



Volume 34 - Number 2

Cruise ship dock piles protected with a SeaShield System, Ketchikan, Alaska - Story pages 12-13.

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LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY








Densostrip™ Used On Aberdeen Western Peripheral Route

A consortium consisting of Balfour Beatty and Galliford Try were awarded the £750 million contract to construct over 40 miles of roads as part of the AWPR (Aberdeen Western Peripheral Route) Scheme, which is nearing completion.

Winn and Coales (Denso) Ltd supplied over 15,000 linear metres of Densostrip™ to the consortium to seal pre-cast concrete box culverts and inspection chambers on the contract. Densostrip is a rubber and bitumen compound that gives a long-lasting flexible

seal that is resistant to chemical and biological attack

Additionally the company also supplied the sub-contractors for this project with Protal 7300™, Denso Tape™, Denso Profiling Mastic™ and Denso SA PVC™ for protecting gas pipes and fittings

For quick identification of the relevant 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

which were being diverted to allow construction of the roads.

Protal 7300 is a VOC-free moisture-tolerant pipeline coating specially formulated for dry damp or wet exterior pipeline surfaces.

Densostrip seals pre-cast concrete box culverts on Aberdeen Western Peripheral Route.



Project Summary	
Product type: Sealing Mastics	
Country:	Scotland
Object:	Pre-cast box culverts
Problem:	Joint sealing
Product solution:	Densostrip



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Denso Protal™ Field Joint Protection for APA EGP

The APA Eastern Goldfields Pipeline (EGP) is a 293 km 8" pipeline which transports gas from the existing APA's Murrin Murrin Lateral Pipeline to AngloGold Ashanti's Sunrise

Dam and Tropicana Goldmines.

The pipeline is being used for fuelling gas fired power generation for the 2 sites.

Dual layer FBE coated pipe was selected as the parent coating for steel and supplied through MRC Global. The steel was delivered to lay down sites along the pipeline route from Fremantle over the Christmas period.

SpieCapag Lucas Joint Venture (SCLJV) was awarded the construction of the pipeline in late October 2014 and SCLJV engaged Denso (Australia) for the supply of Field Joint and HDD Coating and Repair cartridges which were supplied in 400ml cartridges. The material was selected by SCLJV

given the success of recent projects completed for the Jemena Looping Project and the QCLNG Upstream Project where the product proved itself to be a user friendly, high performance, high build epoxy coating system.

Pictures: APA EGP being assembled and field joints protected with Protal 7200™.



Project Summary

Product type:
Coatings for Buried Pipes

Country: Australia
Object: Gas main field joints
Problem: Corrosion prevention
Product solution: Denso Protal 7200



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The product is also manufactured locally providing fast turnaround and local employment in manufacturing.

Protal 7200™ has been supplied in 800 Litre kits to be utilized with SCLJV's 3 purpose built coating rigs comprising

plural pumps and generators for plural application of the Protal 7200. At its peak, coating crews were completing the coating of in excess of 435 girth welds per day using plural application. Tie-ins and repairs have adopted the use of 1 litre kits for manual

application of Protal 7200 and 400ml dual repair cartridges.

In total the project saw nearly 30,000 Litres of Protal 7200 supplied on the project between March and July 2015.





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Densoband Seals Joints in Toyota Manufacturing Test Track - Woodstock, Ontario



This summer, Toyota Motor Manufacturing Canada undertook repaving of the test track located at their vehicle manufacturing facility in Woodstock, Ontario.

The facility manufactures all types of Toyota consumer vehicles which must undergo high scrutiny evaluations on performance and production quality before being made available to customers.

To do this, a highly specialised and carefully constructed test track was created which allows for employment of highly sensitive testing equipment in vehicles to ensure they pass this final quality control evaluation.

In constructing this 1.5km track, the contractor suggested the use of Densoband as they had used it with great success in the past. Toyota engineers, who had been flown in from Japan to oversee construction, were interested and agreed to the use of Densoband.

Overseeing installation, the engineers were impressed by the concept of the Densoband as well as the ease of installation.





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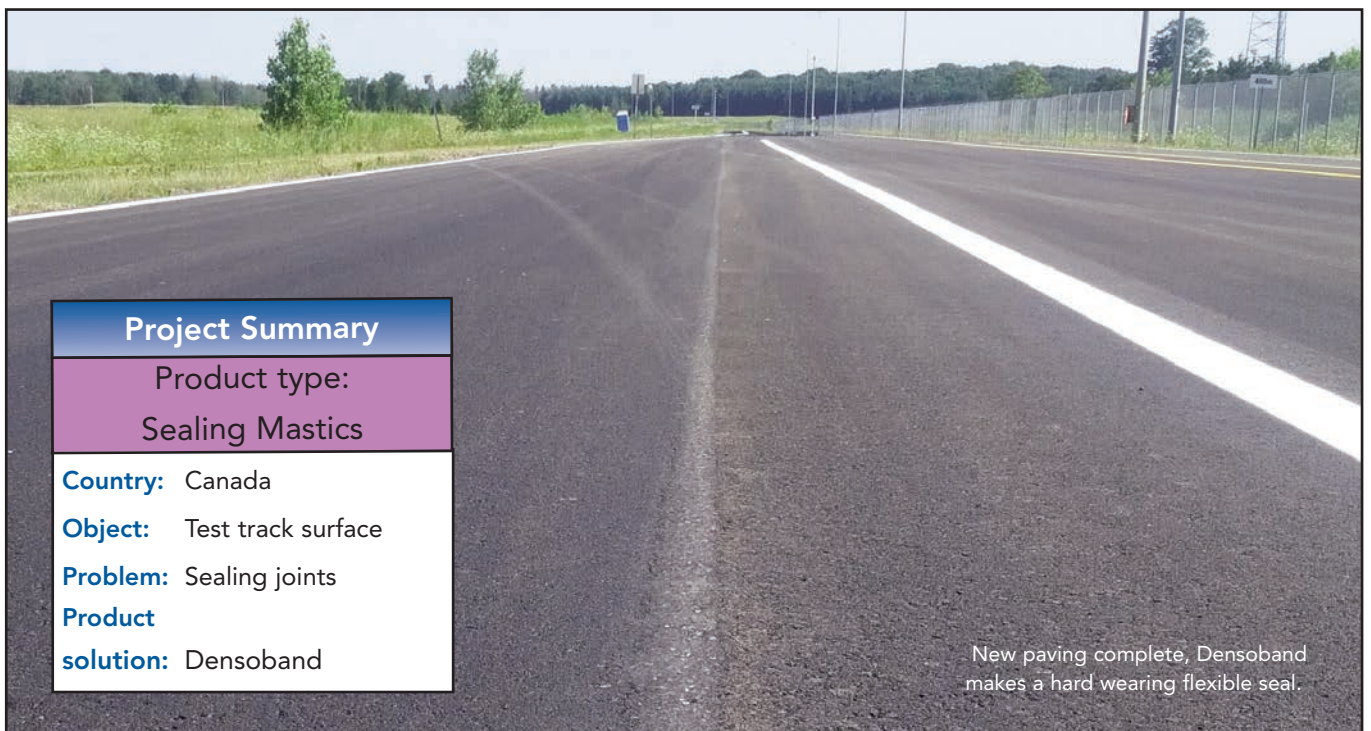
After only a few hours the Densoband was fully installed and paving resumed resulting in a track that will perform for decades to come.

This installation was different from most which involve Densoband and Denso Reinstatement Tape as the margin of accepted difference was extremely low and so both the contractor and the products employed were under close scrutiny to ensure the track was completed exactly as designed.

Next year, Densoband will be used again to seal cold joints when Toyota repaves the test track at their Cambridge, Ontario facility.



Above: After first priming, the Densoband rubber bitumen flexible jointing strip is laid along the vertical face of the joint.



Project Summary

Product type:
Sealing Mastics

Country: Canada

Object: Test track surface

Problem: Sealing joints

Product

solution: Densoband

New paving complete, Densoband makes a hard wearing flexible seal.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Archco™ Resistant Linings Applied During a Local South African Refinery's 2017 Annual Shutdown



Denso South Africa (Pty) Ltd have recently supplied a well known integrated chemicals and energy company with a substantial quantity of Archco 403D™ to use during their annual shutdown.

Archco 403D is a high quality resistant lining for the internal protection of steel tanks and vessels and is widely used in the oil, pharmaceutical, chemical and processing industries.

The local refinery's annual shutdown usually comprises the lining of approximately 400

pieces of equipment, which range from ½m² to 20m² per water box. Over 3000m² has been lined with Archco 403D in various tanks and vessels internally. So far, a total of approx 13 tons of Archco 403D has been supplied to this refinery for this financial year.

Project Summary

Product type:
Industrial Linings

Country: Republic of South Africa

Object: Various tanks/vessels

Problem: Corrosion prevention

Product

solution: Archco 403D



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

SeaShield™ Rehabilitation of River Crossing Gas Pipeline

The Oil and Natural Gas Corporation (ONGC) is the largest producer of crude oil and natural gas in India, contributing around 70% of Indian domestic production. The crude oil is the raw material used by downstream companies like IOC, BPCL and HPCL to produce petroleum products like Petrol, Diesel, Kerosene, Naphtha and Cooking Gas-LPG.

Application of the SeaShield 2000 FD jackets.



For rehabilitation of their 36" diameter pipeline which crosses the Aпти river near the ONGC plant, where the concrete coating of the pipeline was damaged, Denso SeaShield 2000 FD™ was chosen to be applied by contractors YOJAKA. Because of the unique requirement of the pipeline which

Project Summary

Product type:

Sub Sea Splash Zone Coating

Country: Hazera, India

Object: 36" gas pipeline

Problem: Exposed river crossing

Product SeaShield Series

solution: 2000 FD System



The damaged concrete pipeline coating.

is submerged during high tide and may also get buried during certain seasons, they wanted a unique solution and SeaShield perfectly fits the bill as far as insitu application, ease of application, limited window for application and minimum surface preparation requirements are concerned.



Installation of the SeaShield Series 2000 FD is almost complete.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

A Further 92 Jetty Piles Get SeaShield™ Protection

An extra 92, 864mm diameter jetty piles have now been protected with the SeaShield Series 100 System™ on a jetty in China Bay, Trincomalee, Sri Lanka.

The project, completed by ELS Construction (Pvt) Ltd, was an augmentation of an existing application of the SeaShield Series 100 that was previously completed on 61 of the jetty's piles in the harbour in 1999.

The SeaShield Series 100 is a medium duty wrap system that comprises an inner layer of Petrolatum Paste and Tape with a durable HDPE jacket outer layer that is secured with a Banding System.



Above: After cleaning, the Petrolatum Paste is applied to the pile.

Below: The harbour at China Bay, Trincomalee.



Project Summary

Product type:
Sub Sea Splash Zone Coating

Country: Sri Lanka
Object: Jetty Piles
Problem: Corrosion prevention
Product solution: SeaShield Series 100 System





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Above: The Petrolatum Tape is then applied over the Paste.



Above: The HDPE jacket is closed before being fully sealed with the banding system.



Below: The original SeaShield 100 application from 1999 still good and showing the expected amount of marine growth after 18 years.





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City of Ketchikan Cruise Ship Dock: 10 Years with the SeaShield Series 2000 HD System™

Project Summary

Product type:

Sub Sea Splash Zone Coating

Country: Southern Alaska

Object: Jetty piles

Problem: Corrosion prevention

Product: SeaShield Series

solution: 2000 HD System



City of Ketchikan Cruise Ship Dock.

In early 2007 the City of Ketchikan, located in Southern Alaska, needed improvements to their Cruise Ship Passenger Terminal Dock. As a part of this project, the steel piles were to be protected with a long-term splash-zone corrosion prevention system.

Denso's SeaShield Series 2000 HD System™ was selected as the coating system and



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Completed piles fully protected with the SeaShield Series 2000 HD System in 2007.

installation was complete in early 2007. After the piles received proper surface preparation, the contractor applied Denso S105 Paste™, Densyl Tape™ with 55% overlap and the Series 2000 HD Outercover™ (80 mil HDPE) to the pile's splash-zone area.

After almost 10 years of service, several piles were inspected to determine the level of corrosion protection that the Series 2000 HD System had provided. Upon removing the Outercover and then removing the Densyl

Tape, the steel piles showed no corrosion. The system had performed as advertised and will continue to provide corrosion protection for years to come.

Left: Pile protected with SeaShield Series 2000 HD System ready for inspection in late 2016.

Below: Steel pile showing no corrosion after 10 years of service.





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Densoseal 16A™ Passes Sealing Tests for the STEP Project Megastructure

In early 2016 consultants Mott MacDonald were interested in using Densoseal 16A™ waterproof sealing mastic between entry pipes/cables and their sleeves in the 'Strategic Tunnel Enhancement Programme - Tunnel Pumping Station' Project (STEP) in Abu-Dhabi, UAE.

The cutting edge Dh5.6 billion STEP engineering project to build Abu Dhabi's Super Tunnel megastructure will more than double the island and mainland's water capacity from 650,000 to 1.7 million cubic metres a day.

Although Densoseal 16A has been available for a number of years and used in many effective applications, Mott MacDonald asked sub contractors Drake & Scull to carry out two simple tests on the material.

Densoseal 16A being used to seal an external entry duct on the test breeze block tank.

Project Summary

Product type:
Sealing Mastics

Country: Abu Dhabi, UAE

Object: Pipe and cable ducts

Problem: Sealing

Product

solution: Densoseal 16A

First a test breeze block tank was built containing four entry ducts each containing pipe or cable and sleeve.

Test 1: The gap between the sleeve and the pipe was filled with Densoseal 16A to a depth of 110mm both ends of the sleeve as recommended in Denso's method statement for





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View inside the test tank showing the four entry ducts containing a mixture of pipes and cables, all sealed with Denso 16A.

the product. The tank was then filled with water. The end result was that the Denso 16A had effectively prevented any water leakage from all four ducts when the test was stopped after a period of 5 days.

Test 2: Denso 16A was applied to the same depth as above (110mm) but this time to just one end of each duct and the tank was again filled with water. This time it was left for a period of 24 hours. The result was that no leaks were detected during the test period.

Denso are proud to announce that following these successful test results, 1.2 tonnes of Denso 16A has eventually been used to seal various ducts on this interesting project.



Above: To test Denso 16A thoroughly, thicknesses of between 15 and 45mm were used to seal the various pipes and cables.

If you would like more information about our long-term corrosion prevention and sealing systems that deal with the problem areas listed below, simply tick the boxes and fax back this completed page and we will supply you with more information.

BURIED ONSHORE COATINGS

- External corrosion prevention for underground pipelines, welded joints, valves and fittings.
- Protection of mounded LPG vessels and fuel tanks.

EXPOSED SURFACE COATINGS

- Corrosion prevention for chemical plant, structural steelwork, above ground pipes, storage tanks, offshore rigs, bridges and support cables, cranes and pipe bridges.
- Corrosion prevention for metal roof purlins and metal roof sheets.
- Protecting pre-stressing and post tensioning bridge cables and ground anchorages.

SUB SEA/SPLASH ZONE COATINGS

- Maintenance corrosion protection for steel jetty piles.
- Subsea pipelines and outfalls.
- Protection of timber and concrete piling.

INDUSTRIAL LININGS

- Internal linings for tanks, pumps, vessels and pipelines.
- Linings for concrete bunds and floors.
- External abrasive wear protection

MEMBRANES & FLASHINGS

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- Exposed rooftops and parapets.

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- Joint sealing of precast concrete manholes and culverts.
- Joint and crack sealing of asphalt road surface wearing courses.
- Joint sealing for airport runways.
- Sealing of cable entry ducts.

INDUSTRIAL TAPES

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- Protecting and bonding

DIY WEATHERPROOFING

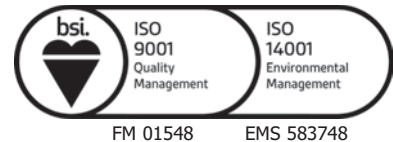
- Waterproofing and flashing

For further information - tick boxes, fill in coupon and email or post to your nearest Denso branch (full list of addresses on page 2).

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