



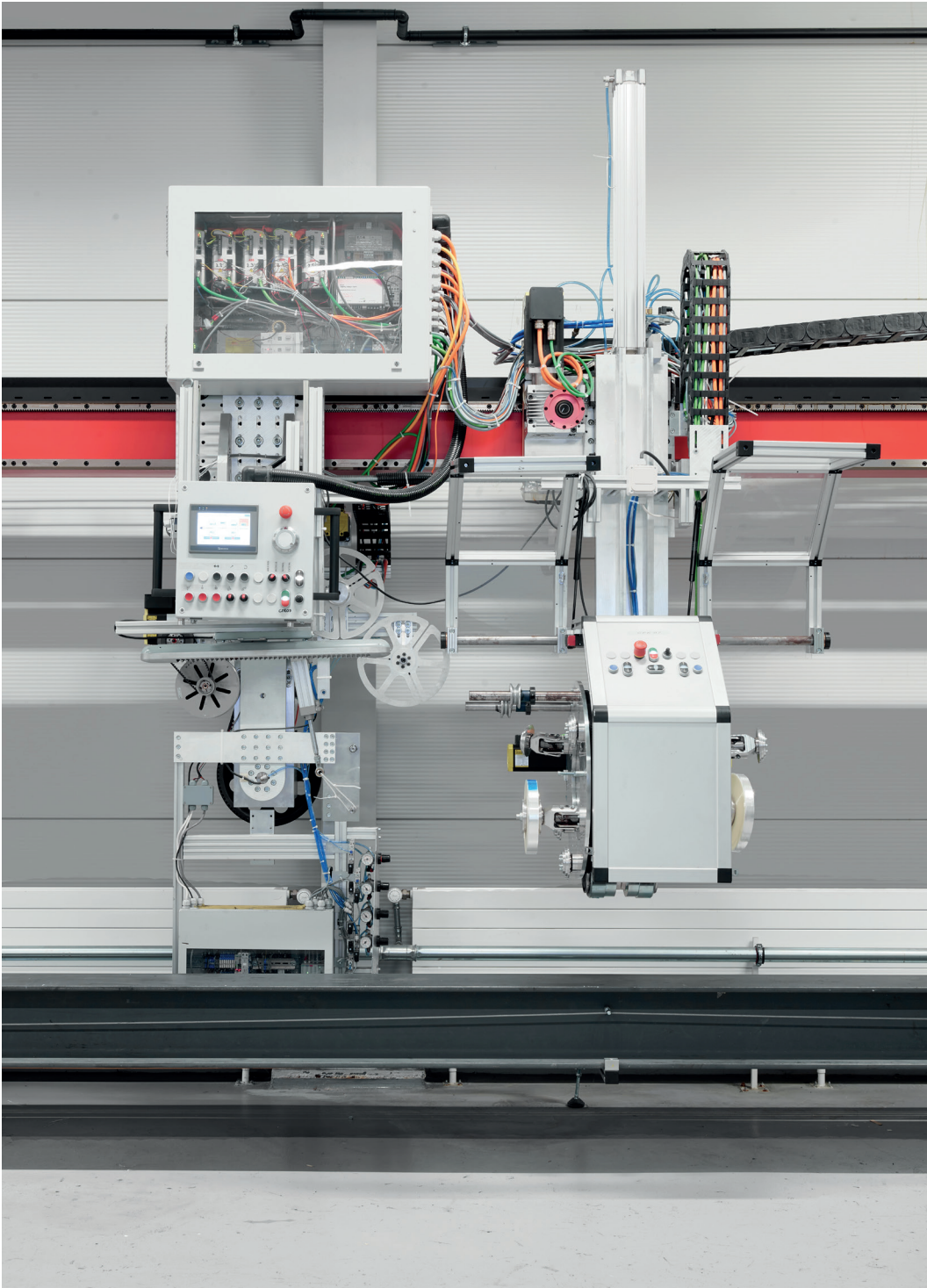
CL BRIDGE

CFRP bridge hangers

Sustainability through longevity & durability

Made in Switzerland

www.carbo-link.com



Carbo-Link

Founded in 2000 as a spin-off from EMPA (Swiss Federal Laboratories for Material Science and Technology), Carbo-Link specialises in the design, engineering and manufacture of CFRP structural elements for high loads. Carbo-Link is AS9100D Aerospace & Defence certified, with multiple solutions DNV Type approved. All solutions are made in Switzerland.

Mission

Contribute to increased structural efficiency & sustainability of global infrastructure through the use of long lasting, reliable & cost effective CFRP solutions in new construction & existing structure rehabilitation.



CL BRIDGE

Carbo-Link's CFRP CL BRIDGE cable technology is driven by stiffness and break load demands – whilst both variables are treated independently. The inherent non-corrosive nature of carbon is further enhanced with a ceramic coating to increase resistance to chafe, impact and vandalism.

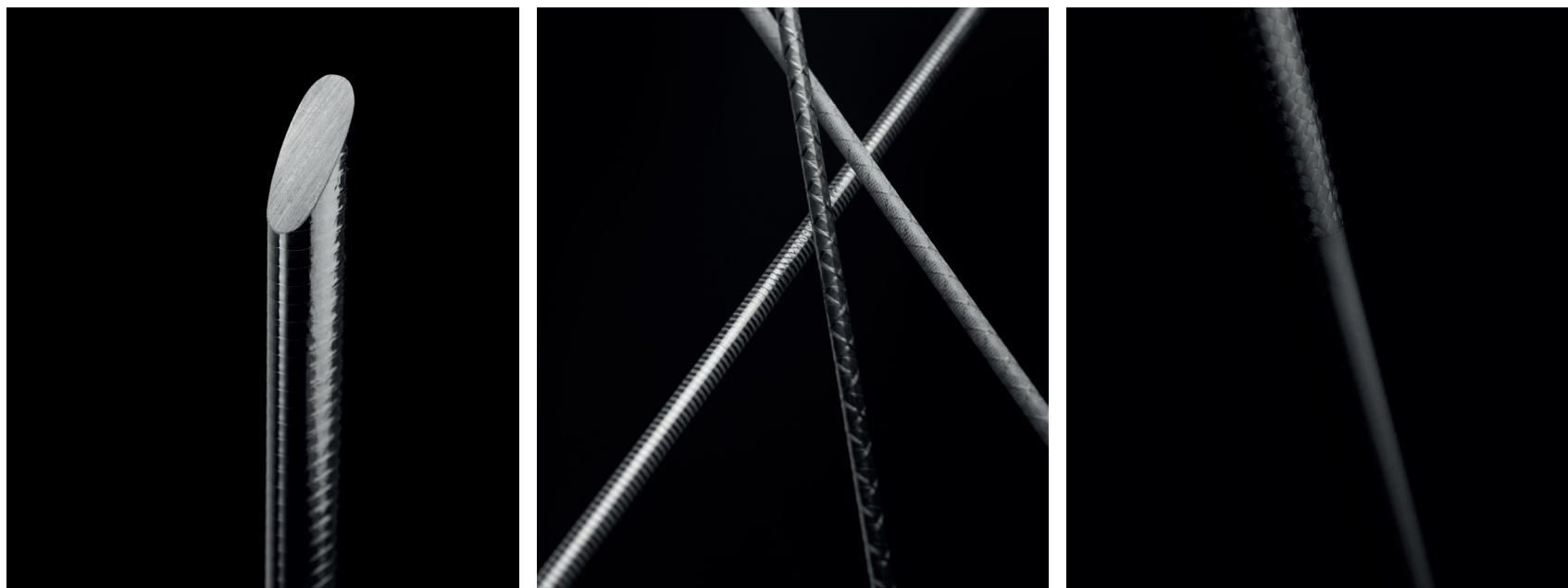
Produced from pre-pregnated carbon tapes and integrated titanium fittings. Raw carbon fibres are impregnated with the optimum matrix material using our in-house, automated prepreg machine. This process ensures that the carbon fibre filaments are aligned perfectly along the load path – ensuring exacting stiffness. In addition, the prepreg tapes are produced to the correct width to correspond with the titanium termination, meaning there are no slit tapes along the entire length.

WHY CFRP?

Composite materials allow the CFRP Bridge Cable to significantly outperform steel alternatives as a result of bespoke process development. Optimising fibre type, direction and volume fraction together with optimised matrix material systems results in tailored properties to suit the exact demands.

Fatigue strength is a limiting design factor of steel cables. As a result, they are overbuilt from a static strength perspective resulting in low Eigen frequencies leading to life-reducing wind-induced vibrations, non-required stiffness with additional peak load and restraint stresses plus dead load related sag oscillating with every load cycle.

CL Solid CFRP Bridge Cables are designed to meet exact load requirements. Subsequently, a stay cable/hanger can be produced with a much smaller cross-section – reduced by a factor of 5. This allows stiffness properties to be reduced, resulting in a more even load distribution, consistent behaviour and no load peaks. The lower cross-section, combined with the inherent lightweight nature of CFRP, results in a significant weight reduction – by a ratio of 25. The reduction in cable weight and improved fatigue properties has two added values; (1) the bridge infrastructure itself can be reduced whilst retaining required properties, reducing design and build time together with substantial reduction in costs, and (2) improved logistics in cable/hanger installation further improves construction time with reduced install requirements. Both reducing cost of ownership.



KEY BENEFITS

1. Superior fatigue properties; reduced stiffness demand = consistent load distribution
2. Superior durability and corrosion resistance in harsh exposure environments
3. Weight saving; lightweight cable and reduced demand on support infrastructure
4. Significant reduction in cost of ownership; install logistics & maintenance cost
5. Competitively priced inferior steel alternatives; less material required



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