



Volume 34 - Number 1

Denso protection of water main joints and valves in Canada - See pages 4-5.

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LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Protects Footbridge Suspension Wire



The steel wire rope protected with Denso Steelcoat at the Thames Ditton footbridge.

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

General view of the Thames Ditton suspended footbridge.

Winn & Coales' Denso Steelcoat™ 100/400 system was chosen by Hampshire Rigging Services of Romsey to protect the suspension of the footbridge at Thames Ditton Island, Surrey.

Project Summary

Product type:
Exposed Steel Coating

Country: United Kingdom
Object: Steel wire rope
Problem: Corrosion prevention
Product solution: Steelcoat™ 100/400 System

For this recently completed project the Denso Steelcoat™ system was applied to a steel wire rope which is fitted to the four tower tops from which the footbridge is suspended. The wire rope where the groove fits in is approximately 1 metre in length and 44mm diameter.

Particular attention was given to the application of Denso Steelcoat on the four tower tops and the anchorage bars, which had previously suffered from some corrosion. Following surface preparation, the Denso Steelcoat system applied by Hampshire Rigging Services consisted of Denso Hi-Tack Primer™ followed by Densyl Profiling Mastic™ for filling awkward profiles. This was then followed by Denso Hi-Tack Tape™, Denso Ultraseal Tape™ and Denso Acrylic Topcoat™.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso System Protecting Windsor's Waterworks Infrastructure

The City of Windsor, Ontario, located along the Canada/US Border, has long seen the benefits of using Denso products to prevent corrosion from occurring on their water distribution system.

A new water main installation was recently undertaken there that was comprised of several large sections of 36" dia. PVC water main piping. These sections were completed with multiple valve assemblies, metallic restrainers and a variety

of metal fittings that were all protected with the Denso Petrolatum Tape System™. The system included Denso Paste™, Denso Profiling Mastic™ and Denso LT Tape™.

CoCo Construction Group were the contractors on this

project and did much of the assembly and construction of these sections top-side before slinging the large, wrapped assemblies down into the ground. Once the remaining connections were joined together below grade, they were finished being wrapped with Denso and then backfilled.

The process of assembling the sections and then protecting them before going in the ground was much easier from the contractor's perspective as it helped minimise much of the in-trench work and permitted a better overall application of the Denso system.

Some of the Denso Petrolatum Tape System™ installation was applied prior to placing in-situ.





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY



The Denso Petrolatum Tape System was used to protect all of the metal valve assemblies and fittings on the new Windsor water main.

Project Summary

Product type:
Coatings for Buried Pipes

Country: Canada

Object: Valve assemblies

Problem: Corrosion prevention

Product Denso Petrolatum

solution: Tape System™



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Protal™ 7200 - Australia's Pipeline Coating of Choice

APA Group's Victorian Northern Interconnect Expansion (VNIE) Pipeline Project comprised of three stages, which have been constructed over the last 3.5 years. The VNIE pipeline loopings fall within both states of Victoria and New South Wales (NSW) and is made up of 16" and 18" 2LFBE coated mainline steel pipe. Stages one and two of the pipeline loopings were constructed by McConnell Dowell and Nacap Australia, which consisted of loops 1 to 5 and were completed between 2014 and mid-2015.

The pipeline loopings of a section of the existing Victorian Transmission System and Northern Interconnect System will provide natural gas security of supply on the East Coast of Australia.

The final stage, being loops 6 to 9 of the VNIE pipeline project, was awarded to Spiecapag Lucas JV (SCL) in late 2015, where construction was carried out nearby the country townships of Seymour, Wangaratta and Chiltern in Victoria and Cootamundra and Young in NSW. Loops 6 to 9 saw more than 162km of pipe delivered between Seymour and Young at strategically placed holding yards some 500km apart.

Denso Australia was again engaged for the supply of Denso Protal™ 7200 high build epoxy for field joint coating materials and mainline repairs by SCL given the strong working relationship, which has been formed over recent years namely supplying APA's Eastern Goldfields Pipeline Project and Jemena's Queensland Gas Pipeline Looping project using Protal 7200 for FJC.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Project Summary

Product type:
Coatings for Buried Pipes

Country: Australia

Object: Gas main field joints

Problem: Corrosion prevention

Product

solution: Denso Protal™ 7200

The selection of Denso as the supplier of choice is a testament to the confidence that both Spiecapag, Lucas and Denso Australia have developed over the course of the previous projects and the suitability of Protal 7200 as a user friendly, high performance, high build epoxy coating system.

The project itself was carried out over a 15 month period through some extremely challenging construction conditions due to unseasonal record setting rain events across Northern Victoria and Southern New South Wales.

Nevertheless, construction continued and saw the coating of more than 8,000 mainline field joints, applying Australian manufactured Protal 7200. The epoxy was supplied in 800 litre kits to be utilised with SCL JV's three purpose-built coating rigs. These comprised of plural pumps and generators for spray application of the Protal 7200.



Above & below: Denso Protal 7200 being applied to protect the gas main field joints.

Manual kits of 1.5 litres were supplied for tie-ins and 400ml repair cartridges for any repairs.

The project in total saw more than 25,000 litres of Protal 7200 consumed during the construction period. This project, along with APA Group's Eastern Goldfields Pipeline, Jemena's

Queensland Gas Pipeline (QGP) Looping project and the QCLNG Northern Trunklines project has spanned some 550km throughout Australia. It has seen SCL apply nearly 60,000 litres of Protal 7200 during a 36 month period.

A section of the new gas main under construction.





LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Steelcoat™ 200 System Protects Power Station Steam Turbine Pipeline

South Hedland power station is a 150MW combined-cycle natural gas-fired power generation facility being constructed in the Boodarie Resource Industrial Estate, approximately 13km south of Port Hedland, Western Australia. The project aims to meet the growing demand for electricity in the Pilbara region.



Construction of the power station began in February 2015 and is expected to be fully commissioned and commence operations in 2017 with a cost estimation of AU\$570m.

Combined cycle power plants are highly efficient and feature both natural gas and steam turbines, with the steam turbine using waste heat from the gas turbine to generate additional power.

Left and below: Denso Hotline Tape is applied to the pipeline sections.



The underground pipeline for the steam turbines is operating at elevated temperatures that standard anti-corrosion tape wrap systems are unable to tolerate long term.

Denso Australia was successful in supplying the specified Denso Steelcoat™ 200 system, which is designed to withstand 110°C above ground and 90°C below ground.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY



Civmec were the installation contractors and were trained to apply the Steelcoat 200 system in accordance with our application procedures.

Above and below: Denso Glass Outer Wrap Tape is applied over the Denso Hotline Tape to complete the Denso Steelcoat 200 system.

Prior to the Steelcoat 200 application the piping spools were first hot dipped galvanised by Hartway Galvanisers and placed on pipe-stands ready for protective wrapping. The Denso Hotline Tape was applied spirally with a 55% overlap, effectively providing a 3000 micron corrosion barrier followed by the water activated Denso Glass Outer Wrap Tape also incorporating a 55% overlap. On completion of the application the spools were loaded onto trucks for the 1745km journey to site. The Denso Glass Outer Wrap served a dual purpose of protecting the spools during transport and tolerating the high operating service temperatures of the pipe once commissioned.

The Denso Steelcoat 200 system is designed to provide 20+ years' operating service.



Project Summary

Product type:
Exposed Steel Coating

Country: Australia
Object: Steam turbine pipe
Problem: Corrosion prevention
Product solution: Denso Steelcoat™ 200 System



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

City of Juneau Waterfront H-Piles Protected with the SeaShield™ Series 2000HD System

The City of Juneau has undergone recent improvements to their downtown waterfront. This included improvements to its Cruise Ship Terminal and associated dock area where many restaurants and shops cater to the many tourists that visit the area. As a part of the improvements, Denso's SeaShield™ Series 2000HD System was selected to be used to protect 79 steel H-Piles that were exhibiting corrosion in the splash zone.

Project Summary

Product type:
Sub Sea Splash Zone Coating

Country: Alaska

Object: Jetty piles

Problem: Corrosion prevention

Product: SeaShield™ Series

solution: 2000HD System

View of Downtown Juneau, Alaska.



Completed H-Piles fully protected with the SeaShield Series 2000HD System.

After hand power tool cleaning surface preparation, the Dive Contractor applied Denso S105 paste, Foam Blocks wrapped with Densyl Tape, a final Densyl Tape wrap with a 55% overlap and the Series 2000HD Outercover (80 mil HDPE) to the pile's splash-zone area. In addition to these piles, there were several piles that had cross bracing and node areas, which received the Denso Glass Outercover UV in lieu of the 80ml HDPE Outercovers.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

SeaShield SplashZone UW Epoxy was used to protect all other irregular gusset areas that could not be wrapped.

The SeaShield Series 2000HD System will provide 20+ years of corrosion protection in this harsh environment that encounters over 20 feet of tidal fluctuation. The project was completed in the early Spring of 2016 under budget and ahead of schedule. All parties, including the Contractor, Design Engineer and City of Juneau were very pleased with the project.



Above: Pile cap/gusset area protected with the SeaShield SplashZone UW Epoxy.

Below: Steel cross beams protected with Denso Glass Outerwrap UV in lieu of the 80 mil HDPE Outercovers.




SeaShieldTM



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Denso Protection Specified Inside and Out for Northern Cape Water Pipeline Joints

Sedibeng Water in the Northern Cape, (Kathu), has awarded this 80km steel pipeline, namely Roscoe, to Black Rock Pipeline Project, for the Vaal Gamagara Regional Water Supply Scheme to Group 5 Construction.

Kathu is a town in the Northern Cape Province which is considered to be the iron ore capital. Kathu means "town under the trees", after the surrounding Camel Thorn forests.

The pipeline is coated with a rigid polyurethane coating and the pipe diameter varies between 1100mm OD - 400mm OD. The external field joints are being protected with a system comprising Denso Primer D™, Denso Ultraflex 1250 Tape and

MDP™ whilst the internal field joints are being lined with the Denso ST100™ epoxy system applied at 600μ DFT.

Pipe Coatings, a well-known customer of Denso, will be sub-contracting to Group 5 to do the coating and lining as well as the field joint wrapping with our proposed systems on the estimated 4500 field joints. So far Denso have supplied 10% of the total materials for this project.



Above: Internal field joints lined with the epoxy Denso ST100 System.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Project Summary

Product type:
Coatings for Buried Pipes

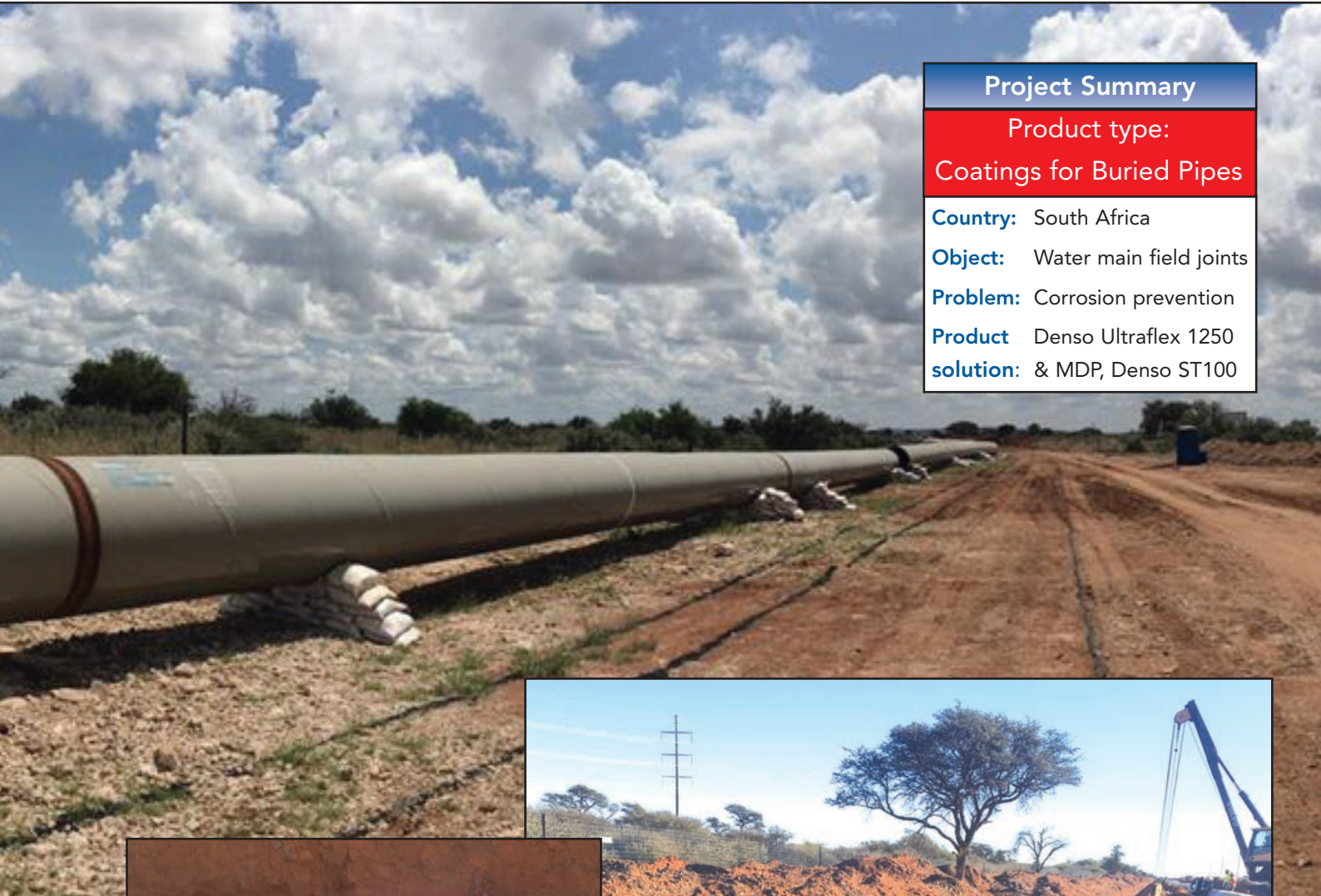
Country: South Africa

Object: Water main field joints

Problem: Corrosion prevention

Product Denso Ultraflex 1250

solution: & MDP, Denso ST100



Above: A completed field joint.

Right: Pipeline laid with a boom and external field joints protected with the Denso system in-situ.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Thames Water Cable Entries Protected Against Flooding

Flood Control International of Tavistock, Devon, are completing a project at a Thames Water site in Watford of sealing cable entries with Winn & Coales Densoseal 16A™. There will be further Thames Water sites to follow in a major refurbishment of their sites resulting from a Flood Prevention report.



Flood prevention measures:

Densoseal 16A used to seal cable ducts at the Thames Water site in Watford, UK.



Project Summary

Product type:
Sealing Mastics

Country: United Kingdom

Object: Cable Entry

Problem: Sealing against
flood water

Product

solution: Densoseal 16A™

Densoseal 16A™ is a non-setting, self-supporting mastic which may be applied to wet surfaces and will seal ducts and conduits against ingress of water and gas. It is suitable for CHP and biogas projects. It complies with British Telecom Specification M212C. It is suitable for sealing cable ducts, conduits and service entry pipes or sleeves, particularly below ground level, to prevent entry of water or gas into buildings. It may also be used for profiling mechanical joints on hot pipes to allow application of tapes.



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

Leading UAE Storage Operator Uses the Denso Tank Base Protection System™

BPGIC is an important tank storage operator who's licenced activities in Fujairah, UAE cover the storing of (crude oil, fuel oil, all kinds of oil products and gas), as well as building, managing and investing in refineries including the extraction and exploration of crude oil.

Project Summary

Product type:
Exposed Steel Coating

Country: United Arab Emirates

Object: Tank bases

Problem: Corrosion prevention

Product solution: Denso Steelcoat™

Tank Base Protection System



Above: Denso Acrylic Topcoat is applied over the layer of Denso Ultraseal RT.

After discussions with the consultants MUC, BPGIC approved the use of the Denso Steelcoat™ Tank Base Protection System for all their tanks on their new Fujairah storage facilities terminal. This approval was based on the successful record of the Denso system being used by other tank farm operators in Fujairah. The Denso protective system was applied by contractors Audex. The project was completed in March 2017.

The Denso Steelcoat™ Tank Base Protection System: After hand power tool cleaning and the application of Denso Hi-Tack Primer™, Densyl Mastic™ is used to fill all voids before the area is wrapped with a layer of Denso Hi-Tack Tape™. Denso Primer D™ is then applied to a masked area before a layer of Denso Ultraseal RT Tape™ is applied. Finally it is over-coated with Denso Acrylic Topcoat™ forming a lasting waterproof and flexible seal.

The finished Denso Steelcoat Tank Base Protection System in service.

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.

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- Protecting and bonding

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