



Harbor West Condominiums, Seattle, Washington, USA:
Marine support piles protected against corrosion with SeaShield Series 500 System - See page 9

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Industrial Linings - Refinery Tanks

Archco-Rigidon 300E Protects Refinery's Tanks

The new Archco-Rigidon 300E System introduced at last years Denso International Conference has been specified by Engen to internally protect storage tanks in their new Kwa-Zulu Natal refinery.

The internal surface area of both tanks is 3,500m² and they were first blast cleaned to Sa2½ with a 40-60 micron angular profile. The tanks were then primed with Archco-Rigidon 300E Primer and had two coats of Archco-Rigidon 300E applied at 225 microns each.

Contractor RJ Southey KZN applied the Archco-Rigidon 300E by airless spray with Corrosion Advisory Technical Services providing the third party inspection.

Above: Internal view of the tank showing application of the Archco-Rigidon 300E.



Below: External view of the tank.



To enable quick identification of the subject matter within each story in this brochure we have adopted the following colour codes.

PROJECTS INVOLVING:	
PROTECTIVE COATINGS FOR.....	
■	BURIED PIPELINES & LPG VESSELS
■	EXPOSED STEEL & PIPEWORK
■	SUB SEA PIPELINES & JETTY PILES
PROTECTIVE LININGS FOR.....	
■	STORAGE TANKS, PUMPS ETC
SEALING & WATERPROOFING.....	
■	SEALING MASTICS
■	MEMBRANES & FLASHINGS
■	INDUSTRIAL TAPES

Corrosion Prevention - Marine Piles

SeaShield Protection for CentrePort's Seaview Wharf

CentrePort's Seaview Wharf is the Lower North Island region's main import terminal for bulk petroleum. Petrol and oil is discharged at the 600 metre long wharf, which is capable of handling tankers of up to 50,000 tonnes.

Ensuring it remains in good condition is critical for the region's economy. To help do that, DiveCo is undertaking a six month job of installing Denso SeaShield Series 100 system to the 403 H piles. Application of Series 100 to this type of pile involves installing a pre-profiled polystyrene filler block to fill the void and create a profile that is easier to encapsulate.

pre-measuring every 15 piles and keeping a hot-wire machine onsite to make emergency modifications.

Compared with previous SeaShield projects that DiveCo have carried out in the Auckland region, working in Wellington was a breeze, Mr Kirk Hannaford (Managing Director of DiveCo), said. "It's not tide dependent because tides in Wellington at

scheduled to start at the beginning of New Zealand's winter, finishing up toward the end of the year. DiveCo and our SeaShield has been through warm 15 degree days, chilling -5 degree mornings with snow falling on the hills behind the wharf and one near hurricane with winds reaching 145kph that removed the roofs of several local buildings, including part of the Wellington International Airport! Despite all of this, on good weather days Mr Hannaford's team of five can cover a pile in two hours.

Denso will visually inspect the condition of our product on Seaview Wharf during each visit to Wellington and DiveCo will be coming back every six months for the next two years

Installation of the SeaShield Series 100 system on one of the 403 H piles at CentrePort's Seaview Wharf.



This presents a fairly difficult problem for the divers onsite as well as the polystyrene manufacturer as very few of these H piles are consistent in dimension. Denso worked with DiveCo to solve this problem both in the factory and in the field by

about one meter are minor compared to those in west Auckland which are above four metres".

However, Wellington's wet and cold had been a problem with the average water temperature around 9 degrees. The contract had been

to check on the piles.

Mr Hannaford is confident that the wrapping would stand up to Wellington's weather.

"The biggest hazard is an impact - being hit by a boat. But as long as the tape is not compromised it'll be doing its job for years to come".

Corrosion Prevention - Buried Water Pipes

Densoclad 70 Protects Cooling Water Pipework

A substantial contract completed by coating contractors E & P Coatings of Ellesmere Port was to protect pipework destined to carry river water as a coolant with Densoclad 70 Tape.

The work was carried out for Laker Vent engineering who are installing the protected pipework above ground at Acordis Acetates in Derby.

All pipework was first grit blasted by E & P Coatings to the Swedish Standard Sa2½ and then coated Denso Primer D. This was then followed by a double wrap

application of Densoclad 70.

Densoclad 70 Tape is based on a polymer modified bitumen adhesive laminated to a robust pvc backing tape, which also makes it particularly suitable for rolling rig applications when required.

Water pipes wrapped and ready for installation.



Sealing Mastics - Jointing Asphalt Highway Surfaces

Denso North America's Largest Road Project is Underway

For many years, Denso North America Inc. in Canada has been working on increasing the use of Denso road products in a number of markets across the country.

After numerous field demonstrations and follow-up activity, Denso has been awarded a very large contract by the Ministry of Transportation in Ontario. The contract calls for the installation of approximately 25 kilometres of Densoband joint sealing material. The material will be supplied in 15mm x 45mm x 6.5m rolls, along with appropriate primer, on the longitudinal joint between lanes one and two on one of the busiest stretches of highway in Canada. The highway, known as Highway 401, is a major multi-lane artery that runs east to west for 800 kilometres from one side of the Province of Ontario to the other and connects the Province and the country, to the busiest



Canada/USA border crossing at Windsor, Ontario and Detroit, Michigan.

The constant “round the clock” traffic, of which a very large portion is 53’ long tractor trailers carrying automotive parts and completed vehicles, has meant that the Densoband work is done from 9:00PM at night, through to 7:00AM the next morning, when the highway traffic is lighter.

This project is the first time Denso in North America has used an applicator machine for the Densoband installation. After a few modifications to the unit, we are now capable of installing the product at a rate of approximately 360 metres/hour, a rate that keeps us well ahead of the paving and finishing crews.

The various contractors and engineers are extremely pleased with the application of Densoband on this job and we look forward to many more highway projects across Canada, both large and small.



Photographs

Opposite page

- Top: The hot asphalt arrives by truck.
- Middle: Densoband comes in several sizes. 15mm x 45mm x 6.5m rolls were used on this project.
- Bottom: Applying Densoband at 360metres/hour with the special Densoband applicator machine.

This Page

- Top: The Densoband is in place, ready for the asphalt to be laid.
- Middle and Bottom: Close up of the Densoband applicator machine.

Corrosion Prevention - Buried Tie Rods

Denso Protection for Donegal Fishery Harbour Piling

A major Fishery harbour development has been completed at Killibegs, Co. Donegal, for Ireland's Department of Marine and Natural Resources. Main contractors were Irishenco.



The piling for deeper berths to accommodate larger fishing vessels included the use of 187, 105mm tie rods. Ranging in length from 33m to 34.5m, the rods were supplied by Normanby Industries Ltd of Gainsborough, Lincs. Although all the tie rod sections that

remained above the sea bed were encased in concrete as part of the piling system, Normanby Industries specified Denso Tape overwrapped with Denso PVC Tape to give extra anti-corrosion protection. This wrapping also gave protection during transit and storage on site in the

marine environment.

This choice resulted from the company's previous experience of the capabilities of Denso products on several major tie rod contracts. The tapes were applied mechanically using a Denso Wrapping Machine.

Corrosion Prevention - Marine Piles

Condominium Pilings Protected with SeaShield Series 500 System

The Harbor West Condominiums were built over 40 years ago along the aggressive coast of Puget Sound in Seattle, WA. The structure is supported by 140 each 14" octagonal concrete pilings and had been performing well until they were damaged from an earthquake in 2002. The SeaShield Series 500 System was selected as the sole-source system for complete encapsulation of all the piles.

The project included the complete encapsulation of all 140 piles. Firstly, 100 of the piles were protected with the Series 500 System, that included a 15¼" dia. SeaShield Fiber-Form jacket that yielded a minimum ½" annulus at the 8 corners of the existing octagonal piles. The jackets were constructed of ⅝" thick woven and roving fiberglass and gel coated. The annulus was then pumped and filled with the SeaShield 550 Epoxy Grout. The epoxy grout kits consisted of 1 gallon of 2-part epoxy and a 44 lb. bag of grout yielding 0.4 cu.ft.

Next, 40 of the 140 piles were encapsulated with ⅝" thick 16" dia. steel split sleeves,

Below: Completed SeaShield 500 System.

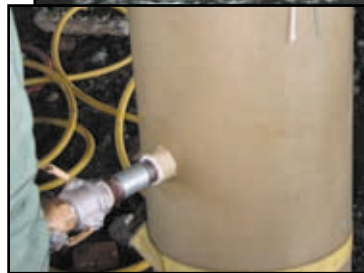


welded and then filled with the 550 Epoxy grout. Finally, these 40 piles were encapsulated with 17¼" dia. Fiber-Form jackets that included ½" stand-offs and were again filled with the 550 Epoxy Grout.

All together the project included approximately 1,800 LF of 15¼" dia. jackets, 800 LF of 17¼" dia. jackets, and 2,400 kits of the 550 Epoxy Grout.

Installation took place during

Below: Preparing surface with high-pressure water blasting.



Above: SeaShield 550 Epoxy Grout being pumped into the Fiber-Form jacket..



Above: Standoffs provide a minimum ½" annulus to all eight corners of octagonal piles.

the late summer and early fall when tides are difficult, temperatures are near freezing at times, and coastal waters are at their most aggressive. With all the elements working against the Contractor, they were still able to complete the project on schedule and on budget.

The contractor gave rave reviews on the ease of installation of both the Fiber-Form Jackets and the 550 Epoxy Grout.

The Series 500 System provides excellent bond strength/adhesion to steel and concrete, long-term corrosion protection, UV resistance and outstanding abrasion resistance. The system will provide many years of additional service life to the Condominium structure.

Sealing Mastics - Sticking Down Textile Mesh

8 Miles of Denso Skid Resistant Tape used at Stanstead

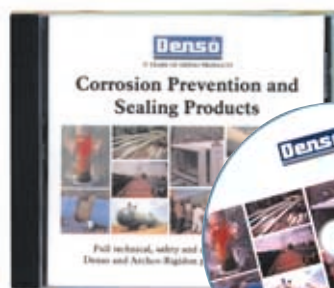
The versatility of Denso Skid Resistant Overbanding Tape was recently demonstrated on the BAA access road to Stanstead Airport from the A120. Contractors Balfour Beatty used the overbanding tape on the interface with the road surface black top and a textile mesh, known as American Green, which holds down the grass verges.

To date over 13,500 linear metres (nearly eight miles) of Denso Skid Resistant Overbanding Tape has been used.

This recently introduced product has a special textured surface which has been independently tested and proven to exceed the minimum skid resistance value for overbanding materials specified by the Department of Transport.

Designed for sealing cracks or failed reinstatements (up to 5mm wide) on secondary road pavements, use of the new tape prevents the entry of water which if left unchecked will eventually cause more damage and breakdown of the surface. The special skid resistant surface is an added safety feature which has been welcomed by contractors, utilities and highway authorities alike. Another virtue of the tape that should appeal to the conservation conscious is that it is made from recycled materials.

Denso Skid Resistant Overbanding Tape holding down the American Green at the side of the BAA access road to Stanstead Airport.



New Denso CD-Rom - Now Available

The new Denso CD-Rom is now available and is about to be issued to Denso Digest readers and Denso customers.

Containing full product information, accessible via either product or application selection, we hope that users will find it a simple yet efficient way of viewing our extensive product range.