

Tapecoat®

Royston®

Application Guideline

1.0 SCOPE

This document contains general instructions and recommended practices for the application of Tapecoat and Royston butyl, cold applied tape coating 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 or 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

2.1 Tapecoat 6025 - A 30 mil tape for coating small to moderate diameter pipe, pipe joints, and repair of factory coating. For use above and below grade for service temperatures up to 250°F (121°C).

2.2 Tapecoat HTMB - A 40 mil mesh backed tape for coating small to large diameter pipe, pipe joints, and repair of factory coating. The mesh backing gives an exceptional resistance to soil stress. For use below grade for service temperatures up to 300°F (149°C).

2.3 Royston Greenline® - A 35 mil tape for coating small to moderate diameter pipe, pipe joints, and repair of factory coating. For use below grade for service temperatures up to 165°F (74°C).

2.4 Royston Butyl Moldable Sealant (C125 Tac Tape) - A 125 mil adhesive for coating weld seams, bolts, step downs or anywhere a filler material is needed. For use under other coatings only for service temperatures up to 185°F (85°C).

2.5 Tapecoat Omniprime® - Liquid Adhesive/Primer required for the application of Tapecoat Butyl tapes. Uses a VOC exempt solvent. For use at service temperatures up to 180°F (82°C).

2.6 Royston Roybond 747 - Liquid Adhesive/Primer required for the application of Royston butyl tapes and sealant. Available as a brush applied liquid or in a spray can. For use at service temperatures up to 185°F (85°C).

2.7 Tapecoat TC 7000 - Two part epoxy required as a primer for the application of Tapecoat Butyl tapes. For use at service temperatures up to 300°F (149°C).

2.8 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.

2.9 Tapecoat Hand Wrapster - A hand operated application tool, which can assist the operator in wrapping tape with the proper tension and overlap for piping 4" OD and above.

3.0 SURFACE PREPARATION

3.1 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, moisture, grease, oil, sharp edges, burrs, mill scale, welding splatter and shop lacquer.

3.2 When using the Tapecoat Omniprime or Royston Roybond 747 the pipe cleaning must meet either SSPC-SP 2 or SSPC-SP 3 at a minimum, but SSPC-SP 6/NACE No. 3 can also be used. When using The Tapecoat TC7000 Epoxy as the primer the pipe cleaning must meet SSPC-SP 10/NACE No. 2 at a minimum. A 2-4 mil surface profile must be achieved when using Tapecoat TC7000 Epoxy.

3.2.1 SSPC-SP 2 HAND TOOL CLEANING: Scrapers, files and wire brushes.

3.2.2 SSPC-SP 3 POWER TOOL CLEANING: Power brushes and grinders

3.2.3 SSPC-SP 6 / NACE No.3 COMMERCIAL BLAST CLEANING

Important to note: Clean the grit or shot off the pipe surface after blasting.

3.2.4 SSPC-SP 10 / NACE No. 2 NEAR WHITE BLAST CLEANING

Important to note: Clean the grit or shot off the pipe surface after blasting.

3.3 The coating must be applied as soon as practical after cleaning to keep dirt and rust bloom from re-contaminating the pipe surface.

3.4 Before coating application the surface must be dry. Preheating the surface to 120°F will dry the surface and increase adhesion. Be cautious not to damage the existing coating during this step by always keeping the torch moving.

4.0 TAPE APPLICATION

4.1 When using the Omniprime or Roybond 747, stir the primer until the product appears uniform using a paint stick or similar tool. A thin (4 mil wet/1.0-1.5 mil dry) coating applied by brush is recommended. The Roybond 747 can also be applied using Royston supplied spray cans. The primer must be given enough time to dry before the tape is applied. A simple touch test can be used to indicate when the primer is dry. A touch without transfer of the primer to a gloved hand is considered a successful touch test.

4.2 For operating temperatures above 180°F a 6-10 mil thickness of Tapecoat TC7000 Epoxy must be used as primer layer instead of the Omniprime with the Tapecoat butyl products. The tape should be applied to the epoxy once the epoxy is dry to the touch, but before it is fully cured.

4.3 If needed, Royston Butyl Moldable Sealant can be used to fill all step-down areas, irregular shapes and angles. The Butyl Moldable Sealant application will create a smooth surface to allow for full bonding of the tape coating.

4.4 Tape must be applied with sufficient tension to conform and bond to the pipe surface using either a manual or tape wrap machine method. Remove the release liner as the tape is being applied.

4.4.1 Preferred method: Apply tape in a spiral wrap with sufficient overlap to ensure a good lap seal.

4.4.2 Cigarette wrap tape when conditions do not allow for spiral wrapping.

4.5 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. For the Tapecoat 6025 and HTMB a minimum 50% overlap is required.

4.6 Field applied tape should extend at least 4 inches over the factory coating.

4.7 The tape wrap should be free of voids and wrinkles. When coating a weld joint, added care must be given when wrapping over a factory cutback. If the factory coating is thicker than joint tape selected, Butyl Moldable Sealant should be used to allow for a smooth transition at the cutback.

4.8 The coating wrap should end on the down side of the pipe between the 1 to 5 o'clock positions.

4.9 When coating a vertical or riser pipe, always wrap from the bottom to the top.

5.0 INSPECTION AND TESTING OF FIELD APPLIED COATING

5.1 Visual Inspection: The tape wrap shall appear free of voids and wrinkles.

5.2 Electrical Continuity Test (Holiday Detector): A coil spring electrode or brush-type electrode shall be used. The voltage should be determined using NACE RP0274 (Discontinuity (Holiday) Testing of Protective Coatings). The voltage setting is determined using the below formula.

Holiday Detection Voltage Setting (Volts) = $\sqrt{\text{thickness (in mils)} \times 1250}$

6.0 REPAIR OF DAMAGED COATING

6.1 All damaged and loose coating must be removed. If this removal results in the metal surface becoming visible it must be prepared as discussed in Section 3 and a primer must be applied as discussed in Section 4.

6.2 When the damaged area is sufficiently deep, Royston Butyl Moldable Sealant should be used to fill the void prior to the application of tape.

6.3 Apply tape with enough pressure to conform and fill in the irregular areas of the substrate. Remove the release liner as the tape is being applied. Apply tape with tension.

6.4 The preferred method is to wrap the tape around the total circumference of the pipe (either spiral wrap or cigarette wrap), covering the area of the holiday and extending onto the undamaged coating a minimum of 4 inches.

7.0 HANDLING, SHIPPING AND STORAGE

7.1 Care should be taken to handle the coated pipe in such a manner as to prevent exposure to abrasion or damage during handling, shipping, storage or installation.

7.2 Booms, hooks, forklifts, skids and all other devices used to move or handle coated pipe must be padded to prevent damage to the coating. Chains and steel bands should not be used.

7.3 Pipe should be shipped with sufficient padding or dunnage to adequately protect the pipe coating.

8.0 BACKFILL

8.1 Backfill should be free of large rocks, stones, scrap, and debris that could damage the coating.

8.2 Tapecoat Terra Shield can be used to protect the coating when it is determined that backfill, handling or installation could be detrimental to the integrity of the coating.

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Chase Corporation
295 University Avenue
Westwood, MA 02090

Phone: 800-323-4182
Fax: 781-332-0701
www.chasecorp.com

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