

TITANIUM LEADING EDGE PROTECTION

The leading edge of the propellers blades needs a reinforced protection, against stones impact or other projectiles, and sometimes against erosion possibly generated by rain and sand.

Since October, 2019, the E-Props propellers V20 range include a Titanium protection on the blade leading edge, 5/10e thick and 40 cm long (on propellers with diameters > 170 cm).

E-Props uses a superplastic forming process of the Titanium, like for the leading edges of the Rafale aircraft.

TITANIUM is the ideal material for blade leading edge protection thanks to its mechanical characteristics :

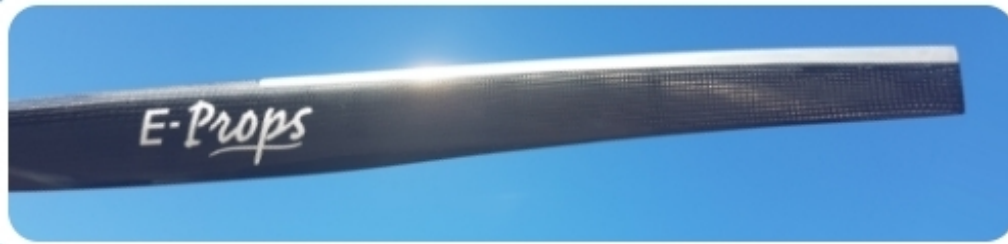
- specific resistance outpacing Aluminium and Steel
- expansion and elasticity close to carbon – epoxy
- exceptional corrosion resistance (in particular in marine climate)
- Titanium is twice as light as Steel or Inconel



If the Titanium leading edge protection is damaged, E-Props can change it, without having to change the whole blade.

The blades with a Titanium leading edge (V20 range) are specifically manufactured: the mould integrates a place (respecting the blade profiles) where E-Props comes to glue the Titanium leading edge protection. The blades of the V12 range do not have this place and therefore cannot receive Titanium leading edge protection.

Titanium has the same coefficient of expansion as the carbon in the blades, so it expands at the same time and doesn't come unstuck. Out of hundreds of thousands of blades equipped in this way, for aircraft and drones, E-Props has never had a single report of a detached protection



In marine environments, no galvanic corrosion as can occur (as it is the case between aluminum and carbon). Titanium leading edge protection is the best solution for seaplanes. E-Props equips ICON A5, Super Petrel, Aventura, Seamax, Borey, and many tractor floatplanes.



