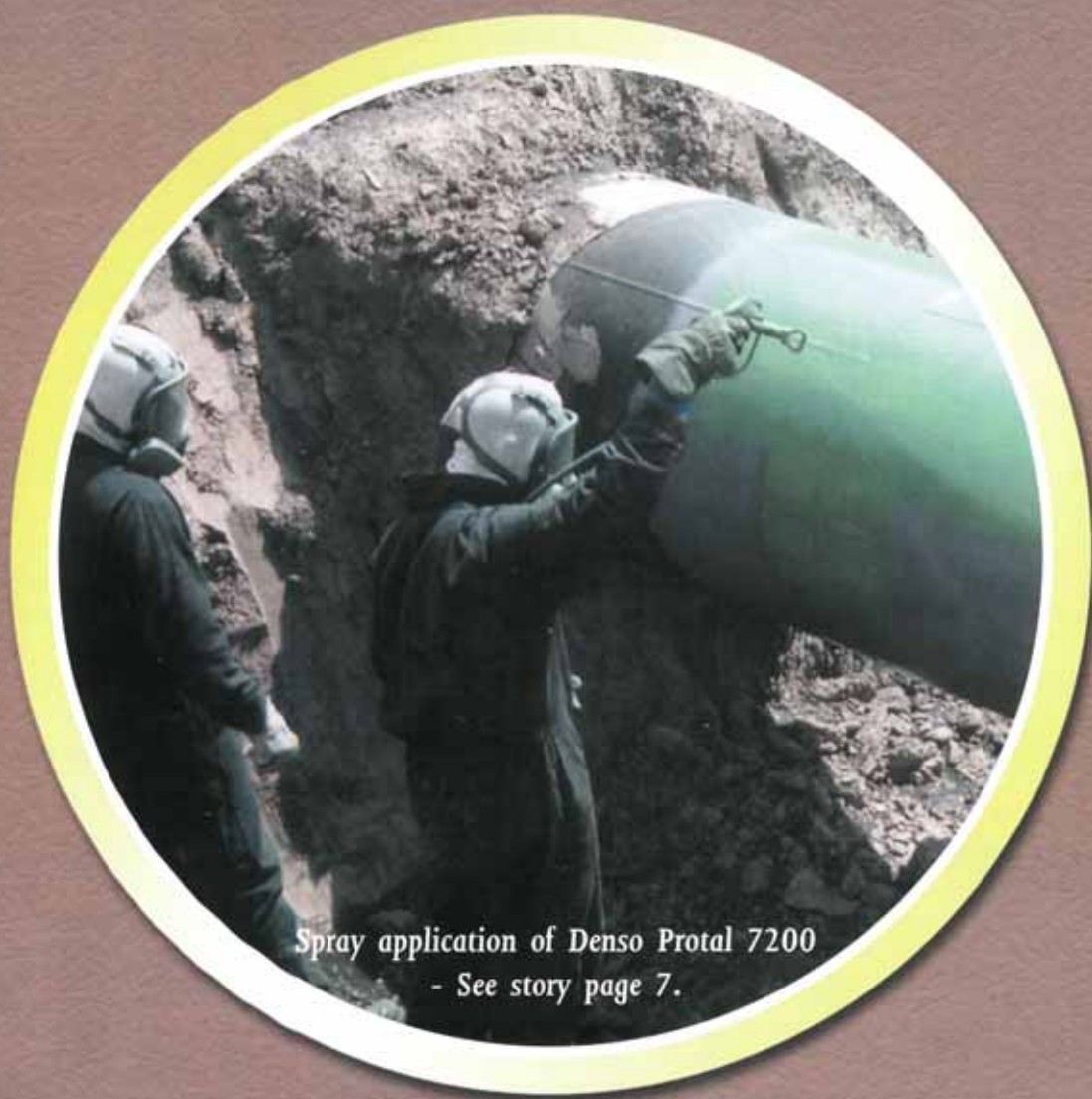


WINN & COALES INTERNATIONAL LTD

# Denso Digest

CELEBRATING 75 YEARS OF DENSO PRODUCTS



*Spray application of Denso Protal 7200  
- See story page 7.*



LEADERS IN CORROSION PREVENTION & SEALING TECHNOLOGY

# 1929 - 2004

## 75 Years of Denso - An Ongoing Success Story

We are proud to announce that during 2004 we are celebrating 75 years of the manufacture and supply of Denso Petrolatum Tape and its associated products. Little did the company realise back in 1929 when it introduced the product in the UK that it would be such an astounding success and that 75 years on it would still have the major brand name and place in the market it has today. Please read on for a brief background to the product and how it has led to the extensive range of Denso systems available today.

Paul Winn & Co. commenced business in 1883 as a Merchant, Importer and Exporter.

Frank Coales joined Paul Winn & Co. in 1916 and this era saw the company develop from a small trading company into a substantial business.

In 1929 the company took on the Agency for a tape of German manufacture used for corrosion prevention - marketed in Germany as 'Schades Plastische Schutzbinde' and Paul Winn & Co. marketed this product initially in the UK as Denso Anti-Corrosion Tape.



applied and self-adhesive. The initial market was aimed at the gas industry for wrapping underground pipes - until this time hot applied bitumen and pitch troughing systems were used.

Being cold applied Denso had distinct operational advantages over the existing systems and sales grew steadily with the product being accepted and used by most of the Public Utilities.

By 1933 the sales justified the creation of a manufacturing operation and

Frank Coales became a partner. A manufacturing company was established - Winn & Coales Ltd. (later Winn & Coales (Denso)

Ltd.) in a small factory in Stepney, East London.

With the advent of War in 1939 Denso Tape was widely used for gas proofing rooms, waterproofing military vehicles, landing craft and for the repair of bomb damaged services.

The Head Office in Trinity Square was totally destroyed by a flying bomb and the administration was moved temporarily to Beckenham - although the Stepney Factory survived.



Examples of Paul Winn & Co. Ltd and Winn & Coales Ltd letterheads.

The original Denso Tape comprised of a cotton cloth impregnated with a petroleum jelly compound and was cold



An example of an early Paul Winn & Co Ltd advert.

Following the War the demand was near to outstripping capacity and it was decided to move both the Head

Office and Factory to one site in West Norwood where an old brewery was purchased and the company moved in 1950.



The intricate contours of valves and pipe couplings are easily protected against corrosion with the Denso Petrolatum Tape System.



Large diameter exposed jetty pipelines protected against marine corrosion with Denso Petrolatum Tape.



Exposed steelwork members of process plant are protected against chemical corrosion with Denso Petrolatum Tape and Acrylic Topcoat.

In 1956 a range of waterproofing products for the DIY market and the builder was introduced under the Sylglas brand name.

In addition, Bitumen and Coal Tar Tapes were launched and widely used for the protection of new pipelines following the introduction of natural gas.

Over these years a UK Export Marketing Department was formed resulting in sales to over 50 countries. Between 1968 and 1973 Overseas Subsidiaries were established in Australia, New Zealand, Canada, USA and South Africa with their own Sales & Marketing teams plus a network of Importers and Distributors. In order to provide solutions for most long-term corrosion prevention and sealing requirements a comprehensive Denso product range has now been developed which includes:

- Denso Protal Epoxies for buried pipelines, fittings and mounded LPG vessels with special grades designed to accommodate high operating temperatures.

- Densopol and Densoclad Tapes for large bore welded pipe joints, including sub-sea projects.
- Denso Butyl Tapes for very fast on-site machine application and low temperature conditions.
- Denso Steelwork Systems for all above ground steel structures and offshore rigs.
- Denso Archco-Rigidon industrial linings for steel storage tanks, ducting, pumps, internal pipe coatings and concrete tank bund walls.
- Denso SeaShield Systems for marine jetty pile protection.
- Industrial pressure sensitive tapes for duct sealing and electrical installations.
- Denso Tokstrip for jointing precast concrete units.
- Denso Acrylic Waterproofing Membranes for exposed roofing and Densoseal Membranes for tanking requirements in the Civils Industry.

- Denso Highway Maintenance products for sealing and jointing asphalt road surfaces.

Ongoing demand for this highly specialised range of Denso Products is supplied by two factories in the UK, one in Australia and one in South Africa.



Denso Petrolatum Tape.

A life cycle of 75 years is unusual for any product and with 21st century technology involving special polymer modifications further improving the properties of Denso Tape, this product still remains the most effective long-term coating when applied over light rust, over chemically contaminated steel surfaces and even underwater for pipe and jetty pile protection.



**Coming Soon!** As an integral part of our **75 Years of Denso Products** celebrations, we have produced a CD-Rom containing comprehensive product information in a user friendly format. All Denso Digest recipients will automatically receive a copy.



## 2004 International Conference: A Showcase for New Products



Dr Mike Ball watched by Conference Delegates brushing out a new Denso Steelcoat product in the Denso London laboratory.

An International Conference incorporating a celebration of 75 Years of Denso Products was held in London during the third week in May. Objectives included a special focus on group technical developments for a variety of worldwide market needs. A number of new Denso systems introduced at the Conference are highlighted below.

### 1. New Protal 300 System for Welded Joints:

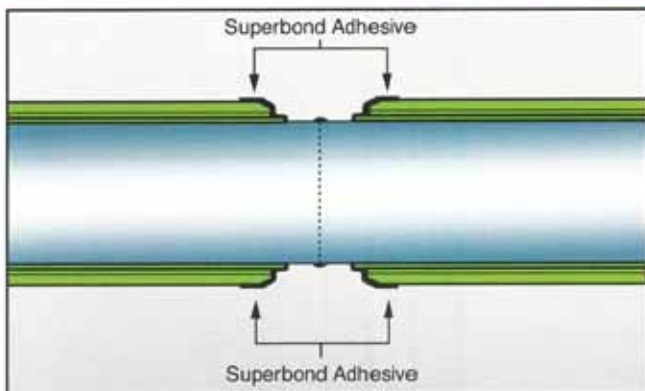


Plate 1.



Plate 2.

Plate 1. Pipe weld joint on a 3 layer polyethylene shop coated pipe showing application of Superbond Adhesive.

Plate 2. Hand application of Protal 300 Epoxy.

**Benefits:** • No heat required • Exceptional adhesion to P.E. shop coating  
• No wastage - materials supplied in kit form • No shielding of cathodic protection system

### 2. New Protal 7000X for Pipelines & LPG Vessels:



Plate 3.



Plate 4.

Plate 3. Fast airless spray application to large pipe surface areas.

Plate 4. Fully coated LPG vessel awaiting transportation to site.

**Benefits:** • No plural component spray equipment • High build in one coat • Very cost competitive  
• Exceptional impact and cathodic disbonding resistance

### 3. New SeaShield 2000R System for Jetty Pile Maintenance:



Plate 5.



Plate 6.

**Plate 5.** Effective hand cleaning machine for quick removal of marine growth.

**Plate 6.** Rapid application time utilising new fully pre-lined jackets.

**Benefits:** • Abrasive blasting or high pressure water jetting not essential • No pre-application of paste and tape to the pile in the water • Substantial time savings offer lower overall costs

### 4. New Steelcoat System for Exposed Steel Structures and Pipework:



Plate 7.



Plate 8.

**Plate 7.** Heatshield 250 high temperature coating.

**Benefits:** • Can be spray applied to hot steel surfaces from 100°C (212°F) to 250°C (485°F)  
• No shutdown necessary • Maintenance solution for coating hot pipes under insulation

**Plate 8.** Rigspray Micra - 2 coat high build system for normal operating temperatures.

**Benefits:** • No need for a primer coat • Exceptional chemical and UV resistance • Touch dry in 1 hour  
• Solvent free • Cost effective despite high build • No UV topcoat needed

### 5. New Archco-Rigidon 300E System for Tank Lining Refurbishment:



Plate 9.



Plate 10.

**Plate 9.** After 15 years, previous coating has osmotic blistering on all weld seams of diesel fuel storage tank.

**Plate 10.** Same tank completed with the Archco-Rigidon 300E System.

**Benefits:** • System thickness can be easily controlled to provide tailor-made service life requirements

## Corrosion Prevention - Exposed Steel Tanks

# Denso Steelcoat 700 Protects Tanks at Foskor, Richards Bay

For 15 years the Denso Covercoat and Steelcoat 400 Systems have been protecting structural steel at Foskor, the fertilizer producing plant at Richards Bay on the South African East coast. Both systems have performed extremely well under very harsh chemical and marine environments.

With this in mind, the plant engineers approached Denso South Africa to recommend a system for the external corrosion protection of their steel tanks.

Steelcoat 700 was specified comprising of two coats of ST Epoxy Mastic and a topcoat of Weathershield, totalling 400

microns. The system has been applied to four tanks totalling 2500 sq.m. by the on-site contractor, T.E.C.

The Denso S.T. Epoxy's surface tolerant properties make the system an ideal choice for the humid application conditions typically found in the Richards Bay Area.

To enable quick identification of the subject matter within each story in this brochure we have adopted the following colour codes.

PROJECTS INVOLVING:	
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

Two of the tanks during application of the Denso Steelcoat 700 System.



## Corrosion Prevention - Buried Pipeline

## Protal 7200 used for Pipeline Integrity Programs

Many oil & gas companies are creating pipeline integrity programs to inspect, monitor and repair their pipeline systems. If during inspection the coating is found to be disbanded or in need of repair, the pipeline will be excavated and recoated. Denso's Protal 7200 is becoming the product of choice to recoat pipelines by hand or spray.

Kinder Morgan selected the Protal 7200 to recoat approximately 600 linear feet of 36" diameter pipe. The project consisted of excavating and exposing the 36" diameter pipe. Prior to coating, the pipe was sandblasted to a near white metal finish, SSPC SP-10 or NACE No.2 standard. After the surface was prepared, Protal 7200 in (90 liter kits) was applied using plural component spray equipment. The coating was applied by the Corpro Companies at an average thickness of 28-35 mils in one coat. The tack-free time was approximately 30 minutes and the pipe was ready for backfill within 2 hours.

Protal 7200 is a VOC free, 100% solids epoxy that exhibits excellent cathodic disbondment results with 4 mm at 150°F (65°C).

In addition, the coating offers high impact resistance, fast curing, high abrasion resistance, high build (up to 50 mils in one coat) and



Spray applied Protal 7200 protects 600 linear feet of 36" diameter pipe.



environmentally safe.

Denso manufactures a full line of Protal liquid coatings to meet the demand of the pipeline industry.

Protal liquid coatings are the coatings of choice by owners, oil and gas specifiers and contractors across North America.

## Corrosion Prevention - Buried Low Temperature Pipe Joints

## Denso Helps Cool Off The City Of Toronto

Deep water cooling of the downtown core of a major city. Pretty innovative thinking. Soon office towers and buildings in Toronto's downtown core will be cooling off with water drawn from the chilly depths of Lake Ontario, and they will be protected with Denso anti-corrosion products as well!!

In an expansion program deep below the city streets and in particular below the convention hall and cultural arts center, a project is being completed that is designed to use cold water from the depths of Lake Ontario to provide air conditioning to the complex of high rise office and residential towers in Toronto.

The high-rise towers need year round cooling and they are conveniently located beside a body of Lake Ontario water that reaches 85 metres in depth less than 5 kilometers offshore. This body of water also is permanently just above freezing (4.0 degrees Celsius).

By using this cold water, the Deep Lake Water Cooling project can replace air-conditioning technology that relies on electricity and fossil fuels. The project is capable of servicing 20 million square feet of office space (100 high rise towers) and is expected to reduce annual carbon

dioxide emissions by 40,000 tons and use up to 75% less energy than conventional electric chillers. This leads to significantly lower levels of pollution as well.

There is an additional benefit to this project. Spent water from the cooling phase is passed through a cold-energy transfer loop back into the city filtration plant to produce cooler potable drinking water for downtown.

The mechanics of this project begin with drawing cold water through three parallel, 600mm HDPE intake pipes from a depth of 85 metres, 5.6 kilometers south of the city out in Lake Ontario. These pipes are buried where water depth does not exceed 10 meters, in order to protect them from damage from large wave and current loads as well as marine traffic and anchors. Where water depth is greater than 10 meters, the pipe is laid on the lake bottom. Screens are provided at the intake to prevent fish and

other organisms from entering. The water is passed through a heat exchanger at a temperature of 4.7 degrees Celsius and exits at a temperature

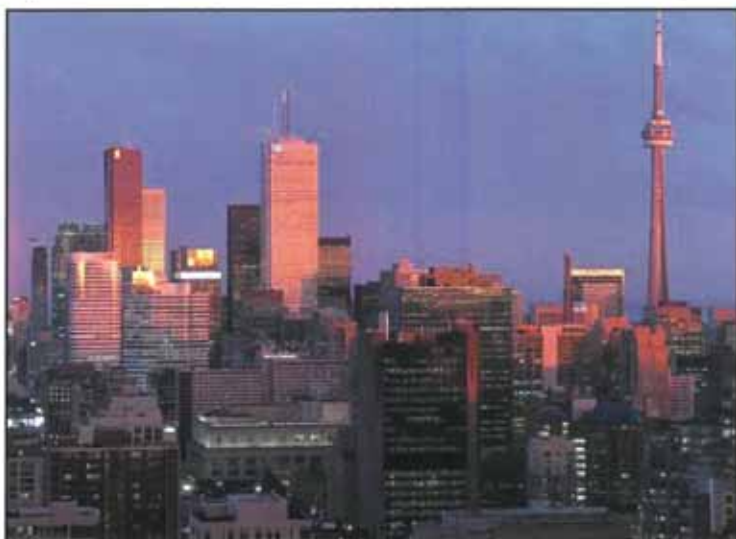


One of the project sites showing the famous CN Tower in the background.

of 12.5 degrees Celsius, travelling through the city's municipal water distribution system. Return water enters the exchanger at a temperature of 13.1 degrees Celsius and by borrowing more cold, fresh lake water is brought down to a temperature of 5.0 degrees Celsius. From here, it is pumped through 1200mm diameter pipes to an underground facility below the arts & convention center in the downtown core. From this underground chamber, it will be further chilled to 3.3 degrees Celsius and distributed to office & residential towers for air-conditioning circuits.

At these extremely cold water temperatures, there is only one tape product that can withstand this type of cold and still be flexible enough to be applied to pipes and fittings while in operation. The tape must also show all the attributes of petrolatum tapes and provide long-term corrosion protection and sealing. The product selected for this massive project was Denso LT tape, along with Denso Paste and Mastic.

The application involved assembling 1200mm flanged joints, which connected two steel pipe sections complete with a valve assembly. The sections



The Toronto skyline basking in the glow of the late evening sun.





A Denso protected valve assembly ready for installation.

were built on their ends, offsite and when put together stood about eight feet tall. The application of Denso Paste went

around the nut and bolt assemblies and the pipe sections along with a large amount of Profiling Mastic to fill the many voids. The irregular configurations on this section really highlighted the conformability of Denso Petrolatum Tape, which to the delight of the applicator made his job easier.

Once completed, the concrete lined assembly's weighing several tons had to be moved by crane onto a truck and then transported to the jobsite 60km away. Once onsite, the assemblies were lowered about 80ft below the road surface down to a tunnel, which had been bored using a huge vertical drilling machine.

The tunnel runs from Lake Ontario where the large diameter water pipes were then connected with the assemblies to the piping that runs underneath the city. Once the large diameter piping was protected and connected, the small diameter feeder pipes and valves that connect to the various office buildings were protected with the Denso Petrolatum System.

The uniqueness of this project offered insight into the environmentally sound potential for alternative ways of cooling. The project also allowed Denso to be part of this leading edge technology; the first of it's kind in Canada and one of very few in the world.

Corrosion Prevention - Buried Pipeline

# BassGas Onshore Pipeline Project

**In today's competitive environment, it is refreshing to see that quality comes before price (at least in some cases).**

After much time and rigorous material testing, Clough Engineering chose and specified

Denso's 3 Ply Butyl Tape System S43/R23, for the girth weld joint coating on the BassGas

Onshore Project. This project involved Denso providing joint protection for a 32km x 10" Ø multi-phase flow pipeline which is carrying domestic gas from the Lang Lang Gas Plant to Pakenham tying into the regional gas grid here in Victoria.

Despite an initially "higher" purchase cost to similar



alternative coatings, Clough Engineering insisted on using the Denso S43/R23 System to ensure coating integrity is not compromised.

The project has recently been completed with all parties (being Clough Engineering - (Managing Engineers), Origin Energy (owners) and A J Lucas (Contractors) happy with the performance of our product.

Denso 3 Ply Butyl Tape System protect pipe joints on the Bassgas Onshore Project.

Corrosion Prevention - Marine Bridge Piles

## Denso SeaShield Pile Protection for North Wales Bridge



A major refurbishment project was carried out in 1990 by Flintshire County Council on the bascule bridge over the River Dee at Queensferry, North Wales. It was decided to give longer life protection to the bridge, built in 1926 and particularly to the four 1.5 metre caissons, which were currently protected with a Denso SeaShield pile protection system

In the spring of 2002 an underwater survey of the caissons revealed that the SeaShield system was still in place on three of the caissons, but the outer jacket had slipped down on the fourth. Further examination showed that the slipped jacket had become loosened, possibly from impact by floating debris carried by the tide and current.

As the other three jackets were still in place and fully

protecting the caissons from corrosion after twelve years service, Flintshire County Council's Department of Transport and Planning decided to replace the system on the fourth caisson. After removal of marine growth, the area to be re-protected was wrapped circumferentially with a double layer of Denso Marine Piling Tape and a SeaShield 2000HD jacket secured over the tape. The installation was carried out

recently by Associated Diving Services of Manorowen, Fishguard.

Denso Marine Piling Tape, a cold applied petrolatum based tape for application under water is the primary corrosion protection in the Denso SeaShield system for jetty pile protection. New SeaShield 2000HD Jackets can now be easily tensioned around the pile to improve hoop-tension and prevent slippage.

SeaShield 2000HD applied to the bascule bridge over the River Dee at Queensferry, North Wales.



# 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

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.denson.com



18211 Chisholm Trail, Houston, Texas 77060,  
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.denson.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

Shop 10, 1 Westhaven Drive, Westhaven, Auckland,  
New Zealand  
✓ Anti-corrosion and sealing systems

Tel: +64 9274 1255  
Fax: +64 9274 1258  
Email: renee@denso.co.nz  
Website: www.densoaustralia.com.au



## SEASHIELD INTERNATIONAL

✓ Marine corrosion protection systems  
Denso House, Chapel Road, London SE27 OTR, England

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Most Denso products are covered by patents and the words "DENSO", "DENSYL", "ARCHCO-RIGIDON", "DENSOPOL", "DENSOCCLAD", "TOESTRIP", "CORROCLAD", "SYLGLAS", and "PROTAL" are registered trade names in the UK and many other countries.

## Would you like more information about our long-term corrosion prevention and sealing systems?

If you are interested in any of the products featured in this issue of the Denso Digest please tick box:   
 Please indicate page number(s):



We also offer tried and tested systems to deal with all the problem areas listed below, simply 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 previous page).**

Name: ----- Title: -----  
 Company: -----  
 Address: -----  
 -----  
 Phone: ----- **Denso** Fax: -----

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