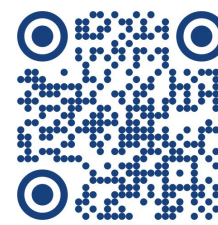
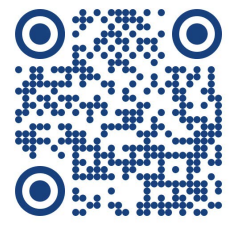


pilejax.com



Digital TDS



Installation
Guidelines

DESCRIPTION

PileJax™ is the Pile Repair System used for the rehabilitation and reinforcement of port infrastructure, bridges, loading terminals, and any other structures utilising piles. PileJax™ can be used to remediate any type of pile, including concrete, steel or wood in any profile.

PileJax™ is manufactured from high-spec fiber reinforced composite. Providing a lightweight, high strength, high durability jacket. The jacket incorporates an internationally patented locking system allowing it to be opened and closed around the pile. Used in conjunction with a selection of proven grouts and epoxy resins the PileJax™ jacket remains in place to become an integral component of the repair.



APPLICATIONS

- ❖ Concrete piles displaying cracking, popout, delamination, spalling, honeycombing, abrasion, impact damage or any other form of material loss.
- ❖ Steel piles displaying any form of oxidation or any evidence of an active corrosion cell resulting in loss of parent metal.
- ❖ Wood piles displaying serious weathering or any form of biological attack.
- ❖ Protection of any type of pile in any profile.

FEATURES & BENEFITS

- ❖ Patented mechanical locking system enables rapid installation without nuts, bolts, wraps or other fasteners.
- ❖ PileJax™ is modular in design, allowing for a tailored solution to unique site requirements.
- ❖ Light weight, high strength construction makes handling safer and easier.
- ❖ Fast installation provides reduced labour and dive times. Substantially reducing cost.
- ❖ High quality, marine and UV resistant materials providing outstanding durability.
- ❖ High hoop stress, flexural and axial load capacities.
- ❖ Compatible for use with or without cathodic protection systems.
- ❖ Full composite construction – no metallic components.

JACKET DIMENSIONS

PileJax™ jackets are available in any lengths from 1m to 12m, in diameters from 0.5m to 2m. Wall thicknesses are between 3mm to 6mm, depending on application. However the PileJax™ system is modular, and therefore scalable. Custom sizes and configurations are available. Please contact PileJax™ for a custom solution beyond 12m in length.

DESIGN & TESTING

The PileJax™ system has been engineered using computer modelling and finite element analysis (FEA) utilizing global best practice in design and materials selection.

Independent testing conducted by the University of Southern Queensland, demonstrates that a 50% deleted concrete pile with exposed reinforcing bar will be restored to 95.8% of its original strength.

PileJax™ also conducts in-house destructive testing (tested until failure) on random samples taken from every order prior to shipment.

PACKAGING & TRANSPORT

The PileJax™ system is supplied in shipping containers. As every job is different, and jacket dimensions vary greatly, the exact number of units per container also varies. Space inside the container is maximized by nesting the jackets inside one another. The optimal packing arrangement will be achieved for any given order. For example, 40 jackets at 800mm diameter, 6m in length, will fit in a 40ft shipping container.

HEALTH AND SAFETY

PileJax™ lightweight, high strength design makes handling and installation extremely quick and efficient.

All personnel must be suitably trained. They must hold the appropriate qualifications and certifications to be involved in diving operations. These requirements are determined by the government of the country in which the installation is going to take place. Topside only support crew should be familiar with the precautions required when working in proximity to an active dive operation. Please refer to the PileJax™ Installation Guidelines or scan the QR code at the top of this document.

Ensure that all personnel involved in the handling and installation of the PileJax™ systems are fully aware of the procedures to be followed prior to any work commencing, as detailed in the project Safe Working Method Statement (SWMS). Work is to be conducted in accordance with International Risk Management and Safety Standards ISO 31000 and ISO 45001.

PILE PREPARATION

Piles to be remediated must be thoroughly cleaned using a high pressure water jet (240-275 bar approx) or appropriate mechanical tools. Ensure all marine growth, oxidation, spalling, rot and any other loose materials are removed. Qualified inspection of the pile should be carried out at this time. Suitable surface preparation must be confirmed before the installation of the PileJax™ system. The project engineer should co-sign approvals to proceed. Please refer to the PileJax™ Installation Guidelines.

GENERAL INSTALLATION

Whenever possible deploy jackets at slack tide. When the current is running deploy the jacket on the upstream side of the pile. Water flow will help to close the jacket around the pile rather than push it away. The Dive Supervisor must make a judgment on environmental conditions and when to deploy the jacket.

Small to medium jackets can be maneuvered into position by hand. Large jackets are best supported from above with lifting gear or an appropriate deployment rig. Close the jacket around the pile while it is supported from above, all jackets must be clear of the sea/river bed when closed. This prevents debris being scooped up by the bottom of the jacket. If the jacket is resting on the sea/river bed, debris may make it difficult to close the jacket and prevent the keys from being tapped into place.

When the jacket is supported from above and closed clear of the sea/river bed, the jacket and locking system will self-align. The keys can now be tapped in with the correct application of force. The bottom key is unique, and must be tapped into place in the bottom position. Once the bottom key is tapped home correctly all other keys will index from it. Fit the bottom locking key first by inserting it laterally into the key passage one pitch height above the bottom of the jacket. Use a lump hammer to strike the PileJax™ key insertion tool, rather than the key itself. Tap the key down until the stops are reached. At this point the jacket can be lowered into its final position. Fit all other keys the same way, tapping them down until they touch the key below. The PileJax™ jacket is now ready to be filled. For full Installation Guidelines scan the QR code at the top of this document.



PileJax™ Material Properties

Tensile Strength	296 MPa / 42,900 psi
Tensile Modulus	6.5 GPa / 942,000 psi
Flexural Modulus	10.9 GPa / 1,580,000 psi
Water Absorption	Max 1%
Specific Gravity	1.4
Colour	Translucent
Wall Thickness	3mm / 1/8in nom.
Barcol Hardness	38

Other material properties are available. Contact PileJax™ for further information.

IMPORTANT NOTE

© PileJax™ is a registered trademark, and the system is legally protected by international patents.

The advice and technical information contained in this document is based on our best technical and practical knowledge at the time of publication. Please scan the QR code to ensure you have the latest version of the TDS. PileJax™ has no control over where or how its products are applied. Therefore PileJax™ and Pile Repairs Pty Ltd will not accept any indirect or consequential loss or liability beyond the replacement of jackets due to defective materials and or manufacturing defects. Suggestions made by PileJax™ either orally or in writing may be followed, modified or rejected by the owner, engineer, installer or contractor. As they are responsible for the installation not PileJax™ / Pile Repairs Pty Ltd. The firm installing the PileJax™ system assume all risk in carrying out procedures appropriate to a specific installation and the prevailing environmental conditions.