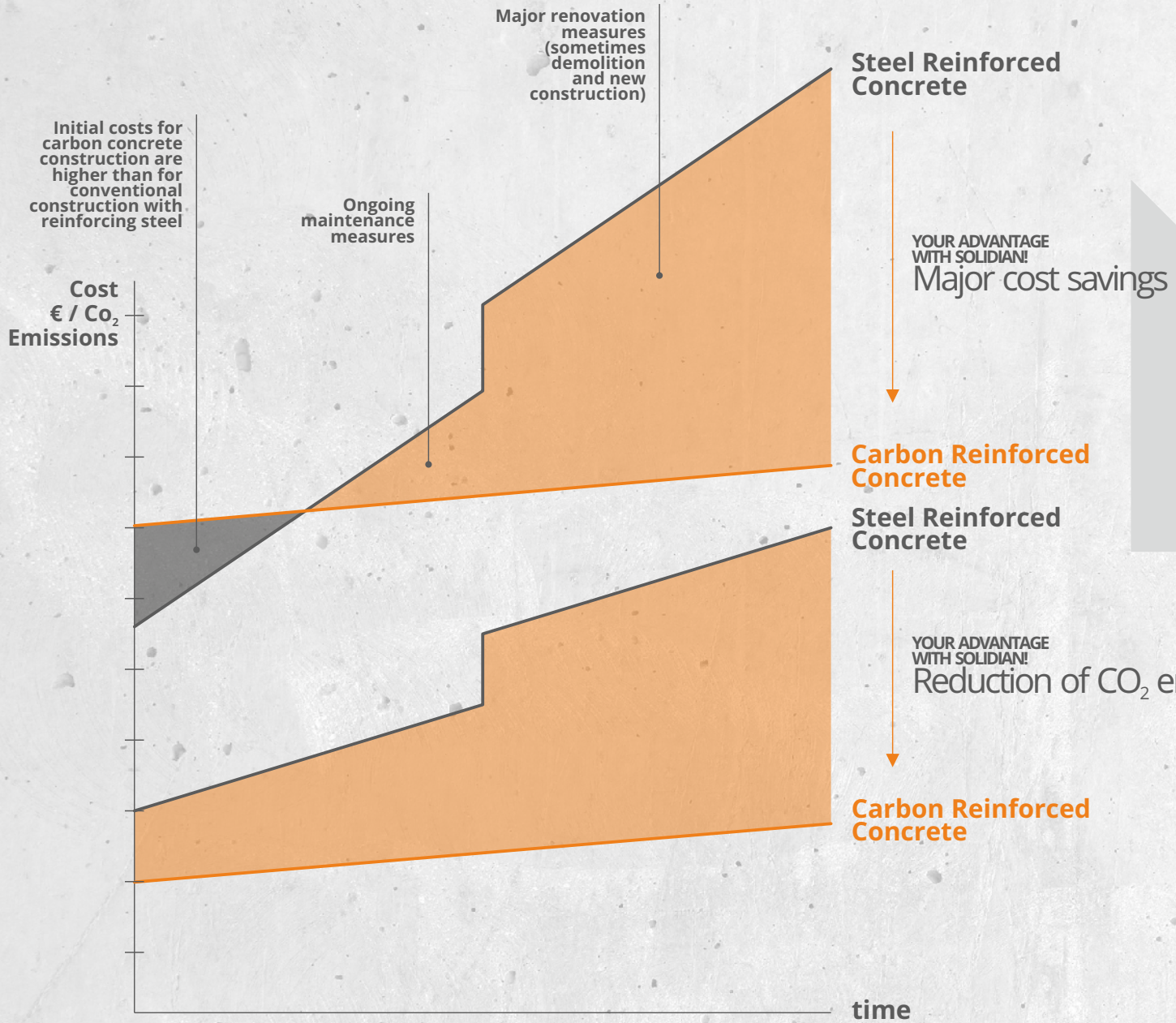
Carbon Reinforced Beam



Carbon concrete requires **NONE** increased concrete cover or protective measures, such as surface protection systems

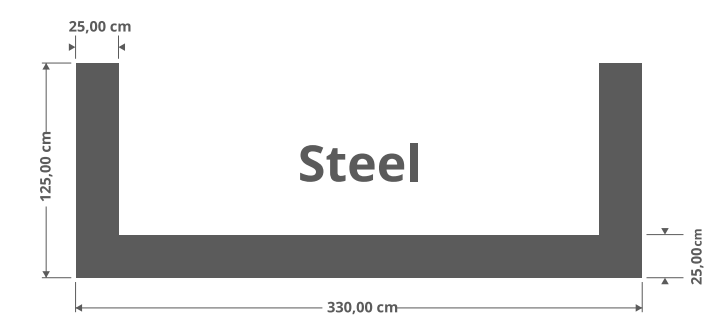
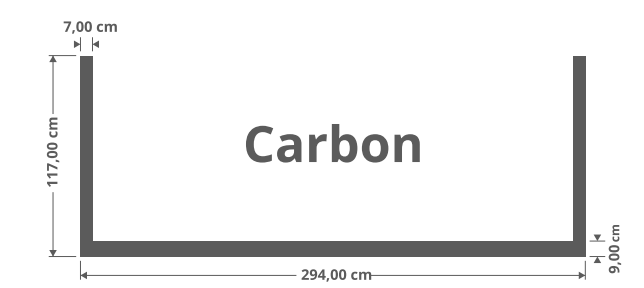
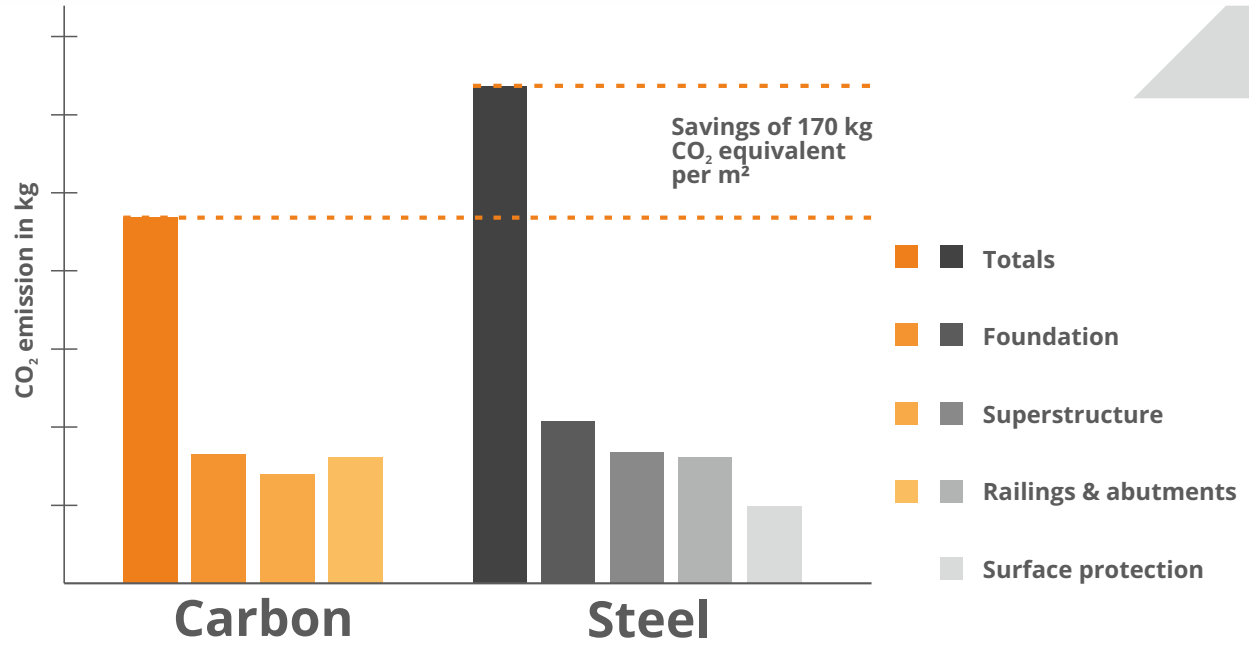


Carbon concrete requires **ONE** concrete cover, only for the transmission of forces



Cost effectiveness with sustainability?

...and protect our resources at the same time!



Resource and CO₂ reduction using the example of a pedestrian bridge



~ 21,000 kg Sand & gravel



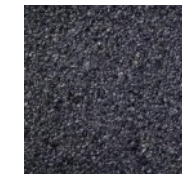
~ 4.000 l Water



~ 1,500 kg Steel



~ 7,500 kg Cement



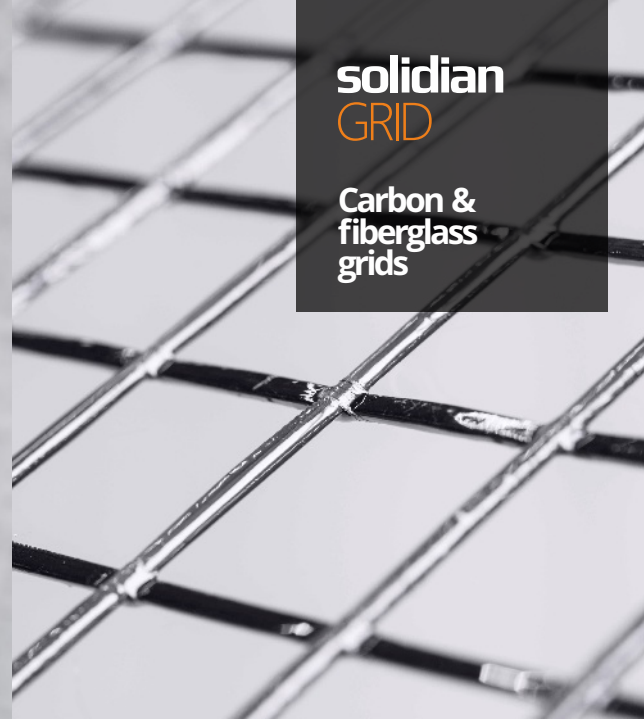
~ 9,000 kg Asphalt

Our products & solutions are your success!



solidian
REBAR

Carbon & fiberglass bars



solidian
GRID

Carbon & fiberglass grids



solidian
ANTICRACK
Form

Formed carbon & fiberglass grids



Tokyo Rope
CFCC

Carbon strands



solidian
REBAR Form

Formed carbon & fiberglass rods



solidian
ANTICRACK

Sanded carbon fiber grids



solidian
REMAT

Carbon & glass bar mat

**We support your
efficient construction
site logistics!**

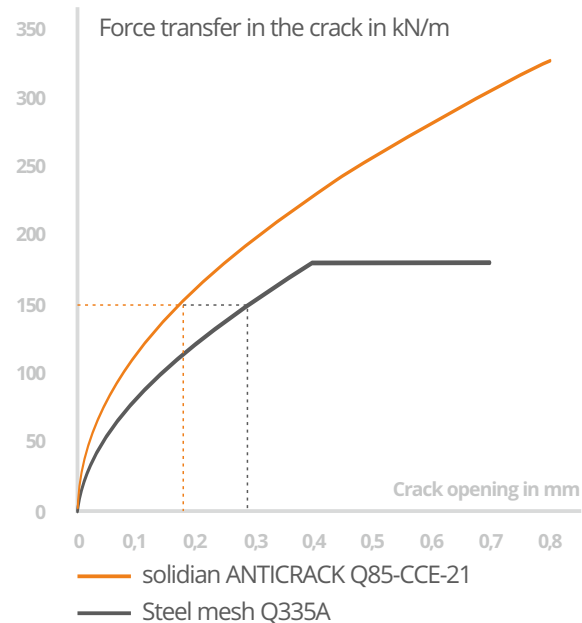
Transportation &
Storage system

solidian CARGO SYSTEM

- Safe handling and transportation
- Roll material enables reduction of joints, less waste, savings in transportation costs
- Up to 250 m (750 m²) of reinforcement in one piece

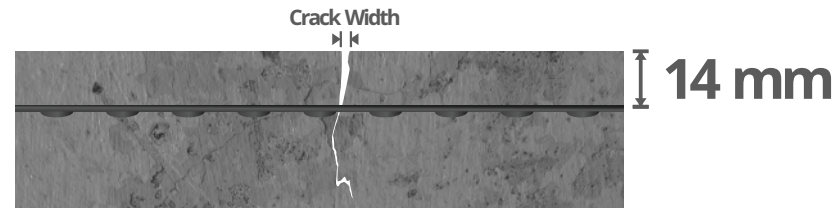


Large cracks in concrete don't stand a chance!

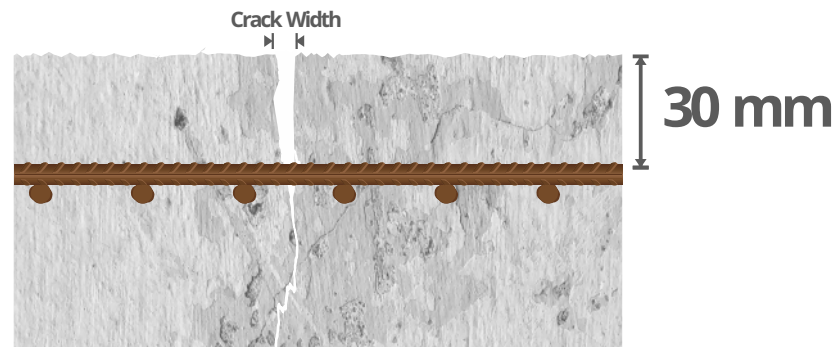


solidian ANTICRACK Q85-CCE-21 shows superior crack width limitation compared to a Q335A reinforcing steel mesh and can also be installed very close to the surface due to its corrosion resistance.

Carbon Reinforced Concrete



Steel Reinforced Concrete

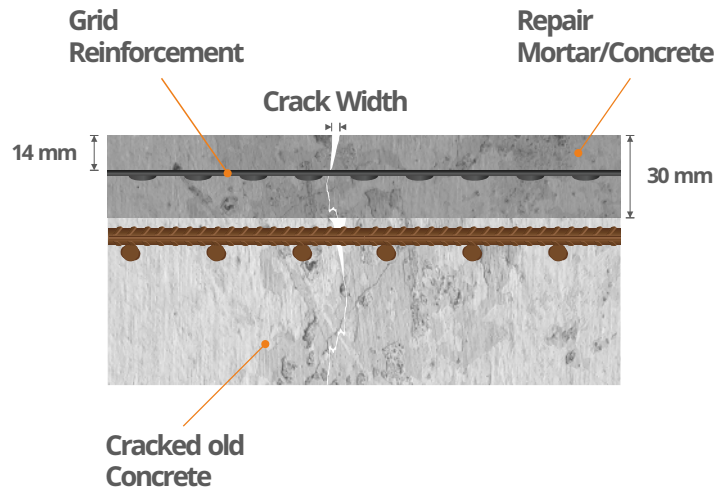


- Lower concrete cover, resulting in a slimmer component with lower constraining stresses from hydration
- Smaller crack width with the same force/stress in the reinforcement
- Near-surface reinforcement directly limits cracking
- Difficult penetration of the concrete component by media or pressurized water, regardless of the direction (from below/above or outside/inside)

And not even in maintenance,...

Top Concrete

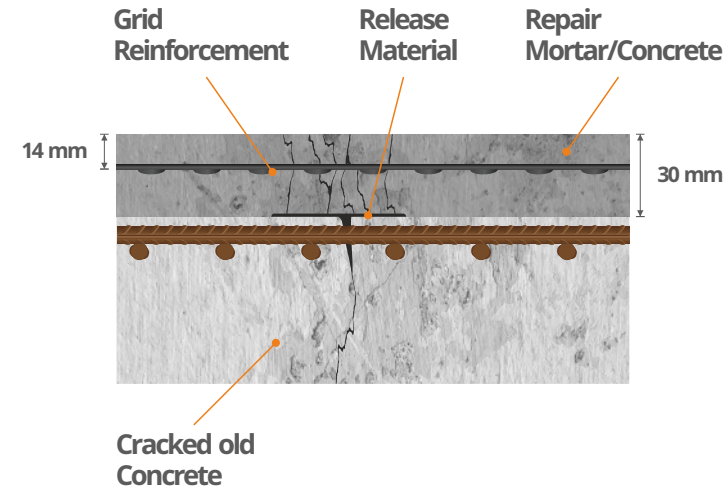
Smaller crack width



- Smaller crack width with the same force/stress in the reinforcement
- Near-surface reinforcement directly limits cracking

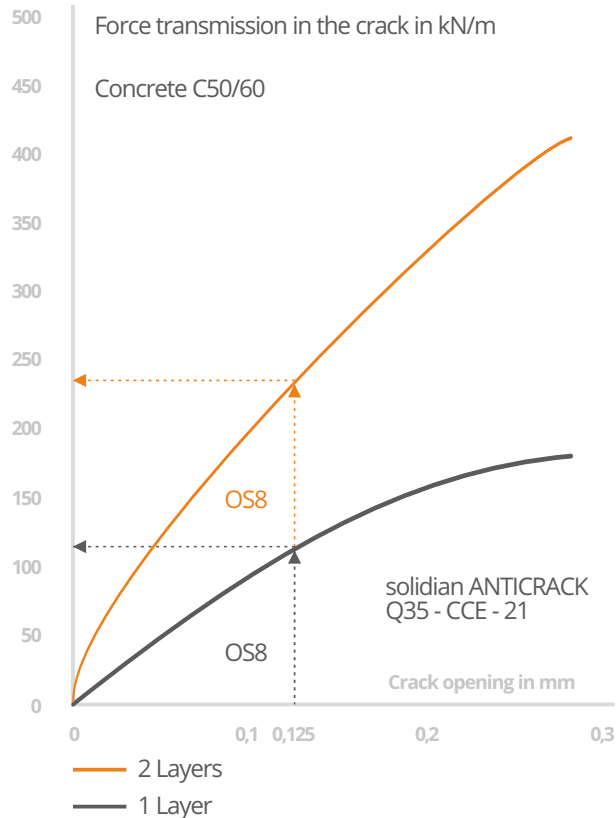
Top Concrete

Significantly smaller crack width

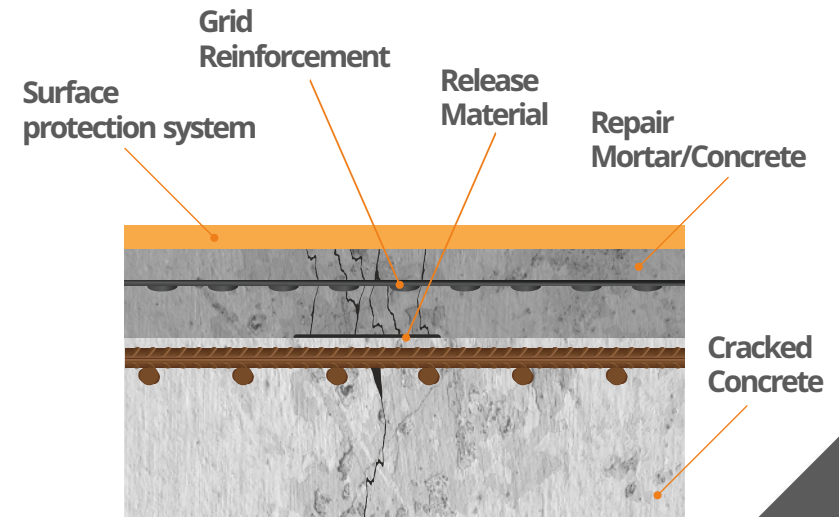
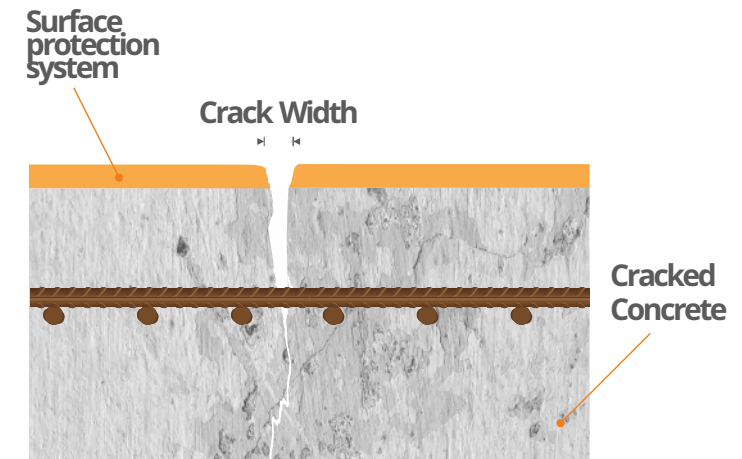


- Shortening the crack spacing Fine distribution of cracks
- This results in more cracks with a significantly smaller crack width
- In particular, the sanded surface of the reinforcement ensures optimum positive locking to the concrete or mortar

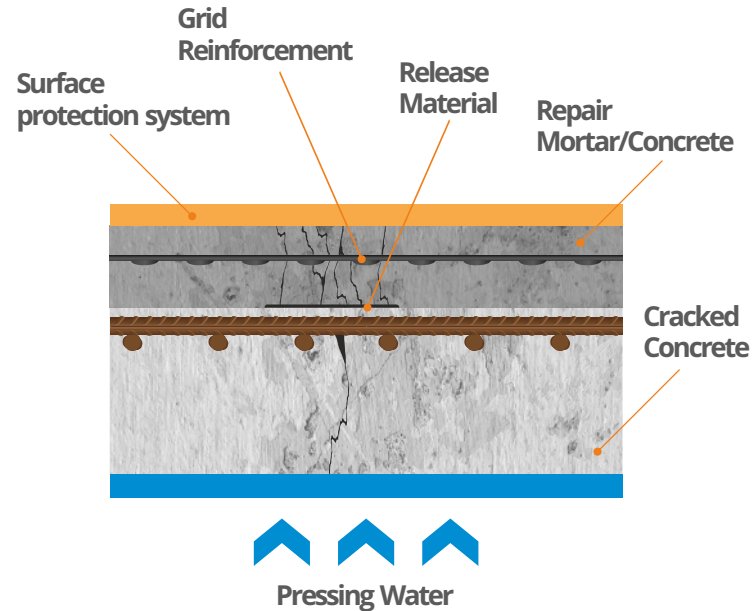
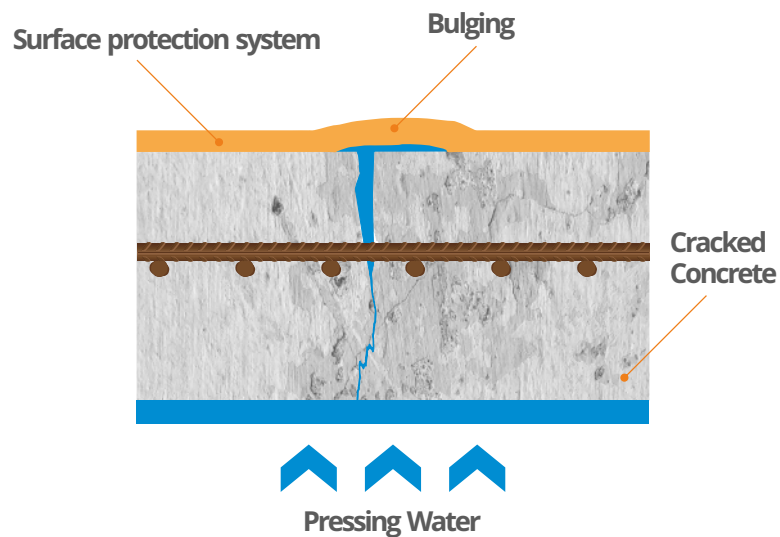
... when surface protection systems are used!



- Carbon reinforced concrete achieves smaller crack widths on the concrete surface with even distribution
- This enables the use of a rigid surface protection system
- The rigid surface protection system is mechanically more resistant than flexible systems and therefore more durable
- This results in cost savings due to the non-recurring replacement of a flexible surface protection system and cheaper material and its installation



This is a sealing layer that holds tight!



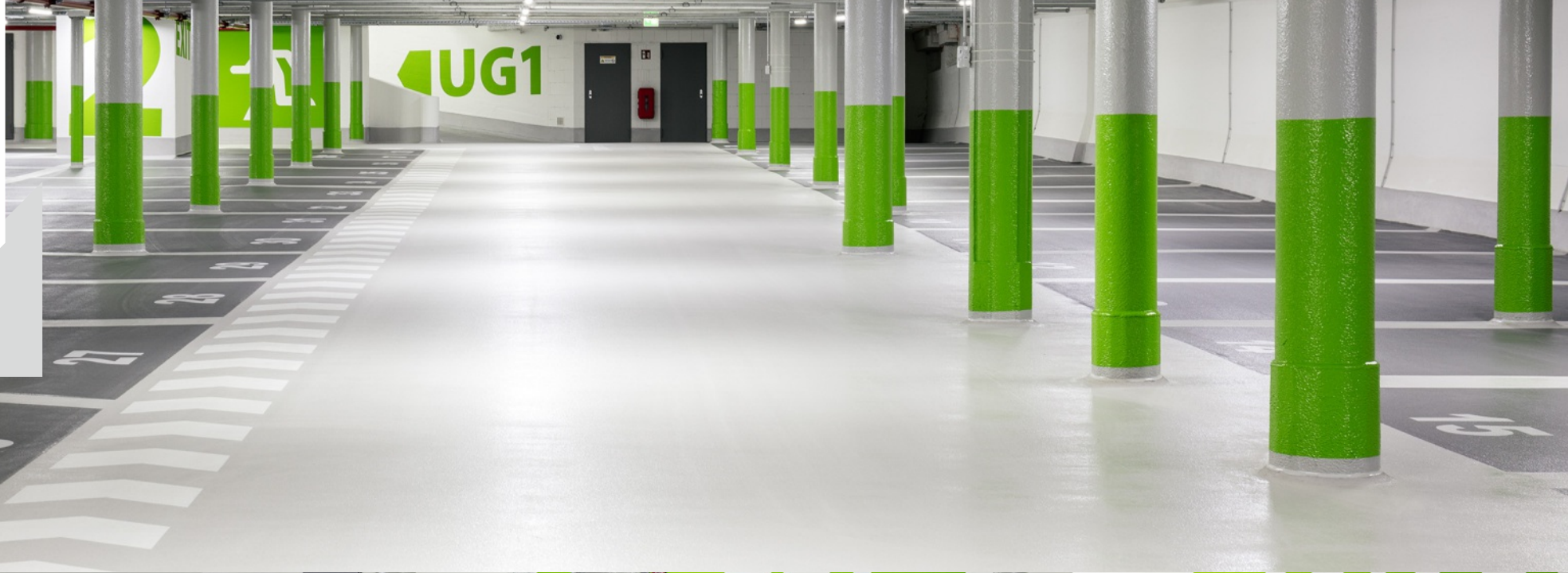
- Pressing water from below damages the component on the surface. The surface protection system bulges!
- Carbon reinforced concrete achieves smaller crack widths on the concrete surface with even distribution
- Crack widths are minimized so that water cannot penetrate the carbon concrete layer. The carbon concrete takes on the function of a sealing layer
- The rigid surface protection system is mechanically more resistant than flexible systems and therefore more durable
- This results in cost savings due to non-recurring renewal of a flexible surface protection system and cheaper material and installation

Park Elmshorn, Hamburg, DE



- More than 8,000 m² reinforcement area
- Carbon grid reinforcement (sanded): solidian ANTICRACK Q85-CCE-21 in rolls
- Flowable concrete replacement mortar (weber.floor 4640 Outdoor RepFlow)
- Best cost-effectiveness thanks to as few overlapping surfaces as possible
- Repairs were carried out faster and with less effort than with conventional solutions

Underground car park Marquardt Bau, Stuttgart, DE



- Structural reinforcement and renewal of approx. 1,600 m² parking area
- Structure had to be as light as possible to avoid additional dead weight
- Construction of a carbon reinforced concrete topping of approx. 4 cm
- Repairs were faster than with conventional solutions



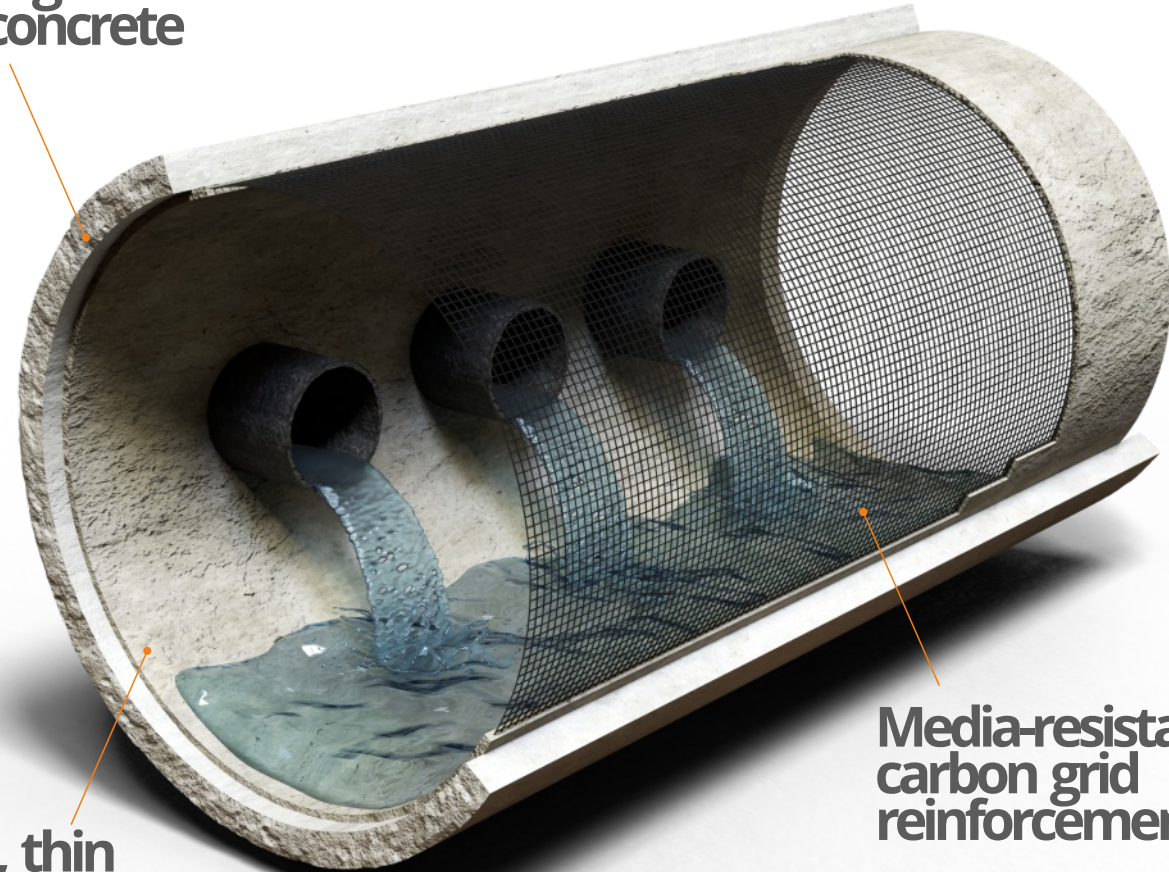
Turn old into new!

- Carbon reinforced concrete as concrete repair and/or pure structural reinforcement
- Resistant to highly aggressive media in the waste water sector (classification XWW4, e.g. biogenic sulphuric acid, reinforcement tested in accordance with German standard DIN 19573)
- Easy transportation in confined spaces
- Less installation effort compared to reinforcing steel reinforcement due to large-area installation of very light grids
- Easier construction site set-up and efficient construction process without excavation pit and traffic detour
- Minimal reduction of the flow cross-section due to thin supplementary layer
- Less consequential damage due to more robust surfaces and therefore increased durability

More damaged old concrete

New, thin layer of carbon concrete

Media-resistant carbon grid reinforcement



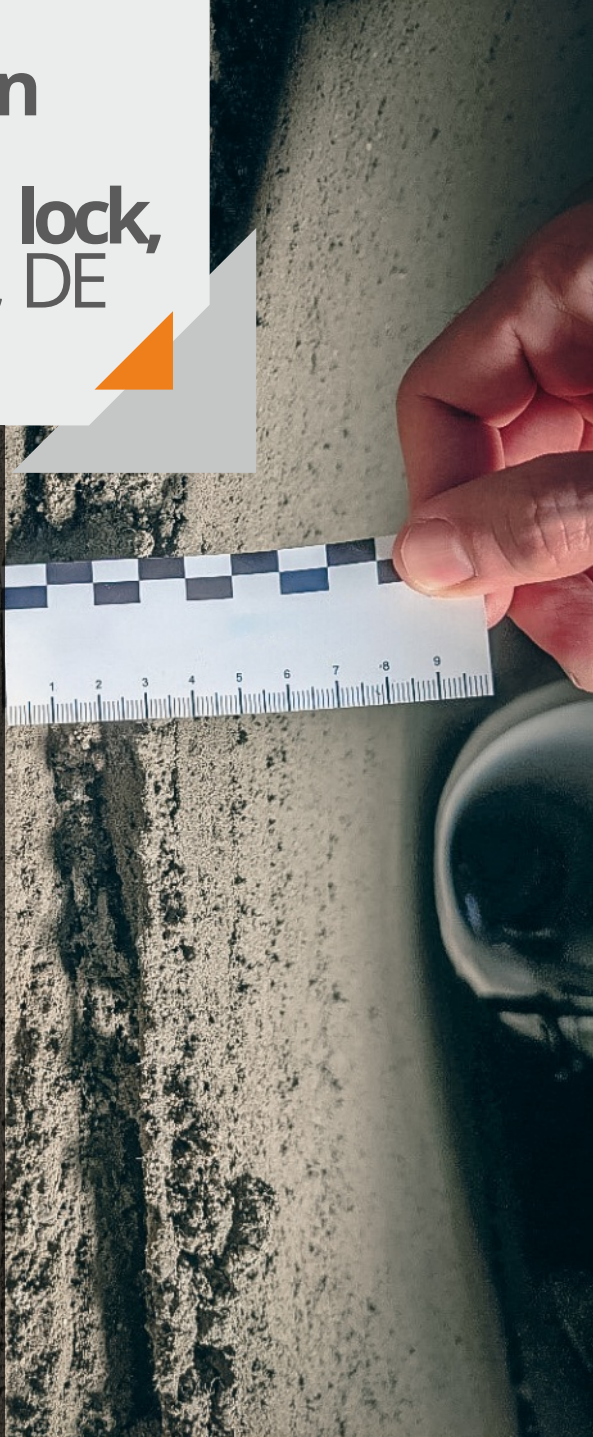
Sewer, northern main collector, Leipzig, DE

- Reinforcement of the vault structure of the sewer with solidian GRID Q43-CCE-21 carbon grid reinforcement and spray mortar (remmers)
- Rear anchorage into the existing structure: solidian L-Shape
- Carbon reinforced concrete for maximum resistance and durability
- Highly flexible and lightweight carbon reinforcement for efficient processing and easy transportation in confined spaces



Circulation channel Anderten lock, Hannover, DE

- Repair of the circulation channel with a sanded carbon grid reinforcement solidian ANTICRACK Q85-CCE-21 and spray mortar (StoCretec)
- Thickness of the new inner shell approx. 30 mm
- Increased mechanical resistance of the surface
- Executed in accordance with the MITEX guideline of the Federal Waterways Engineering and Research Institute (BAW) of Germany



Remstal bridges, near Stuttgart

- Lightweight and robust bridge deck made of carbon reinforced concrete due to low component thickness of 80 to 120 mm, without sealing
- Covering also serves as weather protection for glulam beams
- Carbon grid reinforcement: solidian GRID Q95-CCE-38
- The lightweight construction method results in smaller dimensions for beams, foundations and pile foundations and thus a significant saving in materials



Modular bridge girders (PAMB), Saxony, DE

- Modular, prestressed traffic bridge girders for safe and cost-effective infrastructure
- Very high durability and a service life of over 100 years
- Operation without a surface and yet extremely low and economical maintenance
- Minimum installation time and immediate commissioning
- High robustness and rigidity



Modular bridge girders (PAMB), Saxony, DE

Dimension

- Beam length: 16.40 m
- Beam width: 1.50 m
- Beam height: 1.10 m
- Panel height: 0.26 m
- Bridge width: 7.50 m

Carbon reinforcements:

- Grid reinforcement
solidian GRID Q95-CCE-38
- Bar reinforcement
solidian REBAR D12-CCE
- Tension strands
Tokyo Rope CFCC 1x7
12.5D



Schwaderloch Rhine footbridge, Albbruck, DE/CH

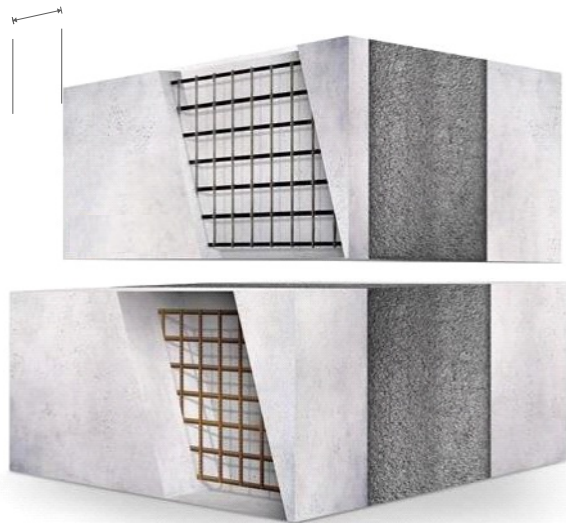


- Bridge length: 204 m
- Year of construction: 1934
- Welded steel profiles as main girders over 5 bays
- New concrete slab with the lowest possible dead weight, slab thickness from 70 mm
- Only one expansion joint in the middle of the bridge at 102 m
- solidian GRID Q95-CCE-38 carbon grid reinforcement and solidian ANTICRACK Q95-CCE-38 as a sanded carbon grid

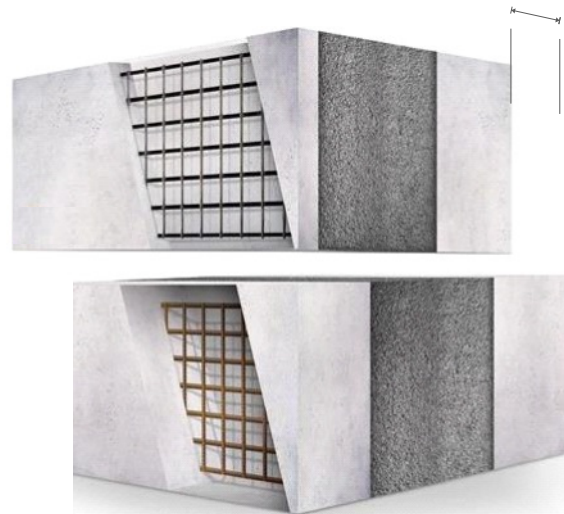


Don't just save material - gain space too!

Reduction of component thickness
min. 40 mm



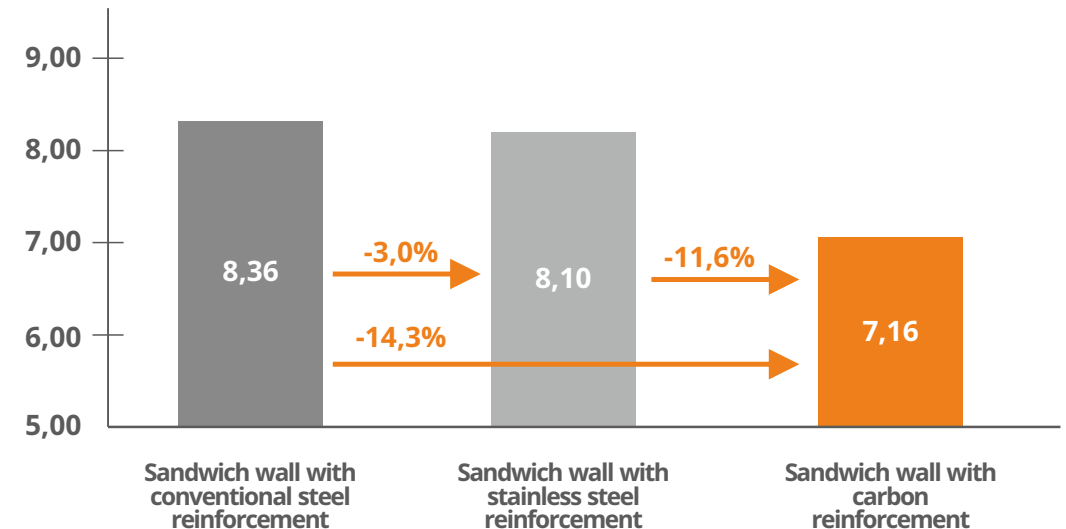
Gain in area
min. 40 mm



Example: Office building, 4-storey,
external dimensions 40 x 20 m

- With a basic rent of EUR 20/m², this results in approx. EUR 3,800 additional income from letting per year
- This alone amortizes the initial higher construction costs of the façade after approx. 12 years

Weight in t



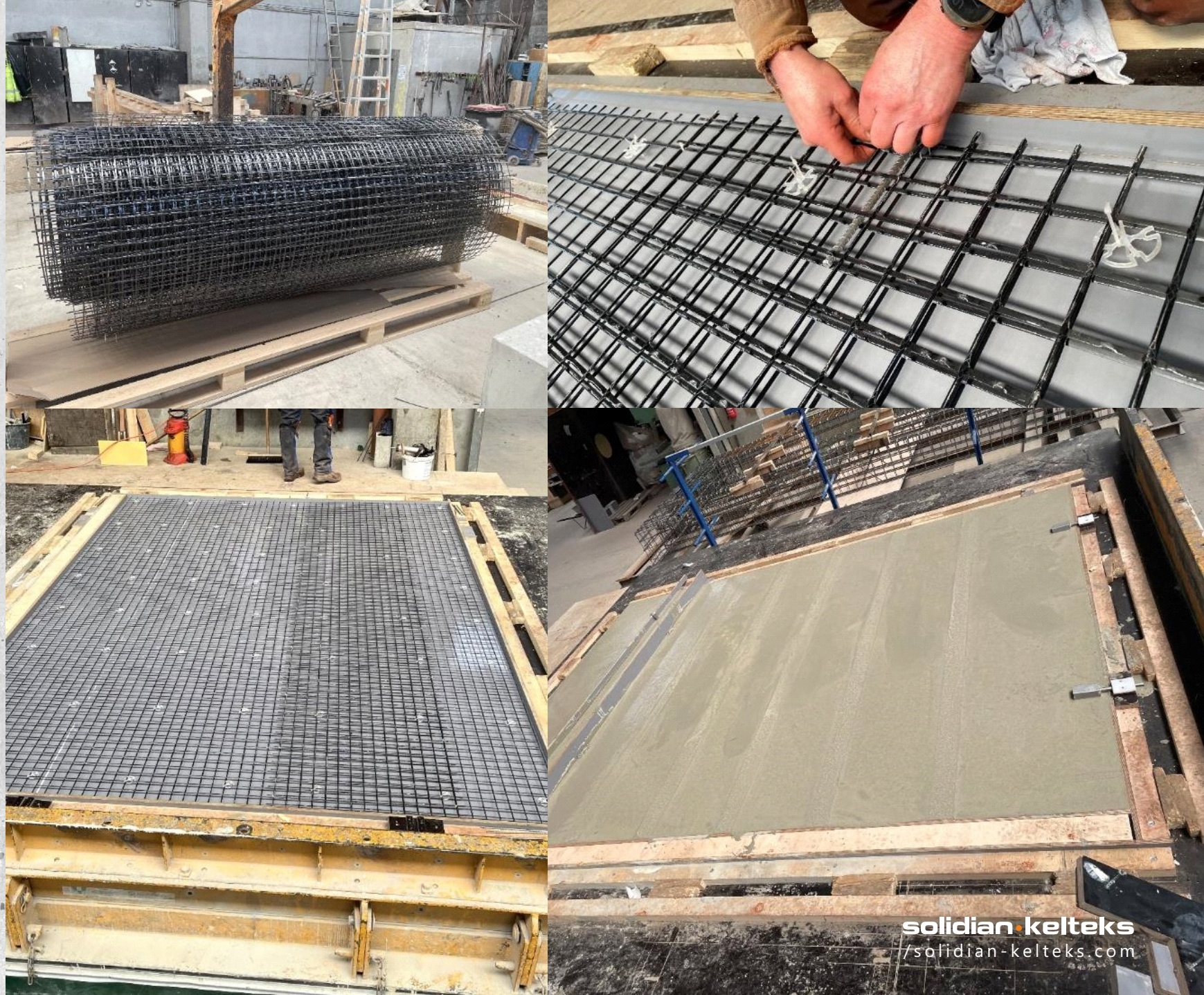
Concrete sandwich façade, Aachen, DE

- Concrete sandwich façade with fastening system made of glass fiber composite plastic
- Thermal bridge-free fastening with solidian Z-CONN load-bearing anchors and solidian PIN-CONN connecting elements
- Carbon grid reinforcement solidian GRID Q95-CCE-38, centrally reinforced
- Dimensions of the finger elements:
approx. 6 x 4 m
- Panel thickness: 35 mm
- Concrete quality: C35/45

Curtain wall façade, Berlin, DE

solidian SANDWICHWALL 2.0

- Panel dimensions up to 3.70 m x 2.70 m
- Panel thickness: 40 mm
- Concrete quality: C50/60
- Carbon grid reinforcement solidian GRID Q71-CCE-51
- One reinforcement layer in the middle of the slab
- Fastening system: HALFEN FPA SL-30 by LEVIAT



Here for You!

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