



40 YEARS OF MARINE PROTECTION

## APPLICATION INSTRUCTIONS

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

#### 1. SCOPE:

The Series 70 system is designed to protect timber piles and surrounding areas from the environment. It consists of SeaShield Primer and Mastic, Marine Piling Tape and Densoglass FX Outerwrap.

The Denso Marine Piling Tape covers and makes intimate contact with the entire surface of any substrate in the splash or tidal zone while the Densoglass FX Outerwrap provides reinforcement and mechanical protection for the system.

#### 2. USES:

For splash or tidal zone protection of timber piles that are subject to organism attack in relatively sheltered environments. Easily applied to pilings that have a variable outside diameter (OD) throughout the length of the protection zone. Can be used by road and port authorities and local councils on bridges jetties, navigation aids, piers, docks, marinas and mooring berths.

#### 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 Marine Piling Tape corrosion protection layer.
- Densoglass FX Outerwrap for reinforcement and mechanical protection of the system.
- Compression film (Cling Wrap).

#### 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.

- 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. Denso SeaShield Primer is applied to the surface area by gloved hand, cloth, roller or brush, at a spreading rate of 1.0 - 1.5 m<sup>2</sup>/kg (0.9 - 1.4 m<sup>2</sup>/L). It is applied in a circular motion obtaining an even film. All voids, concaves, holes should be primed. Denso SeaShield Primer can be applied above and below the water surface.



▲ **Figure 1:**  
Denso SeaShield Series 70 System

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

Primer is required in;

- *Areas with deep cracks or crevices:* Defined as areas of at least 2.0 mm wide or deep where there is a danger of the tape wrapping 'bridging' the area 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 fill the area.
- *Irregular pile surfaces:* Apply a liberal amount of primer to the surface. Use mastic to create fillets which provide a profile to the substrate that can accommodate the smooth application of tape. Sufficient mastic fillets should be used to avoid any bridging when the tape wrap is applied.

### Second Inspection:

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

### c) Tape Wrapping:

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



▲ **Figure 2.** Tape being applied under water.  
sealed, moulded and blended together.

### Application of Denso 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 150 mm wide then the overlap will be about 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 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

### d) Application of Densoglass FX Outerwrap:

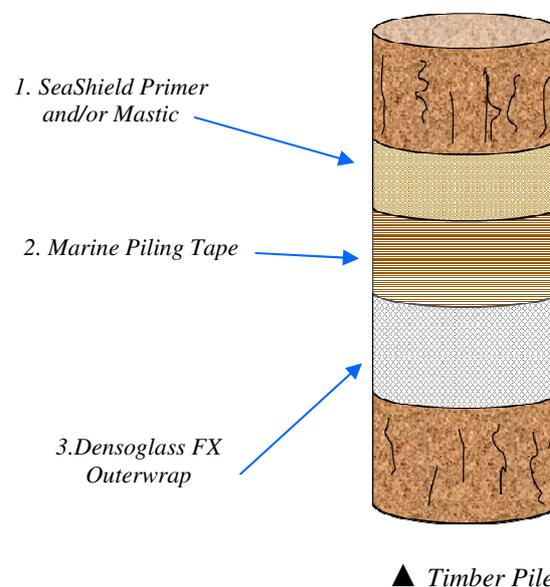
Once removed from the sealed wrapper the Densoglass FX Outerwrap roll needs to firstly be immersed in clean water for up to 1 minute (clean, clear sea water will suffice) before it can be used so as to initiate the resin curing process.

In the pile protection zone apply the outer tape in a similar fashion to the Marine Piling Tape by starting with two full circumferential wraps about 50 mm below the inner tape then proceed spirally upwards 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 150 mm wide then the overlap will be about 150 mm.

As wrapping proceeds smooth by hand to exclude water, air bubbles and wrinkles from under the tape and to aid sealing of overlaps. Do not over tension the tape or this will result in the membrane tearing. 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 50 mm above the end of the inner tape finishing again with two complete horizontal turns of the tape.

The resin which impregnates the Densoglass FX Outerwrap should be protected from contamination during the curing process in order to maximise the service life of this outer tape. Apply a couple of layers of compression film around the outer tape and allow to stand for at least hour after which it can be removed without the use of sharp tools.

**Diagram 1.** Illustrated example of the Series 70 System



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

### *Final Inspection:*

It is imperative to thoroughly inspect the Densoglass FX Outerwrap 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. SAFETY DATA:

<b>Storage:</b>	The system components shall be stored in a cool dry place out of direct sunlight between 5° and 25°C.
<b>Transport:</b>	Avoid prolonged exposure to high temperatures during transit, preferably in an enclosed vehicle.
<b>Handling:</b>	Care shall be taken to avoid sudden impact that may tear or damage the materials.
<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>Ingestion:</b>	If swallowed and 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 (gloved) 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



130 YEARS SERVICE TO INDUSTRY

**Denso (Australia) Pty Ltd**

411 - 413 Victoria Street,  
Brunswick, Vic 3056  
Australia

**MELBOURNE ♦ SYDNEY ♦ ADELAIDE ♦ BRISBANE ♦ PERTH**

Tel: + 61 3 93567600 ♦ Email: [denso@densoaustralia.com.au](mailto:denso@densoaustralia.com.au) ♦ Web: [www.densoaustralia.com.au](http://www.densoaustralia.com.au)



**Denso (New Zealand) Limited**

Tel: + 64 21 304 660 ♦ Email: [info@denso.co.nz](mailto:info@denso.co.nz)

**A MEMBER OF WINN & COALES INTERNATIONAL**