

# Blade fixing system failure – metal insert

- Catastrophic damage
- Metal insert coming off the blade





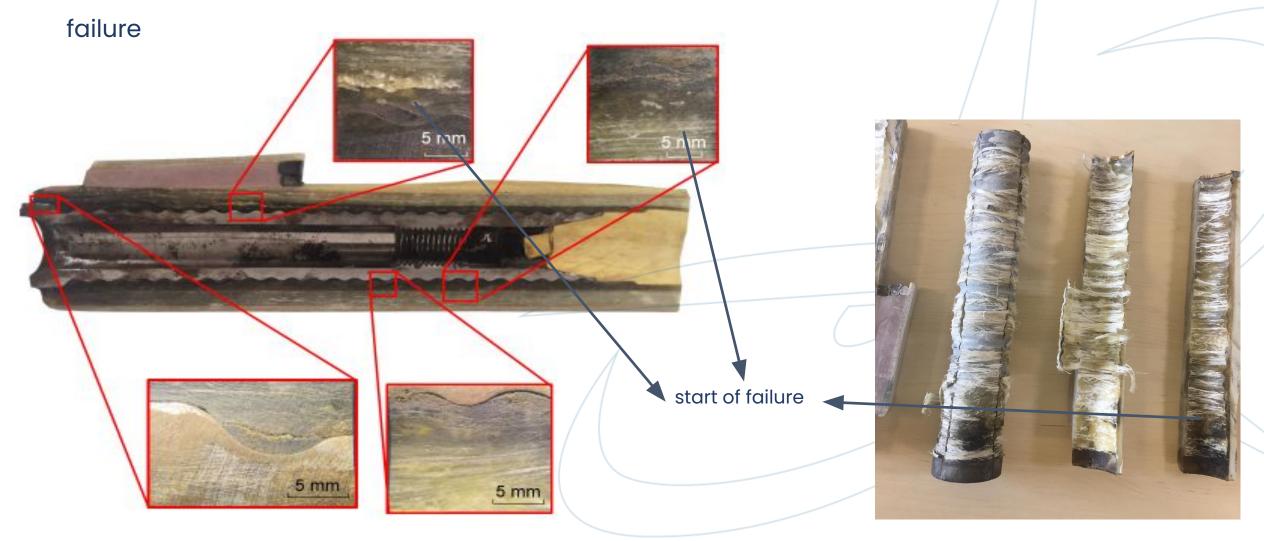






## Contamination

Micro and Macroscopic Analysis of the Insert infused with the Laminate - process



#### Problem

### Contamination

Cut up for contamination analysis.

Metal insert completely detached from laminate/easy removal after cut in half

Laminate contaminated with oil

Metal insert contaminated with oil

#### Our Solution!

## **Root Replacement**

The solution consists of removing the original root of the blade and installing a new root. The new root is produced with technology that ensures the blade is fixed to the turbine.













