



# Engineering Specifications for **SeaShield Series 70** Timber Pile Protection System

## 1.0 Scope

- 1.1 This specification may be used for the materials and application of Denso SeaShield Series 70 for Timber Pile Protection.
- 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 commendations of the manufacturer regarding application of the specified system.
- 2.2 The manufacturer of specified materials shall be Denso North America, 9747 Whithorn Drive, Houston, TX 77095, Tel: 281-821-3355 or 90 Ironside Crescent, Unit 12, Toronto, Ontario, Canada M1X1M3 Tel: 416-291-3435. E-mail: info@densona.com

## 3.0 Materials

### 3.1 Denso Marine Piling Tape

The Denso Marine Piling Tape shall be comprised of a non-woven synthetic fabric carrier fully impregnated and coated with a neutral petrolatum based compound with water displacing agents and backed with a thin layer of HDPE.

The Denso Marine Piling Tape 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. Highly resistant to mineral acids and alkalis.

The Denso Marine Piling Tape shall meet the physical specifications values listed on the specification sheet.

### 3.2 Denso Glass Outerwrap 70

Denso Glass Outerwrap 70 is a fiberglass cloth impregnated with a water activated resin that is used as a protective outer wrap over Denso Marine Piling Tape. It is a protective coating which offers exceptional mechanical and impact strength for underwater, underground, and above ground pipe and piles. It can be applied between 32°F (0°C) and 150°F (66°C).

#### Setting Times

50°F (10°C) - 60 minutes

70°F (21°C) - 30 minutes

90°F (32°C) - 15 minutes

### 3.3 Denso Poly-Wrap

Denso Poly-Wrap is a 150 gauge (1.5 mil / 0.04 mm) wrap made from high performance metallocene resins.

## 4.0 Installation

### 4.1 Cleaning and Surface Preparation

Identify piles to be protected between elevations indicated on the drawings.

Remove marine growth and foreign matter for the entire length which is to be protected with the series 70 system. All surface projections such as nails, bolts, large splinters, fouling organisms and other surface conditions that would penetrate the tape shall be removed.

### 4.2 Application of Denso Marine Piling Tape

The Denso Marine Piling Tape shall be wrapped onto the timber pile using a minimum 55% overlap. Application shall begin at the designated low point indicated in the specifications and drawings and proceed upward to the high point, creating a weather board effect.

Hold end of the tape firmly against the starting point and firmly press onto the surface. Unroll the tape, keeping the roll close to the pile. Do not get a long lead

of tape as it will tend to fold and gap on the surface being wrapped.

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.

Maintain a minimum 6" (150 mm) overlap when overlapping one roll with the end of a new roll.

At the completion of each roll, smooth the overlaps by hand in the direction of the spiral to insure sealing of the overlap.

#### 4.3 Application of Denso Glass Outerwrap 70

Once removed from the sealed wrapper, the Denso Glass Outerwrap 70 roll needs to initially be immersed in clean water for up to 1 minute (clean, clear sea water will suffice) before it can be used so as to initiate the resin curing process. In the pile protection zone, apply the outer tape in a similar fashion to the Denso Marine Piling Tape by starting with two full circumferential wraps about 2" (50 mm) below the inner tape, then proceed spirally upward along the pile progressing with a 55% overlap, this will ensure a minimum double thickness of tape. Commence each new roll by overlapping the last roll by 6" (150 mm), as wrapping proceeds, smooth by gloved hand to exclude water, air bubbles and wrinkles from under the tape and to aid sealing of overlaps. Any overlapped edges are to be moulded and smoothed down by hand. This process is repeated all the way along the protection zone to a point about 2" (50 mm) above the end of the inner tape finishing again with two complete horizontal turns of the tape.

#### 4.4 Application of Denso Poly-Wrap

Apply a couple of layers of Denso Poly-Wrap around the Denso Glass Outerwrap 70 and allow to stand for approx. 15 min. after which it can be removed without the use of sharp tools.

#### 4.5 Mud Line Seal

Excavate the soil around the base of the piles so that the outercover extends to a minimum of 2 feet (6.1 m) below the mud line. After installation of the outerwrap, back fill all excavated areas to the original mud line.



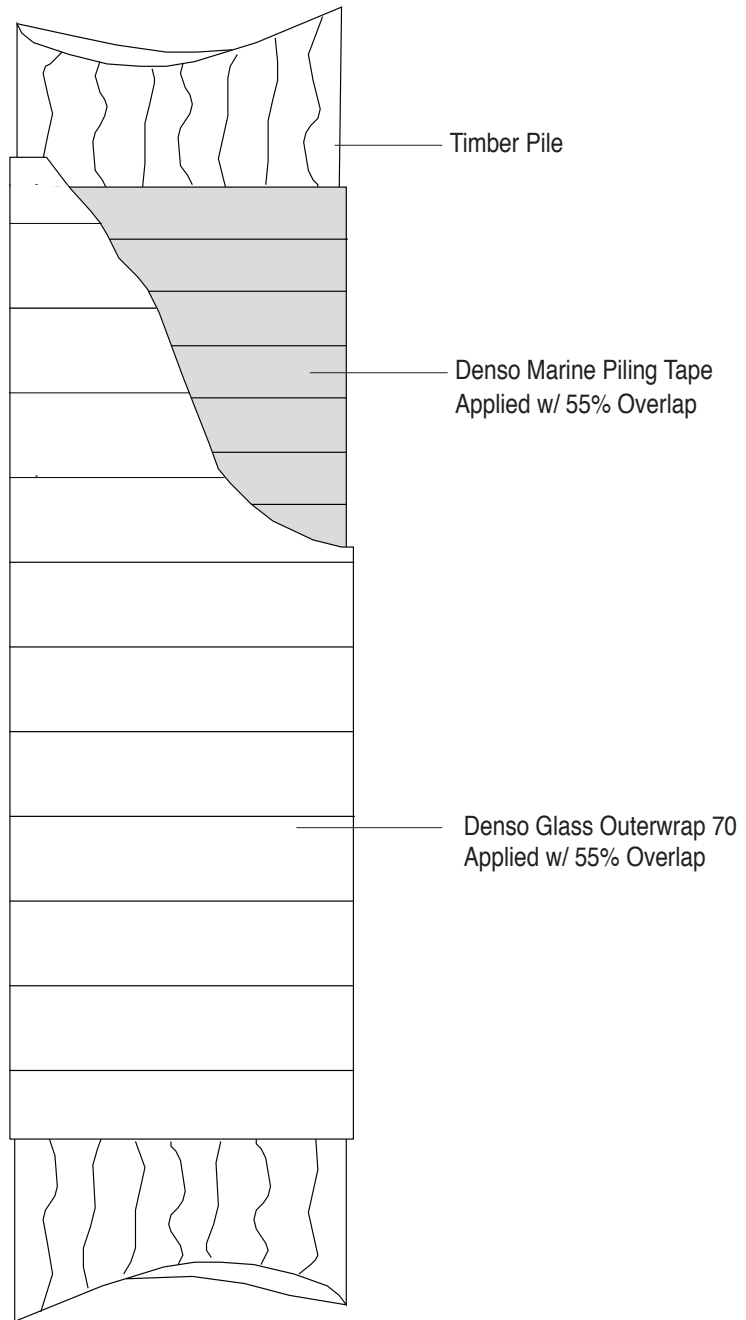
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**Elevation View**

**Sheet 1**  
(Not to Scale)

**SeaShield Series 70  
Timber Pile Protection System**

