

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



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 ✓ Membranes and corrosion protection systems

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 Fax: +44 (0) 1233 770633
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Tel: +1 416 291 3435
 Fax: +1 416 291 0898
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 Web site: www.denisona.com



DENSO USA - LP

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 United States of America
 ✓ Anti-corrosion and sealing systems

Tel: +1 281 821 3355
 Fax: +1 281 821 0304
 Email: houston@densona.com
 Website: www.denisona.com



DENSO SOUTH AFRICA (PTY) LTD

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 ✓ Anti-corrosion and sealing systems

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 Website: www.denso.co.za



DENSO (AUSTRALIA) PTY LTD

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 Fax: +61 39387 6973
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 Website: www.densoaustralia.com.au



DENSO (NEW ZEALAND) LTD

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 New Zealand
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 Website: www.densoaustralia.com.au



SEASHIELD INTERNATIONAL

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 Website: www.denso.net



SEASHIELD INTERNATIONAL

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 United States of America
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LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Densostrip Concrete Panel Sealant for Grain Stores








A.C Bacon Engineering Ltd of Hingham, Norfolk, who specialise in all types of steel structures and cladding, including agricultural buildings now use Densostrip on grain stores with concrete crop retaining walls.

They are using the rubber bitumen sealing strip to seal the joint between a static flat topped concrete panel (below floor level), which is tied into the concrete floor slab and the crop retaining panels (above the floor level), which are allowed to deflect under load from the crop.

Densostrip carries out an important role in this application

allowing movement of the panels above floor level whilst keeping everything below floor level static and at the same time maintaining a weatherproof seal between the two. See the photo below which shows the application before the concrete floor was installed.

Densostrip is normally used as a flexible joint sealant between

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

precast concrete box culvert and manhole units and has been widely used as a reliable and long-lasting solution to this problem by the construction and water industries for over 55 years.

The picture shows the crop retaining panels in position prior to the concrete floor being laid. Although not visible, the Densostrip is in position along the horizontal joint behind the grey mastic which is used to fill all joints afterwards as standard practice and does not affect the Densostrip in any way.



Project Summary

Product type:
Sealing Mastics

Country: United Kingdom

Object: Concrete panels

Problem: Flexible joint sealing

Product

solution: Densostrip



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Tank Base Protection System for Tank Facility

Denso North America completed a Tank Base Protection System at a Tank Facility in Victoria, Texas. The existing caulk sealant between the concrete chime and tank base had failed entrapping water and creating a corrosion problem on the tank base.



After the surface was properly prepared, Densyl Mastic was rolled up and installed in the gap between the tank and base.

The Densyl Mastic provides a smooth profile when applying the Denso Hi-Tack Tape.

The Hi-Tack Tape was cut into usable sections and applied to the chime area. Next, the Denso FB 30 Tape (a butyl rubber tape with fabric backing) was applied over the Hi-Tack Tape, which provides mechanical protection.

Finally, Denso Weathershield 55 (a high build flexible acrylic top coat) is applied over the FB 30 Tape for UV protection and color matching.

Left: The existing tank caulk was trapping water, causing the tank base to corrode.

Below: The 80ft diameter tank.





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The Denso Tank Base Protection System provides a proven external corrosion protection to the tank chime that not only protects, but also is flexible enough that it will move with the tank when it gets filled and emptied.

Visit the Denso North America website to watch how easy it is to apply to give your tank chimes decades of working life:

<http://www.densona.com/Videos/Denso-Tank-Base-Protection.aspx>.

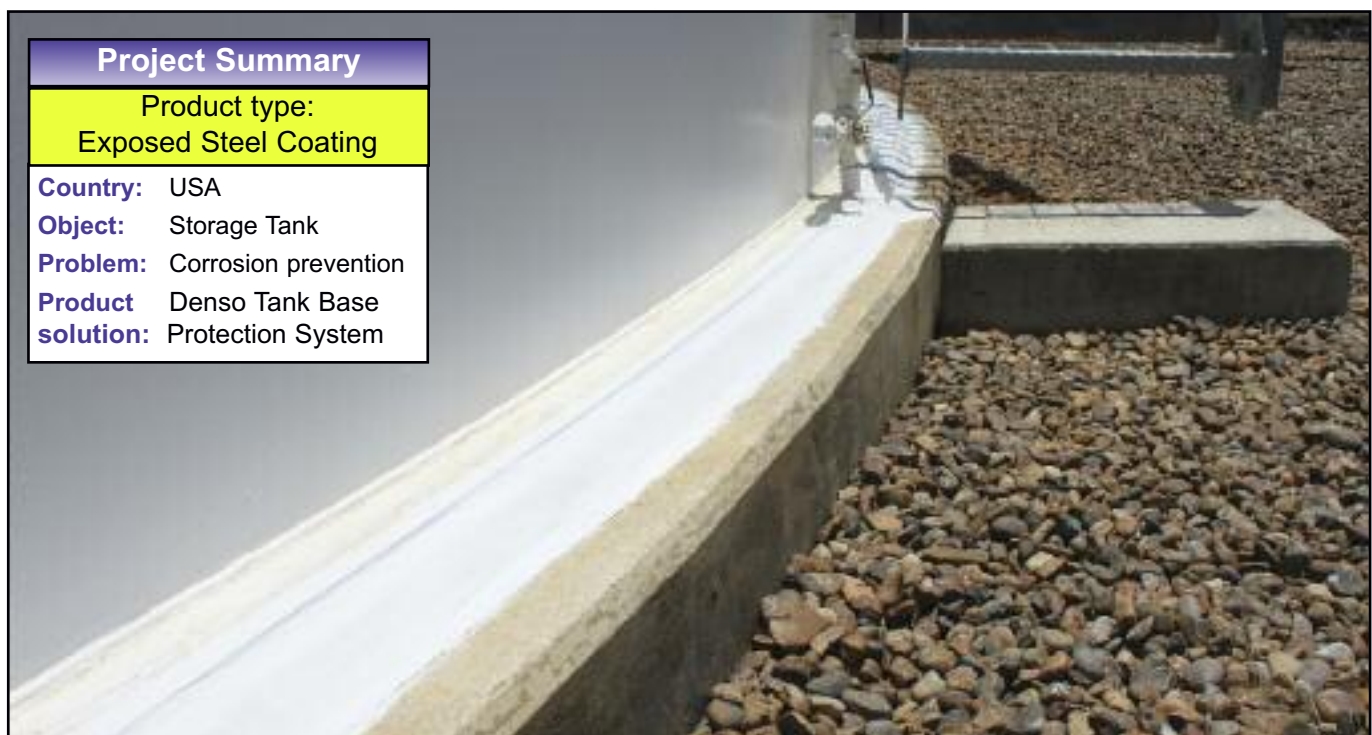


Top: After cleaning, the tank plinth area is sealed with Densyl Mastic.

Centre: A layer of Denso Hi-Tack Tape is then applied and overwrapped with a layer of Denso FB 30 Tape.



Below: Denso Weathershield 55 is applied as a topcoat, completing the Denso Tank Base Protection System.



Project Summary

Product type:
Exposed Steel Coating

Country: USA
Object: Storage Tank
Problem: Corrosion prevention
Product solution: Denso Tank Base Protection System



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

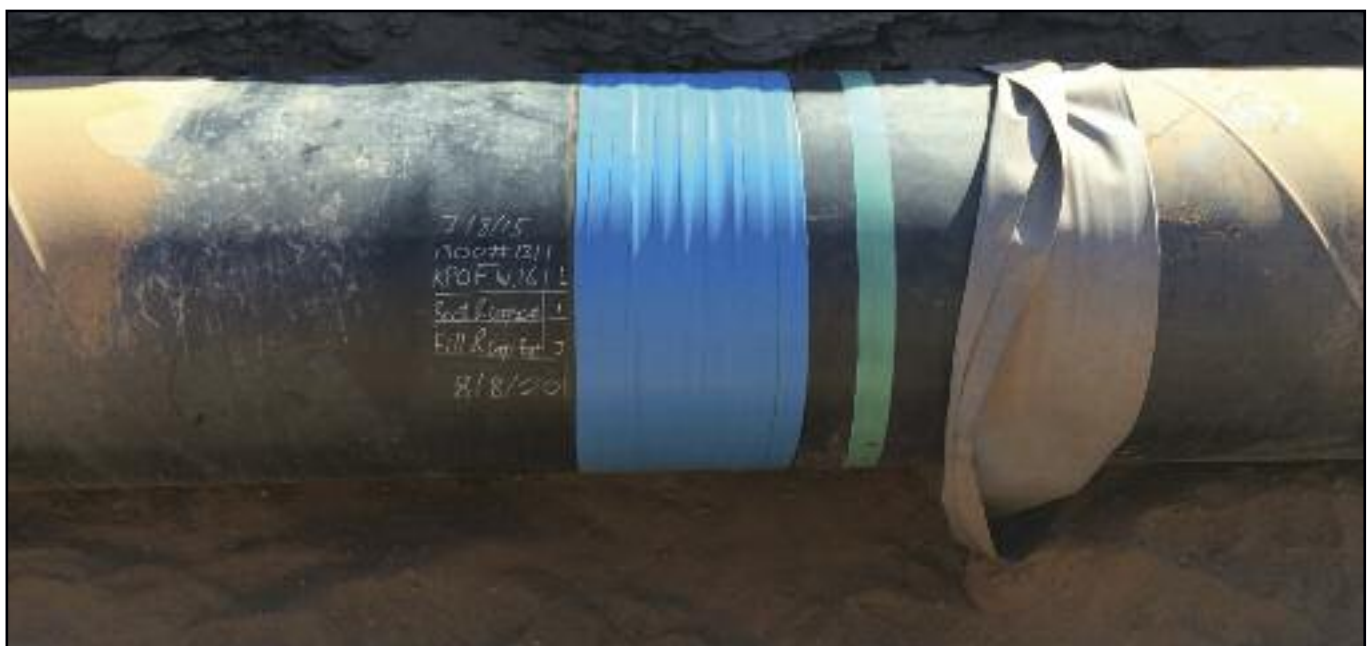
Field Joint Wrapping for Neckartal Dam (Namibia) Bulk Water Project



Located in the Karas region (near Seeheim) along the Fish River in the south of the country, the project is the first phase of the Neckartal Irrigation Scheme. Made from roller-compacted concrete (RCC) and standing around 80 meters high, the Neckartal dam will harness water from the Fish River to produce energy and to create a reservoir capable of holding 857 million cubic meters of water.

This water will be used to irrigate 5,000 hectares of land for the agricultural development of the area. A crossing and a pumping station, along with the relevant intake structure, will be built 13 km downstream from the dam. The water will flow through an 8.7 km steel pipe with a diameter of 1,100 mm to reach a reservoir that is also part of the project.

Knight Piesold Consulting, with its head office based in Durban, South Africa, specified this Denso wrapping system as it has performed excellently on major pipeline projects in South Africa. The tape wrapping system,





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY



Project Summary

Product type:
Coating for Buried Pipes

Country: Namibia-Keetmanshoop

Object: Steel pipeline

Problem: Corrosion prevention

Product solution: Denso Ultraflex 1250 and Denso MDP 032 Tape



Above: Pipeline under construction.

Far left: After priming with Denso Primer D the pipe joint is wrapped with Denso Ultraflex 1250.

Left: Overwrapping the Denso Ultraflex 1250 Tape with Denso MDP 032 Tape

Below: The complete pipe joint protection.

which comprised of Denso Primer D, Denso Ultraflex 1250 Tape (primary corrosion prevention) and Denso MDP 032 Tape (for mechanical protection) was supplied to pipeline contractors WBHO Construction who have begun the wrapping of the 600 field joints.





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Denso SeaShield 80 System Protects Manx Outfall Pipe



Manx Utilities in the Isle of Man have installed a new sea outfall pipe at Kirk Michael for the discharge of foul effluent from its treated waste water plant.

Hyder Consulting, consulting engineers for the new pipe installation approached Denso for advice on a suitable system to protect the joints on the outfall pipe.

Due to the extreme tidal conditions at the exposed location it was decided that the Denso SeaShield 80 System would be used but with the additional application of Denso Glass Outerwrap to combat the severe conditions.

The contractor chosen to apply the system was JCK Ltd from Ballasalla, Isle of Man.

Denso also provided assistance and guidance to JCK Ltd in the application of the system. The successful work was overseen by Homes Grace Consulting Engineers, Hydra Consulting and Manx Utilities.

The Denso SeaShield 80 System comprises Denso S105 Paste, Denso Marine Piling Tape and Densoclad 70 Tape. On this particular occasion Denso Glass Outerwrap, a flexible fibreglass cloth impregnated with a water activated resin, was used as additional protection over the SeaShield System.

Project Summary

Product type:
Sub Sea Splash Zone Coating

Country: Isle of Man
Object: Outfall pipe joints
Problem: Corrosion prevention
Product: Denso SeaShield
solution: 80 System

Above: Completed SeaShield joint protection.

Below: Overwrapping the Densoclad 70 Tape with Denso Glass Outerwrap.





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Steelcoat Protects South Staffs Pipebridge

A combination of the Denso Steelcoat 100/400/700 Systems has again been chosen by South Staffs Water to give long-term protection to one of its pipebridges. This time it was for a 30 metre pipebridge running alongside the road bridge over the river Churnet at Rocester, Staffordshire.

Contractors for this project were Deborah Services Ltd, Industrial Services Division, Wakefield.

After removal of the residue of the previous coating, hand preparation was carried out to St2 standard using scrapers, wire brushes and emery cloth. The water pipe was then protected with the Denso Steelcoat 100 and 400 tape wrap systems comprising a coat of Denso Hi-Tack Primer followed by a wrap of Denso Hi-Tack Tape and then a wrap of Denso Ultraseal Tape. Two coats of Denso Acrylic Topcoat were then applied to complete the system.

Denso Steelcoat 700 System was used on the stanchions comprising a coat of Denso ST Epoxy followed by a coat of Denso Weathershield.

Project Summary

Product type:
Exposed Steel Coating

Country: United Kingdom
Object: Pipebridge
Problem: Corrosion prevention
Product solution: Denso Steelcoat 100/400/700 Systems

The Rocester Pipebridge protected with a combination of the Denso Steelcoat 100/400/700 Systems





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Steelcoat Protects Potash Warehouse

AV Dawson Ltd, who were founded on Teesside, Middlesbrough in 1913 are a multimodal distribution logistics supplier who operate a diverse range of haulage, shipping, warehousing and railhead facilities

At their Ayrton railhead site they handle potash from a nearby mine in North Yorkshire which is very aggressive to steel structures. Consequently they have historically used anti-corrosion coating systems supplied by Denso to protect roof trusses from corrosion.

When they recently replaced roof trusses in a section of one of the warehouses used for

storing potash they designed the trusses as hollow rectangular sections to allow easier application of the Denso Steelcoat 100 System.

Denso Steelcoat 100 System comprises Denso Hi-Tack Primer overwrapped with Hi-Tack Tape and provides excellent long-term protection to steel structures in aggressive environments. On this occasion Denso

Project Summary

Product type:
Exposed Steel Coating

Country: United Kingdom
Object: Roof trusses
Problem: Corrosion prevention
Product solution: Denso Steelcoat 100 System

Self-Adhesive PVC Tape was used to provide additional protection in the aggressive dusty atmosphere of the warehouse.

This system has been used in several applications at salt mines and salt handling facilities and has a proven history in providing long-term protection in such environments.

New potash warehouse rectangular hollow roof trusses being protected with the Denso Steelcoat 100 System prior to being installed.





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Protection at Cambridge Pumping Station

The pumping station at Kennet on the Cambridge/Suffolk border performs a key function on the Environmental Agency's major Ely Ouse to Essex Water Transfer system which takes raw water from Blackdyke in Norfolk to Great Sampford in Essex. Design consultants for a project to refurbish the pipeline part of the system were Black & Veatch Ltd.



Wire brushed coupling.



Application of paint primer.



Application of Denso Mastic.

The construction of this project was carried out by main contractors Jackson Civil Engineering for refurbishment of the anode bed of the cathodic protection system for the main pipework, with specialist sub-contractor Cathodic Protection Co Ltd of Grantham.

During works at Kennett PS it was observed that two VJ couplings and associated pipework within a chamber were suffering from surface corrosion due to deterioration of the original protection system.

Sub-contractors Jack Tighe Ltd wire brushed all chamber pipe and coupling surfaces and ensured that they were dry and

free from contaminants. In this project, after stabilising the surface with a paint primer Denso's conventional protection system was applied starting with Denso Paste followed by application of Denso Mastic on bolt heads, nuts, flanges and other projections to give an overall smooth external profile.

This was then wrapped with Denso Tape in a spiral wrap using 55% overlap. The tape extended along 150mm of the protected barrel of the pipe on each side of the joint and fittings.

In a report to the Environment Agency, Black & Veatch stated "The works were carried out to a high standard"

Project Summary

Product type:
Exposed Steel Coating

Country: United Kingdom

Object: VJ Couplings

Problem: Corrosion prevention

Product

solution: Denso Tape System



An overwrap of Denso Tape completes the protection.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Protects Lucinda Bulk Sugar Terminal Jetty

Early in 2013 Queensland Sugar Limited (QSL) appointed locally based Advanced Aqua Blasting (AAB) as principal contractor for the repair and installation of corrosion systems to the world's largest bulk sugar loading facility- Lucinda Jetty.

AECOM had worked through the initial design stage with QSL's engineers to protect their asset portfolio, and the progressive works rollout for an 8-10 year installation plan utilising SeaShield 2000FD on the large diameter piles, Steelcoat 400 on the bulky headstocks and Denso Petrolatum systems for internal protection inside the conveyor tunnels.

AAB are now in their third year of installing 2000FD jackets after previous work wrapping the conveyor tunnel with Denso Petrolatum tapes as cyclone and maintenance repairs. The locally based north Queensland team at

AAB have become some of the most competent Denso applicators in Australia, showing a passion in ensuring that the Denso is installed to last!

SeaShield works had previously been completed from a multi-level drop scaffold arrangement to access the pile from +1.5m L.A.T to headstock level +6.7m L.A.T with the expectation that some areas may be accessed using a PMV (Pile Maintenance Vehicle) on the roadway to lower personnel in a bucket above the waters of Halifax Bay. The improved access time by using the PMV, helps when working on an area with short closing weather/tide windows and

no delays waiting for drop scaffold to be erected at each pile.

Due to the positive results at Lucinda, QSL have commenced works at their Bundaberg Sugar Terminal with the Denso SeaShield 2000FD, and planning is underway for the Cairns Molasses pipeline to be given the Denso treatment with KF Colourtape, Steelcoat 100 and SeaShield systems also.





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Project Summary

Product type:
Sub Sea Splash Zone Coating

Country: Australia

Object: Jetty piles / steelwork

Problem: Corrosion prevention

Product Denso Steelcoat and

solution: SeaShield Systems

Denso SeaShield 2000FD was used to protect the large diameter marine piles



A Denso Petrolatum Tape system was used on steelwork in the conveyor tunnels



The Denso Steelcoat 400 System was used to protect the headstocks.

The benefits of these systems:

- Minimal surface preparation
- No blast encapsulation risk over the Great Barrier Reef waters.
- Practical priming and wrapping in most weather conditions.
- Durable jackets that stand up to rugged marine conditions.

AAB and QSL have taken very well to the various Denso systems used around their QLD terminal facilities and proudly offer to show any other facility operators their expertise in cost effectively applying Denso systems for long duration with low/no maintenance required for 30+ years.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Toronto Uses Densoband for Busy Lane Repairs

Over many years the City of Toronto has dealt with a tremendous increase in traffic loads on their residential streets. The use of city busses, construction equipment, delivery trucks and general day to day commuter volume coupled with our Canadian climate have helped contribute to a more rapid deterioration of Toronto's roads.

As with every year, the City, which is divided into four main quadrants, is saddled with the task of repairing the areas that are in need of rehabilitation and this summer several contractors were awarded asphalt repair contracts to do just that.

Kenaidan Contracting Ltd. was one of the local contractors doing work along Eglinton Avenue and these repairs involved the use of 8mm x 45mm Densoband. Both joint edges of hundreds of meters of roadway were sealed with the bitumen strip ensuring a long-term, watertight joint that will stay sealed even with road movement through temperature change and constant traffic.

This approach by the City



Densoband is applied to the vertical joint face of the reinstatement trench providing a waterproof and flexible seal over the entire depth of the joint.

of Toronto to provide a better sealed asphalt joint at the time of repair will go a long way in keeping their streets from needing additional restoration or replacement "down the road".

The Densoband in place along both of the vertical joint faces of the reinstatement trench.



Application of the new asphalt road surface.



Project Summary	
Product type: Sealing Mastics	
Country:	Canada
Object:	Asphalt road surface
Problem:	Flexible joint sealing
Product solution:	Densoband



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY



Sea water intake pipes lined with Archco-Rigidon Rigspray

Rigspray Internal Protection for Nuclear Power Plant Sea Water Intake Pipelines

The Barakah Nuclear Power Plant being constructed in Abu Dhabi UAE, is part of the Gulf Cooperation Council's (GCC) ambitious nuclear power program due to be completed by 2020.

The new power plant owners required a coating to line the sea water intake pipe. The consultant in charge wanted a coating which exhibits excellent abrasion and erosion resistance, good permeation resistance, undercutting resistance and that performed well in marine applications.

After discussions with local Denso agent Bin Moosa & Daly and also viewing numerous successful case histories showing similar applications, Archco-Rigidon Rigspray was chosen for the project.

Normally used on steel oil rig legs and riser pipes etc, as an

outer coating, Archco-Rigidon Rigspray is well suited to give long term protection to steel in marine environments.

Project Summary

Product type:
Industrial Linings

Country: Abu Dhabi - UAE

Object: Pipeline

Problem: Internal lining

Product Archco-Rigidon

solution: Rigspray

Below: After the pipes are lined with Archco-Rigidon Rigspray, the lining is tested for holidays.



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

- Tanking / waterproofing.
- Exposed rooftops and parapets.

SEALING MASTICS

- 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

- Sealing and insulating
- Protecting and bonding

DIY WEATHERPROOFING

- Waterproofing and flashing

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

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Company:

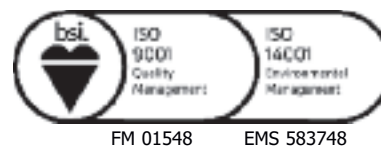
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