

WINN & COALES INTERNATIONAL LTD

Denso®
Digest



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QUALITY & INNOVATION FROM 1883 INTO THE 21ST CENTURY



WINN & COALES INTERNATIONAL LTD

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✓ Anti-corrosion and sealing systems

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Protective Coatings - Exposed Barrage Gates

Denso Steelcoat 1000 System Protects the Vaal River Barrage Gates

The Vaal River barrage Gates situated between the provinces of Gauteng and the Free State in South Africa are operated by the Rand Water Authority. The 36 gates built in 1920 are used for providing water to the gold and coal mines in the vicinity.

The Rand Water Authority wanted to upgrade the coating used to protect the barrage gates and required a long term solution for the upstream surface, which is subject to damage from floating debris especially during floods.

Denso South Africa, recommended the use of heavy duty Denso 1000 PGF, the toughest coating available, due to its success on a previous project for the Engen refinery in Durban. The first seven gates have now been coated and installed successfully.



Above:
A barrage gate in a partially lifted position clearly showing the water turbulence.



Left:
One of the seven Denso 1000 PGF coated gates at Concor Yard, Johannesburg.

Protective Coatings - Exposed Slurry Pipelines

Denso Steelcoat 300 System Protects Asbestos Slurry Lines

A major power generator required a coating for their asbestos slurry pipes. The pipe already had a sealing coat of PVA, however the original liquid topcoat was starting to fail with large areas of the coating delaminating away from the pipe after a few years of service life.

They required a coating that would reduce surface preparation and would have the ability to be applied over the existing failing coating.

Denso White Steelcoat 300 was chosen for the project due to its uv stability and minimal surface preparation. The coating system comprised; Denso Colourtape Mastic, Denso White Colourtape and Denso White PVC Outerwrap.

The Steelcoat 300 System is ideal for coating asbestos pipes.

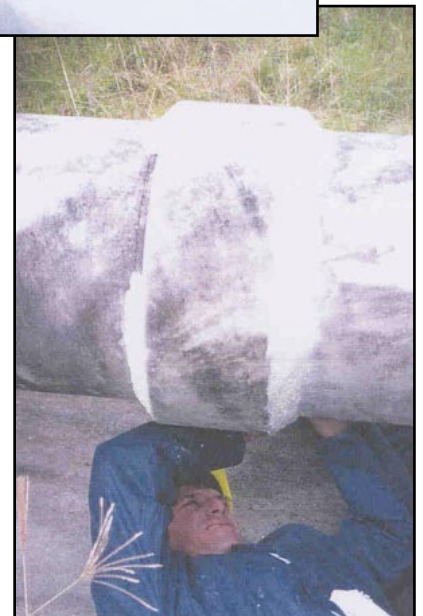
It requires no water wash down of the substrate nor is any spray equipment required. The System also does not require a priming coat and the tape gives a



Above:
The application of
Denso White
Colourtape.

Right:
The Denso System copes
easily with any pipe
couplings encountered on
route.

Left:
The completed job.



consistent coating thickness.

Application was carried out by a Denso approved Licensed Applicator and the coating came with a 10 year warranty.

The work carried out in June 2001 is only the first stage of the project and included 6 pipelines to be coated.

Protective Coatings - Protection of Exposed Steelwork

Denso Steelcoat 400 System Protects Steel Structures in Japanese Hotel

Work was recently carried out using the Denso Steelcoat 400 System on the exposed steelwork on top of a hotel building situated in Nara City, Japan.

The steel beams were grit blasted to remove all loose and flaking material and prepare the substrate for the new protective coating. They were then coated with Denso Penetrating Primer and allowed to dry. This was followed by wrapping the beams first with Denso Conforming Tape on awkward contours and then with Denso Ultraseal Tape.

To give extra UV protection as well as an attractive finish, the whole structure was then overcoated with a pure acrylic topcoat.

The resulting system will now give long lasting protection against corrosion to the highly exposed steelwork.



*Above:
The poor condition of the steelwork before grit blasting*

*Left:
The completed Denso protection system illustrating the superior conformability of the products.*

Protective Coatings - Exposed Pipebridge

Denso Steelcoat Protection for Middlesborough Pipebridge

Northumbrian Water has refurbished a pipebridge at the Middlesborough site of chemical producers Wilton International that carries a 24 inch water main over a rail track, the site's main haulage road and process ducts. Denso Steelcoat 100, 400 and 700 Systems have been chosen for the long term protection of the 57 metre pipebridge.

Specialist contractors for this project are Hertel UK Ltd, whose main UK base is at Middlesborough. Hertel UK removed all previous coatings on the pipebridge, under an environmentally closed condition and prepared the surface to the SA 2½ standard before applying the Steelcoat Systems.

The Denso Steelcoat Systems comprise: Denso Hi-Tack Primer, Denso Profiling Mastic to smooth all contours, Denso Hi-Tack Tape, Denso Ultraseal Tape and finished with a layer of Denso Acrylic Topcoat. For extra protection on the guard rails and valve box, coats of Denso ST Epoxy GF and Weathershield were applied.

Below: Denso Hi-Tack Tape is applied over a coating of Denso Hi-Tack Primer.



Above:
Denso Ultraseal Tape is applied over the Denso Hi-Tack Tape.



Left:
A final application of Denso Acrylic Topcoat finishes the system.

Sealing Mastics - Jointing Asphalt Runways

Densoband Seals Taxiway Repairs at Gatwick Airport

Contractors Shaw-Seal Ltd have recently carried out renovation work on approximately 1500m of the rapid exit taxiways off the runway at Gatwick Airport for the British Airports Authority.



Densoband is applied vertically against the sound surface areas before infilling with Zebrascreed.

Shaw-Seal have cut out worn areas of the special asphalt wearing surface to locate any cracks in the concrete slabs underneath. Winn & Coales' Densoband is then applied vertically against the edges of the sound surface areas before infilling with Zebrascreed specialist asphalt base.

Shaw-Seal recommended Densoband as a result of previous experience with this jointing material at Gatwick as well as Heathrow and RAF Northolt.

Approved by the British Airports Authority and the Highways Agency, Densoband forms a flexible watertight joint between hot rolled asphalt and asphalt, concrete and steelwork. Because water, salts, pollutants, weed seeds, etc cannot penetrate the sealed joint it remains unaffected by extremes of temperature and further deterioration.

Sealing Mastics - Sealing Seams in Road Reconstruction

Denso Paving Tape Seam Sealant for A5

International contractors Lafarge have just completed a major reconstruction of some 3km of the A5 trunk road near Dunstable, where the surface was at the point of breaking up due to constant heavy traffic. The work was carried out for the URS consortium.

Denso Paving Tape was used for surface sealing of the seams prior to overlaying with the asphalt base-wearing course. Denso Paving Tape is a cold applied synthetic fibre reinforced bituminous tape protected with a disposable release film. It provides a moisture barrier that reduces water penetration into the sub grade, thereby retarding cracks appearing in the new overlay.



Denso Paving Tape is applied over the seams before overlaying with the asphalt base wearing course.



Protective Coatings and Jointing Strips - Highway Construction

Electronic Toll Highway uses Two Different Forms of Denso Protection

Over the last several years, motorists in Ontario have been able to drive on a new state-of-the-art electronic toll highway which, until recently ran from Denso North America's office in Markham, west approximately 40kms to the City of Mississauga. Highway 407 has become a tremendous help for anyone not wanting to drive right into the most populous city in Canada and then spend most of an hour trying to get away from it.

As this new electronic highway has become popular, so has the demand for its' expansion even further east and west. This meant a significant increase not only in the construction of the main highway extensions, but also in the amount of on off ramps used to connect the roads that

intersect the highway. This has also meant that the highway would divide some very residential areas where water pipelines run from one side of the highway to the other.

It was at several of the main highway intersections where Denso LT Tape, Paste and Profiling Mastic were used to protect hundreds of feet of ductile iron water pipe from corrosion. All of the 40 foot lengths of pipe were wrapped by hand outside of the trench and then lowered by excavating

equipment down 20 feet, connected and then each joint



The new hot asphalt road surface is layed against the Densoband forming a waterproof seal.

was wrapped with Denso LT Tape. Once all of the water pipes were installed using Denso corrosion protection, construction of the on and off ramps began.

Denso was called on again to supply Densoband asphalt



A Densoband jointing strip is positioned along the vertical face of a road joint.

jointing strips as the paving crews began to pave the miles of new roadway. Existing sections of highway were joined with new approach ramps using 8mm Densoband to seal a number of the road joints. Densoband was also used to seal portions of the bridge decks that joined the approach ramps and also many areas where the lanes were widened to accommodate new road access points.

The versatility and performance of our products shows why Denso continues to be the leader in corrosion protection and sealing technology.



The pipelengths were wrapped outside the trench then lowered into position and joined together. The joints were then wrapped with Denso LT Tape.



Corrosion Protection - Girth Welds

Protal 7200 Liquid Epoxy Protects Girth Welds on New Pipeline Construction

Many major oil and gas companies have used Protal 7200 to protect girth welds on push-rack and land applications.

Protal 7200 has been selected as the coating of choice for push-rack applications due mainly to its extremely fast cure and excellent cathodic disbondment results. By pre-heating the surface up to 180°F (82°C) the coating was cured in 15 minutes allowing the pipe to be holiday tested and pass over the final rollers on the push rack system. On land applications the fast cure is a benefit by allowing the contractors to backfill at a faster rate.

Protal 7200 is a two-part 100% solids epoxy coating that can be applied in one coat up to 40mils. The coating exhibits excellent cathodic disbondment results of 7mm @ 175°F (80°C). Another benefit is high impact and abrasion resistance for directional drill applications. In addition to its fast cure, Protal

7200 also exhibits excellent adhesion properties and is environmentally safe. Test results with independent labs and oil and gas companies have proved it to be superior to other liquid coatings.

Unlike FBE, which requires expensive and heavy equipment, Protal 7200 only requires a brush or roller to apply. The costly risk of downtime due to equipment failure is eliminated. Due to these cost savings Protal 7200 is ideal for a variety of field or shop applications including girth welds, tie-ins, drilling applications, station piping, fittings and repairs to FBE.

Denso has an extensive line of pipeline coatings to protect a wide variety of pipeline applications in almost any environment.



Left:
During a push-rack application, Protal 7200 cured in 15 minutes at 180°F (82°C).

Below:
Protal 7200 being applied using an applicator pad.

Below:
Protal 7200 applied on girth welds allows the contractor to backfill quickly.



Above:
The girth welds were coated with 25-30 mils of Protal 7200 in one coat.

Industrial Linings - Internal Tank Linings

Archco-Rigidon Lining for 1 $\frac{3}{4}$ Million Gallon BP Tank

Maintenance engineers at the BP Coryton, Essex, refinery have refurbished a massive tank used for holding raffinate. Measuring 95ft in diameter by 44ft at the highest point, the tank holds 39,000 US barrels of product, which amounts to in excess of 1 $\frac{3}{4}$ million gallons.

The raffinate tank is rivetted and national contractors Deborah Services Ltd applied a stripe coat of Archco-Rigidon 403D as a caulking to seal and protect the rivet heads and joints of the tank walls. Archco-Rigidon 403D lining was also applied to the entire floor area of the tank and, as with the walls, was thickness checked after application and spark tested to ensure a pinhole-free surface.

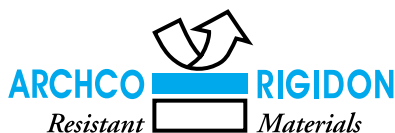
Archco-Rigidon 403D was specified for this project following its successful use on

several smaller tanks and refinery vessels at Coryton over the past twelve months.

The specialist lining is a vinyl ester based glass flake filled coating offering excellent long term corrosion/erosion resistance in highly corrosive environments.



Work in progress inside the 1 $\frac{3}{4}$ million gallon tank.



Sub Sea/Splash Zone Coatings - New SeaShield Website

New Website Devoted to the Protection of Jetty Piles and Offshore Facilities

www.seashield.com is a new website dedicated mainly to the world-wide protection of steel, concrete and timber jetty piles. Offshore facilities and sheet piling in marine environments are also covered on the site.

Full product information and technical data is available and a questionnaire is accessible online for faster problem solving and quotations.

Visit
our new
Website!

SeaShield
www.seashield.com