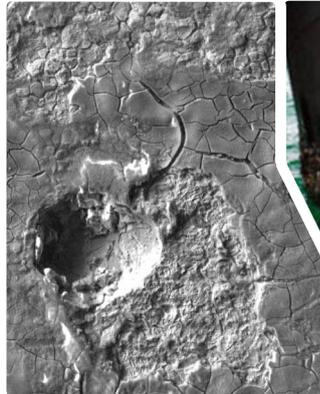


Steel pile repair

Marine environment corrosion zones	
	Atmospheric Zone Moderate Corrosion
	Splash Zone Severe Corrosion
	Tidal Zone High Corrosion
	Submerged Zone Low Corrosion



Steel pitting
 Steel piles subject to pitting from exposure to marine environments



Major corrosion
 Steel piles subject to major corrosive rusting



Microbial corrosion
 Corrosion from sulphate-reducing bacteria organism

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

Marine Environment Corrosion

Corrosion can be visually hidden by years of accumulated marine growth.

Types of Corrosion Zones:

Atmospheric Zone

The atmospheric zone is subject to airborne chlorides and moisture due to humidity or precipitation that cause moderate corrosion. The piling is also not covered with marine growth so there is no protective corrosion barrier.

Splash Zone

The splash zone is subject to wave action and salt spray and is not covered with marine growth. Thick stratified rust layers can develop and cause high levels of corrosion.

Tidal Zone

The piling is alternately submerged in sea water and exposed to salt spray. This can accumulate dense barnacle growths with green seaweeds. Although these can protect the piles, wave action and atmospheric exposure can cause moderate to high corrosion.

Submerged Zone

Due to continuous sea water immersion a protective blanket of marine growth causes low corrosion.

Accelerate Low Water Corrosion (ALWC)

ALWC can occur in areas away from the low water band and can be caused by microbial influenced corrosion (MIC).

MIC is due to the actions of micro-organisms such as the sulphate-reducing bacteria (SRB) organism. Most MIC manifests as localised corrosion due to visually difficult to detect colonies of organisms. The bacteria can leave a sulphide mud and oxidation which produce a sulphuric acid that attacks the piles. Regular piling checks need to occur to detect these hidden threats.

Early Stage

Bright orange areas appear on the steel surface which when disturbed reveal a black/grey sludge overlying a shiny and locally pitted or eroded steel surface.

Middle Stage

The release of a sulfurous odour and specific areas of dishing or thinning of the steel can be observed.

Advanced Stage

Larger holes can appear and remain disguised due to overlying marine growth.

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.