



CENTRAL
PRODUCTS

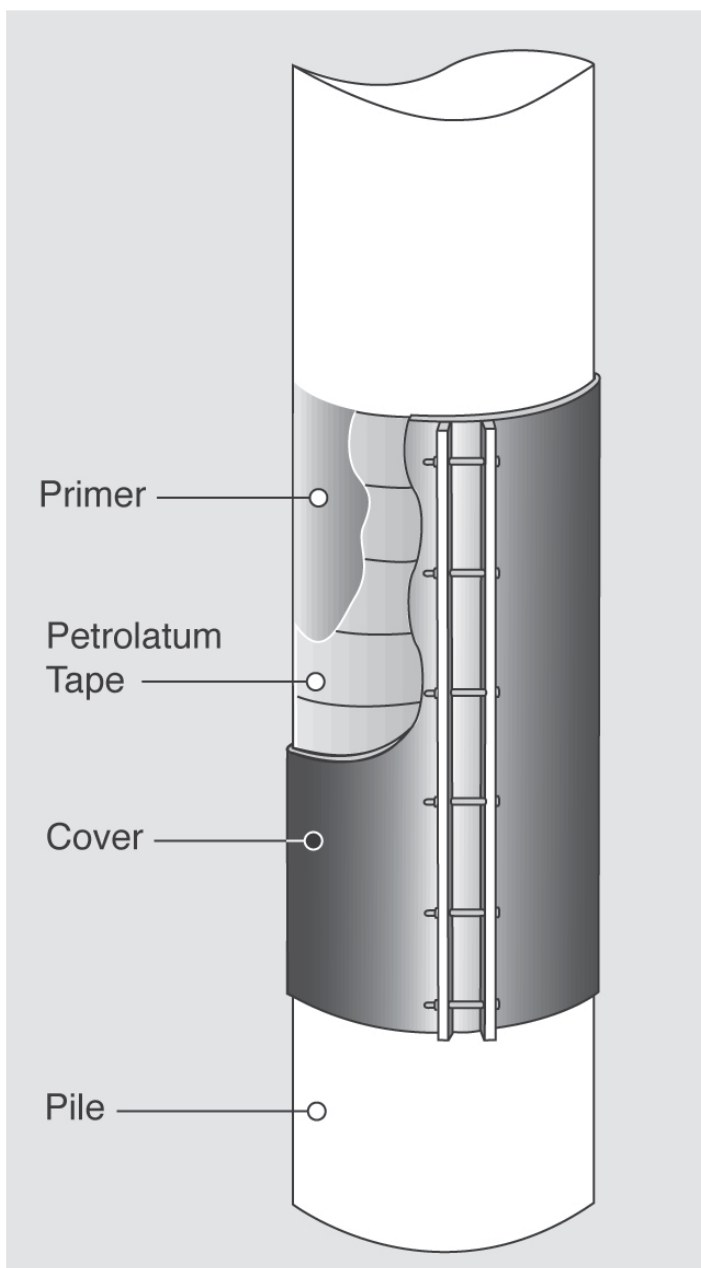
TM

PROTECTING YOUR WORLD

SPLASHpro

SPLASHpro Series M2

Installation Guide



SERIES M2-80

SERIES M2-100

SERIES M2-120

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1. Prepare the Pile Surface ...

Methods and Specifications

There are several methods for surface preparation:-

- *Hand tools such as wire brushes, chipping hammers and scrapping tools*
- *Power tools such as power wire brushes, and impact tools*
- *High pressure water blasting*
- *Abrasive blasting*

The choice of surface preparation method depends on the site conditions and the degree of cleaning necessary to achieve the surface finish required.

Cleaning Procedures and Surface Pretreatment

- *Remove all loose rust, coatings and marine growth by hand/power tools and/or water blasting to SSPC SP 2 or SP 3.*
- *Protrusions of any kind, and weld scars must be removed from the surface and smoothed to remove sharp edges and any sudden changes in profile.*
- *For deep pitting areas and large surface imperfections, a liberal coat of putty like compound, STACfill, should be applied over these areas to fill any uneven surfaces in the substrate for better contour.*



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2. Priming ...

The surface must be prepared according to SSPC SP2 or SP3 as stated in section 1 before priming.

- After cleaning, examine all areas of the exposed steel surface. Any surface imperfections should be treated and filled up with STACfill.
- Apply a thin, uniform film of STACprime marine with gloved hand, brush or rag, over the entire surface to be wrapped. Central Products Co. recommends a coverage of 3m² per kg.
- STACprime marine displaces surface moisture, passivate surface oxides, fills surface imperfections and ensures adhesion between STACwrap marine tape and the substrate.



3. Spiral Wrapping ...

STACwrap marine tape is a non-woven, stitch-bonded, synthetic fabric carrier, fully saturated and coated with a neutral petrolatum compound blended with inert fillers, corrosion inhibitors and biocides.

- Make a mark on the pile to indicate the top of the wrap.
- The total coverage area of each piling is recommended to be 0.6m above the average high tide and 0.6 m below the average low tide.
- Apply STACwrap marine tape from the bottom of the pile.
- Spiral wrap using a minimum of 55% overlap to achieve double thickness of the material.
- At the completion of each roll, smooth the overlaps by hand in the direction of the spiral to ensure sealing of the overlap. Maintain a 5 cm overlap when overlapping the existing roll with the end of a new roll.
- When the end of the length of the pile to be protected is reached, finish the wrapping with a complete circumferential wrap around the pile.
- Always press down the wrap to ensure proper adhesion and remove trapped water and air bubbles.



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4. HDPE Outerwrap ...

To protect the STAC corrosion barrier, the SPLASH^{pro} M2 system utilizes an outer layer of HDPE mechanical protection that is secured by a corrosion resistant bolted system. It is a tough, ultraviolet-resistant jacket that provides protection to the tape against abrasion, accidental impact and wave action. The jackets are secured with SS316L stainless steel threaded bolts.

Before Installing Outerwrap



The following should be considered when preparing dimensions for installation:

- *historical high, high tide:*
- *historical low, low tide:*
- *average high tide:*
- *average low tide:*
- *average tide:*
- *average difference:*

The total coverage area of each piling is recommended to be 0.6 m (2ft) above the average high tide and 0.6 m (2ft)

below the average low tide. STACprime marine is recommended for a coverage of 3m² per kg. STACwrap marine tape is wrapped at a 55% overlap to provide 2-layer coverage. For pilings of 0.6 m diameter and above, Central Products Co. recommends 150 or 300mm (6 or 12 inch) wide STACwrap marine tape.

Fitting the HDPE Outerwrap

- *Wrap the Outercover around the pile over the wrapped tape.*
- *Rest the Outercover on the supporting lugs at the bottommost part of the splash zone.*
- *Line up the opposite bolt holes and temporarily hold the Outercover in place using a ratchet strap or hand clamps.*
- *Fit the SS316L bolt assembly in the sequence: M10x85mm long bolt, with the M10 washer (the M10 bolt then passes through opposite holes in flanges), then another M10 washer and a M10 stainless steel nut. (Refer to hydraulic tensioning stated in section 5)*



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- Put all the bolt assemblies in place, and then tighten the bolts in sequence from the centre of the Outercover, alternating above and below the centre bolt.
- The recommended maximum torque of the bolting is 2.8 kg.m.
- On multi-Outercover system, the subsequent Outercover should overlap and fit right above the previous Outercover with the flanges lining-up vertically.



5. Hydraulic Tensioning ...

Our method of securing the HDPE Outercover consists of SS316L stainless steel threaded bolts c/w stainless steel nuts assembled using the hydraulic tensioning rig.

Each hydraulic tensioning rig is made up of two pieces of flat steel bars clamping the flanges of the jacket and two positioning steel rods slotting into the holes of the flanges according to the following procedure.

- The surface of the tapes between the flanges shall be greased with primer or suitable lubricants if necessary in order for the jacket to slide in place in the process of clamping the flanges using the hydraulic tensioning rig, to ensure that it is flush with the wrapped pile.
- Use at least two sets of hydraulic tensioning rigs to simultaneously clamp through the bolt holes until the gap between the flanges is such that the bolts and nuts can be tightened randomly through the empty bolt holes.



- The hydraulic tensioning rigs should be spaced strategically with at least one empty hole available above and below the rig.
- The gaps between the flanges should be even, before the bolts and nuts are tightened into each of the empty bolt holes respectively.
- After the bolts and nuts are fixed in position, the hydraulic tensioning rigs should then be released so that the steel rods can be withdrawn from the holes of the flanges before the remaining bolts and nuts can be completely tightened in place.



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6. Inspection Procedures ...

Cleaning Inspection

- *Ensure that all marine growth has been removed.*
- *Check that all loosely adhering coating has been removed.*
- *Ensure that the surface has been prepared to SSPC SP2 or SP3.*

Pre-Wrapping Inspection

- *The cleaned metal surface should be examined for pitting corrosion.*
- *If pitting has occurred and the depth of the pit is 5mm or greater than the adjacent metal surface, then STACfill must be applied to the area of the pitting.*

Tape Wrapping Inspection

Examine the wrapping for the following:

- *The start and finish of the wrapping has been carried out with a complete circumferential turn around the pile before beginning and ending the spiral wrapping.*
- *The spiral wrapping must not be less than 50-55% overlap.*
- *There must be no un-smoothed folds or wrinkles in the tape that will allow water to penetrate under the tape wrapping.*
- *The tape must be tight against the pile over the whole area of the wrapping. There must be no 'bladders' of air or water trapped under the tape or any loose areas.*
- *The edge of the overlap has been smoothed down to seal the upper layer to the lower layer.*

Inspection of Fitted Jackets

- *Inspect the jackets for damage before fitting.*
- *The jackets should be at the correct position and height.*
- *The jacket is fitted tightly around the wrapped pile so that there are no bulges or loose areas.*
- *Stainless steel 316L bolts c/w stainless steel nuts and washers are all well tightened in position, and none are missed out.*
- *The jackets have been evenly tightened where required.*
- *Nuts and bolts have been tightened.*
- *The flanges should be completely in contact.*



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7. Safety and Health ...

Guidance on PPE and Safety Precautions

Fitting SPLASHpro and wrapping anti-corrosion tape around piles may mean working over water. It may mean having divers apply and fit these products underwater. Before work is begun, a full risk assessment of the task involved should be undertaken by a competent person.

Having carried out the risk assessment, all actions so far as is reasonably practicable should then be implemented to ensure the safety and welfare of the workers involved.

Due to the nature of the work and the varying environmental conditions, equipment and procedures must be exercised in compliance with local and international regulations.