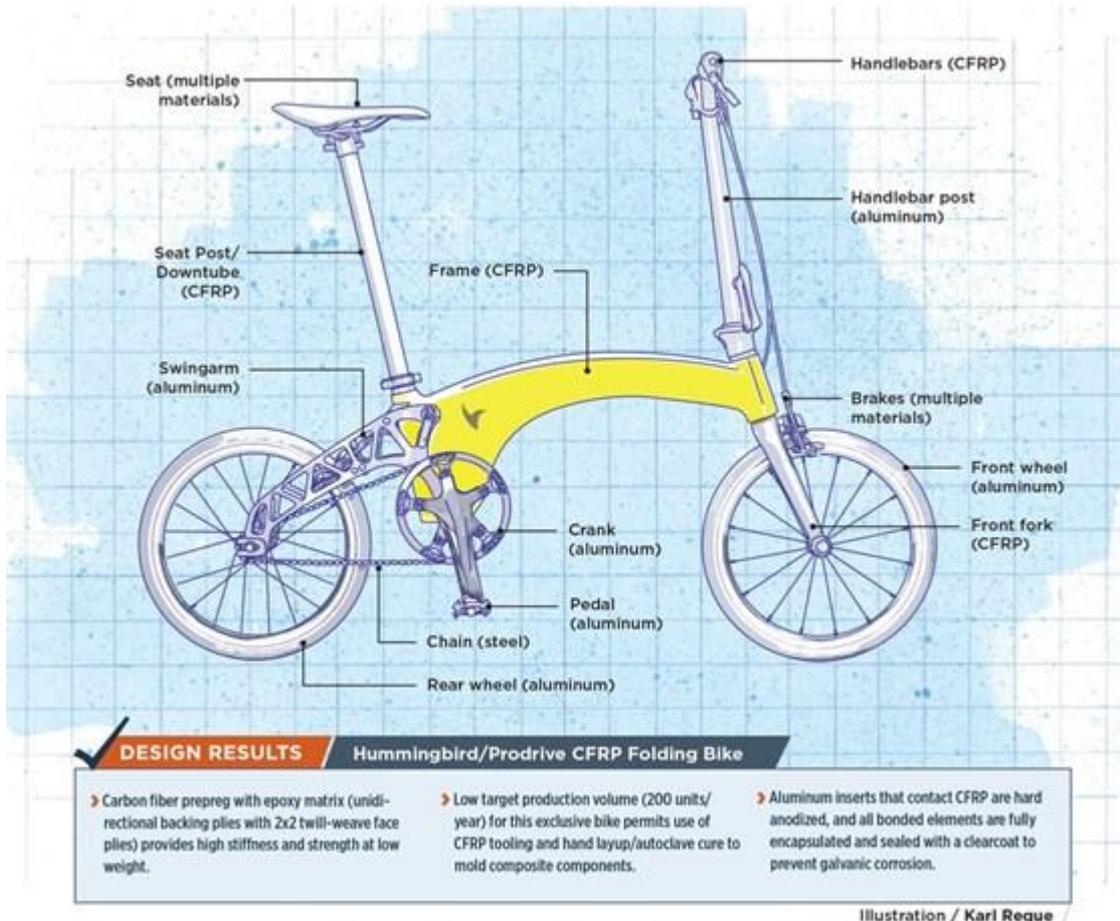


Microtex Advanced Composites Specified in the World's Lightest Folding Bike

Innovative UK-based startup, *Hummingbird Bike Company Ltd*, sought to simplify multi-modal transportation away from the heavy, inconvenient sized and uncomfortable norm. Their quest led them to design a more compact and robust, composites-intensive folding bike. Made primarily of carbon fibre-reinforced plastics (CFRP), the new *Hummingbird Bike* is currently said to be the world's lightest folding bike at just 6.9kg.



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Key design elements included the lightweight frame and a three-point folding pattern. Type and layup of the composite reinforcement were discussed at length between manufacturing and the structural analysis teams. They selected [carbon fibre-reinforced epoxy prepreg](#) from *Microtex Composites Srl.* (supplied in the UK by *Total Composite Solutions*), which is hand laid up and vacuum-bag/autoclave-cured on CFRP tools. *Microtex X1 Matrix epoxy system* was also chosen for its structural performance and visual clarity for the frame. Loose tool inserts are used to create all mating surfaces where seat/head and bottom bracket are inserted and bonded during assembly. Fully cured resin is rated for a continuous-use temperature of 80°C. The 2x2 twill-weave, bi-directional surface piles use 245g fabric while unidirectional backing plies are 660g and are also used as added reinforcements in high-stress areas. It takes about 18.5 hours to hand produce each bike.



On the back of this innovative design, *Prodrive* continue to specify *Microtex* in other related products such as motorsport parts. They have been “delighted with the cutting-edge advanced composites from *Microtex*, along with the great partnership approach offered by their UK partner, *Total Composite Solutions*”.

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