

Tubes & profiles for drones

Carbon fiber tubes

Thanks to our expertise in continuous manufacturing processes like **pultrusion** and **pull-winding**, our carbon fiber tubes combine high-performance fibers with advanced resins to deliver superior mechanical properties. They are ideal for applications requiring ultra-lightweight, strength and durability, including drones, transportation, and aerospace technologies.

Main features

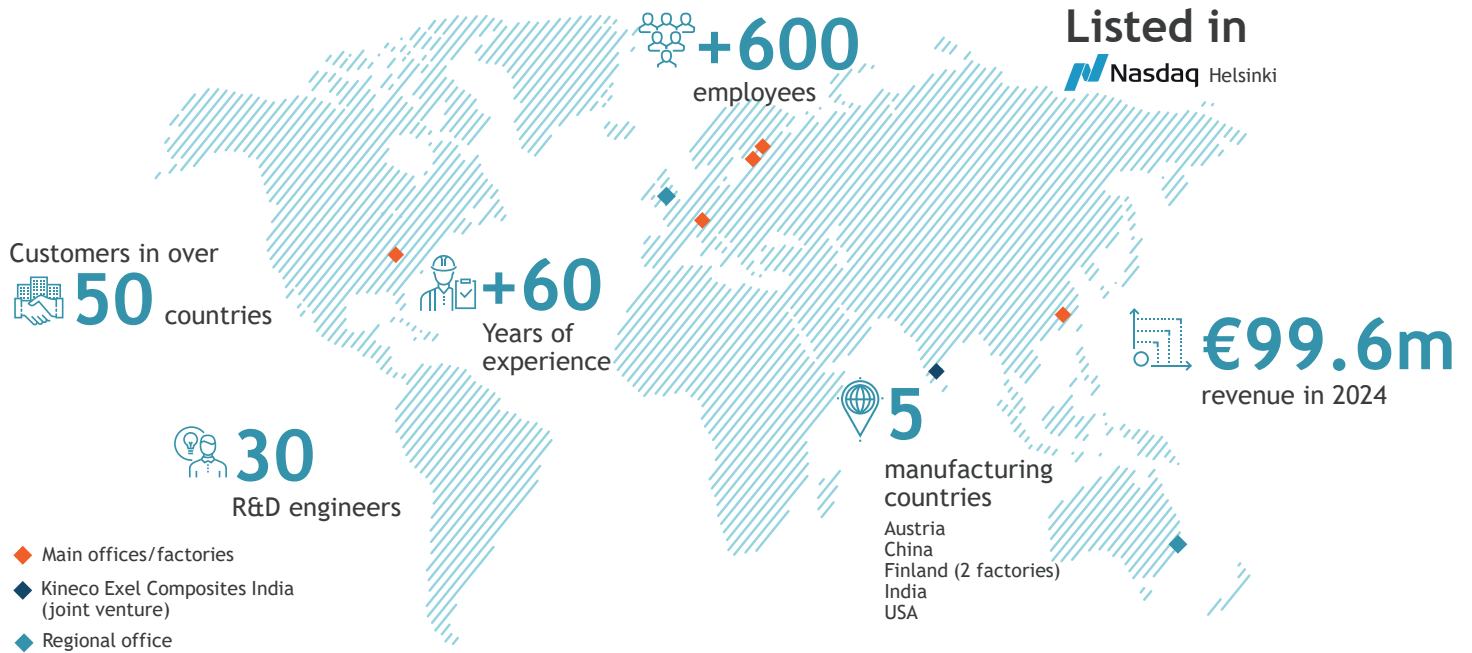
- ◆ Superior strength and stiffness. Multiple times stronger than steel/aluminum.
- ◆ Lower weight compared to fully glass fiber structure.
- ◆ 80% lighter than steel.
- ◆ Excellent strength-to-weight ratio. Key for achieving stable flight and maximizing payload capacity.
- ◆ Superior surface quality straight from the process, no post-processing.
- ◆ Customizable surface patterns by adjusting the fiber angles.
- ◆ Thermal stability.
- ◆ Excellent hoop strength
- ◆ Higher repeatability, scalability and cost- efficiency compared to batch-based prepreg.

General specification for carbon fiber tubes

Manufacturing method	Pull-winding
Structure	UCUV / UCUMV / UCUC
Resins	Epoxy resin, vinylester
Fiber type	HS-carbon/HM-carbon (UHM)
Diameter range O.D.	4 - 400mm / 0.16" - 16"
Typical wall thickness	1.0 - 1.5mm / 0.04" - 0.06"
Minimum wall thickness	0.50mm / 0.02"
Color	Black
Fiber volume content	-63%
Fiber weight content	-80%
Surface finish	Plain / diamond pattern
Water absorption	<0.5 w-%
Stiffness	-125-175 GPa
Density	1.55g/cm ³
Tensile Strength	800 MPa

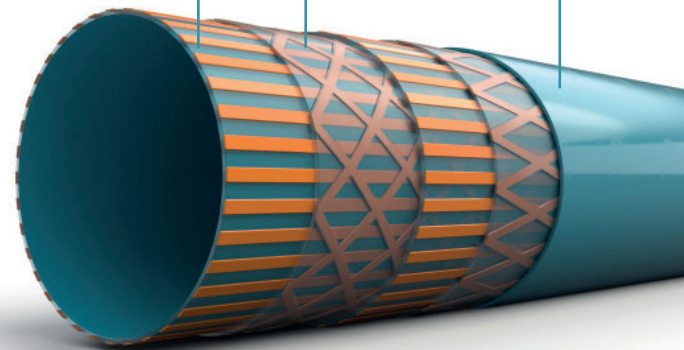
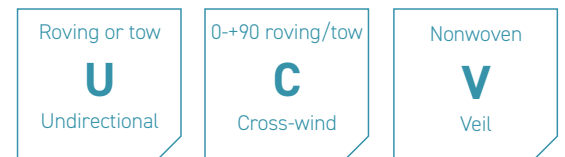


Our global **production capacity**, combined with our extensive engineering expertise, enables us to deliver high fiber-content and **cost-effective** solutions made in **Europe, North America** and **South Asia**.



How we design and manufacture composite tubes for your application

Pull-winding combines the two techniques of pultrusion and winding. In addition to the unidirectional alignment of fibers, the pull-winding process uses helical windings. This mix of fiber directions allows for composite advantages such as thinner walls or meeting specific strength or stiffness requirements higher than with wrapping technologies.



Geometry possibilities

Composite tubes do not have to be only round, and can even include negative space.

