



40 YEARS OF MARINE PROTECTION

## APPLICATION INSTRUCTIONS

### *Seashield Series 60 System* for Timber Pile Protection

#### 1. SCOPE:

The Series 60 system consists of Denso Seal T or Marine Piling Tape and Ultraflex 1500 or Densopol 80 tape, Primer, Mastic and Pilemesh outer protection all fastened with Smartband strapping and buckles.

Designed to protect timber piles and surrounding areas from the environment. The tape covers and makes intimate contact with the entire surface of any substrate in the splash or tidal zone.

#### 2. USES:

For splash or tidal zone protection of timber piles which are subject to organism attack in sheltered environments.

Easily applied to pilings that have a constant outside diameter (OD) throughout the length of the protection zone. For pilings without a constant OD Denso Seashield primer and mastic can be used to create a profile which enables the use of the system.

Used in sheltered environments by yacht clubs on marinas and mooring berths.

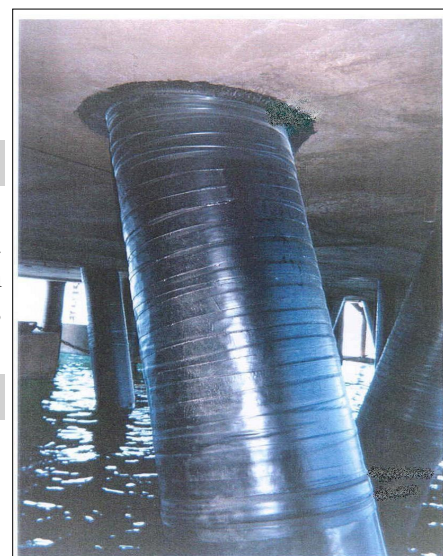
By road authorities on bridges and jetties. By local councils on bridges jetties, navigation aids and piers.

#### 3. EQUIPMENT LIST:

- Wire brush, powered wire brush, scraper, water blasting equipment (optional).
- Brush cleaning solvent, utility knife, cleaning cloth, hand cleaner, barrier cream.
- Diving gear and equipment or overalls, gloves and any other personal protection equipment deemed necessary by the Safety Data Sheets and Job Safety Analysis conducted prior to the commencement of any work undertaken.

#### 4. MATERIALS LIST:

- Denso Seashield Primer.
- Denso Seashield Mastic for filling and profiling irregular surfaces.
- Denso Seal T or Marine Piling Tape corrosion protection layer.
- Denso Ultraflex 1500 or Densopol 80 Tape and Pilemesh for mechanical protection of the system.
- Smartband strapping, buckles and fitting tool supplied by Denso to secure and hold Pilemesh in place.



▲ **Figure 1.** Denso Seashield Series 60 system (excluding Pilemesh).

#### 5. APPLICATION of TAPE SYSTEM:

##### a) Surface Preparation:

Surfaces to be protected must free from all marine growth, perished timber, previous coatings, dirt etc.

The surface can be prepared by high pressure water jetting and hand tools such as wire brushes and scrapers.

The choice of method will depend on a number of factors and will need to take into account the most practical with regard to site conditions and any environmental constraints imposed due to site location.



► **Figure 2.** Timber piles protected in the splash zone.

## 5. APPLICATION of TAPE SYSTEM (continued):

- Remove all marine growth from the area to be protected .
- Remove any sharp splints. Trim around holes, cavities and sudden changes of profile.
- Wash down surface, seawater will suffice.

Precautions may need to be taken during the preparation process due to environmental concerns. Measures should be taken to minimise the amount of debris being deposited into the marine environment. Local regulations may dictate specific precautions and conditions that need to be met as part of these works. A job site Environmental Management Plan may be available for guidance in these matters.

### *First Inspection:*

When all marine growth has been removed a close examination must be made of the surface area that has been prepared to ensure a thoroughly clean surface without growth, sharp or protruding surfaces is obtained.

### **b) Priming:**

Priming is always required when using Seal T Tape. Marine Piling Tape is regarded as self priming for new substrates. Denso Seashield Primer is applied to the surface area by gloved hand, cloth, roller or brush, at a spreading rate of 1.0kg/m<sup>2</sup>. It is applied in a circular motion obtaining an even film. All voids, concaves, holes should be filled. Denso Seashield Primer can be applied above and below the water's surface.

Primer is required in;

- *Areas with deep cracks or crevices:* Defined as areas of at least 2.0mm wide or deep where there is a danger of the tape wrapping 'bridging' the and leaving a void. These areas must be treated with a liberal coating of Seashield Primer to fill up any voids. If a very deep void occurs, such as holes, then after priming cut a patch of Seashield Mastic and press firmly into the area.
- *Irregular pile surfaces:* Apply a liberal amount of primer to the surface. Use Mastic or tape to create fillets which provide a profile to the substrate that can accommodate the smooth application of tape. Sufficient should be used to avoid any bridging when the tape is applied.
- *Remaining Pile:* Apply a thin coat of primer to the remaining exposed pile surface to be protected.

### *Second Inspection:*

The primed area must be thoroughly inspected to ensure that all the surface area has been properly coated with the primer, including voids, concaves and holes. A smooth profile must be evident to ease tape application and prevent bridging.

### **c) Tape Wrapping:**

It is important to apply the tape with the correct side facing the pile. The outside of the tape is to make intimate contact with the piling substrate. The pile is wrapped from the bottom up



### *Application of Seal T or Marine Piling Tape:*

In the pile protection zone apply the tape by starting with two full circumferential wraps then proceed spirally along the pile progressing with a 55% overlap, giving effectively a double layer of tape. This will ensure a minimum double thickness of tape all the way. Carry on until the roll runs out.

Commence each new roll by overlapping the last roll by the same length as the tape width, for example if the tape is 150mm wide then the overlap will be about 150mm.

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 blended together by hand. This process is repeated all the way along the protection zone finishing again with two complete horizontal turns of the tape.

### *Third Inspection:*

It is imperative to thoroughly inspect the wrapped pile surface area ensuring it has been wrapped with the specified 55% overlap, that all water, air bubbles and wrinkles are excluded from under the tape and that all overlaps are sealed, moulded and blended together.

▲ **Figure 3.** Tape being applied under water.

## 5. APPLICATION of TAPE SYSTEM (continued):

### c) Tape Wrapping (cont):



◀ **Figure 4.** Model of the Series 60 system. Visible is the strapping and Pilemesh with sections removed to show the outer tape.

#### Application of Ultraflex 1500 or Densopol 80 Tape Outer Tape:

In the pile protection zone apply the Ultraflex 1500 or Densopol 80 Tape in a similar fashion to the Seal T or Marine Piling Tape by starting with two full circumferential wraps then proceed spirally along the pile progressing with a 55% overlap, giving effectively a double layer of tape. This will ensure a minimum double thickness of tape all the way. Carry on until the roll runs out.

Commence each new roll by overlapping the last roll by the same length as the tape width, for example if the tape is 150mm wide then the overlap will be about 150mm.

As wrapping proceeds smooth by 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 finishing again with two complete horizontal turns of the tape.

#### Fourth Inspection:

It is imperative to thoroughly inspect the Ultraflex 1500 or Densopol 80 Tape surface area ensuring it has been wrapped with the specified 55% overlap, that all water and air bubbles are excluded from under the tape and that all overlaps are sealed, moulded and blended together.

## 6. APPLICATION of PILEMESH:

A sheet of Denso Pilemesh is cut to suit the circumference of the pile and tape with allowance for a 100 to 150mm overlap.

Denso Smartband strapping is then used to secure the Pilemesh at the top and bottom 50mm from its edge and in between at gaps of no more than 500mm apart.

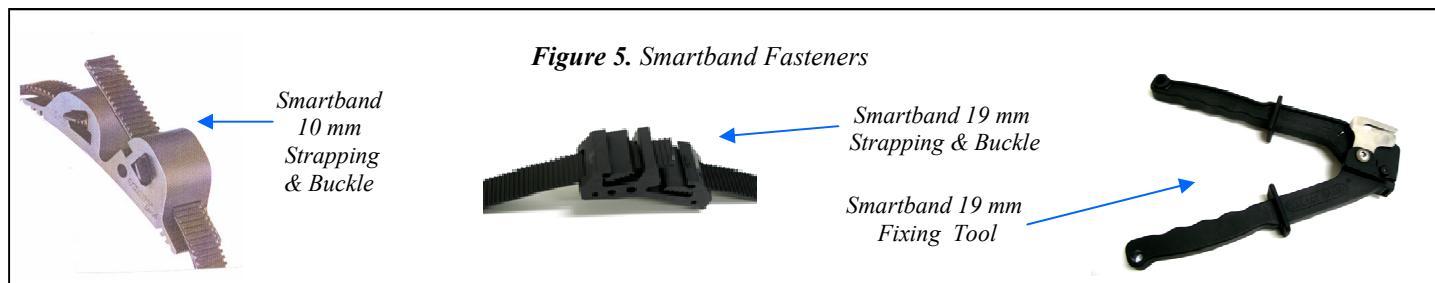
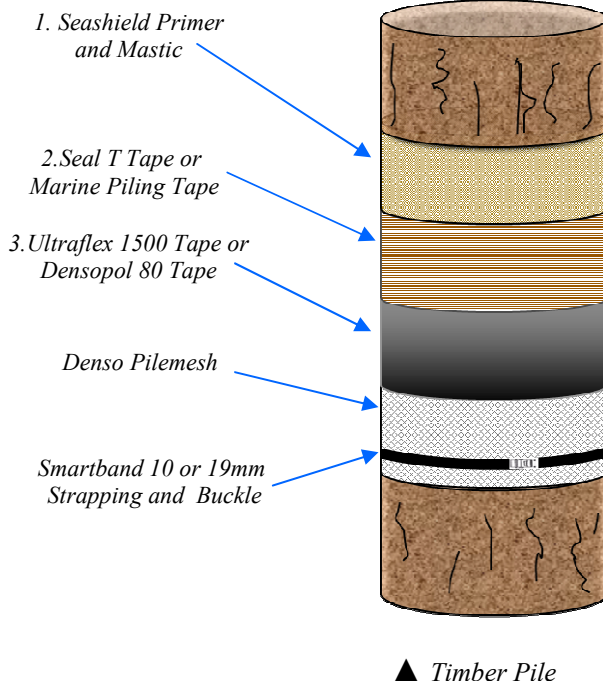
Insert the Smartband strap teeth uppermost into one end of the buckle. Wrap the strap around the outside of the Pilemesh and insert into the opposite end of the buckle. Pull the buckle through hand tight before reverting to the Smartband fitting tool to complete tightening. Use the cutter blade on the fitting tool to remove excess strapping. Ensure that all buckles are in the same vertical position on the pile near or on the overlap.

If possible the position of the overlap and buckles should be located on any sheltered side of the piles..

#### Final Inspection:

Check that all Pilemesh surfaces are smooth and flat around the pile, all strapping is not loose, that the Pilemesh is securely fixed to the pile and is not able to be moved in any direction.

**Diagram 1.** Illustrated example of the Series 60 System



**7. SAFETY DATA:**

<b>Storage:</b>	Denso Primer, Mastic and tapes shall be stored in a cool dry place out of direct sunlight between 5° and 25°C. Denso Pilemesh shall be stored the way they arrive and kept out of direct sunlight until they are required.
<b>Transport:</b>	Avoid prolonged exposure to high temperatures during transit, preferably in an enclosed vehicle.
<b>Handling:</b>	Denso Pilemesh shall be kept rolled and taped to prevent damage ready for transportation to the installation site. Care shall be taken to avoid sudden impact that may tear or damage the material.
<b>Action in case of fire:</b>	Extinguish with water fog, dry powder, carbon dioxide or chemical foam. Self-contained breathing apparatus may be required.
<b>Skin Contact:</b>	Wash with warm water and mild soap. Use pumiced heavy duty hand cleaner for stubborn stains.
<b>Swallowing:</b>	If feeling unwell, seek medical advice.
<b>Inhalation:</b>	In a fire situation avoid inhaling fumes.
<b>Spillage:</b>	No materials classified as hazardous. Pick up and collect material by hand or with absorbent rags or pads.
<b>Disposal:</b>	Incineration or landfill in accordance with local regulations.
<b>Other:</b>	For more information please refer to Denso safety data and technical data sheets. Available for all system components.



Approved Quality Management System  
AS/NZS ISO 9001:2008  
Lloyds Register – Certificate N° Mel 0927759



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