

marine environments and ports



concrete protection

- ▶ **reduces** surface abrasion loss
- ▶ **increases** pull off strength for coatings
- ▶ **one time only** simple application
- ▶ **removes** need for many other products
- ▶ **protects** reinforcing steel within concrete

▶ the total concrete protection solution for salt water environments

The long term protection and durability of maritime concrete is adversely affected by many attack elements present in sea water and salt air environments

Salt attack is one major factor among others such as corrosion of embedded reinforcing steel, surface abrasion, moisture penetration and freeze/thaw damage.

Lockwell WPC can be deployed on new marine concrete infrastructure or used to remediate existing infrastructure that is sustaining damage. Lockwell WPC formula will stabilize pH levels and also purge and/or encapsulate contaminants within the capillaries in the concrete matrix.

Lockwell WPC fully penetrates the capillaries and invokes a Calcium Silicate Hydrate (C-S-H) reaction with the free calcium within the concrete to completely fill the capillaries with a compound produced by the colloidal nano silica (CNS) properties of this unique concrete protection technology.

Lockwell WPC prevents the ingress of oxygen and water into the capillaries to prevent corrosion in new concrete and arrest corrosion in existing concrete thus protecting the embedded rebar steel from expanding and causing structural damage.

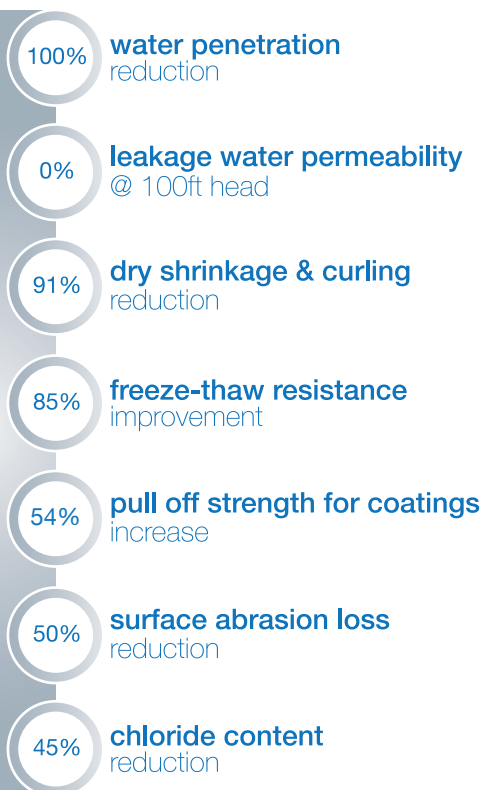
Marine concrete can also be enhanced in production at the ready-mix plant through the use of Lockwell MWE when added to the mix water before batching to produce stronger, denser concrete with fewer, smaller surface capillaries as a result of improved cement hydration.

Design life analysis conducted using the 'Life 365' software shows the extended service life of Lockwell treated concrete after one single application. Concrete treated with Lockwell can be immersed in seawater after only two hours.

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wpc performance summary



specific benefits marine environments

- Deeply penetrates and protects concrete from deep within (not merely the surface layer)
- Fills entire length of capillaries and creates a permanent internal compound that is immune to attack
- Protects concrete from ALL forms of attack (Moisture, Acid, Salt, Corrosion, Chloride penetration & Hydrogen Sulphide gas attack)
- Reduces chloride content by up to 45%
- Reduces abrasion loss by over 50%
- One time only application. Lifetime protection
- Reduces drying shrinkage by up to 94%
- Superior to water ponding cure.
- Rapid cure solution - site access to newly poured concrete in only 24 hours (not weeks)
- Huge productivity benefits and time savings on jobsite
- Unique mix water enhancer for ready mix concrete, produces stronger, denser concrete with much fewer capillaries
- **ZERO VOC content** - 100% non toxic and safe to apply
- Removes the need for: curing membranes, damp proof membranes, corrosion inhibitors, surface hardeners, water ponding, strengthening compounds and densifiers