

Challenges of Oak Timber - Pests.

Although oak is immensely durable if the construction is designed carefully, it does have, as all natural timber products, a potential for degradation. This can happen either by insects which would eat the timber, or fungi which live off it.

Insects are more frequently found than fungus as fungus will take a much longer time to appear, and normally has moved on to oak from another attack on nearby softwood.

Frequently found insects

1. The Powder Post Beetle (*Lyctus Brunneus*)

The powder post beetle is a reasonably common insect which lives exclusively on the sapwood of timber with sufficiently open grain for the female to lay her eggs in. Commonly attacked timbers are oak, chestnut and sapele. Other timbers with less open grain such as maple, beech and softwood are immune.

It is always in any case only the sapwood that is at risk. The beetle larvae that dig the tunnels cannot live in the heartwood as there is no food value in this wood.

The larvae have around a 1 year life cycle after it hatches from the egg emerging as a small copper or brown coloured beetle of approximately 3 to 4 mm long around late April to June.



Typical adult beetle shown actual size



Classic exit holes showing tunnel exits in sapwood but not heart wood.

The powder post infestation is easily treated by most solvent based preservatives. The sapwood is fairly easy to penetrate and will normally effectively clear up the infestation. Even if the treatment does not penetrate to all the tunnels, the larvae are most likely to die as they burrow toward the surface to fly out.

The sapwood should only be treated. There will be no larvae in the heartwood, although this is sometimes erroneously alleged.

2. Ambrosia Beetle (*Platypus Cylindricus*)

The ambrosia beetle is responsible for frequently found isolated holes and tunnels in the oak timber. It is never found in timber of a moisture content of 25% or less, but the presence of occasional holes may alarm owners of oak frame buildings that may discover these holes and tunnels.

The beetles will have vacated once the wood has dried, and they will no longer be present. The reason for this is a remarkable partnership between the beetle and the ambrosia fungus on which it lives. The fungus cannot exist below 25% moisture content, so any drier or drying wood will be immune.

The beetle will bore into a tree either living or recently felled, and lay its eggs. It will also introduce the fungus which will grow in the tunnel and the hatching larvae will eat the fungus for their life cycle of the next 2 years.

Tunnels are typically 2 – 3mm in diameter, and are often black due to the discolouration from the ambrosia fungus.



Black ambrosia tunnels in an oak decking board.

3. Woodworm, also known as Furniture Beetle (*Anobium Punctatum*)

Woodworm prefer dry softwood but will eat hardwoods such as oak. As with the other species the tunnels are made by the larvae which hatch from eggs laid in small cracks, or old flight holes. The woodworm tunnels normally follow along the line of the grain, up and down the length of the wood.

After hatching the woodworm larvae will become adults in 3 to 5 years, the length of their life depending on the quality of the available food source.

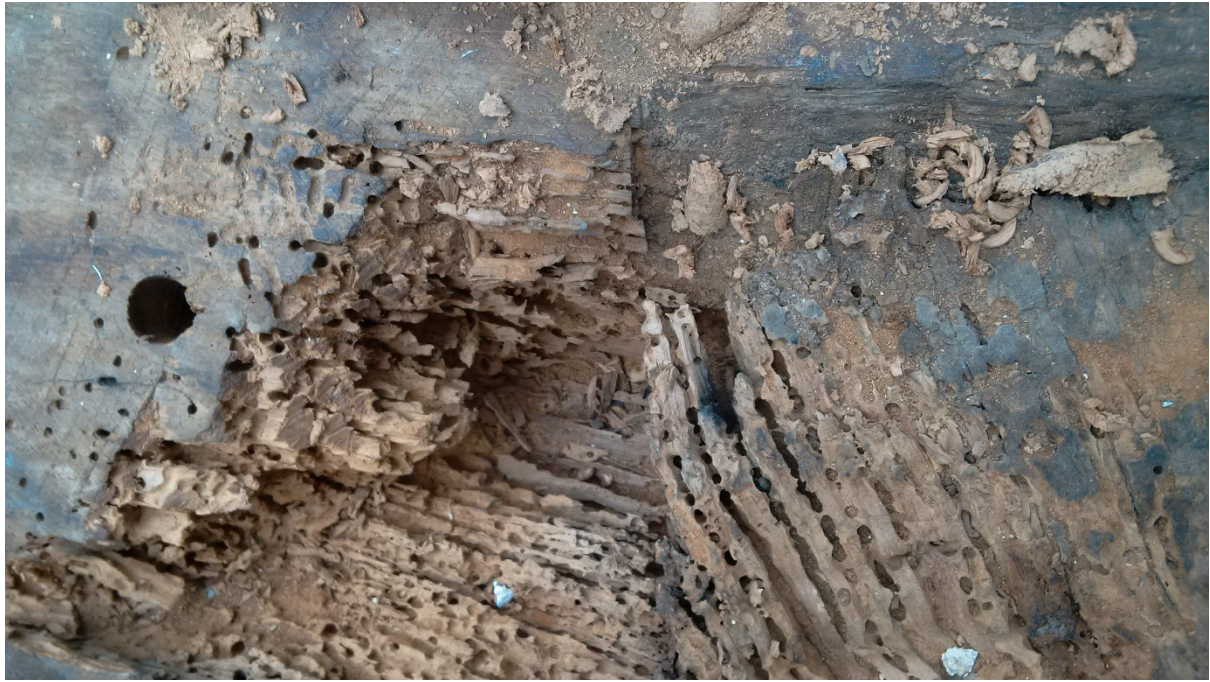


Typical woodworm attack on 17th century truss.

Treatment is usually with solvent based chemicals, and in more serious cases by sterilisation or fumigating. Care should always be taken in buying old furniture to reduce the risk of introducing woodworm to a property.

4. Death Watch Beetle

Death watch beetle typically attack hardwood structural timbers in old damp property. The beetles prefer timber that is damp, especially if it has been slightly degraded by fungi previously. Adult beetles lay eggs in small crevices and old flight holes, and the larvae tunnel up and down the wood, leaving characteristic round excreta or “frass”. After a lifecycle of 1 to 2 years, the larvae hatch into adults, and the cycle begins again.



Typical death watch beetle infestation in an old church roof.

5. Great Capricorn Beetle

From time to time in oak timber, large tunnels and exit holes may be found. These can be up to 18mm in diameter, forming an oval hole.



Typical Capricorn larval tunnel sawn through by bandsaw.

Nobody need to be alarmed by thinking they have the world's largest woodworm, these are the work of the Great Capricorn larvae, one of Europe's largest beetles. They feed exclusively on decaying and dead wood, either dead branches or fallen trees, and they only stray into heartwood of living trees in error. A creature of the forest, they are very occasionally brought into sawmills with logs.



Adult Great Capricorn Beetle.