

Lesson 16: Blade Rot

Turbines are good in theory but bad in practice - they are susceptible to **Blade Rot**.

Airborne particles such as dust, salty air, hail stones, wind storms, fertiliser and chemical sprays cause considerable damage during high impact collision with the fast spinning turbine blades.

Over time, the tiny particles colliding with the high speed blades cause major damage to the structure of the blades.

The leading edge of a turbine blade is most vulnerable to deterioration leading to blade rot.

The internal layers of fibreglass separate allowing water to get in, weakening the blade, breaking down the structural integrity of the material, and eventually leading to blade rot.

Engineers in the video clip outline the problem of delamination of turbine blades (Blade Rot)



This separation of the fibreglass layers is called delamination.




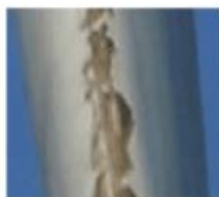
Delamination causing blade rot occurs when blades are exposed to the elements.

Over time tiny airborne particles colliding with the high speed blades (over 290kms/hr) eventually cause breakdown of the blade surface.

The YouTube video explains how the leading edge of the blade (shown in picture) is vulnerable to delamination and will deteriorate over time.

This results in decreased efficiency of the blade and an increase in special audible characteristics or special loud noises.

[The Glaring Engineering Mistake That Made Wind Turbines Inefficient | Massive Engineering Mistakes - YouTube](#)

	Pit	Gouge	Minor delam.	Major delam.
				
Depth/diam (mm)	0.5	2.5	3.8	>3.8

Blade Rot

Blade rot reduces the lifespan of turbines.

Wind companies don't want farmers to spray their land because the chemical and fertiliser residue causes blade degradation.

The confidentiality clause in a wind farm lease agreement prevents Host farmer disclosing that they are prevented from undergoing normal farming practices such as aerial or ground spraying of crops and pastures.

Prime agricultural land in Oz is therefore lost to turbine blade preservation.

The issues for the neighbours next door:

- Has the noise nuisance increased over time?
- Has the whoosh-whoosh-whoosh sound become worse? – do the blades squeal or roar louder?
- Do you believe the blades pose a risk to public safety?

Then there's the manufacturing issues.....

Blades can be faulty before they arrive in the paddock

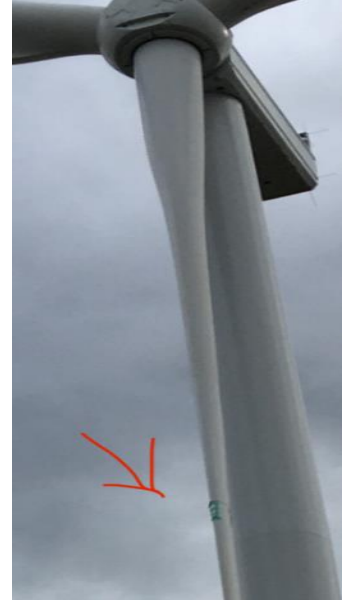
Mortlake South Wind Farm has blade problems.

Contractors have been photographed working on the same blades for months now.

Huge square holes have been cut in the surface of the blades to provide access to the internal laminated layers.

And at night they cover the holes up with plastic and green tape.... This is a bad look for the wind company Acciona.

Mortlake South Wind Farm, Moyne Shire, South West Victoria, Australia. Company – Acciona 2022



- * Neighbours beware of non-destructive testing of the blades such as “tap hammer testing”.
- * Workers perched high in cherry-pickers on the blades should be a red flag – an indication that something is wrong with the blades.
- * Take photos and note the date and time of the blade rectification works in your diary – it could be used later to support your case of unreasonably loud audible characteristics of the blades i.e. noise nuisance.

The Wind Industry in Australia is Unregulated

Dundonnell Wind Farm Blade Throw Incident Dec 2019



There is no regulatory oversight on blade integrity.

- The wind company will self-report to the *Responsible Authority* (the local municipal council) that the blades are good to go.
- *Often local councils receive cash gifts from wind companies.*
- There is no regulatory authority requiring certification of blade manufacturing or blade repair integrity.
- There is no guarantee that cutting huge holes in the blades will not weaken the blade’s structure.
- The local council will have no idea how to assess the quality of the blade repairs.
- For example, the Moyne Shire Councillors took a vote one day and signed off on questionable blade documentation submitted by Tilt Renewables of Dundonnell Wind Farm. *Then - a blade throw incident happened.*
- Whoever signs off on the blades or blade repairs could be held liable for any future blade failure or blade throw incident in which a blade fragment flies off and kills someone.
- If a Host is aware of blade rot, they too may be liable for a blade throw incident.
- Hosts are uninsured for blade throw deaths.