

Tapecoat®

Manufacturer's Qualified Application Procedure (MQAP)

1.0 SCOPE

This document contains recommended practices for the application of Tapecoat Petrolatum/Wax coating systems in order to meet CSA Z245.30 2014. These coatings meet the manufacturer qualification coating test requirements for System FC7, fibre-reinforced petrolatum systems. The various coating grades discussed in this document are used for the corrosion protection of piping, girth welds, fittings, pipe reconditioning and pipe fabrication for above and below grade environments. The specifics of where the product can be used are detailed in Section 2.0. For assistance in coating selection, surface preparation, application or inspection, please contact a Chase Representative.

2.0 MATERIALS

a. PRIMERS

- Tapecoat Enviroprime - A VOC free, cold applied, wax based primer designed to wet out the surface prior to installation of a wax tape or putty. Enviroprime will help to protect piping and metal structures from damage and deterioration caused by corrosion at temperatures up to 300°F (149°C). Enviroprime can be used on sweating and wet substrates. Enviroprime is brown in color and may discolor Color Coat. Meets acceptance criteria for **System FC7**.
- Tapecoat Color Coat Primer - A VOC free, cold applied, wax based primer designed to wet out the surface prior to installation of an outer wrap. Color Coat Primer will help to protect piping and metal structures from damage and deterioration caused by corrosion at temperatures up to 140°F (60°C). Color Coat Primer can be used on sweating and wet substrates. Color Coat Primer is white in color and can be used with both Color Coat and Envirotape. Meets acceptance criteria for **System FC7**.

b. COATINGS

- Tapecoat Envirotape - A 70 mil VOC free, cold applied, wax based tape designed to protect piping and metal structures from damage and deterioration caused by corrosion at temperatures up to 250°F (121°C). This coating is appropriate for use below grade in dry, damp or wet operating conditions. The Envirotape encapsulates the surface in order to protect it, this allows for easy inspection of the substrate and repair of the coating. The tape is used with the

Enviroprime or Color Coat Primer which completely wets out the substrate surface and displaces any moisture.

- Tapecoat Color Coat - A 60 mil VOC exempt, UV resistant, cold applied, self-hardening, wax based tape designed to protect piping and metal structures from damage and deterioration caused by corrosion. This coating is appropriate for use above or below grade; in dry, damp or wet operating conditions. The Color Coat encapsulates the surface in order to protect it, this allows for easy inspection of the substrate and repair of the coating. The tape is used with the Color Coat Primer which completely wets out the substrate surface and displaces any moisture.

c. SUPPORTING PRODUCTS

- Tapecoat Moldable Sealant - A 60 mil VOC free, cold applied, elastomeric adhesive with integrated primer for coating weld seams, bolts, step downs or anywhere a filler material is needed. For use under other coatings only.
- Tapecoat Profile Putty - A VOC free, cold applied, wax based putty filled with expanded polystyrene beads that is designed to fill gaps and irregular contours prior to the application of other Tapecoat wax based products. Profile Putty will protect piping and metal structures from damage and deterioration caused by corrosion at temperatures up to 95°F (35°C). The Profile Putty encapsulates the surface in order to protect it. A coat of Enviroprime or Color Coat Primer is required prior to application. Profile Putty is yellow in color and may discolor Color Coat.
- Tapecoat Flangecoat - A VOC free, cold applied, polymer based caulk that is designed to fill the flange crevice prior to the application of other Tapecoat wax based products. Flangecoat will protect piping and metal structures from damage and deterioration caused by corrosion at temperatures up to 180°F (82°C). The Flangecoat encapsulates the surface in order to protect it. Flangecoat is gray in color and can be used with both Color Coat and Envirotape.

d. OUTERWRAPS

- Tapecoat Envirostretch Wrap - A 1 mil clear outerwrap used to seal the wax coating system prior to burial.
- Tapecoat Rugged Wrap - A 30 mil UV resistant mesh weave fiberglass wrap that offers additional mechanical protection for protective coatings. This moisture activated non-shielding overwrap will give coatings and structures increased protection from exposure to abrasion, soil stress, frost heave and mechanical damage above and below grade.

- Tapecoat Terra Shield® - A 3/8" thick closed cell polyethylene foam rock shield with 1/4" perforations. Protecting the pipe coating by cushioning the impact of the backfill as it is reintroduced into the ditch and keeping deleterious backfill from direct contact with the pipe coating after the ditch has been closed.

3.0 APPLICATION REQUIREMENTS (Per CSA Z245.30-14, Section 5.3.2)

- a. No tools are needed during the application process.
- b. The Steel and adjacent coatings shall be cleaned with acetone, isopropyl alcohol (IPA), xylene, toluene or other fast drying solvents that do not leave any residue. Mineral spirits should not be used.
- c. The pipe cleaning must meet either SSPC-SP 2 or SSPC-SP 3 at a minimum, but SSPC-SP11, SSPC-SP6 /NACE No. 3 can also be used. All substances that will impede bond or otherwise be detrimental to the performance of the coating system must be removed prior to the coating application. This includes all loose surface material, rust, dirt, dust, grease, oil, sharp edges, burrs, mill scale, welding splatter and shop lacquer. These systems can be applied to damp or wet surfaces, but excess moisture should be removed when practical. The coating must be applied as soon as practical after cleaning to keep dirt and rust bloom from re-contaminating the pipe surface. Tools commonly used to provide recommended cleaning include: scrapers, files, brushes, grinders and clean rags.
- d. Adjacent coating cleaning must meet SSPC-SP1.
- e. Tapecoat Wax/Petrolatum Tapes are compatible with most other anti-corrosion coatings. Compatible coatings include epoxy, FBE, PE, PP and CTE.
- f. Preheating of the substrate is not normally required. If the substrate temperature is below the range stated below it can be heated using a wide mouth torch until the substrate is within the stated range. Preheating can be used for removing excess moisture present on the pipe surface should it exist.
- g. The substrate shall be between -20°F and 250°F (-29 to 121°C) for surface preparation and application of Tapecoat Enviropriime Primer and Envirotape. The substrate shall be between -20°F and 140°F (-29 to 60°C) for surface preparation and application of Tapecoat Color Coat Primer and Color Coat Tape.
- h. The temperature of the substrate must be 5°F (3°C) above the dew point temperature.
- i. Tapecoat Wax/Petrolatum Tapes, associated primers and supporting products, except for Tapecoat Rugged Wrap, do not require mixing or thinning. Tapecoat Rugged Wrap, when removed from the foil pouch and plastic protectant, should be submerged into a bucket of water prior to application.

- j. Tapecoat Wax/Petrolatum Tapes come in a preformed roll at a specified thickness. The coating specification will determine if one or two or more layers of tape are required to meet the minimum requirement. The total thickness for Tapecoat Envirotape is 70 mils (1.78mm), and for Tapecoat Color Coat, the total thickness is 60 mils (1.52mm).
- k. For application of Tapecoat Wax Coatings, the usage of supporting products may be utilized to ensure a successful application. Please refer to section 2.0 Materials for product descriptions on the supporting products.
 - i. Primers are required prior to using all of the wax coatings.
 - ii. Using a brush or a gloved hand, apply a coat of primer that has a minimum thickness of 4 mils. Be sure that the entire surface is encapsulated. For damp or wet surfaces be sure to work the primer into the surface to displace the moisture.
 - I. For irregular areas where the tape wrapping may be difficult Tapecoat Moldable Sealant or Profile Putty can be used to create a surface that will be easier to wrap. The Moldable Sealant can be applied by wrapping around the substrate or small lengths can be cut and molded to the surface of the substrate. The Profile Putty should be applied by hand and molded to the surface of the substrate.
 - II. When filling the space between two flange plates first wrap the void with two layers of Tapecoat Flangetape. Make two small slits in the tape at the 3 and 9 o'clock positions. Insert the Flangecoat tube into one of the holes and begin filling the void. As the space is filled make additional slits in the tape and continue filling the void until it is completely filled. Remove the tape apply primer to the exposed substrate prior to wrapping with tape.
 - iii. Tape must be applied with sufficient tension to conform to the pipe surface.
 - iv. Preferred method: Apply tape in a spiral wrap with sufficient overlap to ensure a good lap seal. Cigarette wrap tape when conditions do not allow for spiral wrapping.
 - v. The overlap should be a minimum of 1 inch or 20% of the tape width, whichever is greater. When conditions require additional protection, a 50% overlap should be used. Field applied tape should extend at least 4 inches over the factory coating.
 - vi. The coating should be free of voids and large wrinkles. The tapes can be cut with scissors to make the application easier for complicated substrates.

- vii. The coating wrap should end on the down side of the pipe between the 1 to 5 o'clock positions. When coating a vertical or riser pipe, always wrap from the bottom to the top. After a section is wrapped the tape should be worked by hand to smooth out any wrinkles and seal the overlaps. After a section is wrapped the tape should be worked by hand to smooth out any wrinkles and seal the overlaps.
- viii. If holiday testing is required, it should be done prior to the application of the outerwrap.
- ix. For below grade applications when additional mechanical protection is not required, Envirostretch Wrap can be used to seal the wax coating.
 - I. Apply the Envirostretch Wrap spirally using a 50 % overlap.
 - II. Wrinkling of the Envirostretch Wrap or airspace between the wax coating and the wrap are acceptable.
- x. For below or above grade applications when additional mechanical protection is required, Rugged Wrap can be used to seal the wax coating. Rugged Wrap comes in various Safety Colors and can help with the identification of piping.
 - I. The user should wear gloves and safety glasses when using the Rugged Wrap.
 - II. Remove the Rugged Wrap roll from the foil pouch and submerge the roll into a bucket of water. Gently work the roll to insure full penetration of the water into the center of the roll. Remove the roll from the water and gently squeeze it to remove the excess water.
 - III. Wrap the pipe circumferentially while holding the starting piece to the substrate and then begin to wrap the Rugged Wrap spirally. The roll can be cut with a sharp pair of scissors if needed.
 - IV. The coating wrap should end on the down side of the pipe between the 1 to 5 o'clock positions. If needed, Envirostretch Wrap or another industrial tape can be wrapped at the end of the coating to hold it in place while it hardens.
 - V. Once a roll is wet, the working time is about 20 minutes before the roll becomes too hard to wrap.
- xi. If Tapecoat Rugged Wrap Outerwrap is being used, allow a minimum cure time of 1 hour prior to backfill. If Rugged Wrap is not being used, then Tapecoat Wax/Petrolatum Tapes can be backfilled immediately after installation.

- l. Tapecoat Wax/Petrolatum Tapes, Primers and supporting products handling and storage requirements.
 - i. Stored between -40 and 90°F (-40 to 32°C).
 - ii. The humidity will not affect the material.
 - iii. Should be stored in their original, unopened containers away from the elements (snow, rain) and out of direct sunlight.
 - iv. Should be stored in their original, unopened containers away from possible contaminants (dust, water, chemicals).
 - v. Should be used on a first in, first out basis. Should be used prior to their expiration date. Tapecoat Wax/Petrolatum Tapes are 2 years from manufacturer. Tapecoat Rugged Wrap is 1 year from manufacturer.
 - vi. Should be stored in their original, unopened containers and protected from all forms of physical damage.

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