

Timber pile repair



Combating the effects of wood pile degradation in wharf, bridge, pier, jetty and infrastructure assets can be managed effectively during early diagnosis by a marine specialist in structural engineering.

There are numerous environmental factors which can cause wood pile degradation.

Fungi Deterioration

Fungi tend to be found above the waterline. Fungi reproduce through spores and can spread through dissemination.

Wood rot is a result of fungi deterioration and its tell-tale signs include softening of the wood, changes in its colour and decreased wood density as the wood decays and loses its mass.

Marine Borers

There are three predominant groups of borers which deteriorate wood piles - Limnoria (Gribbles), Shipworms and Pholads. Wood piles, often extensively covered with marine growth may be structurally damaged internally due to borer organisms and the full extent of the damage can be camouflaged.

Limnoria (Gribbles)

These are destructive crustaceans that burrow into the wood surface. They are free-swimming and can move from location to location on

wood piles. These organisms burrow into the interior wood of the piles. Gribble infested piles tend to have an hour-glass shape at the tidal zone. When there are large numbers of gribbles, their burrows can be separated by very thin walls of wood that are easily eroded by the motion of the water.

Shipworms

Shipworms are clam-like organisms that burrow deeply into submerged wooden piles. Piles infested with shipworms may appear unmarked on the exterior of the pile. They can be internally damaged with a myriad of extensive burrows and tunnels. These borers create holes into the centre of the pile columns and attack from within, damaging the piles structural integrity. Detecting shipworm damage can be difficult as external damage signs are minimal.

Pholads

Pholads are rock-burrowing clams that burrow into wood in warmer waters such as Hawaii and Mexico. Pholads look like ordinary clams and unlike shipworms, they burrow only into the shallow surface of the wood, enlarging their entrance holes. Their colonisation of wood is more readily

detectable than a shipworm infestation.

Bacteria

Bacteria can also attack the cell wall, detoxify preservatives and increase wood permeability. Bacteria may also create the optimum conditions for wood piles to be attacked by fungi and wood borers.

Chafing

Flotsam can strike piles creating areas of damage. Floating docks and chains can chafe timber piles and create weakened areas exposed to further damage.

Long-term Security and Marine Asset Protection

To ensure long-term future protection of marine piles, more rigorously tested and durable solutions are required.

The PileJax rapid repair systems are cost-effective corrosion prevention creating long-term increases in the life expectancy of the pile.

PileJax systems improve outcomes and cut costs in critical areas including assembly and installation times, manufacturing and materials. They are quick and safe to assemble with intuitive designs that are proven around the world.

