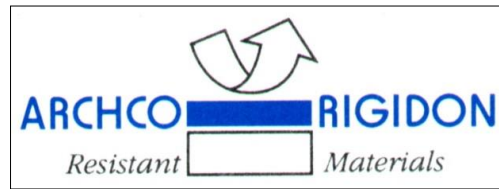


ARCHCO-RIGIDON REINFORCED CORROSION PREVENTION SYSTEMS

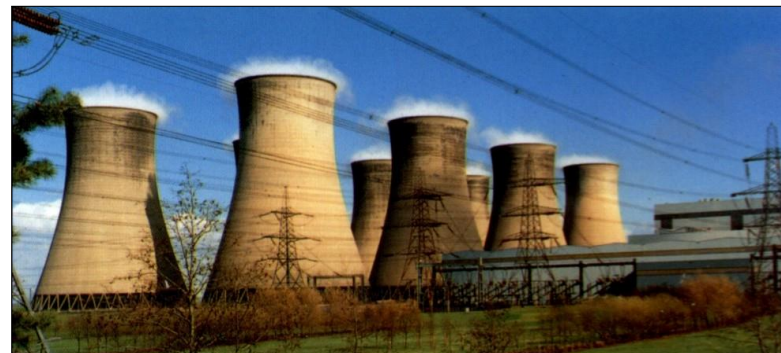
STEEL & CONCRETE TANK LININGS
FLOOR AND BUND PROTECTION
SPECIALITY COATINGS
VALVE & PIPE LININGS



Offshore



Chemical / Petrochemical



Power Generation

ARCHCO-RIGIDON

The history of Archco-Rigidon dates back to the early 1970's.

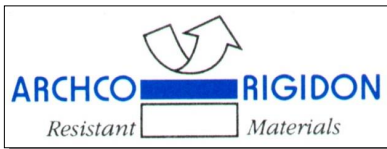
The Archco and Rigidon ranges of products developed their own extensive track records under the names of, in the case of Archco, Archco Ltd and Archco-Sprayglass Ltd and, in the case of Rigidon, Rigidon (UK) Ltd and Rigidon Resistant Materials Ltd. Both names became market leaders in the corrosion resistant lining field.

In 1989 Archco Ltd was acquired by Winn & Coales International Ltd.

In 1993 Rigidon Resistant Materials Ltd was also acquired by Winn & Coales International Ltd who, themselves, are not only known as market leaders with their Denso range of anti-corrosion wrapping tapes, but also have a growing involvement in the complementary technology of liquid coatings.

The Archco and Rigidon operations were combined to create the Archco-Rigidon Division of Winn & Coales to act as a major lining and coating manufacturer supplying through an established international network of outlets. Extensive track records in industries such as the offshore, power generating and chemical industries, dating back almost 20 years, have made Archco-Rigidon probably the most experienced supplier of its kind in the UK.

The combined financial and technical resources of the Winn & Coales Group has enabled Archco-Rigidon to build upon its already predominant position in the field of high performance linings and to develop the range of new and improved materials outlined in this brochure.



PRODUCTS & SERVICES

Archco-Rigidon corrosion resistant systems combine thermosetting resins with various types of reinforcements and fillers to produce tank linings, floor toppings and coatings that are able to resist most environments.

The standard range of products includes glass flakes reinforced linings and coatings, (which offer maximum protection to steel surfaces), and heavy duty concrete protection systems, (which prevent corrosion to tanks, bunds and floors). Custom design of systems is also considered.

All of the tank linings, coatings and flooring systems can be purchased for self installation or as an applied system direct from an Archco-Rigidon Approved Applicator (please consult Archco-Rigidon for advice).

Archco-Rigidon can provide technical support, applicator training, contract supervision and inspection services if required.

Besides being a major supplier in the UK, Archco-Rigidon has an extensive network of sales outlets worldwide.

ABOUT THE PRODUCTS

LININGS AND COATINGS

Archco-Rigidon linings and coatings are designed specifically to protect steel and concrete surfaces from aggressive environments.

As well as having excellent corrosion resistance our systems have superior bond and permeation resistance and, where resistance to abrasion, impact and undercutting is important, many of the Archco-Rigidon lining systems greatly exceed the capacity of competitive materials.

The coefficient of expansion is a closely matched to that of the substrate, whether steel or concrete, which ensures that the bond is unaffected over a wide range of temperatures.

Most materials are cold curing and can be applied either on site or in works. They are liquid during application, allowing for the quick and easy coating of complex shapes as well as the complete restoration of corroded or pitted surfaces. Most systems will harden rapidly and can be put into light service conditions within a few hours.

FLOORING AND BUND PROTECTION

Archco-Rigidon chemical resistant flooring and bund linings are formulated from high performance resins and are reinforced, for maximum strength, with membranes such as woven glass fabrics.

Their resistance to liquid penetration is so good that they can also be used for lining concrete tanks for the total containment of aggressive chemicals.

SPECIALITY PRODUCTS

The Archco-Rigidon policy of research and development has led to many new resin based products being brought onto the market, these include:

Heatshield	A lining resistant to both sea water and caustic at temperatures up to 150°C
Enviroshield	A dual skin lining which can be linked to an electronic monitoring system to give immediate warning of lining failure.
701 ESR	A lining for concrete bunds and tanks which is resistant to 96% sulphuric acid and 40% caustic at ambient temperatures

OUR PHILOSOPHY

To produce the best quality products, at reasonable prices, backed by prompt and efficient service.

REINFORCED CORROSION CONTROL LININGS

GLASS FLAKE LININGS

Archco-Rigidon glass flake linings are designed primarily for the protection of steel and are formulated from high performance resins combined with glass flakes.

The combination of high performance resins and glass flakes produces linings with outstanding performance characteristics. They can be applied by spray, brush or trowel.

In each system there will be approximately 125 layers of glass flakes in each 1mm thickness of lining.

PRINCIPAL ADVANTAGES

- * Outstanding chemical and temperature resistance
- * Improved resistance to permeation
- * Excellent resistance to: Undercutting * Abrasion * Erosion * Impact
- * Profile restoration – can be used as a filler
- * Ability to follow contours
- * Flexible up to the deformation point of steel
- * Easy to repair
- * Can be used with Cathodic protection
- * Machinable
- * Long life, low cost
- * Rapid cure

LAMINATED SYSTEMS

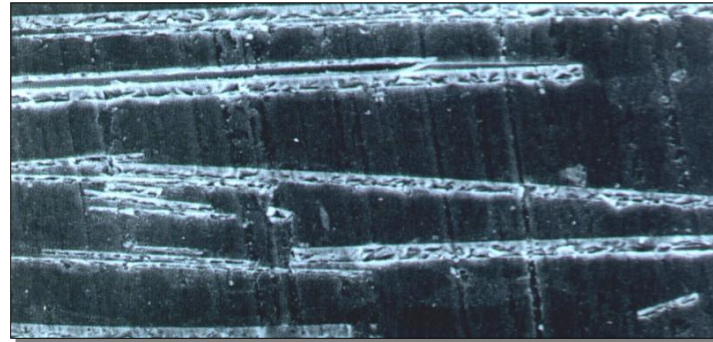
These linings are intended for the protection of either concrete or steel and are reinforced with membranes such as woven glass cloth, chopped strand mat, or synthetic cloth.

The use of the reinforcement helps to modify the expansion and contraction characteristics of the lining to more closely match that of the substrate. This allows the lining to operate at elevated temperatures and under fluctuating temperature conditions. It also reinforces the lining so that it can withstand physical abuse and impact damage as well as minor substrate integrity failures, e.g. 'hairline' cracks in concrete.

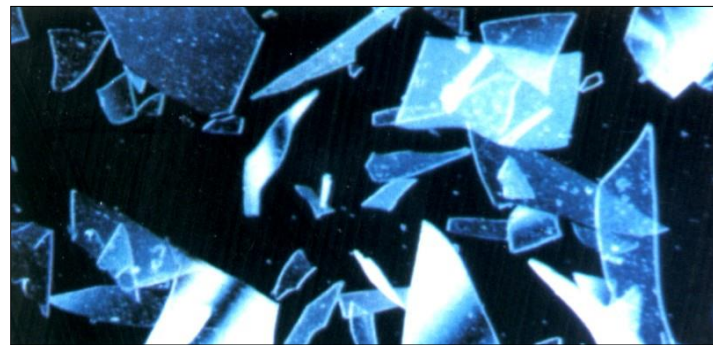
Carbon fillers are used when the lining is to be exposed to Hydrofluoric Acid, caustic, etc.

PRINCIPAL ADVANTAGES

- Outstanding chemical resistance
- Complete protection for the substrate if exposed to physical or mechanical abuse
- A monolithic system (unlike, for example, rubber or tiles)
- Easy to repair
- Will bridge live cracks
- Long life, low cost
- Rapid cure

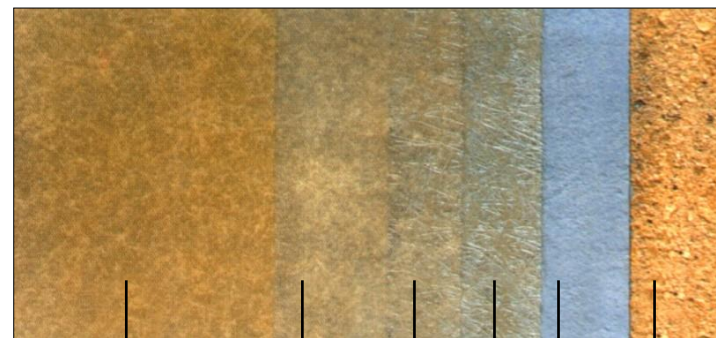


Section through a glass flake lining showing even distribution throughout the resin and their alignment to the substrate



Magnified view of glass flakes

600 Series showing stages of coating



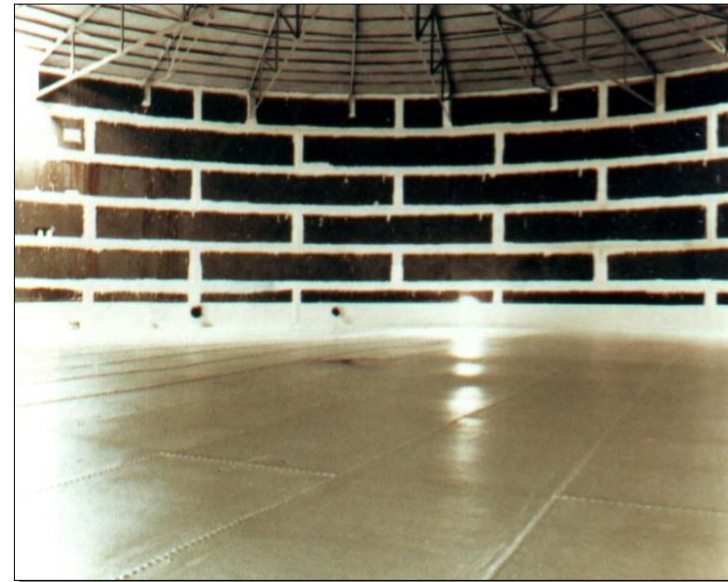
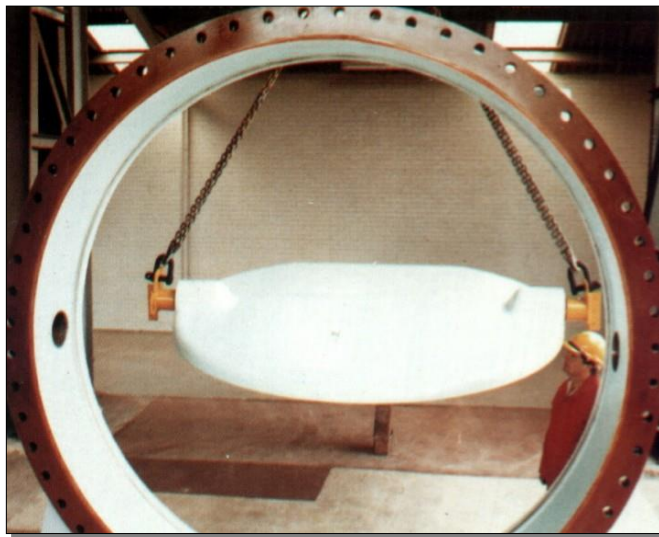
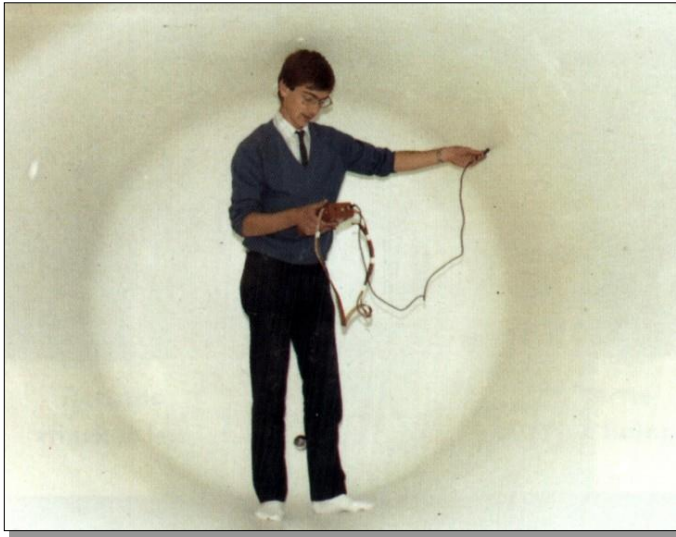
Top coat Reinforcement Filled base coat Prepared & primed concrete



700 Series showing stages of coating

SYSTEM	DESCRIPTION	Method of Application	Applied Thickness (approx.)	Designation	Substrate	Temperature Limits	
						Immersion	Fumes / Spillage
FLAKE FILLED COATINGS							
200 SERIES	Lining and coatings, reinforced with inert flakes, which are specifically recommended for use in sea water applications and water treatment industries for both internal and external protection	Spray or brush	1 mm	Coating or lining	Steel	60°C (140°F)	90°C (200°F)
GLASS FLAKED LININGS							
400 SERIES	Medium duty linings which are reinforced with glass flakes. These systems are suitable in immersion conditions for duties which include severe chemical environments.	Spray or brush	1 mm	Lining	Steel	60°C (140°F)	90°C (200°F)
			2 mm	Lining	Steel	100°C(212°F)	170°C(338°F)
500 SERIES	Heavy duty linings which are reinforced with glass flakes. These linings offer the ultimate in chemical resistance with the glass flake range of materials and can operate at temperatures up to 100°C under immersion conditions. These linings may also be used where abrasion and erosion resistance is more critical.	Spray or trowel	2 mm	Lining	Steel	100°C(212°F)	170°C(338°F)
FILLED REINFORCED LININGS							
600 SERIES	Linings which are formulated from resin and glass fibre reinforcement together with a filled base coat. These linings are specifically recommended when a lining with a resin rich top coat is required for maximum chemical resistance.	Trowel and hand lay-up	3mm – 4mm	Lining	Steel or concrete	75°C(170°F) 60°C(140°F)	75°C(170°F) 60°C(140°F)
700 SERIES	A silica filled, glass cloth reinforced series of linings designed for heavy duty concrete and flooring protection, but can also be used on steel.	Trowel	3mm – 4mm	Lining	Concrete flooring	75°C(170°F)	150°C(300°F)
SPECIALITY COATINGS							
HEATSHIELD	A specially developed lining for the offshore industry which is resistant to sea water and oil at operating temperatures up to 150°C maximum. The lining has a hard high gloss finish.	Spray	400 microns	Lining	Steel	150°C(300°F)	150°C(300°F)
FILTERLINE	A lining which has been specifically developed for use in swimming pool and industrial filters. Resistant to chlorine, ozone and back flushing.	Spray or brush	1 mm	Lining	Steel	70°C(160°F)	70°C(160°F)
TANKERLINE	A lining developed for use in road and rail tankers carrying aggressive chemical products or acid waste. A specially developed top coat gives resistance to Hydrofluoric Acid.	Spray or trowel	2 mm	Lining	Steel	100°C(212°F)	100°C(212°F)
RIGSPRAY	A system, applied in a single coat, which provides long term protection of steel structures subjected to marine environments.	Spray or brush	0.8 mm	Coating	Steel	60°C(140°F)	90°C(200°F)

The chemical resistance of each of the 200 to 700 series is governed by the resin used. The resins have been given a reference letter and the chemical resistance of each of these can be found in the Archco-Rigidon Corrosion



**200 SERIES**

These linings are primarily recommended for use on offshore oil applications and in the water industry.

The 200 series systems are typically used to line storage tanks, holding water or mildly aggressive chemicals, and pipework internals. They are often used as external coatings.

**400 SERIES**

These products will resist a wide range of chemicals with certain grades being suitable under immersion temperatures up to 100°C. They are particularly suitable for offshore applications where the Archco-Rigidon 403D, in particular, has an extensive track record in lining process vessels and equipment.

The Archco-Rigidon 423D has been extensively used as a tank lining and for the lining of equipment such as valves and pump casings in both the power generating and the chemical industries.

**600 SERIES**

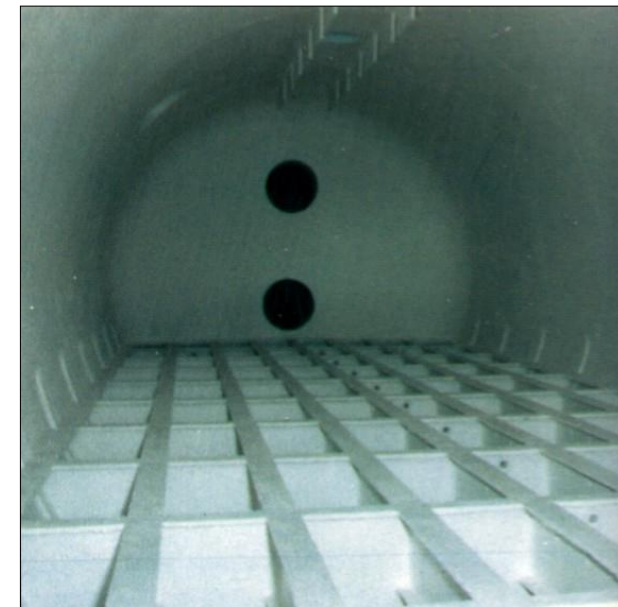
This is a series of linings which is designed to give the optimum chemical performance.

The 600 series linings are typically used to line or coat concrete but are equally effective in lining steel. The Archco-Rigidon 603D and 623D are examples of products that have been extensively used to line bunded areas and storage tanks, particularly in the power generating and chemical industries.

500 SERIES

The range of products offers the best performance of all the glass flake reinforced linings as well as being unaffected by immersion temperatures up to 100°C.

The percentage and size of glass flakes used in these linings reduces their permeability by a factor of 20. These systems can be used in some similar situations to the 400 Series. They offer superior abrasion and erosion resistance where the design and shape of the substrate allows the 500 series materials to be used.

**700 SERIES**

These systems are intended primarily to protect concrete in areas which are subject to severe chemical attack and physical loading. Areas where they are specifically recommended are chemical storage and effluent treatment tanks, bunds, etc. They can also be used to protect floors drainage channels and sumps.

These linings will withstand vehicle and pedestrian traffic.

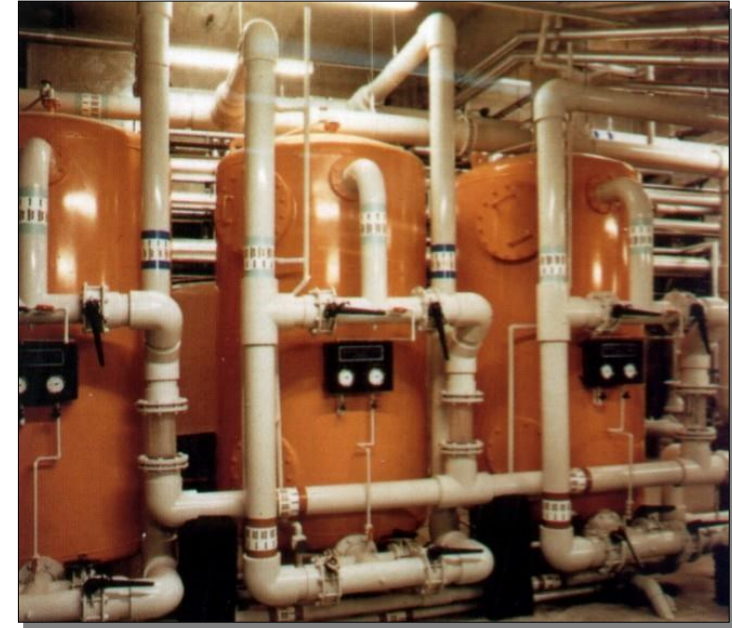


**HEATSHIELD**

Heatshield has been designed for the offshore industry to extend the temperature range over which conventional Archco-Rigidon linings can operate. It is resistant to sea water and oil and can be applied to pipeline and tanks operating at temperatures up to 150°C. The lining has a hard high gloss finish.

FILTERLINE

Filterline is designed for the long term protection of industrial and swimming pool filters. It is resistant to both ozone and chlorine. This lining is unaffected by abrasion resulting from back flushing.

**TANKERLINE**

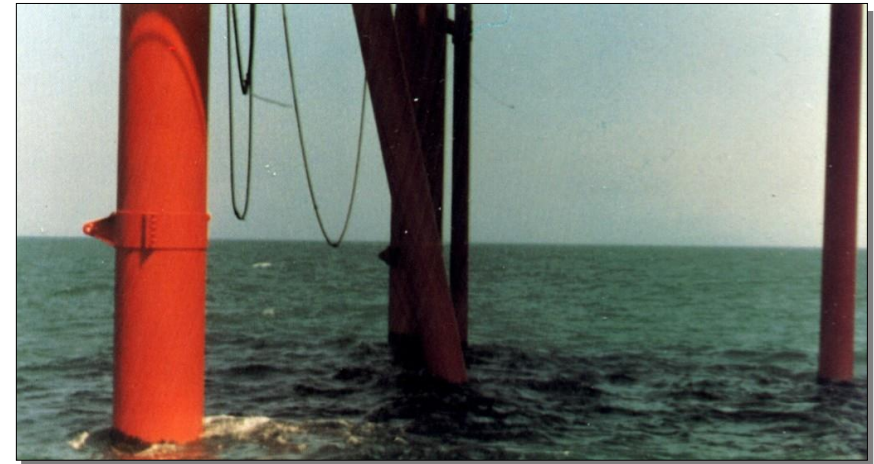
Tankerline is a product which has been specially developed for use in chemical and effluent carrying road or rail tankers.

Tankerline incorporates a special top coat which makes it suitable for use with spent Hydrofluoric Acid.

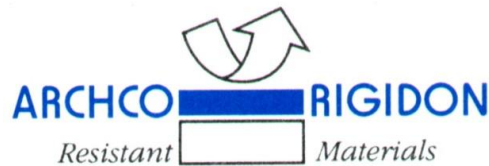
This lining is unaffected by the stresses imposed upon it when the tanker is being filled under vacuum or by the impact and flexing imposed on the tanker when going over uneven ground.

RIGSPRAY

Primarily designed as a one coat, long lasting, anti-corrosion system to be applied to the likes of splash zones and underdeck areas on offshore platforms. Rigspray can be used on all structures and pipework where protection against severe marine environments, or mild chemical environments, is required.



WHERE ARCHCO-RIGIDON MATERIALS ARE USED



The high performance characteristics of Archco-Rigidon materials give a wide and varied range of applications, particularly in the following areas:

CHEMICAL PROCESS INDUSTRY

Tanks • columns and towers • pumps and blowers • vessels
Sumps • floors • steelwork

OIL INDUSTRY

Separators • free water knockout drums • desalters
Depurators • reflux vessels • deaerators • Christmas trees
Choke spoils • storage tanks • gas scrubbers • filtration equipment
Splash zones • legs • pipework • potable water tanks

TRANSPORT INDUSTRY

Road/rail tankers • ships hulls • ballast tanks
Cargo lines • railroad hopper cars

POWER GENERATION INDUSTRY

Cooling water systems (including pumps, valves, pipework,
Concrete culverts, sumps and outfalls)
Water treatment plant (including sumps, cation vessels, trenches and floors)
Cooling ponds • flask washdown bays • active sludge tanks
Laboratory floors • chimney stacks • fans
Scrubbers • ductwork

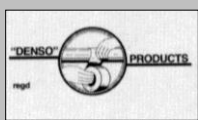
FOOD INDUSTRY

Food storage tanks • effluent tanks • drains
Floors • valves

WATER AND SEWAGE INDUSTRY

Basins • chemical tanks • potable water tanks
Trenches • pipelines • valves

Whilst the information displayed in this leaflet is thought to be accurate, users should independently evaluate the suitability of each product for their own particular use. Archco-Rigidon Ltd disclaims any liability regarding the accuracy of information and its usage.



Archco-Rigidon, A Division of Winn & Coales (Denso) Ltd, Denso House, Chapel Road, London SE27
OTR

Tel: 0181-761 6244 Fax: 0181-761 2456 email: mail@denso.net Website: <http://www.denso.net>

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