

WINN & COALES INTERNATIONAL

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

✓ Corrosion prevention and sealing systems Denso House, Chapel Road, London SE27 0TR, England

PREMIER COATINGS LTD

✓ Membranes and corrosion prevention systems

Headcorn Road, Smarden, near Ashford, Kent TN27 8PJ, England

ARCHCO

✓ Corrosion resistant linings

Denso House, Chapel Road, London SE27 0TR, England

DENSO NORTH AMERICA INC. - CANADA

✓ Corrosion prevention and sealing systems

90 Ironside Crescent, Unit 12, Toronto, Ontario, M1X 1M3 Canada

DENSO INC. - USA

✓ Corrosion prevention and sealing systems

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DENSO SOUTH AFRICA (PTY) LTD

✓ Corrosion prevention and sealing systems

120 Malacca Road, Redhill Industrial Area, Durban North 4051 Republic of South Africa

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✓ Corrosion prevention and sealing systems

77-95 National Boulevard Campbellfield, Victoria 3061, Australia

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✓ Corrosion prevention and sealing systems

PO Box 76167, Manakau City, Auckland New Zealand

SEASHIELD INTERNATIONAL

✓ Marine corrosion protection systems

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140 Years Service to Industry

This year 2023, marks 140 years of trading for the company Winn & Coales International Ltd, well known as a manufacturer of highly specialised corrosion prevention and sealing systems for protecting above and below ground steel and concrete in demanding environments.

Over the years the company has gained an excellent worldwide reputation for the quality and long service life of its Denso and associated brand products and is now a major manufacturer and employer with subsidiaries in the UK, USA, Canada, South Africa, Australia and New Zealand.

This all began from a small business founded in the City of London...

140 Years - A Cause for Celebration



1883-1930 - Starting life as an import/export company:

In 1883, Paul Winn a young innovative entrepreneur, set up an import/export house in the city of London. The business initially specialised in exporting coke, a coal based fuel, to Germany and later expanded by importing goods such as starches, sugars, soda crystals and waxes.







In 1905, the company started its first manufacturing venture making soda crystals and Glauber salts. In 1916, Frank Coales joined the company that now traded as Paul Winn & Co. The company continued to expand which resulted in the manufacture of thorium nitrate used for gas mantles and in the 1920's a new factory located in Barking produced wall tiles. Plumbing and bathroom fittings were also made.

Due to the growth, the company was re-organised on a specialist departmental basis, dealing with building products, chemicals and starches. In 1929, the company took on the agency for a novel tape of German manufacture based on petroleum jelly which was designed for the corrosion prevention of steel pipes, pipe fittings and steel structures.

The speed and efficiency of Denso wrapping was impressive and had the distinct advantages

over hot applied pitch troughing methods.

1930 onwards - A bold new direction in corrosion prevention:

Sales grew steadily, In 1933, Paul Winn and Frank Coales entered into a joint partnership, establishing Winn & Coales Ltd. and began manufacturing Denso Tape under license in a factory premises in Stepney. A new Densotherm Tape, based on bitumen, was developed.





Early Densotherm and Denso Tape applications.

The manufacture of Denso products in London was to become a major turning point for the company and the beginning of a new focus on corrosion prevention and sealing. In 1938, Beckenham based Beney Lighters was acquired adding utility lighters and precision tools to the expanding product range. Through the following turmoil and destruction of World War Two the need for Denso Tape continued to increase sharply with the newly discovered applications of gasproofing houses, repairing damaged gas mains and repairing military vehicles, making demand outstrip capacity.



In the early 1950s in the aftermath of the war when the mammoth task of rebuilding the country began, the company moved to Chapel Road in West Norwood, London where the large attached plot of land would enable much more manufacturing capacity to such a degree that the UK head office and factory still remains there today. A new research and development laboratory was also established at the site which would turn out to be of great benefit to the company over the coming years and still is today.



Denso House in 1959.



The original R&D laboratory.

In the 1960s many new products were introduced and overseas trade continued to grow. Agents were appointed throughout the world and Partnerships were formed in Australia, New Zealand and South Africa as well as associate relationships with existing companies in Europe. The company's current extensive world-wide network owes most of its creation to this period.





Densopol Tape application.

Protal liquid coating application

CLE STORE

More growth and expansion:

Throughout the following years the company has continued to expand its product range manufacturing and introducing many new products including cold applied bitumen tapes, fire resistant tapes, marine protection systems and liquid coatings. New subsidiaries were formed in USA and Canada and a new Merchant Division was set up in the UK. More recently, Premier Coatings was acquired in the UK and Viscotaq was acquired in the USA. In recent years the subsidiaries in the USA, Canada, South Africa and Australia have all needed to enlarge their premises to keep up with demand.

Continued family involvement:

The company has always been a family business with strong family values and remains so. Paul Winn died in 1946 and Frank B Coales held the position of Chairman until his death in 1991 at the age of 102, having served the company for a record 75 years. His grandson Dr. Keith Erskine continues to represent the Coales family in his current role as Deputy Chairman. David Winn OBE the grandson of Paul Winn, joined the company in 1965 becoming Deputy Chairman two years later and then serving as Chairman from 1991 until his death in 2020. David's eldest son Christopher took over as Chairman and his brother James was appointed to the Board.

The Denso Digest:

Originally designed to be a snapshot of the company's activities during any one period of time, the first edition was published 56 years ago in 1966 and then at least twice a year ever since.



Continued commitment to serve industry:

The bold step towards a focus on corrosion prevention and sealing products in 1929 proved to be a very wise one for the company but a commercial life of fighting corrosion doesn't come without its challenges. It has been essential to constantly invest in quality research and development, new manufacturing technology and good capable staff to keep them at the top of their game. This continual investment over the years has resulted in the strong innovative company you see before you today, eagerly looking forward to the opportunities the future holds.

Background Image: The Second Severn Crossing, UK. Denso Void Filler protects post tensioning steel strands and stay cables. The Void Filler was pumped along 250m long cables to a height of 100m.



One of the company's greatest strengths is their brands:

Companies don't last long in the business of corrosion prevention and protection if their products are poor and it's a testament to the quality of Winn & Coales International's products that all of their major brands have withstood the test of time. Just take a look at the ages of their major product brands below, as of January 2023.



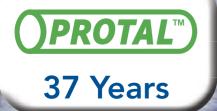












ARCHCO 34 Years



The following pages show a selection of recent applications from around the world...





Viscotaq™ System Used to Rehabilitate Pipe Sections on a Gas Pipeline in Mexico

Viscotaq[™] visco-elastic coatings were used to protect sections of a gas pipeline in Mexico. These self-healing, fully amorphous waterproof coatings were used to recoat the pipe sections during a recent coating rehabilitation project.

The project required that sections of the 48 inch gas pipeline were recoated with a Viscotaq system comprising an inner layer of Viscowrap using a 10% overlap followed by an outer layer of Viscotaq PVC Outerwrap using a 50% overlap.

The pipe surface is thoroughly cleaned prior to the Viscotaq application.

PROJECT SUMMARY

Product type: Coatings for Buried Steel

Country: Mexico

Object: 48 inch Gas pipeline

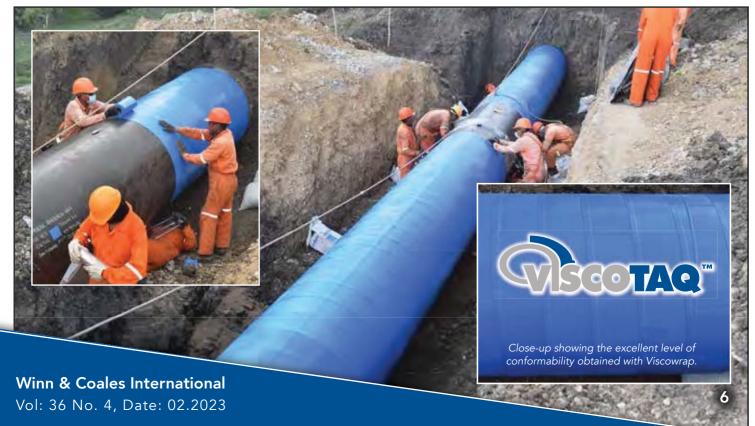
Problem: Corrosion prevention

Product

Solution: Viscotaq[™] Visco-Elastic System

The standard Viscotaq application was caried out as follows. First after cleaning, the visco-elastic inner layer is applied which bonds immediately to the surface of the pipe, conforming to every detail of the substrate.

Below: The application of the Viscowrap inner Layer.







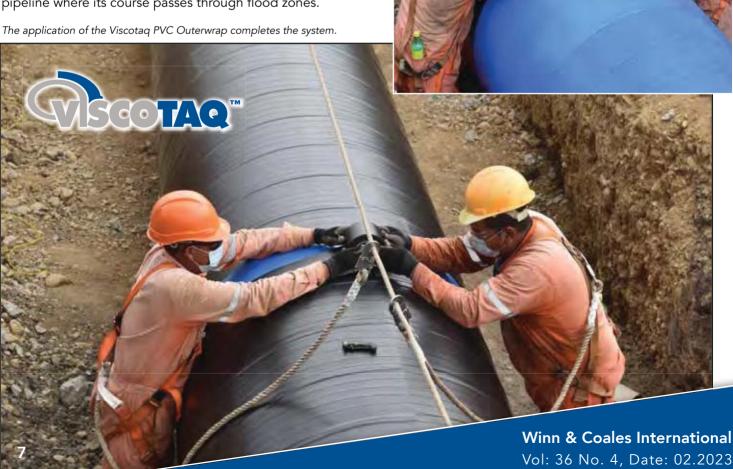
Holiday detection equipment used for routine check.

Then to complete the system, the outer layer is applied which also bonds and conforms immediately to the inner layer. The bonding is so complete that both layers meld forming one homogeneous layer on the pipe section. Each layer is tested individually for holidays and coating thickness during their application. Another great benefit of the Viscotaq system is that the pipeline can be buried immediately after application.

An additional requirement of this project was for the contractor to install concrete slabs to protect the pipeline where its course passes through flood zones.



Above: Testing the coating thickness.









Du-Pont (UK) Industrial Ltd were looking for a system to provide long-term protection to the duct pipe which carries caustic waste at their Maydown Plant which manufactures Kevlar.

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

Above: First, Denso Hi-Tack Tape is applied to the pipe.









A coat of Denso Acrylic Topcoat completes the Steelcoat system.

Previous liquid coating systems only gave a limited period of protection so after discussions with Winn and Coales (Denso) Ltd., and a trial being carried out on a small section of the duct pipe using the Steelcoat 100/400™ System, it was decided that this system would be used to protect approx. 500 metres of pipe.

The Steelcoat 100/400 System was supplied to DuPont by local stockist, Associated Pipeline Products and applied on site by AE Global with support from Winn and Coales (Denso) Ltd.

The Denso protected caustic waste duct pipe in service.

Coatings for Exposed Steel

Country: United Kingdom

Object: Caustic waste duct pipe

Problem: Corrosion prevention

Denso Steelcoat 100/400™ Product

Solution: System

The application involved a variety of wrapping techniques as the route of the pipe included areas where the gap to adjacent pipes was very small and there were a number of points where there were sharp changes of direction.









Abrasive Blasted Pipe Bends.

Through the years, Denso has worked with Owner Groups to test and have Protal 7200 approved for use on many projects. In 2014, CSA Z245.30-14 Field-Applied External Coatings for Steel Pipeline Systems was introduced to ensure that coatings had specified performance criteria. That required additional testing of which Protal 7200 passed all the required testing criteria.

Denso Canada established a procedure for approving application companies to spray apply Protal 7200. That included review of the application company quality control manual and applicator certifications. That was followed with actual product spray application and lab testing to assure competent application. This process has been repeated throughout the last 23 years for many approved application companies.

Country: Canada

Object: Steel pipeline bends
Problem: Corrosion prevention

Product

Solution: Protal 7200™

One approved application company is Advanced Coating Solutions who have been a leading innovator throughout Western Canada in the areas of abrasive blasting and various coating applications. Advanced was founded in 1970 on the belief that quality clients deserve quality work. They have partnered with companies such as Alberta Custom Pipe Bending. This project required bending and coating for numerous pipe bends before being sent to the field for installation. Alberta Custom Pipe Bending completed the pipe bends and Advanced Coating Solutions applied the Protal 7200. The application of Protal 7200 went smoothly and the pipe bends were delivered to the client on time and on budget.







Above: Plural Spray Application of Protal 7200.

Below: Protal 7200 Coated Pipe Bends.







Viscowrap™ used to Waterproof Apartment Balcony

WRAP Resources New Zealand have completed the first waterproofing application of Viscotaq™ in New Zealand since the company's acquisition by Winn & Coales International Ltd. Viscotag was selected to waterproof 35 balconies in Auckland. Contractors on site received training and accreditation which facilitated a high standard of workmanship. Four Viscotag products were used on the project including ViscoWrap ST, Viscotaq™ EZ Wrap, ViscoSealant & ViscoMastic.

The first stage of application involved the use of ViscoSealant & ViscoMastic which are an amorphous, semi-solid, highly conformable sealant/ mastic that offers excellent corrosion prevention and waterproofing properties. In this instance the contractor used both products to provide a seal petween joins on the balcony's extremities



Following this, ViscoWrap ST was applied over the top. ViscoWrap ST has excellent adhesion and permanent wetting characteristics which also acts as an impermeable barrier to moisture. It is labour efficient and can be cut and configured to address delicate corners and surfaces.

Viscowrap ST was then used over the ViscoMastic and Viscosealant.



PROJECT SUMMARY

Product type: Waterproofing

Country: New Zealand

Object: Apartment balcony

Problem: Waterproofing

Product

Solution: Viscotaq System™



Viscotaq EZ Wrap was the final stage of installation and was used over the top of

ViscoWrap ST which allowed the contractor to apply an acrylic topcoat. This project serves as a fantastic example of the capabilities of Denso's Viscotag range. The owners of the apartments have peace of mind knowing their balconies are 100% waterproof and they can enjoy Auckland's dazzling skyline for many years to come.

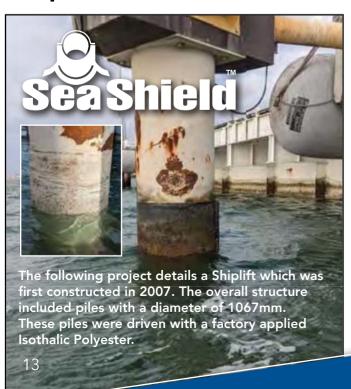






Two coats of Protal ST Epoxy were applied for this project resulting in a very happy returning customer who is assured that his shed floor not only looks great, but is well protected long term.

Shiplift Piles in Excellent Condition after 15 years



for its excellent adhesion. This ensures that any chips

that may occur when tools or engine components fall

to the floor, do not allow the coating to undercut or

continue to de-laminate and is easily repaired.

During the initial construction of the Shiplift, damage occured to the liquid coating on the piles. Because of this, Denso's SeaShield 2000FDTM system was selected as the corrosion protection solution for these damaged areas as it would comply with coating thickness requirements.

In 2022, when checking in on the Shiplift fifteen years later, it was found that the paint system was slowly deteriorating as a result of Accelerated Low Water Corrosion (ALWC). Upon finding this, the Denso SeaShield 2000FD system was specified to provide corrosion protection over the failing liquid coating on all of the piles. As part of this process, the contractor was asked to remove the existing SeaShield 2000FD jackets in order to replace them with new ones. Upon removal, it was found that the surface of the piles and the preexisting coating were both in excellent condition; a testament to the effectiveness of the SeaShield 2000FD system originally applied in 2007.







Using an abundance of caution during installation for HDDs, the pipeline operator specified that the weld joints be protected by a fiber reinforced ARO coating system. The contractor was using Denso Protal 7200 as the anti-corrosion coating on the field joint and as such chose to use the complimentary product also made by Denso and selected Bore-Wrap™ from the available options.

Product type: Coatings for Buried Steel

Country: United States of America

Object: Steel pipeline

Problem: Protection needed during boring

Product

Solution: Denso Bore-Wrap™







Failed pipe roller bearing.

Bore-Wrap was applied to each field joint area to protect the coating over the elevated profile as the pipe was dragged in. The contractor performed the pipe stringing and coating over a span of 3 days and pulled the pipe in on the 4th day. The project was going along as planned right up until the point when the pipe was to be lifted into position for the pull back to start. Unfortunately, during the lifting process one of the pipe rollers couldn't handle the load shifting and it forced the pipe over the edge of the roller. While this does happen from time to time, it is still a frustration because it typically causes damage to the anti-corrosion coating and sometimes even gouges the steel pipe which requires a cut out or repair.

In this instance it happened to occur as the Bore-Wrap was just above the roller. When the pipe dropped, the Bore-Wrap took the initial impact from hitting the bearing, and as the load continued to roll, the bearing housing broke while struggling to pass through the Bore-Wrap. Once the pipe had stopped shifting and it was safe to inspect the damage, the contractor found that the Bore-Wrap had absorbed all of the damage and none of the joint coating was damaged. Both the point of impact and the gouge from the point of the bearing breakage had failed to penetrate the Bore-Wrap. The contractor was able to again lift the pipe and proceed with the installation as planned without any further repair or mitigation needed.

Upon completion of the installation, the first joint of pipe was pulled out and inspected. Bore-Wrap had protected the coating on the joint and exited the bore hole with very little sign of wear. The circumstances of this HDD pull showed the products performance in terms of impact, gouge, abrasion, and flexibility, and the results speak for themselves.







STEELCOAT TO STEELCOAT

PROJECT SUMMARY

Product type: Coatings for Exposed Steel

Country: Republic of South Africa

Object: Steel pipeline

Problem: Corrosion prevention

Product

Solution: Denso Steelcoat 500™ System

Denso™ Acrylic Tape applied at 55% overlap.

Due to the 1200 mm Ø exposed pipeline situated over a river and close to the ocean, additional corrosion protection was required on the already polyurethane-coated pipeline.

The Steelcoat 500™ System comprises of: Denso Primer D™ (a deep penetrating primer), Denso™ Acrylic Tape (a tough acrylic backing laminated to a thick rubber bitumen adhesive compound) and Denso™ Acrylic Topcoat (single pack waterborne synthetic copolymer coating).

Below: The completed Steelcoat System coated with Denso $^{\rm m}$ Acrylic Topcoat.

The sub-contractor, VZ Coatings applied the Denso™ Acrylic Tape which was spirally wrapped at a 55% overlap and Denso were on site to assist the contractor during the application.

The project commenced in September 2019 and was completed in February 2020.

Winn & Coales International

Vol: 36 No. 4, Date: 02.2023







preferred system of choice for the corrosion prevention of the entire pipeline.

The sub-contractor TRD applied the provided products with the assistance of Denso's technical team.















PROJECT SUMMARY

Product type: Subsea Splash Zone Coating

Country: United Arab Emirates

Object: Jetty piles & marine structures

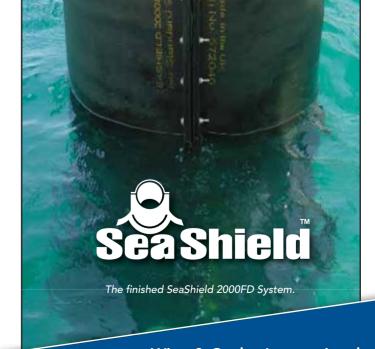
Problem:Corrosion preventionProductSeaShield 2000FD™ andSolution:SeaShield 70™ Systems



The piles being wrapped with SeaShield $^{\text{\tiny IM}}$ Marine Piling Tape.

After an intensive review of competitor systems available in the global market, the oil and gas operator selected SeaShield systems for the long-term corrosion control of their Jetty Piles & Marine Structures based on the systems excellent successful case histories throughout the world over the last 50 years.

The SeaShield systems were utilised for the protection of approx. 295 No. piles providing a protected height of 4 meters with pile diameters ranging from 30" to 42" diameter. The SeaShield systems were recommended by experienced Denso agents Bin Moosa & Daly Ltd and installed by Divetech Marine Engineering Services LLC.



Winn & Coales International Vol: 36 No. 4, Date: 02.2023

Paste \$105 is applied.

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 send us back this completed page and we will supply you with more information.

BURIED ONSHORE COATINGS

- External corrosion prevention for undergroud 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.

SUBSEA & 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 AND 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 email or post to your nearest Denso branch

(full list of addresses on page 2)

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