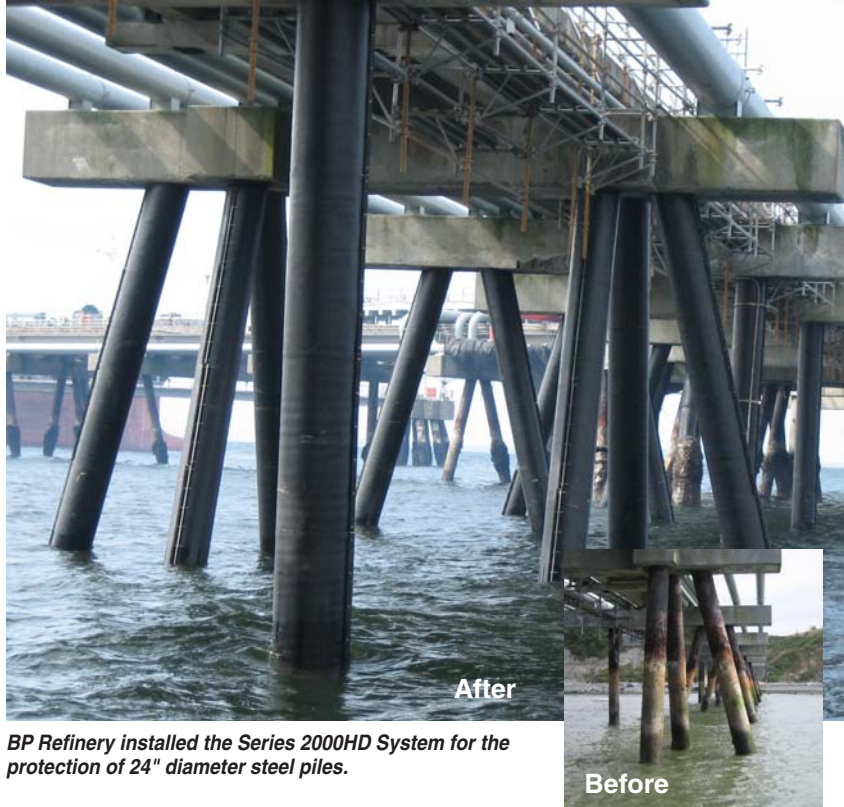


# SeaShield Marine Systems



BP Refinery installed the Series 2000HD System for the protection of 24" diameter steel piles.



## Features

- Minimal surface preparation required (*no abrasive blasting*)
- Fast and easy installation
- Can be applied underwater
- Proven 25 year history of corrosion protection
- One piece jackets
- High impact resistance in aggressive environments
- UV resistant
- Safe to apply and environmentally responsible
- Long maintenance-free service life

## Series 2000HD

Heavy-duty pile protection system with marine grade petrolatum tape and an HDPE outercover secured with a bolted system

**S**eaShield Series 2000HD System provides splash zone protection for steel, concrete and wood structures. The system is ideal for environments where conditions are too severe for paint systems, epoxies and other conventional forms of protection. SeaShield Series 2000HD seals out oxygen and water, effectively stopping corrosion on metal surfaces. The system also prevents spalling and corrosion of steel reinforcement in concrete piles.

The Series 2000HD encapsulates wharf piles, riser pipes and exposed piping in splash and intertidal zones. It accommodates piles with cylindrical and H-Pile configurations, as well as support members, bracing, brackets and other irregular surfaces.





SeaShield Series 2000HD System was used to protect octagonal concrete bridge piles.

## Materials

The SeaShield Series 2000HD System stops corrosion by using a proven petrolatum-based tape. The Premtape Marine forms an anti-corrosion membrane by displacing water and forming a moisture-resistant bond. A tough outercover surrounds this component to protect against weathering and mechanical damage.

### Prempaste S105 Primer

Underwater petrolatum paste containing water displacing, corrosion inhibiting and flow control additives. It does not contain volatile organic components. It is applied to badly corroded and pitted steel above and below water prior to the application of the tape. It displaces water and fills pits and depressions.

### Premier Molding Compound (optional)

A flexible, putty-like caulking and filler material used to seal irregular shapes and other areas where tape may bridge. Common applications include pile/pilecap interfaces, brackets and flanges. Mastic seals against water and air intrusion and improves contours for tape wrapping.

### Premtape Marine

Synthetic fiber-reinforced tape impregnated and coated with a specially formulated, petrolatum-based compound containing inert fillers and water displacing agents. The tape provides a long-lasting, anti-corrosion membrane for steel and concrete surfaces. Applied spirally, and with sufficient tension, Premtape Marine displaces water and develops a water resistant bond. It provides the primary corrosion protection in the SeaShield Series 2000HD System.

### SeaShield Outercover

A tough, ultraviolet-resistant outercover that provides mechanical protection against the elements and accidental impact. The size of the outercover and thickness of the jacket are customized to meet application requirements. SeaShield outercovers are secured with 316 SS marine grade stainless steel bolts, nuts and washers.



The components of the Series 2000HD System can be applied under water with minimal surface preparation.



## Find Out More

For further details please refer to the Engineering Specifications for SeaShield Series 2000HD or call 1-888-821-2300.

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# Engineering Specifications for **SeaShield Series 2000HD** Steel and Concrete Pile Protection

## 1.0 Scope

- 1.1 This specification may be used for the materials and application of Premier SeaShield Series 2000HD for protection of steel and concrete piles.
- 1.2 The engineer shall select appropriate sections of the specification to insure that the specification is comprehensive for specified work.

## 2.0 General Requirements

- 2.1 Contractor shall comply with all written recommendations of the manufacturer regarding application of the specified system.
- 2.2 The manufacturer of specified materials shall be Premier Coatings Ltd., 9747 Whithorn Drive, Houston, TX 77095, Telephone: 281-821-3355 or 90 Ironside Crescent Unit 12, Toronto, Ontario, Canada M1X1M3 Telephone: 416-291-3435.  
  
E-mail: info@premiercoatings.com

## 3.0 Materials

- 3.1 Prempaste S105 Primer
  - 3.1.1 The Prempaste S105 Paste shall be comprised of saturated petroleum hydrocarbons (petrolatum), inert fillers and passivating agents.
  - 3.1.2 The paste is used to displace moisture, passivate surface oxides and fill surface imperfections.
  - 3.1.3 The Prempaste S105 Paste shall meet the physical specification values listed on the specification sheet.
- 3.2 Premier Molding Compound
  - 3.2.1 The Premier Molding Compound shall be comprised of saturated petroleum hydrocarbons (petrolatum), inert fillers, reinforcing fibers and thermal extenders. Variations may contain beads of cellular polymer and flow control additives.
  - 3.2.2 Premier Molding Compound shall be cold applied self supporting Mastic for molding around irregular shaped fittings to provide a suitable profile for applying the Premier Tapes.
  - 3.2.3 The physical specification values shall meet the values given on the specification sheet for the type of Premier Molding Compound.

## 3.3 Premier Tapes

3.3.1 The Premtape Marine is used for cylindrical, square & octagonal piles. It shall be comprised of a non-woven synthetic fabric carrier fully impregnated and coated with a neutral petrolatum based compound with inert siliceous fillers and inhibitors with an HDPE backing.

The Premtape Tropical is used for H-piles. It shall be comprised of a non-woven synthetic fabric carrier fully impregnated and coated with a neutral petrolatum based compound with inert siliceous fillers and inhibitors.

3.3.2 The Premtape Marine & Premtape Tropical shall have a character stable in composition and plasticity over a wide temperature range. The tape shall be non-hardening and non-cracking. The tape shall accommodate vibration and extreme movement of substrate. Superficial oxidation renders surface less tacky. Highly resistant to mineral acids and alkalis.

3.3.3 The Premtape Marine & Premtape Tropical shall meet the physical specifications values listed on the specification sheet.

## 3.4 SeaShield Outercover

3.4.1 The SeaShield Outercover shall be comprised of High Density Polyethylene (HDPE). It shall be new, seamless virgin material. Use of reprocessed resin is prohibited. The sheet shall be uniform throughout, free from dirt, oil and other foreign matter and free from cracks, creases, wrinkles, bubbles, pin-holes and any other defects that may affect its service.

3.4.2 The Outercover shall be 80 mils thick to prevent damage to underlying tape. The outercover will be custom fabricated to the desired length and diameter of the pile. SeaShield Fasteners will be spaced evenly depending on size and length of outercover.

3.4.3 Physical properties of the outercover shall meet or exceed the minimum requirements of the attached product specifications for the SeaShield Outercover.

## 3.5 SeaShield Fasteners

3.5.1 The SeaShield Fasteners shall be comprised of M10 x 150 mm Bolt, 316 Stainless Steel.

3.5.2 M10 Nyloc Nut, 316 Stainless Steel.

3.5.3 M10 Penny Washer O.D. 35 mm x 1.5 mm thick, 316 Marine Grade Stainless Steel for every nut and bolt there are two washers.

3.5.4 Torque Specification up to 40 to 80 in. lb. (4.5 to 9.0 N/m) (Torque wrench capable of reading a minimum of 25 in. lb. / 2.8 N/m is required.)

3.5.5 A thin coat of anti-sieze compound shall be applied to bolt prior to tightening to prevent possible galling.

#### **4.0 Surface Preparation Requirements**

- 4.1 Remove weld spatter, sharp points and edges.
- 4.2 Remove marine growth, loose rust, paint and foreign matter by hand and /or power tools cleaning in accordance with SSPC-SP-2, or SP-3, "Hand Tool Cleaning" or "Power Tool Cleaning" respectively.
- 4.3 A hydraulic whirl away or high pressure water blasting may be used to prepare the surface.

#### **5.0 Application of Prempaste S105 Paste**

- 5.1 If surface has corrosion pits greater than 2 mm, apply a thin uniform layer of Prempaste S105 over corroded area and fill all pits.
- 5.2 When applying the Prempaste S105 Paste underwater use a gloved hand to displace the water and slowly rub S105 Paste onto surface and into pits. (Note: When applying underwater the primer will be less visible on the pile.)

#### **6.0 Application of Premier Mastics**

- 6.1 To protect complex surfaces and configurations such as brackets, flanges, valves etc., apply Premier Molding Compound or Prembond Mastic by filling and packing to achieve a uniform contour to which tape can be applied without bridging or voids.
- 6.2 Use Premier Molding Compound to fill in cavities at the pile / pile cap interfaces.

#### **7.0 Cylindrical Pile - Application of Premier Marine Piling Tape**

- 7.1 The Premtape Marine shall be spirally wrapped onto pile using a 55% overlap, which will provide a double thickness of tape throughout.
- 7.2 Hold end of the tape firmly against the starting point and firmly press on the surface. Unroll the tape, keeping the roll close to the surface. Do not get a long lead of tape as it will tend to fold and gap on the surface being wrapped.
- 7.3 Apply sufficient tension to provide continuous adhesion, but do not stretch the tape. As application proceeds, press out all folds and air pockets that may occur.
- 7.4 Maintain a minimum 6" overlap when overlapping one roll with the end of a new roll.
- 7.5 At the completion of each roll, smooth the overlaps by hand in the direction of the spiral to insure sealing of the overlap.

#### **8.0 H-Pile - Application of SeaShield Foam Blocks and Premier Tape**

- 8.1 Wrap foam blocks with Premtape Tropical with minimum 1" overlap.
- 8.2 Insert the wrapped foam blocks into the openings of the H-Piles on each side, ensuring a tight fit.
- 8.3 The Premtape Tropical shall be spirally wrapped around the H-Pile using a 55% overlap, which will provide a double thickness of tape throughout.
- 8.4 Hold end of the tape firmly against the starting point and firmly press on the surface. Unroll the tape, keeping the roll close to the surface. Do not get a long lead of tape, as it will tend to fold and gap on the surface being wrapped.
- 8.5 Apply sufficient tension to provide continuous adhesion, but do not stretch the tape. As application proceeds, press out all folds and air pockets that may occur.
- 8.6 Maintain a minimum 6" overlap when overlapping one roll with the end of a new roll.
- 8.7 At the completion of each roll, smooth the overlaps by hand in the direction of the spiral to insure sealing of the overlap.

#### **9.0 Application of SeaShield Outcover**

- 9.1 Outcover should be custom fabricated to the correct diameter of the pile.
- 9.2 Locate the outcover between the elevations indicated in the specifications and drawings.
- 9.3 Wrap the outcover tight around the pile and align the holes within the fastener bars.
- 9.4 Using the specified nuts, bolts and washers as described in section 3.5, tighten and secure the outcover with a pneumatic wrench to a torque specification of 40 to 80 in.lb. (4.5 to 9.0 N/m).

#### **10.0 Installation of Stopper Bands for H-Piles**

- 10.1 Locate the elevations at the top of the highest jacket and at the bottom of the lowest jacket.
- 10.2 Remove the release paper from the Butyl Mastic Tape.
- 10.3 Install two halves of the stopper band at the located elevations. Insert bolt & nut and tighten until stopper band is secured.

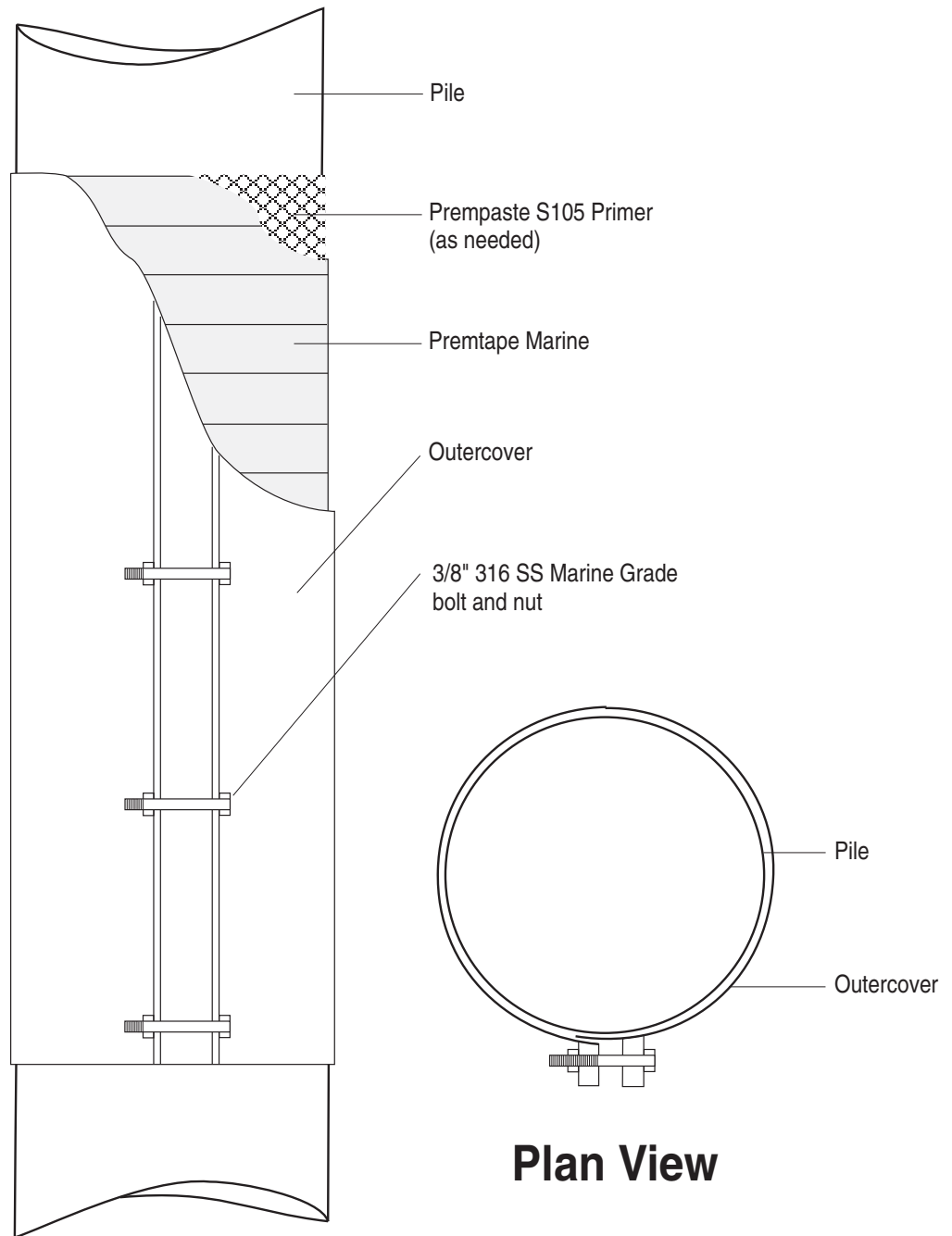


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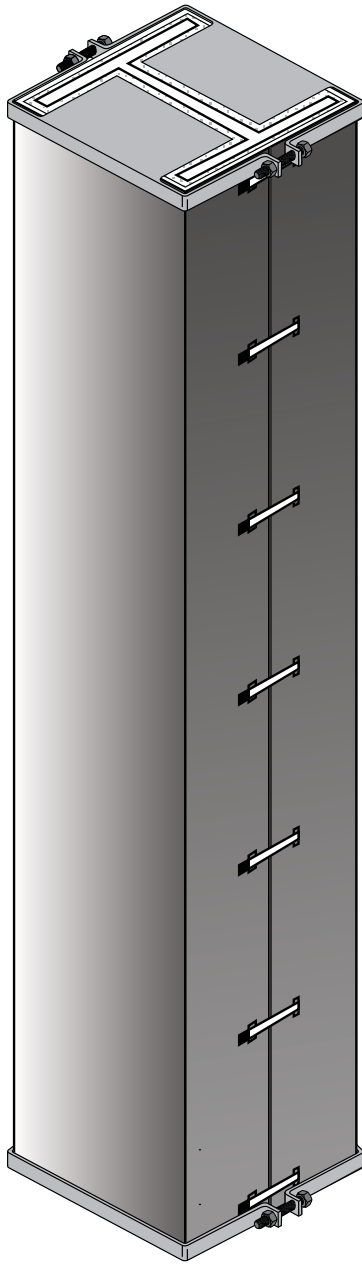
**Elevation View**

**Plan View**

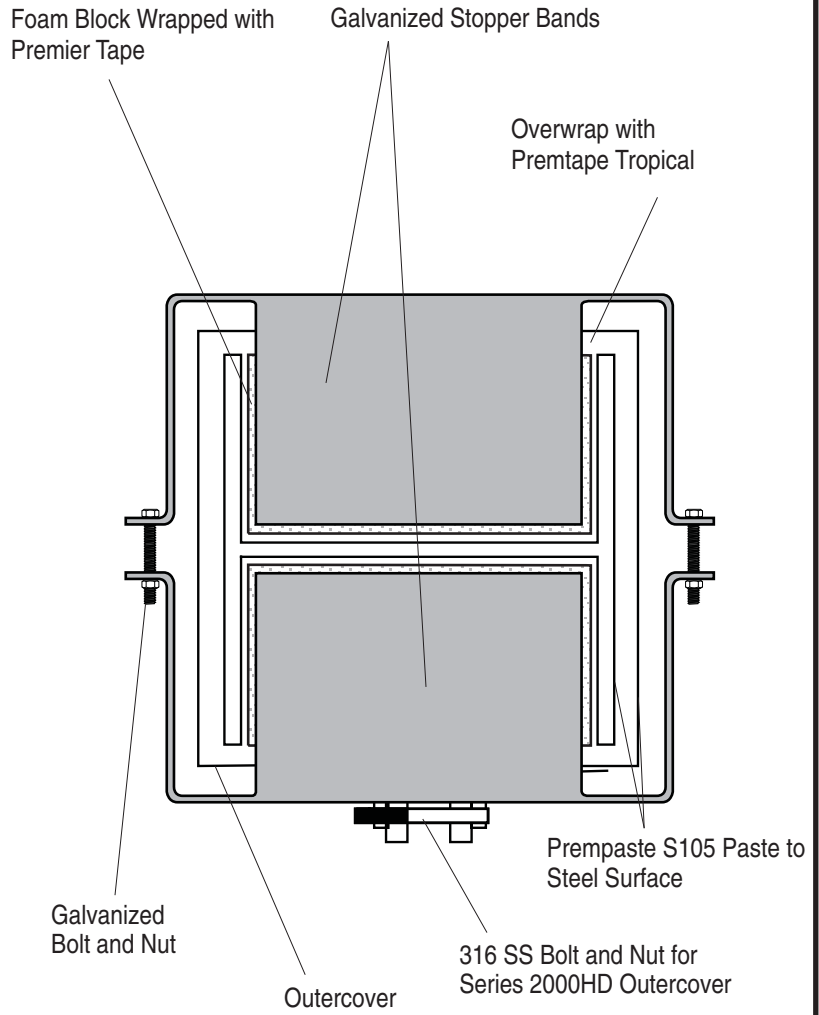
**Sheet 1**  
(Not to Scale)

**SeaShield Series 2000HD  
Splashzone Protection System**





**Elevation View**



**Plan View**

**Sheet 2**  
(Not to Scale)

**SeaShield Series 2000HD H-Pile  
Splashzone Protection System**

