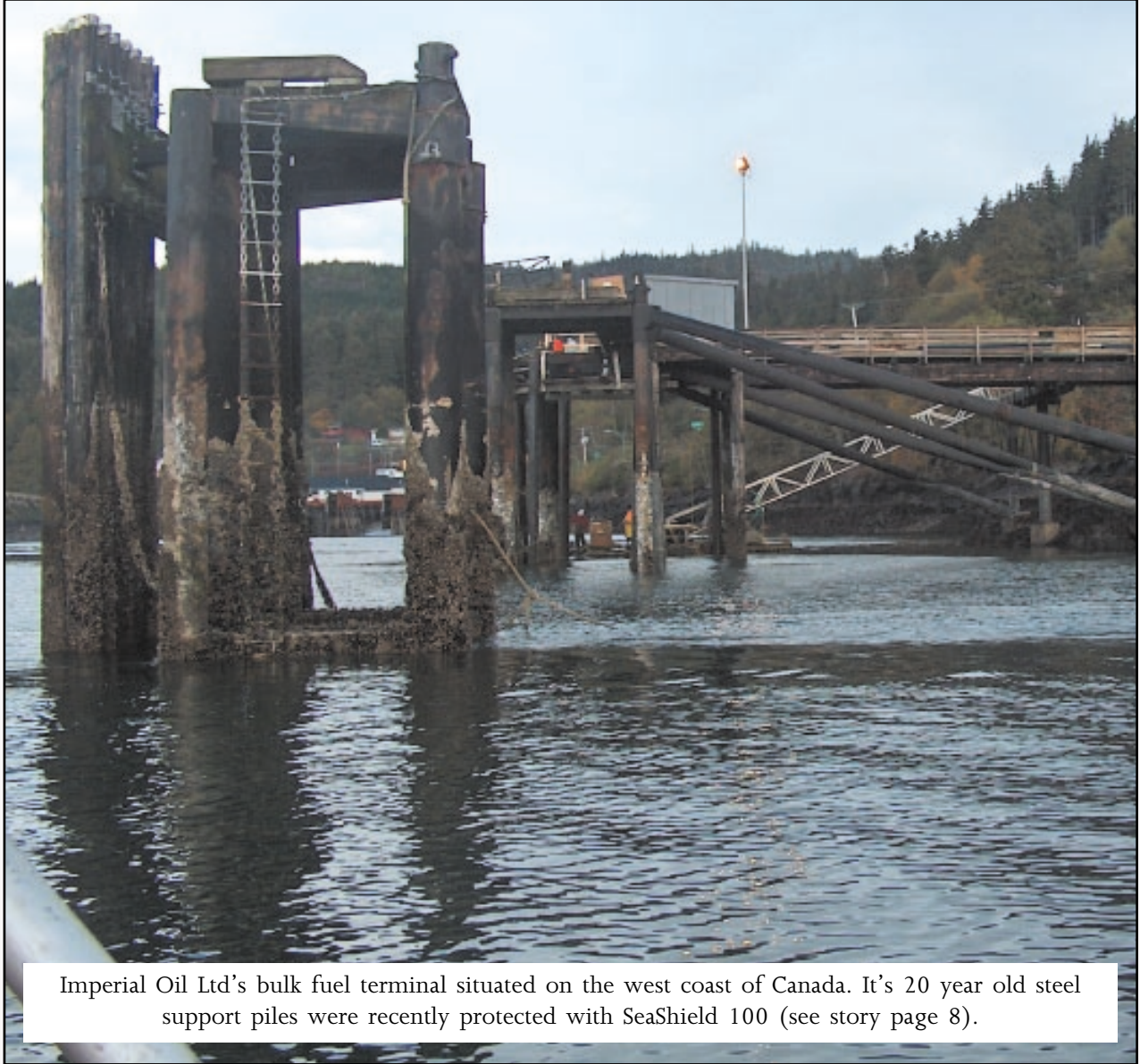


WINN & COALES INTERNATIONAL LTD

# Denso Digest



Imperial Oil Ltd's bulk fuel terminal situated on the west coast of Canada. It's 20 year old steel support piles were recently protected with SeaShield 100 (see story page 8).

QUALITY & INNOVATION FROM 1883 INTO THE 21<sup>ST</sup> CENTURY

**Denso**<sup>®</sup>

LEADERS IN CORROSION PREVENTION  
& SEALING TECHNOLOGY



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For further information on our products and their suitability for your particular project,  
please contact any of the Denso companies listed below:

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✓ Anti-corrosion and sealing systems

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Fax: +44 (0) 20 8761 2456  
Email: mail@denso.net  
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## ARCHCO-RIGIDON

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## Sealing Tapes - Sealing Insulation Panels

# Effective Sealing of Insulation Panels at Liverpool Refrigeration Plant

Coldwise Ltd of Hale, Cheshire, specialists in the design/build of cold stores and temperature controlled environments, have used Denso Vapourseal Tape on many projects over the last 15 years. Finding it consistently reliable with long-term effectiveness, Coldwise have again used Denso Vapourseal Tape to seal insulation panels on a new cold store plant built for McBurney Refrigeration Plant at Liverpool.

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



Coldstore insulation panels sealed with Denso Vapourseal Tape.

The site for the new McBurney Refrigeration coldstore had previously been the site of a coldstore also constructed by Coldwise and all of the insulation panels on that earlier unit had been sealed with Denso Vapourseal Tape.

To meet McBurney Refrigeration's expansion requirements the new coldstore is larger and measures 72m x 65m.

Denso Vapourseal Tape is a thick cold applied bituminous tape designed for sealing joints

between thermal insulation panels and for waterproofing and sealing of construction joints. In service it has a temperature range of -20°C to +60°C and has excellent resistance to water, acids, alkalis and salts.

## Corrosion Prevention - Jetty Piles

# Decal's Panama Facility Uses SeaShield Series 2000HD

Denso's SeaShield Series 2000 HD was chosen as the pile protection system for Decal Panama facility in Taboguilla, Panama. Decal's facility is an integral part of Panama Canal as it is a storage and distribution of petroleum products that serve many of the ships that enter the Canal.

The Canal was open in 1914 to join the Atlantic and Pacific Oceans so ocean vessels could pass through the lowest point of the continental divide. There are locks that raise and lower ships in which are fed by two lakes, Gatun and Madden. It is 50 miles long from deep waters in the Caribbean and Pacific Ocean. There are six massive pairs of locks that ships use for transit, 1000 feet long and 110 feet wide. Each may be filled or emptied in less than ten minutes and each pair of lock gates takes two minutes to open. The water for the locks is gravity fed by the lakes through 18 feet diameter culverts and does not require any pumping of water.

The project involved 65 each 42" diameter steel piles with an

average length of 20 feet. The piles were cleaned to a SSPC SP 2-3. Next the Denso S105 Paste was applied over the entire surface to be coated. Then, the SeaShield Marine Piling Tape was applied with a 55% overlap,



starting from the bottom and proceeding upward. Finally, the SeaShield Series 2000 HD Outercovers were bolted and secured around the piles.

Grupo Naval S.A. out of Panama was the dive contractor



that installed the system. The customer, Decal Panama, was very satisfied as Grupo Naval completed the project on time despite the large diameters and strict safety regulations.

Top: One of the numerous locks in the Panama Canal.

Middle and bottom: SeaShield Series 2000HD System installed on the pilings at the Decal Panama Loading Dock Facility.





## International Conference 2006 - San Diego, USA

Winn & Coales group International Conference was held this year in San Diego, California, USA to coincide with US subsidiary, Denso North America Inc, participation at the NACExpo 2006, 61st Annual Conference and Exposition.

The annual event witnessed the gathering of key staff from the UK, USA, Canada, South Africa, Australia and the Far East to take part in a series of technical workshops, new product development sessions and the finalisation of new marketing and business strategies.

The formula of holding these annual meetings at different locations around the globe has proved a great success with delegates over recent years and this meeting was no exception. Everyone departed with a feeling of great optimism and a series of challenging new goals for the year ahead.



San Diego, USA, host city to the NACExpo 2006 Conference and Exposition and the 2006 Denso International Conference.

The Denso International Conference delegates assembled together on the Denso North America Inc. stand during the 2006 NACE Exhibition.





## Corrosion Prevention - Jetty Piles

# New Seashield Series 500 Gives Protection at North Haven Yacht Club

North Haven Yacht Club at Sandbanks in Poole, Dorset is the location for the first UK application of the Denso SeaShield 500 protection system for marine piles and jetties. This new system is an addition to the current range of SeaShield systems that have been used in numerous marine sites throughout the world, giving protection against corrosive marine environments.

consists of a SeaShield 500 fiberglass reinforced translucent plastic jacket placed around each pile, creating a 13mm annulus between the jacket and the pile. This annulus is then filled with SeaShield 550 Epoxy Grout using a grout pump. The progress of the grout inside the annulus can be easily seen through the translucent jacket. When cured the combination of the grout and jacket presents an impermeable barrier, protecting the pile from corrosion and mechanical damage.



Installation of The SeaShield 500 system.

The clubhouse, built over tidal water on a reinforced concrete platform is supported on 12 piles consisting of thin steel spiral welded tubes filled with reinforced concrete. The 305mm external diameter tubes provided a protective casing of the reinforced concrete. Unfortunately after nearly 30 years, welding started to break down resulting in sections of the casing opening up. This exposed the reinforced concrete which started to erode.

Winn & Coales (Denso) Ltd were consulted and a decision was made to protect the piles with the new Denso SeaShield 500 system. Application was carried out by Atlas Marine Ltd of Dorset, aided by Winn & Coales' engineers.

The new SeaShield system

Below: The grout pump fills the fibreglass reinforced jacket with SeaShield 550 Epoxy Grout.



Above: The grout level is easily monitored through the translucent jacket.

**SeaShield**

## Corrosion Prevention - Gas Pipeline

## South African Gas Line Protected by Denso System

During a recent plant expansion of the Mondi Paper Mill in Richards Bay, a Denso tape system was specified for the external corrosion protection of a new 150mm and 300mm diameter gas pipeline.

Following a successful demonstration to the customer a Denso CPT Bitumen tape wrap system was chosen and applied by hand wrap method.

The contractor having completed this project and being pleased with the results and ease of use, is now beginning another pipeline project using the same Denso system.

Top: Pipe is primed ready for tape wrap.

Opposite: Installation of the new gas pipeline runs parallel to the roadway.



## Corrosion Prevention - Gas Pipeline

## Air Products STB Sdn Bhd Uses Densoclad Tape System

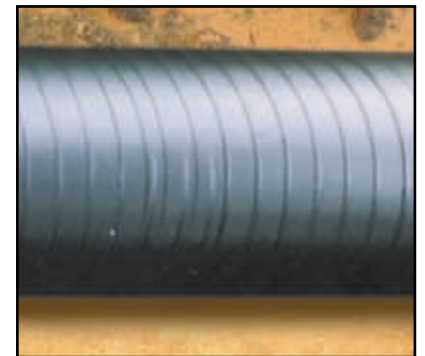
Air Products STB Sdn Bhd is one of the main players in supplying a large range of industrial gas services, from medical gases, liquid/bulk to non-cryogenic units, in Malaysia.

Recently Air Products STB have used the Densoclad 40HT Tape System as the protection coating on the entire 1,500m length of their 250mm OD gas lines.

These underground gas lines supply nitrogen gases directly from Air Products STB factory to their client premises in Perai Penang Malaysia.

Above: One of the Air Products storage tanks which is fed by the gas lines.

Below: A 25mm OD gas pipeline protected with the Densoclad Tape system prior to burial.





## Corrosion Prevention - Jetty Piles

# Seashield Series 100 Protection for Bulk Fuel Terminal in Western Canada

The Queen Charlotte Islands are located on the West Coast of Canada just south of Alaska.

Imperial Oil Limited has a bulk fuel terminal here that distributes fuel to the entire north end of the main island.

To offload the fuel, the facility has a wharf supported by steel pilings that has been in use for over 20 years.

Access to this section of the island requires an 8 hour ferry ride from Prince Rupert on the Coast of British Columbia to the small town of Sandspit, and the fuel is brought in by barge from the mainland.

Imperial Oil Limited required a crane to be built on the loading wharf and thought it an excellent opportunity to add protection to their steel piling system through the use of Denso Seashield Series 100.

Dogwood Petroleum from Richmond, British Columbia performed the application. The job involved protection of 12", 16", 18", and 24" diameter pilings and batters, and the logistics of supplying material to this remote destination as well as the various diameter ranges of the pilings necessitated the use of Denso Seashield Series 100.

Denso S105 Paste, Denso Marine Piling Tape and Denso Series 100 Jackets were used with the Denso Smartband Closure System on all of the steel pilings.

The pilings were cleaned with a high pressure water blast prior to being coated with Denso S105 Paste. Each piling was then spirally wrapped with 4" Denso Marine Piling Tape.

Denso .080 HDPE Jackets were applied using the 3/8" Denso Smartband Closure System.

This western location is subject



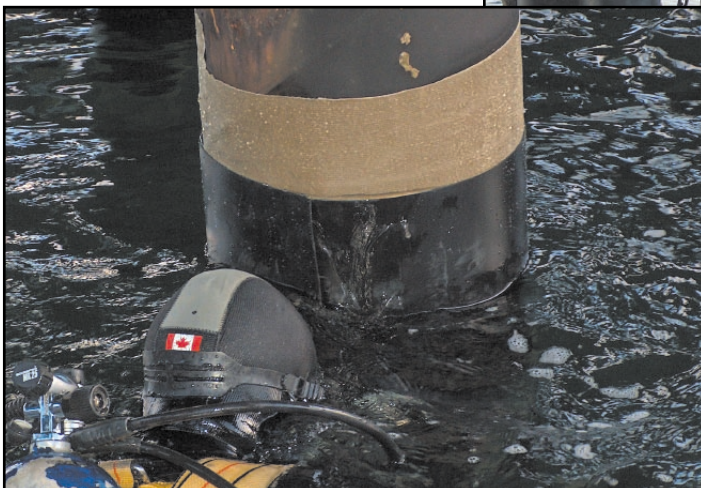
Above: The wharf is supported by 20 year old steel pilings.



Above: center of picture shows Denso Marine Piling Tape protected pile with lower jacket in position.

Left: A diver securing a SeaShield 100 Jacket into place.

to 24' tides so the application took place prior to the tidal swell each day and was successfully completed according to schedule.





## Exposed Surface Coating - Protecting Pipelines

# Brunei Naval Base Uses Denso Steelcoat 400 Protection System

The new Royal Brunei Naval Base located on the Coastline of Brunei Darussalam is constantly exposed to a marine environment and whole year round humidity. These two factors indicated a high potential for severe corrosion damage.

As an effective remedy to these conditions, Denso Steelcoat 400 System has been selected and used to protect 4200m<sup>2</sup> area consisting of AVCAT Fuel lines, Diesel Lines, Hydrants, Nitrogen Gas Lines and LP Compressed Air Lines in the Naval Base. The Denso Steelcoat System was supplied by Shriro (Malaysia) Sdn Bhd agent Unicorp Sendirian Berhad and the work was carried out by Auto Engineering Sdn Bhd in Brunei Darussalam.



Above: To complete the System, a coat of the correct Denso Topcoat is applied over the Ultraseal Tape.



Above and left: The Steelcoat 400 System being applied to in-situ pipelines.



Below: The Denso Steelcoat 400 System pre-applied to pipe lengths before installation.

The Denso Steelcoat 400 System comprises a coat of Denso Penetrating Primer followed by a spiral wrap of Denso Ultraseal Tape. To finish the system a choice of either Denso Acrylic or Urethane Topcoat is applied over the Ultraseal Tape, depending on the local environmental conditions.





**Corrosion Prevention - Mineral Water Pipeline**

# Densoclad Protection for Buxton Mineral Water Supply Pipeline

North Midland Construction Ltd of Huthwaite, Notts, are installing a new 1400m x 80 mm diameter pipeline at Buxton Mineral Water Ltd to convey mineral water from the head well to the extended bottling plant to cope with the increased demand for the company's mineral waters.

External protection for the pipeline, including the buried sections, is being provided by the application of Densoclad 50 Tape.

Denso Primer D is first applied to the pipeline including the welded joints located at every 6 metres. This is followed by application of the Densoclad 50 Tape using a Densoman 100 wrapping machine. To complete the protection, the welded pipe joints are then wrapped with Densoclad 50 Tape by hand.

Denso clad Tape consists of a thick polymer bitumen adhesive laminated to a tough plasticised PVC backing. These cold applied tapes are designed for protecting buried or immersed pipes and fittings against corrosion and mechanical damage.



Top and above: Application of Densoclad 50 Tape to the 1400m x 80mm diameter mineral water pipeline.

Left: Auto-welding of the pipe joints prior to the application of the Denso protective system.



## Corrosion Prevention - Jetty Piles

## Pope's Nose Bridge Piles Get SeaShield Series 100 Protection

**Pope's Nose Bridge (a causeway) is located in the North West of Western Australia, approximately 1750km (1087 miles) north of Perth where general tidal movement lies between 4-6m.**

The difference about Pope's Nose Bridge being a causeway however, is that in the past it allowed water to flow on either side by means of culverts. This presented a problem when local rainfall during the cyclone season would cause the road to wash out, making it very difficult to access either side.

This prompted the Main Roads Authority of WA to open up a section of the land infill at one end of the causeway, allowing a greater passage for water to pass through. Once the piles for support were installed, Denso offered the SeaShield 100 Series with 10mm Smartband Strapping for the 8 piles being 700mm Ø x 2.3m in length. The flow of water through this area is very rapid which meant



The Popes Nose Bridge with its SeaShield 100 Series protected piles.

that Smartband Strapping had to be applied at 150mm increments up to the high water mark, rather than the recommended 300mm. After time we made the decision to replace every second 10mm Smartband with the 25mm Smartband as something a little more heavy duty was necessary.

As a very popular spot for Thread Fin Salmon & Queenfish the area is frequent to many fisherman and it goes without saying that local riff raff seem to find their way there too. And so it is that after approximately 18 months, Denso found themselves replacing one of the jackets due to vandalism. It was replaced with a 2000HD jacket which

also holds up very well under the environmental conditions.



And so...three years on, the water continues to flow, the fish continue to bite and Denso SeaShield continues to protect the piles from any corrosion damage



Above and left: The SeaShield 100 system protects the piles from the rapid flow of water beneath the bridge.