



Authorized Sales Agent in Japan



The Pioneer of Anti-Corrosion  
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## THE DENSO ANTI-CORROSION SYSTEM

DENSO TAPE  
DENSYL KF TAPE  
DENSO COLOUR TAPE  
DENSO HI-TACK TAPE  
DENSO HOTLINE TAPE  
DENSO MARINE PILING TAPE  
FILLERS/PASTE (PRIMER)

DENSO



KITA-NIHON BOSHOKU CO., LTD.

## Old, and New

The Denso anti-corrosion system is based on a series of Denso products for anti-corrosion, water-proof and sealing purposes which have been manufactured and marketed since 1930 by Winn & Coales (Denso) Ltd. of Great Britain. Its anti-corrosive principle works by closely adhering to the surface of the metal with a highly chemical-resistant and weather-resistant special compound that does not evaporate nor harden and which provides a perfect sealing of the metal from the sources of corrosion such as moisture and air. Based on this simple principle, the Denso system has been researched and developed to adapt itself to the various places of the various environments.

Currently, the Denso products are manufactured in 5 countries including the Great Britain, and they are widely applied in every field of industries such as gas, water supply, petroleum, chemistry, shipbuilding, steel, construction, etc., in more than 140 countries of the world including Japan. And as the protection against corrosion is being increasingly acknowledged through the entire society, the demand for the Denso anti-corrosion system is also rising. Their achievement and credibility are highly appreciated.



Even the application on the complicate shape, or under the severe climate, Excellent anti-corrosion and water-proofing can be achieved.

## The excellent characteristic features of the DENSO Anti-corrosion tapes

quality

Since the Denso tapes are never harden, they can be used in any environment with having the excellent anti-corrosion effect. Once its ingredients contact with steel, hard and dense film is formed on the surface of the steel, of which film inhibits the progress of the rust formation and the outstanding anti-corrosion effect is realized. The tapes can be applied to any material and any shape. No heating is required at the moment of application. It will not degenerate nor peel off under the unstable weather and temperature. Even under the extremely low temperature, the same effects for anti-corrosion and water-proofing can be obtained. In addition, the Denso anti-corrosion tapes are highly resistant to acids, alkalis, salts, bacterias and severe climate. It also has a excellent capability to prevent the penetration of water, vapor and gas.

## The characteristic features of the DENSO Anti-corrosion tapes

quality

- Long-term protection.
- It can be applied to any material and any shape.
- It can be used in any environment.
- The construction period can be reduced as the pre-treatment is not required.
- The maintenance cost can be reduced.





Denso Tape



Densyl KF Tape



Denso Colour Tape



Denso Hi-Tack Tape



Denso Hotline Tape

### Product Size and Package

DENSO TAPE Series	Size	Nos.of rolls
	50 <sup>m</sup> × 10m	36 rolls
	75 <sup>m</sup> × 10m	24 rolls
	100 <sup>m</sup> × 10m	18 rolls
	150 <sup>m</sup> × 10m	12 rolls
	200 <sup>m</sup> × 10m	8 rolls
	250 <sup>m</sup> × 10m	6 rolls
	300 <sup>m</sup> × 10m	6 rolls

### PRODUCTS LIST

PRODUCTS	Characteristic/Usage	Temperature		Primer/Application	Length	Thickness	Weight (/m)	Composition	Physical property
		Application	Operation limit						
<b>DENSO TAPE</b>	Denso Basic product Anti-corrosion/Water-proof can be applied above/under ground, in the water, on the steel/cable. (Eq. JIS Z 1902-1)	-5°C~45°C	55°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>	10m (min.)	1.15mm (Avg.)	1.44kg (Avg.)	Non woven synthetic fiber fabric impregnated and coated with a compound based on petrolatum, inert siliceous fillers and special anti-rust materials.	Tensile strength ———— 200N/50mm (min) Elongation at break ———— 10% (Avg.) Breakdown Voltage (50%overlap) —16KV (min.) Resistance to Cathodic Disbondment (ASTM G8 30d) ———— <500mm <sup>2</sup> Resistance to Acids, Alkalis, Salts ———— EXC
<b>DENSYL KF TAPE</b>	Same as Denso Tape Higher heat-resistant Wider temperature range. Incombustible (Eq. JIS Z 1902-2)	5°C~55°C	65°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>	10m (min.)	1.15mm (Avg.)	1.44kg (Avg.)	Almost same characteristics as Denso Tape. The heat resistant material is added to be applied in the tropical zone.	Tensile strength ———— 200N/50mm (min) Elongation at break ———— 10% (Avg.) Breakdown Voltage (50%overlap) —16KV (min.) Resistance to Cathodic Disbondment (ASTM G8 30d) ———— <500mm <sup>2</sup> Resistance to Acids, Alkalis, Salts ———— EXC
<b>DENSO COLOUR TAPE (Grey, Blue)</b>	Anti-corrosion/Water-proof for the pipes and cables in the area to be accommodate with environment.	0°C~50°C	60°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>	10m (min.)	1.5mm (Avg.)	1.25kg (Avg.)	The main component is Petrolatum added chemically stable colour. The other components are same as Denso Tape.	Tensile strength ———— 200N/50mm (min) Elongation at break ———— 10% (Avg.) Breakdown Voltage (Single wrap) — 8KV (min.) Resistance to Acids, Alkalis, Salts ———— EXC Resistance to weather ———— EXC
<b>DENSO HI-TACK TAPE</b>	Anti-corrosion for steel structure above the ground. Specially, suitable for pasting works.	5°C~50°C	65°C	<ul style="list-style-type: none"> <li>● Denso Hi-Tack Primer can be used.</li> <li>● Hand wrapping Hand pasting</li> </ul>	10m (min.)	1.15mm (Avg.)	1.44kg (Avg.)	Non woven synthetic fiber fabric impregnated and coated with a highly adhesive compound based on Petrolatum, polymer and inert siliceous fillers.	Tensile strength ———— 200N/50mm (min) Elongation at break ———— 6% (Avg.) Breakdown Voltage (50% overlap) —16KV (min.) Resistance to Acids, Alkalis, Salts ———— EXC
<b>DENSO HOTLINE TAPE</b>	Anti-corrosion for the pipes for liquid and gas. Most suitable for copper, iron and steel pipes in the concrete, under ground pipes and ducts.	5°C~50°C	110°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used as the preliminary anti-corrosion.</li> <li>● Hand wrapping</li> </ul>	10m (min.)	1.4mm (Avg.)	1.44kg (Avg.)	Anti-bacterial woven synthetic fiber fabric impregnated and coated with a compound based on Petrolatum, polymer and inert siliceous fillers. Lined by transparent plastic film which remains during application.	Tensile strength ———— 200N/50mm (min) Elongation at break ———— 15% (Avg.) Breakdown Voltage (50% overlap) —16KV (min.)
<b>DENSO MARINE PILING TAPE</b>	Anti-corrosion for the steel piles in the pier and other marine structures under wet condition or submerged. Core product of the Denso Seashield System for the protection of steel piles in the pier.	5°C~35°C	45°C	<ul style="list-style-type: none"> <li>● Primer is not required, except in case the pitting depth is more than 1mm, use the Denso S 105 Primer.</li> <li>● Hand wrapping</li> </ul>	10m (min.)	1.3mm (Avg.)	1.62kg (Avg.)	Almost same characteristics as Denso Tape. Non woven synthetic fiber fabric impregnated and coated with a compound based on inert siliceous fillers, water-repellent and anti-bacterial material against wide range of marine lives. Lined by transparent plastic film which remains during application.	Tensile strength ———— 200N/50mm (min) Elongation at break ———— 10% (Avg.) Resistance to Cathodic Disbondment ———— EXC

## The excellent characteristic features of the DENSO FILLERS

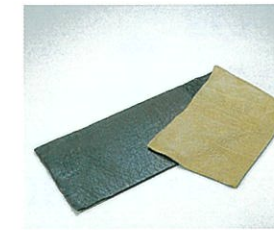
*quality*  
Densyl Mastic is a cold applied self-supporting mastic. Having excellent characteristic features, it can be used for sealing, filling and caulking applications where a protective, water-proof and non-setting mastic is required. Suitable for wide range of temperature.

## The characteristics of the DENSO FILLERS

- character*
- The Mastic can be used in normal temperature.
  - Highly protective, water-proof and non-setting. It can be applied in the wider range of the temperature.
  - Suitable for wrapping and profiling on the irregular shape.



Densyl Mastic



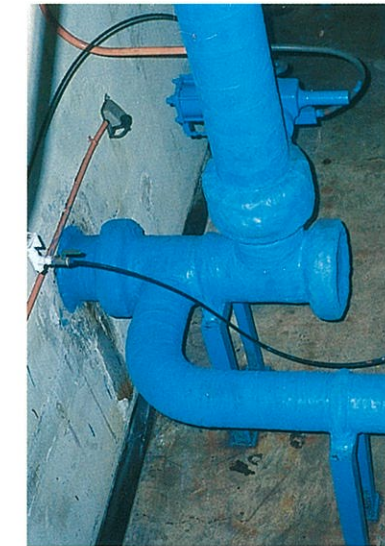
Densyl Mastic Blanket



Denso Colour Tape Mastic



Denso Profiling Mastic



## PRODUCTS LIST

PRODUCTS	Characteristics & Usage	Temperature		Primer & Application	Thickness Width Length	Weight (per m <sup>2</sup> )	Composition	Physical property	Size/Weight Nos. per Package
		Application	Operation limit						
<b>DENSYL MASTIC</b>	Filler based on the Petrolatum. Sealing of the pipes, cables, other gaps. Suitable for profiling the irregular shapes such as valves and flanges to facilitate wrapping tapes.	0°C~70°C	90°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>			The same as Densyl KF Tape, Petrolatum compound with vegetable fibers. Formulated clay-like block.	Specific gravity ————— 1.39 Specific volume ————— 720cm <sup>3</sup> /kg Flash point ————— >180°C Colour ————— Green/Brown	3 kg 6 bags/case
<b>DENSYL MASTIC BLANKET</b>	The same character as Densyl Mastic. Suitable for profiling the flanges with bigger diameter since supplied as the sheet form.	0°C~50°C	70°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>	Thickness 10mm ~12mm  Width 250mm  Length 1m	14.9kg	The same compound as Densyl KF Tape, with vegetable fibers. Formulated clay-like sheet lined by non-woven fiber fabric.	Specific gravity ————— 1.39 Colour ————— Green/Brown	10mm×250mm×1m 5 sheets/case
<b>DENSO PROFILING MASTIC</b>	The same character as Densyl Mastic. With having the smaller specific gravity, it can minimize flexure and drop by weight itself. Suitable for profiling the area required large amount of filler.	0°C~45°C	60°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>			Petrolatum compound with porous polymer beads and outflow-retarder. Formulated clay-like block.	Specific gravity ————— 0.605 Specific volume ————— 1653cm <sup>3</sup> /kg Flash point ————— >185°C Colour ————— Dull Cream	3.5kg 4 bags/case
<b>DENSO COLOUR TAPE MASTIC</b>	For profiling in case of applying Denso Colour Tape. With having the smaller specific gravity, it can minimize flexure and drop by weight itself.	0°C~45°C	65°C	<ul style="list-style-type: none"> <li>● Denso Paste/ Denso Priming Solution can be used.</li> <li>● Hand wrapping</li> </ul>			Petrolatum compound with porous polymer beads, pigments and outflow-retarder. Formulated clay-like block.	Specific gravity ————— 0.7 Specific volume ————— 1430cm <sup>3</sup> /kg Solids ————— 100% Flash point ————— >185°C Sagging temperature ————— 75°C Colour ————— Light stone (Pumice)	3.75kg 4 bags/case

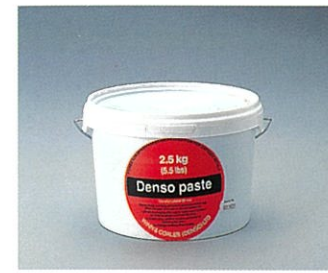
# Denso® PASTE (PRIMER)

## The excellent characteristic features of the DENSO PASTE

It displaces water from the substrate and inhibit the progress of corrosion. It can be applied by brush for the wider area or pasted with having highly adhesive character. Any type of Pastes can exhibit its excellent characteristics and capabilities.

## The characteristics of the DENSO PASTE

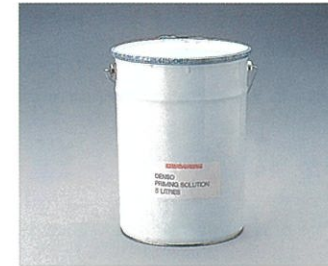
- It displaces moisture and inhibits corrosion.
- No drying, no hardening and no cracking.
- A stable protective film is formed on the surface of the metal substrates
- It enhances the adhesive force between tape and metal surface.



Denso Paste



Denso Hi-Tack Primer



Denso Priming Solution

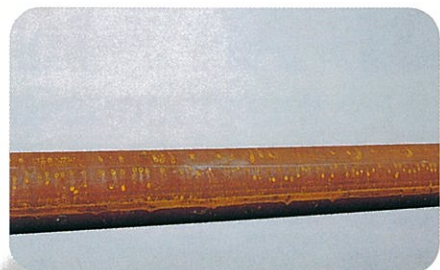


## PRODUCTS LIST

PRODUCTS	Characteristics and Usage	Temperature		Appli- cation	Composition	Physical property	Weight/Volume Nos. per Package
		Application	Operation limit				
<b>DENSO PASTE</b>	A primer used for the Denso Petrolatum Tape. Having anti-corrosive feature, it can be used for the protection of screws, spindles and etc., (Eq. JIS Z 1903)	0°C~40°C	55°C	Hand or Cloth	The main component is Petrolatum, including the corrosion inhibitor and the moisture-displacement material. A dark brown paste	Specific Gravity ————— 1.08 Specific Volume ————— 925cc/kg Solids ————— >98% Flash Point ————— 180°C (Min.) Coverage ————— 2~5m <sup>2</sup> /kg	2.5kg 4 cans/case  25kg/can
<b>DENSO HI-TACK PRIMER</b>	Highly adhesive primer. Used for the Denso Hi-Tack Tape.	0°C~50°C	65°C	Brush	A semi-solid primer based on Petrolatum with high melting point, which is immersed in the petroleum solvent.	Specific Gravity ————— 0.91 Solids ————— >70% Flash Point ————— 32°C (Min.) Coverage ————— 5m <sup>2</sup> /ℓ Drying time ————— ca. 60minutes	5ℓ 4 cans/case
<b>DENSO PRIMING SOLUTION</b>	A primer used for the Denso Petrolatum Tape. Suitable for the application of wider area.	-20°C~55°C	—————	Brush or Spray	A primer based on petrolatum, which is immersed in the petroleum solvent.	Specific Gravity ————— 0.89 Viscosity (BS/B4 Cup@25°C) ————— 55~70sec. Flash Point ————— 32°C (Min.) Thickness/dry film ————— 50μ (Avg.) Coverage ————— 9m <sup>2</sup> /ℓ Drying time ————— ca. 60minutes	5ℓ 4 cans/case  25ℓ /can
<b>DENSO PASTE S105</b>	A primer used for Denso Petrolatum Tape applied in the submerged and highly damp area.	5°C~40°C	50°C	Hand or Cloth	A primer, based on the soft petrolatum including water-displacement, corrosion inhibitor and the anti-bacteria for wide range of marine life.	Specific Gravity ————— 1.08 Specific Volume ————— 925cc/kg Solids ————— 100% Flash Point ————— 180°C (Min.) Coverage ————— 2~5m <sup>2</sup> /kg	2.5kg 4 cans/case  25kg/can



## Application Procedure



**1** Select the most suitable tape, considering the environmental conditions.



**2** Prepare the surface of the substrate. Wipe out the moisture by cloth. The rusts shall be removed by wire brush.



**3** The surface shall be primed with the suitable primer.



**4** A tape of appropriate width shall be wrapped with a 50% overlap, applying slightly tension. Finish with double wrapping.



**5** After application, the tape shall be smoothed by hands to ensure intimate adhesion.



**6** Finally, confirm the beautiful workmanship.

## As time goes by, the excellent characteristics of the DENSO ANTI-CORROSION SYSTEM will be appreciated more than ever

The surface of the pipes on the pier after 17 years since construction.



None of the rusts can be seen on the pipes protected by Denso products, despite those pipes have been operated under the severe marine environment for many years. If you compare the support pipe which was coated and connected to the structure (center left), the difference is very clear.



The left picture shows the condition after removed the old tape for re-wrapping work. The substances on the pipes are the petrolatum compounds. Still, the letters on the pipe can be read as the same shape as delivery. This will be the best evidence showing the excellent performance of Denso Anti-Corrosion System.

Manufacturer

**WINN & COALES (DENSO) LTD**  
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Certificate No. FM 01548  
BS EN ISO 9001:2008