



TRENTON

WAX-TAPE[®] SYSTEMS

An effective, long-lasting anticorrosion system for the toughest environments.

Designed to fit any irregular shapes and structures, protecting assets where no other conventional materials can match.

Strong UV resistance properties making it suitable for outdoor use, lasting for over 20 years.

Suitable for all industries. (Refineries, Petrochemical, Storage Facilities, Utilities, Mining, Ports & Terminals, Pharmaceuticals, etc.)



Reducing the TOTAL COST



Effective control of Total Cost

With Trenton Wax-Tape,

1. Simple surface preparation with no blasting required, reducing pollution, cutting labor and equipment expenses.
2. Simple and forgiving application procedure with high tolerance to weather conditions, quality assurance and inspection is made easy.
3. Application is done when needed, as desired, no more delay due to contractors, labors and equipment management.
4. Long lasting protection of over 20 years, eliminating repeated application and costly yearly maintenance, reducing downtime and underproduction costs.

Ease of Maintenance















TRENTON Wax-Tape can be easily removed for maintenance work

A large diameter valves and flanges was wrapped with Wax-Tape in 1986.

In 1998, the Wax-Tape was removed for maintenance work on the valves. Here are some of the comments made by the inspection personnel:

"Because there was no corrosion, the valve/flange assembly was as easy to take apart as it was to put together"

"Even the threads on the bolts looked good."

Severe Corrosion	DAY 0 Wax-Tape Protection	DAY 610 No Corrosion Evident	DAY 930 No Corrosion Evident
			
			
			

Above The Ground

For pipelines, bridge spans, flanges, structural steelwork and irregular objects.

Excellent for use in areas where blasting or painting may be impractical.



Hard to reach places



Irregular Objects



Pipeline soil transitions



Pipelines



Sweating Lines



Steelworks



Fire Water Lines

Below The Ground

Outstanding waterproofing characteristics. Compatible with cathodic protection systems. Can be backfilled immediately.



Protection of large valve



Transition zone of large pipeline

Specifications

Wax-Tape	
Color	Aluminium, White, Red, Yellow, Blue, Green, Brown
Thickness	70 - 90 mil (2.0 mm)
Weight	4 lb/ yd ² (2.17 kg/m ²)
Dielectric Strength*	> 16 kv
Operating Temp.	-50°F ~ 140°F (-46°C ~ 60°C)
Elongation	> 180 %

* With overlap

Wax-Tape Primer	
Color	White, Brown
Coverage	5m ² ~ 10m ² / liter
Density	4 lb/ yd ² (2.17 kg/m ²)

Packaging		
Width	Length	Packaging
2" (5 cm)	9' (2.74 m)	48 rolls / case
4" (10 cm)	9' (2.74 m)	24 rolls / case
6" (15 cm)	9' (2.74 m)	16 rolls / case
12" (30 cm)	18' (5.48 m)	4 rolls / case
Wax-Tape Primer (1 gallon / drum)		4 drums / case



Used in the water industry

Conforms to AWWA Standard C217



Below ground pipeline can be backfilled immediately

Around The Storage Tank

Typical tank and annular ring present challenges as salts and moisture are likely to accumulate.

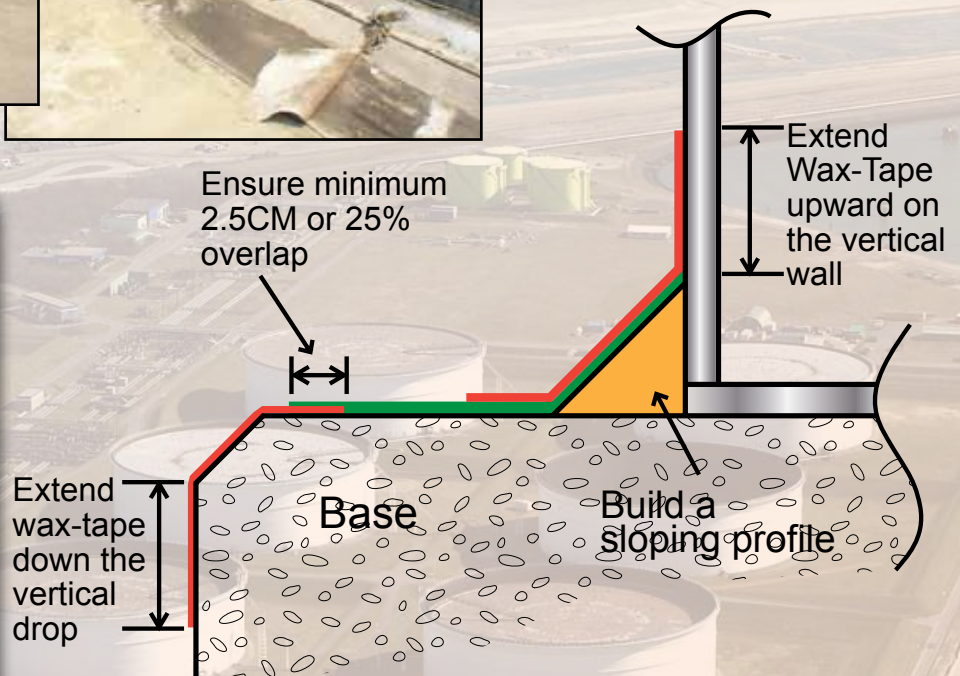
Settlement of the tanks and prolong UV exposure can cause coatings to crack and delaminate.



Quick, Effective and Economical Solution

1. Prepare the surface,
2. Build a sloping profile where tank wall meets the base,
3. Apply Wax-Tape starting from the base up the vertical tank wall.

** Wax-Tape protection forms a continuous, effective, and flexible coating that will not harden, crack, or peel off.*



On The Vessel

Wax-Tape protects your assets on the water



In The Ocean

Wax-Tape protects your assets under water



Wax-Tape ADVANTAGE

TRENTON Wax-Tapes are composed of microcrystalline waxes, plasticizers and corrosion inhibitors (with no fillers) saturated into a non-woven, non-stitch bonded synthetic fabric, forming a tape wrapper. This means they stay conformed to irregular fittings and provide excellent protection.



Wax-Tape Primers are a key reason why the Trenton Wax-Tape system is so effective in mitigating corrosion. It is a blend of microcrystalline waxes, plasticizers and corrosion inhibitors (with no fillers).

The primers penetrate surface rust in preparation for the application of Wax-Tapes, the field applicators only need to use a wire brush to prepare the surface. The primers thoroughly wet the surface of the pipe and require no specific surface profile or anchor pattern for proper adhesion.

Unique Characteristic

1. Easily applied and conforms to irregular objects like storage tanks, structural joints, bolts, flange, valves, welds, bends, supports, etc.
2. No blasting required, minimizing environmental pollution, surface preparation of NACE/SSPC-SP2, ISO ST2 or WJ2.
3. Resistance to UV exposure and weathering
4. Resistance to chemicals, salts, applicable to wet surface and suitable for extreme weather and working conditions.
5. Anti rust, anti corrosion, waterproof, withstand low temperature.
6. Coating maintains flexibility, will not dry or harden causing cracks and delamination.
7. Non-toxic, non-carcinogenic, and low VOCs.
8. Can be painted with water based paints after coating firms up.
9. Can be cut as desire with zero scrap, can be stored indoors indefinitely in original packaging.



Test Results

Salt Spray and Ultraviolet Exposure Test

Test	Result
Salt Spray (ASTM B117 - 1000 hours)	No visible effect
Ultraviolet Exposure (ASTM G53 - 1000 hours)	No material degradation

Chemical Resistance ASTM G20 Vapor Phase

Simple Application

1. Surface Preparation

Wire brush and scrape surface clean of loose rust, paint, dirt. (SSPC-SP2, ISO ST2, WJ2)



2. Apply Primer

Apply thin layer onto surface. No curing or drying time before wax-tape application.



3. Apply Wax-Tape

Apply wax-tape in spiral fashion. Ensure adequate overlap and remove air pockets.



4. Inspection

Check:

- Removal of all air pockets
- Adequate overlap
- Edges are firmly pressed down (*Sealing the edges*)



Effect \ Reagent	Hydrochloric Acid, 5%	Nitric Acid, 10%	Sodium Chloride, 10%	Sodium Hydroxide, 10%	Lime Water Saturated
Blistering	NO	NO	NO	NO	NO
Chalking	NO	NO	NO	NO	NO
Discoloration	NO	NO	NO	NO	NO
Swelling	NO	NO	NO	NO	NO
Loss of Adhesion	NO	NO	NO	NO	NO
Delamination	NO	NO	NO	NO	NO

Product Value

Comparisons

Materials		Wax-Tape	Paints	Tapes	Metallic/Plastic Coatings
Evaluations					
Material Properties	Formulation	Microcrystalline Wax	Epoxy, Latex, Metal	Petrolatum, Bitumen, Asphalt	Zinc, Aluminum, FRP, PE, PU
	Shelf Life	✓ Longest	Short	Medium	Long
	Scrap Rate	✓ Very Low	High	Medium	Medium
	Conforms to Irregular Shapes	✓ Extremely Well	Not Easy	Not Easy	Not Suitable
	Salt Spray Test	Good	Good	Good	Good
	UV Resistance	✓ Excellent	Bad	Medium	Good
	Chemical Resistance	✓ Excellent	Varies	Good	Good
Ease of Application	Moisture & Humidity Consideration	✓ Very Low	Must	Low	Must
	Equipment Required	Minimal	Complex	Minimal	Complex
	Labor Required	Any Maintenance Personnel	Experienced Personnel	Any Maintenance Personnel	Experienced Personnel
	Surface Preparation	✓ Simple (SP2)	Complex (Sa2½)	Simple (St2)	Complex (Sa2½)
	Surface Anchor Pattern	Not Required	Must	Not Required	Must
	Safety	High	Low	Medium	Medium
	Quality Assurance	Easy	Hard	Easy	Hard
	Applicable to existing facilities	✓ Excellent	Good	Medium	Hard
Economical Factors	Environmental Friendly	✓ Excellent	Bad	Bad	Medium
	Corrosion Prevention	✓ Longest	Short~Medium	Medium	Medium
	Management Cost	✓ Lowest	High	Medium	Medium
	Inflationary Impacts	✓ Lowest	Highest	Medium	Medium
	Primary Material Usage	Medium	1~5 Layers of Coating	Large Overlapping	Medium
	Supplemental Material Usage	Low	Low	High	Low
	Total Corrosion Prevention Costs	✓ Low	Low~High	Medium	High
PRODUCT VALUE Economical & Long Lasting		Highest ✓	Low	Medium	Medium

◆ Comparisons are made against general products found in the market. The performance of each product depends on the environment and other factors. Management of corrosion prevention must be accompanied by an adequate design, and with the designed lifespan in mind, carefully evaluate the characteristics of each product and assess its suitability in the design.

Case History: Valve Box at Terminal



Location:

The valve boxes carrying toluene, vinyl chloride, diesel and various fluids are situated at the unloading dock sitting right below the ground level with covers.

Problem:

With valve box situated in close proximity to the ocean, it collects vast amounts of sea water from splashes and rain water, and quite often these runoffs fills up the entire box.

These valves and flanges are coated with paint and wrapped with petrolatum tape. However, corrosion continues to attack these structures. Vast amount of rust flakes are visible at the floor of the box.

The petrolatum tape had to be held in place with PVC tapes because it lost adhesion and starts to peel and fall off.



Action Taken:

After comparing Wax-Tape alongside paint coatings and petrolatum wrap, the client concluded that Wax-Tape was the right system to use to resolve their corrosion problems. The client replace all coatings and wraps inside the valve box with Wax-Tape Anticorrosion System.



LEFT: Wax-Tape

RIGHT: Petrolatum



A World of Applications

Around the storage tank



Pipelines



Wax insp

Expans

Marine park



Insulated pipeline across bridge



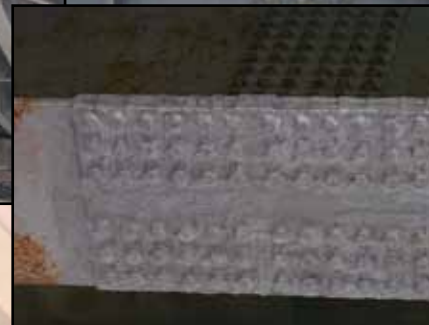
Highly corrosive environment



Platform Risers



Highway support joints





Tape cut for section and repair



Insulation Joint



Bridges



Sweating Lines



Motor casing



On the vessel



Structural support



Environmental Friendly Solution



Wax-Tape requires no blasting and is non-toxic, non-carcinogenic with very low VOCs. Wax-Tape is widely used in the water industry on pipelines to safely transport water near the river, reservoir, above or below the ground.



Usage Estimates

Pipe Size		Recommended Wax-Tape dimension		Recommended overlap, cm	Length of Wax-Tape required per meter of pipe	Primer usage per meter of pipe	
Size	OD, mm	cm	inches			Rough surface (based on 5m ² /L)	Smooth surface (based on 10m ² /L)
1/2	21.7	5	2	2.5	2.73	0.014	0.007
3/4	27.2	5	2	2.5	3.42	0.017	0.009
1	34.0	5	2	2.5	4.28	0.021	0.011
1 1/4	42.7	10	4	2.5	1.79	0.027	0.013
1 1/2	48.6	10	4	2.5	2.04	0.031	0.015
2	60.5	10	4	2.5	2.54	0.038	0.019
2 1/2	76.3	10	4	2.5	3.20	0.048	0.024
3	89.1	10	4	2.5	3.74	0.056	0.028
3 1/2	101.6	15	6	2.5	2.56	0.064	0.032
4	114.3	15	6	2.5	2.88	0.072	0.036
5	139.8	15	6	2.5	3.52	0.088	0.044
6	165.2	15	6	2.5	4.16	0.104	0.052
7	190.7	15	6	2.5	4.80	0.120	0.060
8	216.3	15	6	2.5	5.44	0.136	0.068
9	241.8	15	6	2.5	6.08	0.152	0.076
10	267.4	15	6	2.5	6.73	0.168	0.084
12	318.5	30	12	5.0	4.01	0.200	0.100
14	355.6	30	12	5.0	4.47	0.223	0.112
16	406.4	30	12	5.0	5.11	0.255	0.128
18	457.2	30	12	5.0	5.75	0.287	0.144
20	508.0	30	12	5.0	6.39	0.319	0.160
22	558.8	30	12	5.0	7.03	0.351	0.176
24	609.6	30	12	5.0	7.67	0.383	0.192
28	711.2	30	12	5.0	8.94	0.447	0.223
30	762.0	30	12	5.0	9.58	0.479	0.239
32	812.6	30	12	5.0	10.22	0.511	0.255
36	914.4	30	12	5.0	11.50	0.575	0.287
40	1016.0	30	12	5.0	12.77	0.638	0.319
44	1117.6	30	12	5.0	14.05	0.702	0.351
48	1164.3	30	12	5.0	14.64	0.732	0.366
52	1320.8	30	12	5.0	16.60	0.830	0.415

1. This table is guide only, the actual usage may vary.
2. Please apply approximately 5% material buffer in estimates.
3. Example: 4" pipeline that is 80m long.

Use 6" wax-tape as recommended with 2.5cm overlap

Wax-Tape Calculation:

$$2.88 \times 80\text{m} \times (1+5\%) = 241.92 \text{ meters of 6" Wax-Tape required}$$

$$241.92 \text{ m} / 2.74 = 88.29 \text{ rolls of 6" Wax-Tape required}$$

Primer Calculation:

$$0.072 \times 80 \text{ m} \times (1+5\%) = 6.048 \text{ liters} \approx 2 \text{ gallons}$$

An Effective and Long-lasting Anticorrosion System



Wax-Tape provides long lasting protection from UV damage, weathering and road salt runoff. The inset photo shows Wax-Tape being applied in 1981. Wax-Tape has several such long-term applications, with no end-of service in sight.



In hard to reach locations (near water) where blasting is impractical, causing environmental issues, Wax-Tape is frequently used as it is long lasting with no blasting needs.



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Exclusive Distributor
TRENTON
ANTICORROSION MATERIALS

Wax-Tape are very cost-effective, especially when the Total Cost and the designed life of the project is taken into consideration.