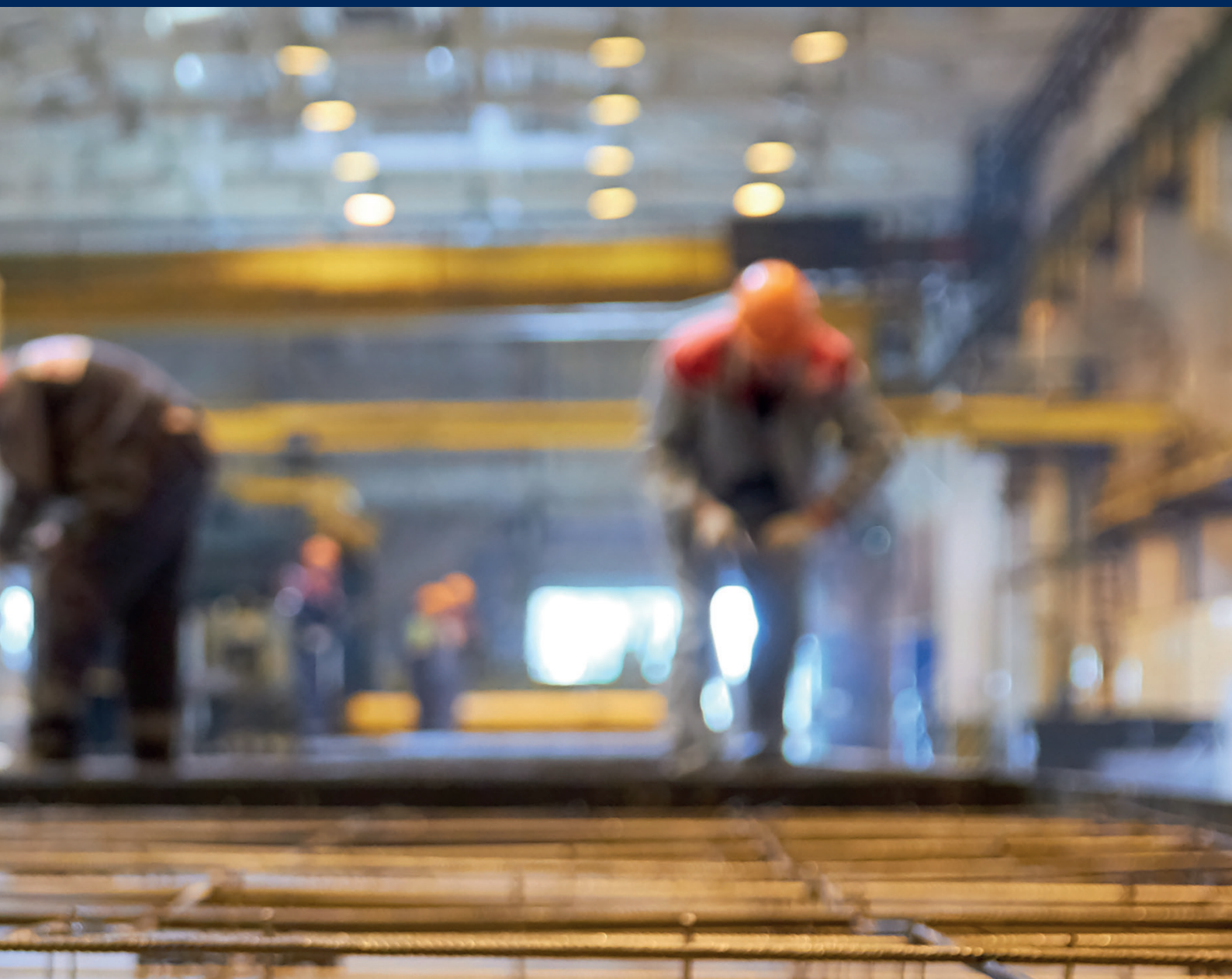
PULTREX
A COMPANY OF KRAUSSMAFFEI

COMPOSITE REBAR NEXT GENERATION

MORE SUSTAINABILITY AND EFFICIENCY FOR THE CONSTRUCTION INDUSTRY



IMPROVING SUSTAINABILTIY
IN THE CONSTRUCTION INDUSTRY

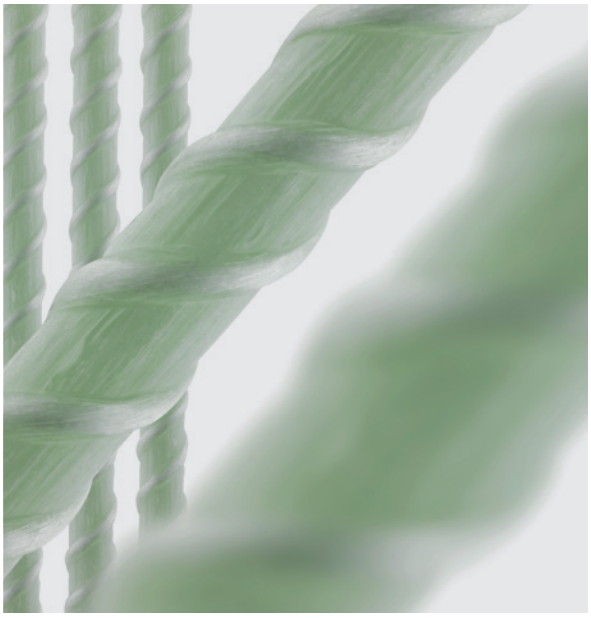
Corrosion is one of the largest governmental asset expenses in the developed global economies. Simultaneously, the demand for sustainable infrastructure and at whole-of-life cycle savings increase. Market driven, we developed a high speed machine for innovative corrosion-free rebars. Removing the risk of corrosion crackings in concrete structures means lower carbon footprint and reduced environmental impact in the sector. We cooperate and build up the future in the construction industry with you together!

A new level of composite rebar production

Composite rebar is a more durable, high performance lightweight solution for concrete. lt is a successful proven reinforcing alternative to the heavy corrosive steel, offering longer service life, especially in highly corrosive environments. No corrosion crackings in the concrete structures caused by the steel reinforcements, save the high maintenance and repair costs in the construction industry. In addition, the composite products are easier for handling or transport, free from magnetism and not thermally conductive. Currently, there are several solutions for composite rebar available but they are still expensive and some also have corrosion problems. Now, after four years of research, development and testing, Pultrex, togehter with her parent KraussMaffei is ready to enter the market with a high-end pulwinding machine, providing an economic, turnkey solution for production of GFRP rebars using fast curing epoxy resin.

High speed production and unique profile

Evaluating different technologies of surface texture, as different sand coatings, helical grooved or helical wraps and measuring the force strength level, we developed a own helical rib solution, benchmarking leading companies and corresponding with settled global construction standards. This solution led to the economic viable glass fiber rebar, pultruded in a novel technology approach - the injection box. KraussMaffei was crowned with an innovation award in 2017 by FSK for reaching pultrusion speed of 2,9m/min with polyurethane, innovating the iBox technolgy. Now, the currently smallest diameter of 8mm rebar is being produced with the speed of 1 0m/min in two lines, with a total output of about 2. 700km per year.



Glass fiber composite rebar

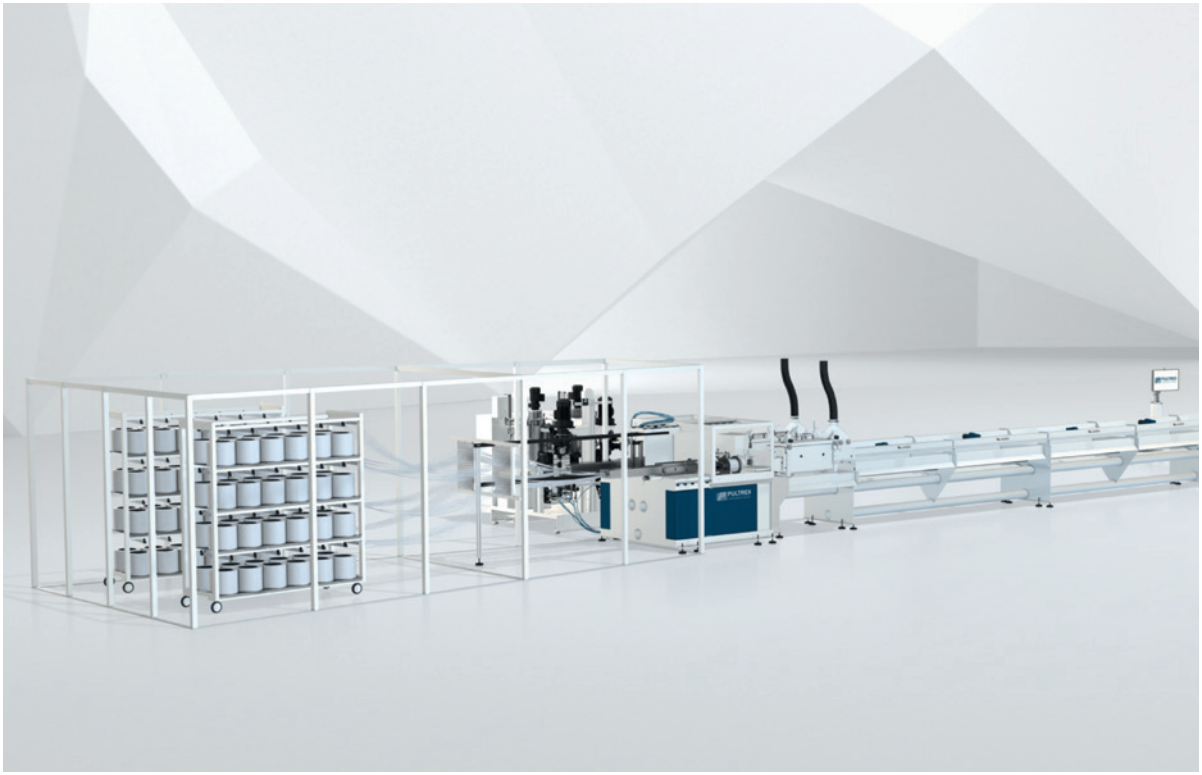
Often about 100mm of concrete is added as a barrier for moisture ingress, to protect the metal bar of corrosion, preventing rapid degradation of the reinforced structure. Using non-corrosive rebar makes this additional thickness obsolete. Furthermore, the tensile strength is typically 2 times higher than from steel rebars. Moreover, a composite rebar is one-quarter of the weight of comparably perfoming steel, inducing lightweight structure design. The excellent fatigue resistance of composites makes them suitable for cyclic loading applications.

A turnkey iPUL rebar pulwinding line

- Metering machines for fast curing epoxy resin
- Pulwinding line of two composite rebars
- Low pressure mixing head
- Injection box with a die for different rebar sizes
- High performance winder for greater speeds
- Different heating and cooling zones
- Specially designed caterpillar
- Flying cut off saw for desired batch lengths
- Take-off table or rebar coiler

YOUR BENEFITS OF THE PULTREX SOLUTION FOR COMPOSITE REBARS:

- *Drastic lower overall production costs*
- *Supreme quality product with high level characteristic values*
- *Turnkey solution with iBox / higher speeds*
- *Lower material consumption due to winding*
- *Worldwide service network*
- *Longer service life*



TURNKEY PULTRUSION SOLUTIONS
FROM ONE INDEPENDENT SUPPLIER

We offer turnkey pultrusion lines for composite profiles or pullwinding machines for rebars from one independet supplier with more than 1400 global sales and service experts in more than 60 locations. We will guide you with our expertise through the whole value creation chain from the research and development of your composite product to after sales support for your Pultrex pultrusion production line.

GLASS FIBER REINFORCED POLYMER (GFRP) REBAR ULTIMATE ADVANTAGES

- Longer service live properties
- Absolute corrosion & alkaline resistance
- Superior tensile strength & lightweight
- Excellent fatigue resistance
- Non-magnetic & non-conductive
- Very-high chemical resistance
- Low thermal conductivity
- Easier machinability
- Lighter for transport & installation
- Cost effective

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