WINN & COALES INTERNATIONAL LTD

Denso Digest

Denso Protal 7200 used to protect Canadian oil pipeline - see story pages 8-9.

Volume 28 - Number 1

QUALITY & INNOVATION FROM 1883 INTO THE 21ST CENTURY

Denso®

LEADERS IN CORROSION PREVENTION
& SEALING TECHNOLOGY

125 YEARS SERVICE TO INDUSTRY

Winn & Coales International Ltd

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

WINN & COALES (DENSO) LTD
Denso House, Chapel Road, London SE27 OTR, England
✓ Anti-corrosion and sealing systems
Tel: +44 (0) 20 8670 7511
Fax: +44 (0) 20 8761 2456
Email: mail@denso.net
Website: www.denso.net

ARCHCO-RIGIDON
Denso House, Chapel Road, London SE27 OTR, England
✓ Corrosion resistant linings
Tel: +44 (0) 20 8761 6244
Fax: +44 (0) 20 8761 2456
Email: mail@denso.net
Website: www.denso.net

DARTFORD COMPOSITES LTD
Unit 1, Ness Road, Erith, Kent DA8 2LD
✓ Manufacture and repair of FRP panels for cars and trains
Tel: +44 (0) 1322 350097
Fax: +44 (0) 1322 359438
Website: www.dartfordcomposites.co.uk

DENSO NORTH AMERICA INC - CANADA
90 Ironside Crescent, Unit 12, Toronto, Ontario, M1X 1M3
Canada
✓ Anti-corrosion and sealing systems
Tel: +1 416 291 3435
Fax: +1 416 291 0898
Email: sales@densona.com
Web site: www.densona.com

DENSO NORTH AMERICA INC - USA
9747 Whithorn Drive, Houston, Texas 77095
United States of America
✓ Anti-corrosion and sealing systems
Tel: +1 281 821 3355
Fax: +1 281 821 0304
Email: houston@densona.com
Web site: www.densona.com

DENSO SOUTH AFRICA (PTY) LTD
120 Malacca Road, Redhill Industrial Area, Durban North 4051,
Republic of South Africa
✓ Anti-corrosion and sealing systems
Tel: +27 31 569 4319
Fax: +27 31 569 4328
Email: bid@denso.co.za
Web site: www.denso.co.za

DENSO (AUSTRALIA) PTY LTD
411-413 Victoria Street, Brunswick, Victoria 3056,
Australia
✓ Anti-corrosion and sealing systems
Tel: +61 39356 7600
Fax: +61 39387 6973
Email: denso@densoaustralia.com.au
Website: www.densoaustralia.com.au

DENSO (NEW ZEALAND) LTD
PO Box 76167, Manakau City, Auckland,
New Zealand
✓ Anti-corrosion and sealing systems
Tel: +64 9274 1255
Fax: +64 9274 1258
Email: enquiries@denso.co.nz
Website: www.densoaustralia.com.au

SEASHIELD INTERNATIONAL
✓ Marine corrosion protection systems
Denso House, Chapel Road, London SE27 OTR, England
Tel: +44 (0) 20 8670 7511
Fax: +44 (0) 20 8761 2456
Email: mail@denso.net
Website: www.denso.net

SEASHIELD INTERNATIONAL
✓ Marine corrosion protection systems
9747 Whithorn Drive, Houston, Texas 77095
United States of America
Tel: +1 281 821 3355
Fax: +1 281 821 0304
Email: houston@densona.com
Web site: www.densona.com

SEASHIELD INTERNATIONAL
✓ Marine corrosion protection systems
411-413 Victoria Street, Brunswick, Victoria 3056,
Australia
Tel: +61 39356 7600
Fax: +61 39387 6973
Email: denso@densoaustralia.com.au
Website: www.densoaustralia.com.au

SEASHIELD INTERNATIONAL
✓ Marine corrosion protection systems
PO Box 76167, Manakau City, Auckland,
New Zealand
Tel: +64 9274 1255
Fax: +64 9274 1258
Email: enquiries@denso.co.nz
Website: www.densoaustralia.com.au

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Densoclad Protection in Northwich Brinefield

Murphy Pipelines Ltd (part of the John Murphy Group) are carrying out Phase 3 of a new development project for Ineos Enterprises Ltd at Holford Brinefield, Northwich Cheshire.

The Densoclad 70 Tape system was chosen to give protection in this corrosive environment to flange joints on air mains and well heads on the 1500m of pipework. Denso Profiling Mastic was used to smooth profiles and fill voids on the flanges prior to the tape wrapping

Densoclad 70 Tape consists of a thick polymer bitumen adhesive laminated to a tough plasticised PVC backing. These cold applied tapes are designed for the long-term protection of buried or immersed pipes and fittings.

The protected flange joints prior to burial.

Above: The application of Denso Profiling Mastic.
Below: Flange overwrapped with Densoclad 70 Tape.

Project Summary	
Product type: Buried onshore coatings	
Country:	United Kingdom
Location:	Northwich, Cheshire
Object:	Flange joints in a brinefield environment
Problem:	Corrosion prevention for pipes and fittings
Product solution:	Denso Profiling Mastic and Densoclad 70 Tape

For quick identification of the product type used in each story, we have used the following colour codes...

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

Denso UK Website Gets Major Overhaul for 2008

To coincide with our celebration of 125 Years of Service to Industry in 2008, we have just completed a major re-design of our UK website which is now accessible to all online.

We have added much more information and packed the new site with features to help prospective customers with their product choices. The new site has been designed with the same corporate look and structure as our recently successful Denso CD-Rom which is still available and remains in demand by specifiers and maintenance engineers alike.

We are confident that our customers from the civil engineering, water, processing, oil, gas, telecommunications, highway maintenance and diy sectors will find the new site a major improvement over the old one and will bookmark it as a useful addition to their favourites list.

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

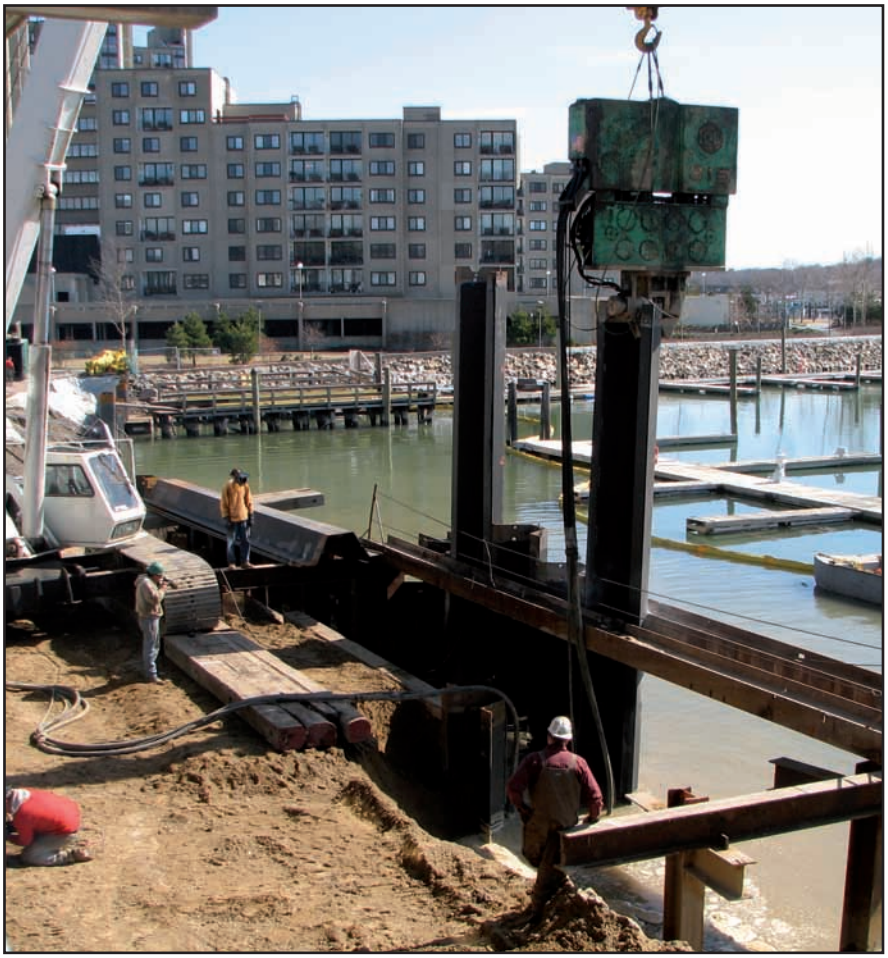
Rigspray Provides Ultimate Corrosion Protection For a New Bulkhead at a Boston Area Marina

The failure of an existing timber marine sea wall led CLE Engineering to specify Rigspray (polyester glass flake coating) as the coating to protect new steel sheet piles from corrosion.

The scope of the project included removing the old and damaged timber bulkhead and replacing it with new Rigspray coated steel sheet piles. There was a total of 107 pieces of 55" wide x 45' long sheet pilings with each one weighing over 6,000 lbs. A quantity of 1,250 gallons of Rigspray (250 ea. 5 gallon kits) was used to coat the double-sided sheet piles. The total surface area coated was over 50,000 square feet.

Above: View from the front of the Tern Harbor Marina in Weymouth, MA.

Below: Driving the new Rigspray coated sheet piles.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Below: Side view showing the initial phase of the project.

Above: New sheet pile just after Rigspray was applied (55" wide x 45' long weighing over 6,000 lbs.)

American Steel Coatings Company spray applied all the sheet piles with an airless spray unit at their facility in West Greenwich, RI. The coated sheet piles were then transferred to Tern Harbor Marina in Weymouth, MA (10 miles south of Boston, MA). The existing damaged timber bulkhead was removed and the new Rigspray coated sheet piles were driven into place. The completed bulkhead totalled 490 lineal feet wide (107 ea. 55" wide sheet piles).

Project Summary	
Product type: Exposed surface coatings	
Country:	United States of America
Location:	Tern Harbor Marina, Weymouth, MA
Object	Steel sheet piles
Problem:	Corrosion prevention
Product solution:	Denso Rigspray

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Steelcoat System Protection for Tees Pipebridge

The Denso Steelcoat 400/100 System has been chosen to protect a Northumbrian Water pipebridge. The 65m length pipebridge carries potable water in two 33" diameter mains.

The contractors for this major pipebridge refurbishment project were Advanced Engineering Solutions Ltd of Cramlington. Once again they demonstrated that the Denso Steelcoat 400/100 System can give an attractive finish as well as fulfiling its main corrosion prevention role.

After the Denso Hi-Tack Tape is applied to the 33" water main, the joints are overwrapped with Denso Ultraseal Tape.

Project Summary	
Product type: Exposed surface coatings	
Country:	United Kingdom
Location:	Northumbria
Object	65m pipebridge
Problem:	Corrosion prevention
Product solution:	Denso Steelcoat 400/100 System

The Denso Steelcoat 400/100 System was applied following wire brushing to remove previous coatings. First Denso Hi-Tack Primer was applied followed by Denso Profiling Mastic to fill voids and even profiles etc on the flanges.The pipework was then overwrapped with Denso Hi-Tack Tape followed by Denso Ultraseal Tape. The application was completed by applying two coats of green Denso Acrylic Topcoat.

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Above: General shot of the completed pipebridge application with Denso Acrylic Topcoat giving a decorative durable finish.

Below: Close up of the Denso Ultraseal Tape application which after being applied to the pipe joints, is then carried on along the adjoining pipework.

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

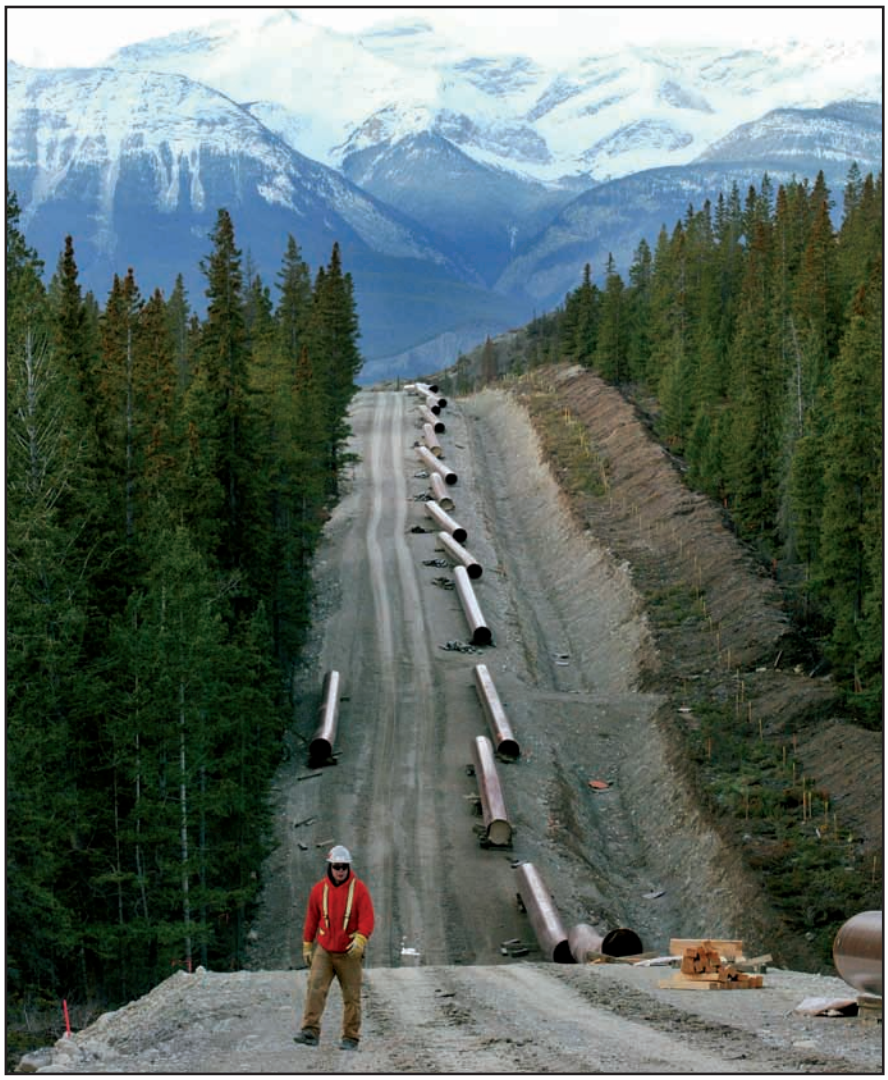
Kinder Morgan TMX Project Denso Protal 7200

The development of the mining business for extracting oil from the oil rich sands of the Canadian North is continuing at a rapid pace. More mine sites are being built and new mega-projects are being announced as the world is beginning to recognize Canada as a safe and reliable resource of oil. Countries such as the United States and China and their great demand for the resource is one of the big driving factors influencing the growth of Alberta's Oilsands.

Part of the equation of the export of Canadian oil is the construction of the infrastructure required to move the oil, in its various states of refinement, to different markets around the world. Pipelines are being utilized as the primary mode of transportation for the initial movement of product to refineries throughout Canada and the U.S.. Pipelines are also utilized as the carrier to get liquids to ocean ports, primarily along the Western Coast of Canada, where it can be loaded onto ocean tankers for markets overseas.

Of utmost importance to the pipeline companies is preservation of their infrastructure, or pipelines, as these projects represent enormous investments of time and money. Failures of these lines are extremely expensive and can have huge environmental impacts.

Denso North America is currently involved with one of these pipeline projects as the selected supplier of liquid epoxies used as an external corrosion barrier on girth-welds, transition fittings as well as on joints of pipe that were



Pipe lengths awaiting Denso Protal application, mark out the route through the stunningly beautiful and environmentally sensitive Canadian National Park.

Project Summary	
Product type: Buried onshore coatings	
Country:	Canada
Location:	Edmonton, Alberta to Vancouver, British Columbia
Object:	Buried oil pipeline
Problem:	Corrosion prevention
Product solution:	Denso Protal 7200

not plant coated with FBE. The 'Anchor Loop' project is the initial phase of Kinder Morgan's TMX (Trans-Mountain X-ing) which when completed will run from Edmonton, Alberta to Vancouver, British Columbia. It is a significant project for a number of reasons, one of which is that it runs through one of Canada's National Parks and is an extremely environmentally sensitive area; also the fact that it crosses the Rocky Mountains provides challenges in itself. Another important aspect of the project is that it strengthens Canada's position to increase flow of liquids to west coast terminals.

North American Construction is the pipeline contractor responsible for building the line having the experience and equipment to handle a job of this magnitude. North American's Denso Certified Coating Teams have the job of hand applying the Denso Protal 7200 to over 10,000 joints and transition fittings in a variety of climatic conditions. For many days North American crews are working in minus 30 degree Celsius temperatures. It takes serious equipment and manpower and a serious coating to take on a project like this.

Denso Protal 7200 (brush applied) and Protal 7250 (spray applied) is a time-tested 100% liquid epoxy which has proven itself to the pipeline and energy companies which encompass the oil and gas industry of Canada and because of this, Protal is often the coating of choice for major Oilsands projects. Denso meets and exceeds both the technical requirements and practical application criteria for pipelining in the rugged North. Tried. Tested. True.

The pipelengths are welded together and the welded joint areas are then coated with Denso Protal 7200 before being buried.

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Corrosion Protection for Tie Bars

A local steel manufacturer approached Denso South Africa for a tie bar specification for corrosion protection of approx 1500 x 50mm tie bars which were to be wrapped at the manufacturer's premises before being exported to Australia. The system comprises of a Denso Petrolatum Tape inner layer and Densopol 60 Tape as the outer layer.

An innovated method of protecting the bundled tie bars in transit was devised which ensured that they were not damaged during loading, shipping and installation.

This was the first major tie bar project for Denso South Africa worth approx R900K with the promise for future orders.

Above: Wrapped tie bars ready for shipment. Inset: Bundled tie bars with protective sleeves.

Only once the order was received did we fully realise the challenges which lay ahead. Not only was the wrapping taking place over our Christmas / New Year shut-down period, but the 1500 wrapped tie bars were to be loaded into 40ft containers for shipping to "The East" without being damaged in transit.

Two tie bar wrapping machines from the UK were airfreighted in and were pivotal in completing the wrapping successfully and on time.

Project Summary	
Product type: Buried onshore coatings	
Country:	South Africa
Location:	Unspecified
Object	Tie bars
Problem:	Corrosion prevention
Product solution:	Denso Tape and Densopol 60 Tape

LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

SeaShield Series 100 System Protects PWCS Jetty Piles

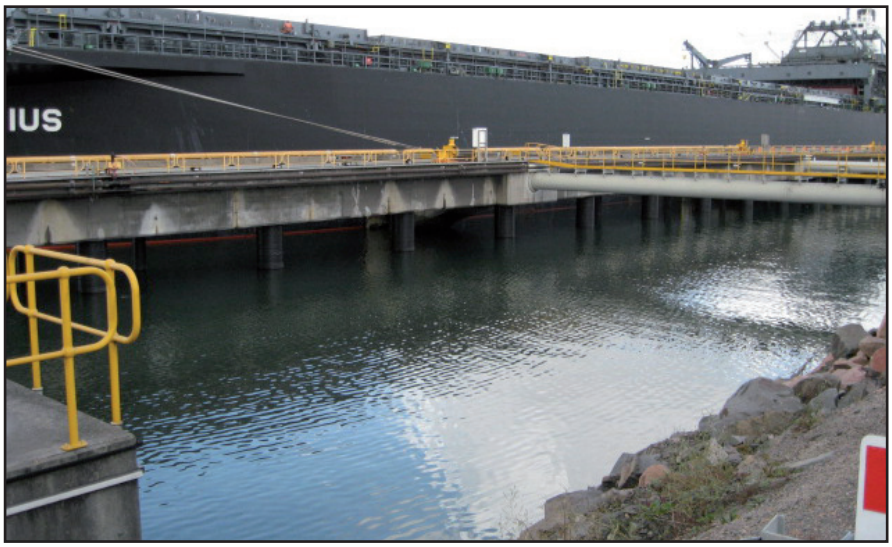
In 2007 Denso (Australia) Pty Ltd supplied the Seashield Series 100 System for the protection of piles at the Port Waratah Coal Service (PWCS) Kooragang Terminal Expansion Project 3D.

PWCS, located at the Port of Newcastle in NSW, operates the world's largest and most efficient coal handling operations with an annual ship loading capacity of 102 million tonnes. PWCS is a continuous 24 hour a day operation utilising modern environmental controls and advanced quality control techniques.

The PWCS Terminals can accommodate 5 ships simultaneously (3 at the Kooragang Terminal), at its berths with all of these potentially loading at any one time.

In conjunction with the Applicators McLennan's Diving Service, Denso supplied the Seashield Series 100 System to be fitted to more than 100 tubular steel piles that previously had been coated with a thin film of paint which had started to corrode.

It has taken Denso many years to get our Seashield System specified on the piles at the PWCS Terminals with the success of this project prompting further orders for other Terminals.



Pictures: Seashield Series 100 system protects more than 100 tubular steel piles at the Kooragang Terminal.

Project Summary	
Product type: Sub sea / splash zone coating	
Country:	Australia
Location:	Kooranga Terminal, Port of Newcasle, NSW
Object	Steel jetty piles
Problem:	Corrosion prevention
Product solution:	SeaShield Series 100 System