Alaska Association of Harbormasters & Port Administrators Conference 2014
Ketchikan, AK

SeaShield Pile Protection Systems

Presented By
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SeaShield Marine Systems
for Corrosion Protection and/or Rehabilitation of Steel, Concrete and Timber Piles

- **Series 100 System**
  Original pile wrap system developed over 40 years ago

- **Series 2000HD System**
  Developed in 2000 with improved fastening system

- **Series 500 System**
  Fiberglass Forms and Epoxy Grout for pile repair/rehab
“The corrosion rate in the splash zone of marine piles is severe.”

Coatings for application in-situ must provide protection even when applied to contaminated or immersed surfaces.
Requirements of the Coating System

A successful coating for in-situ application shall:

- Allow application above & below water
- Displace water from the substrate
- Be surface tolerant
- Fill pits and surface irregularities
- Resist displacement by water
- Be water resistant
- Resist microbiological action
- Resist mechanical damage
- Have long-term weather resistance
- Prevent corrosion or reduce it to a very low rate
How Denso Petrolatum Tapes Work

- Denso Petrolatum Tapes effectively seal out water and oxygen, therefore stopping corrosion. At a minimum, it will reduce oxygen content significantly, thus greatly reducing the corrosion rate.
History of Denso Tape

- Petrolatum Wax Tape was originally developed by Denso in 1929 for the long-term corrosion protection of steel pipe.

- Truly surface tolerant feature allowed for easy, quick protection of buried gas lines in London that were rapidly corroding from stray electric current.
U.S. Navy
Splash Zone Test

Pipe sample wrapped with Denso Tape in May 1977.

Cutting open and inspecting in December 1986.
Pipe sample inspected and solvent cleaned and proved to be in excellent condition after almost 10 years in the splash zone.
Hydraulic fittings protected with Densyl Tape on US Coast Guard vessel.
SeaShield Series 100 System

Since late 1960’s
Hand tools, power tools and/or high pressure water blasting can be used for cleaning.
Denso Petrolatum Tape being applied underwater.
LaGuardia Airport – New York, NY

Over 2,000 steel piles protected with the SeaShield Series 100 System. In service since 1991.
SeaShield Series 100 System in service since 1998.
U.S. Coast Guard
Ketchikan, AK

Steel piles protected with the SeaShield Series 100 System.
In service since 1996.
Installed Series 100 in 2007 on bracing and piles – inspection on piles below water found to be in excellent condition after 11 years.
SeaShield Series
2000HD System

Since 2000

- Pile
- Denso Paste S105 (applied to pile as needed)
- SeaShield Marine Tape (applied to pile as needed)
- 3/8" 316 SS Marine Grade Bolt and Nut
- SeaShield Series 2000 HD Outercover
Existing steel piles with marine growth and severe corrosion in the splash zone.
Removal of existing marine growth and thick rust with hand scrapers and/or pressure wash.
Application of SeaShield Paste and SeaShield Marine Tape.
Installation of SeaShield Outercover

Installing HDPE Outercover

Ratcheting tight with air tool to 40-80 in. lbs.
SeaShield Series 2000HD System
BP Cherry Point - Blaine, WA

Before

After
Surface preparation (SP2/SP3) to remove marine growth, loose paint and blistering rust.
H-Pile application using foam blocks wrapped with Denso Tape and placed in web areas.
Installation of SeaShield Series 2000HD Outercover.
Completed H-Pile application with Durable HDPE Outercover and galvanized stopper bands
SeaShield Series 500 System to protect Steel H-Piles on a bridge rehabilitation.
SeaShield Fiber-Form Jacket with SeaShield 550 Epoxy Grout.

Alaska DOT – Sitka, AK
Thank You