Tapecoat®

Application Guideline

1.0 SCOPE

This document contains general instructions and recommended practices for the application of the TC® 20 hot applied tape coating system. For assistance in coating selection, surface preparation, application or inspection, please contact a Chase Representative.

2.0 MATERIALS

2.1 TC® 20 – A 58 mil, hot applied, coal tar tape used to coat new construction, girth welds, bends, tees and fittings and for reconditioning existing construction. For use below grade for service temperatures up to 120°F (49°C).

2.2 Tapecoat Omniprime® – Liquid Adhesive/Primer required for the application of Tapecoat Butyl tapes. Uses a VOC exempt solvent.

2.3 Tapecoat Terra Shield® - A 3/8" thick closed cell polyethylene foam rock shield with ¼" 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.

2.4 MD50 Electronic Magnum Torch (or similar style) – A propane torch used to heat the TC 20 during application. It can also be used to remove excess moisture from the pipe or to reach the proper substrate temperature before application.

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 coating a metal substrate with the Tapecoat Omniprime 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 the TC 20 is used as a girth weld coating over a new mainline coating the mainline coating must meet SSPC-SP 1 at a minimum. When the TC 20 is used as a repair or reconditioning coating over an existing mainline coating the mainline coating must meet SSPC-SP 1 at a minimum, but SSPC-SP 2 or SSPC-SP 3 are preferred when practical.

3.2.1 SSPC-SP 1 SOLVENT CLEANING

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

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

3.2.4 SSPC-SP 6 / NACE No.3 COMMERCIAL 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.

4.0 TAPE APPLICATION

4.1 Before coating application the surface must be dry. Preheating is required to achieve this and to improve the performance of the system. The substrate temperature should be preheated to 100-140°F (38-60°C). Be cautious not to damage the existing coating during this step by always keeping the torch moving.

4.2 Stir the Omniprime 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 primer must overlap existing coatings a minimum of 4 inches. 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.

4.3 Unroll about a foot of the tape and heat the adhesive side (not the film side) by quickly moving the torch over the surface until it becomes glossy. Place the heated side onto the primed surface and press with a heat resistant glove. Smooth out wrinkles and ensure good contact of the tape to the substrate.

4.4 Unroll an additional 1 to 2 feet of tape and heat the adhesive side until it becomes glossy. Apply that section to the pipe and repeat until the area to be coated is covered.

4.5 Tape must be applied with sufficient tension to conform and bond to the pipe surface using either a manual or tape wrap machine method.

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

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

4.6 The recommended overlap should be 50% of the tape width. When conditions require additional protection, a greater overlap or second wrap can be used.

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

4.8 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. Thick coating should be tapered

at the step down area to allow for a smooth, void free transition.

4.9 When coating irregular pipe segments narrower width tape should be used for better conformability. When necessary apply hand pressure and increased heat to the coating to insure conformability to the substrate.

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

4.11 When coating a vertical or riser pipe, always wrap from the bottom to the top. For transitions from below grade to above grade the TC20 will need to be coated with a UV resistant coating.

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. Voltage shall not exceed 7500 volts for a single layer of coating or 15000 volts when the tape is applied with a 50% overlap or a double layer.

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 Apply tape with enough pressure to conform and fill in the irregular areas of the substrate. To repair thicker coatings multiple patch layers may need to be cut and applied to fill the damaged area before wrapping.

6.3 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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APPENDIX: APPLICATION STEPS

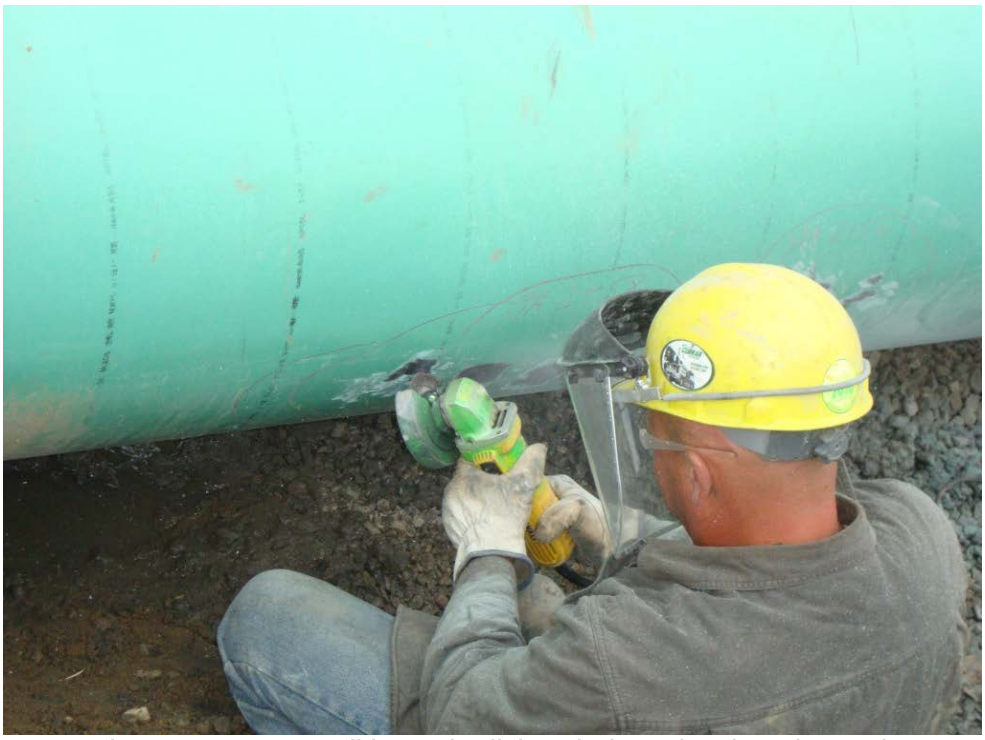

Figure 1: Remove all loose in disbonded coating (Section 3.1)

Figure 2: Prepare step down area at a girth weld (Section 4.8)

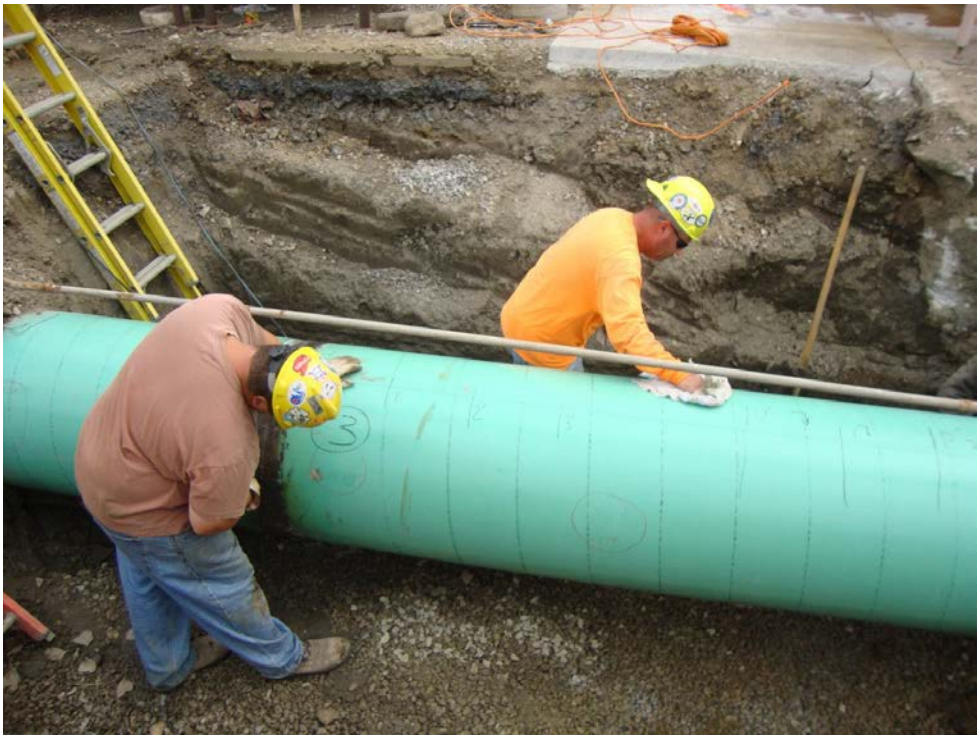

Figure 3: Cleaning the Surface (Section 3.2)

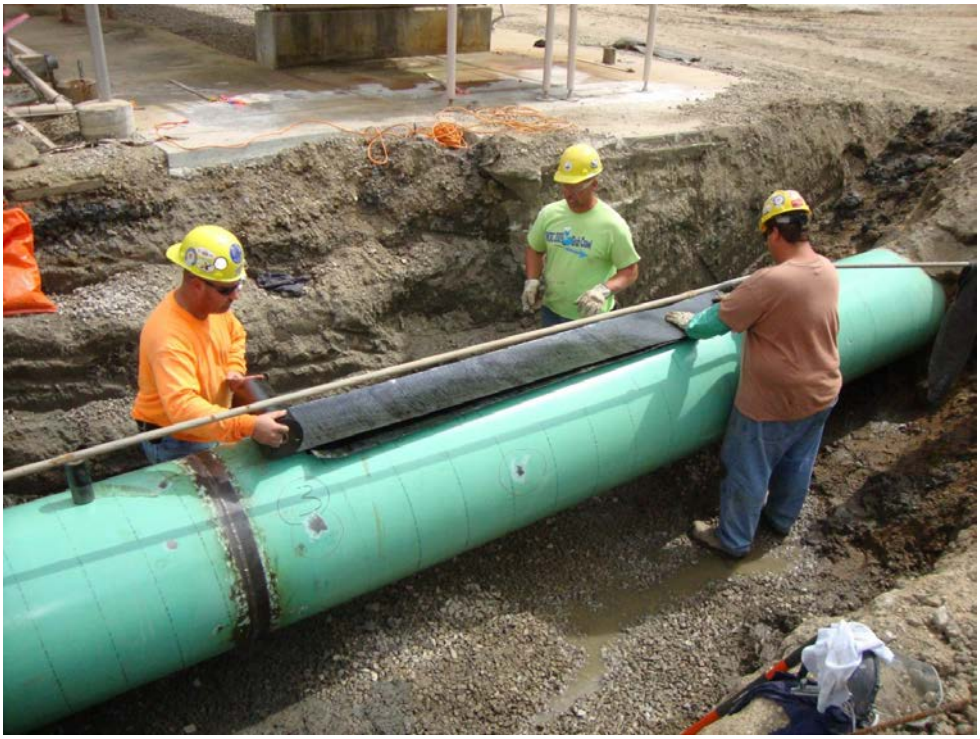

Figure 4: Precutting tape for cigarette wrap (Section 4.5.2)

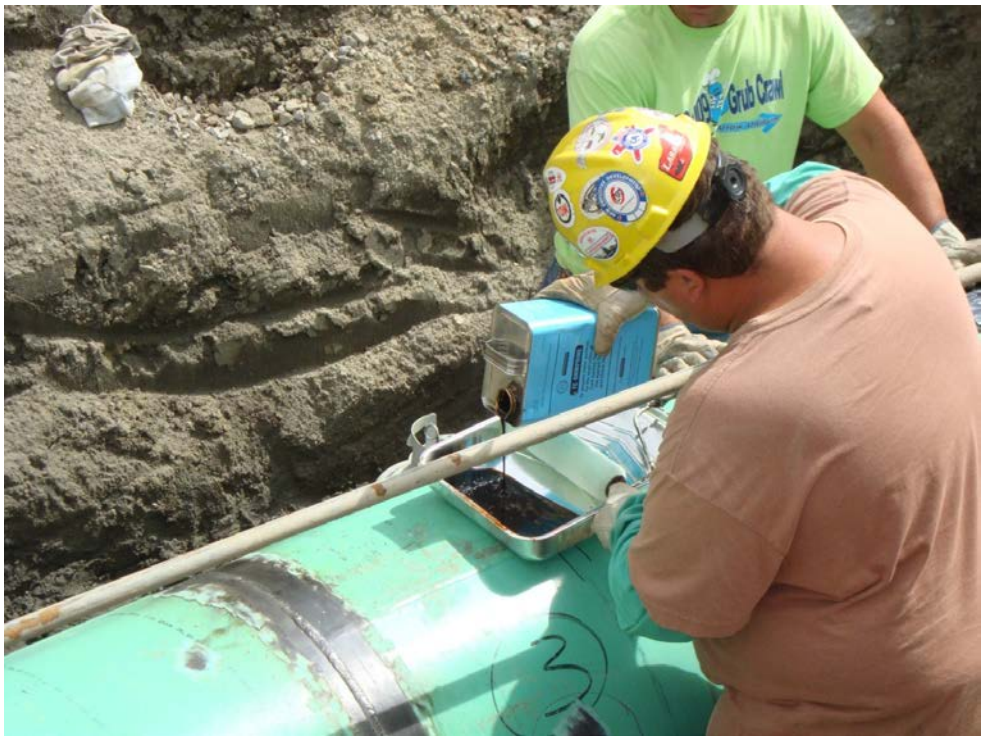

Figure 5: Preheat the pipe and apply primer (Section 4.1, 4.2)

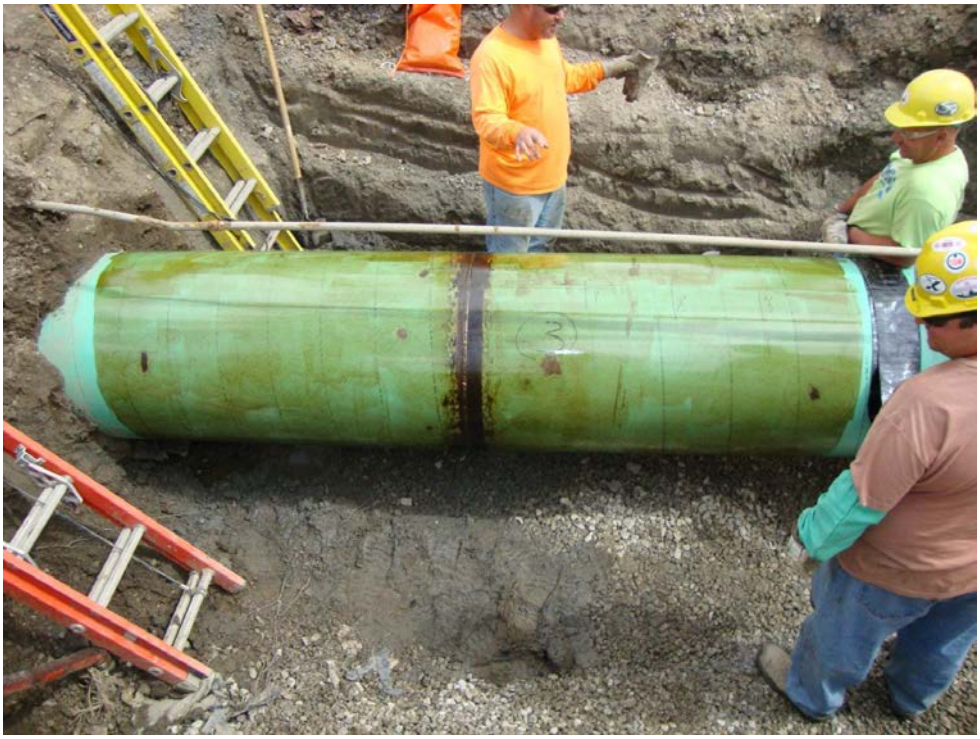

Figure 6: Primer application complete and allowed to dry (Section 4.2)

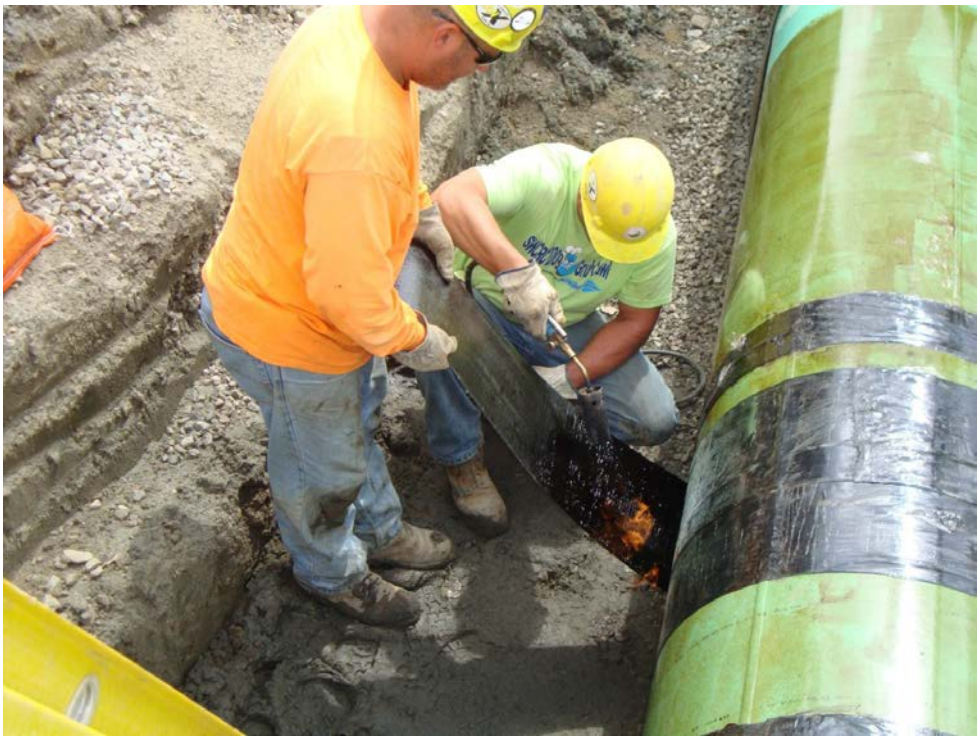

Figure 7: Heating the adhesive before applying the tape to the surface (Section 4.4)

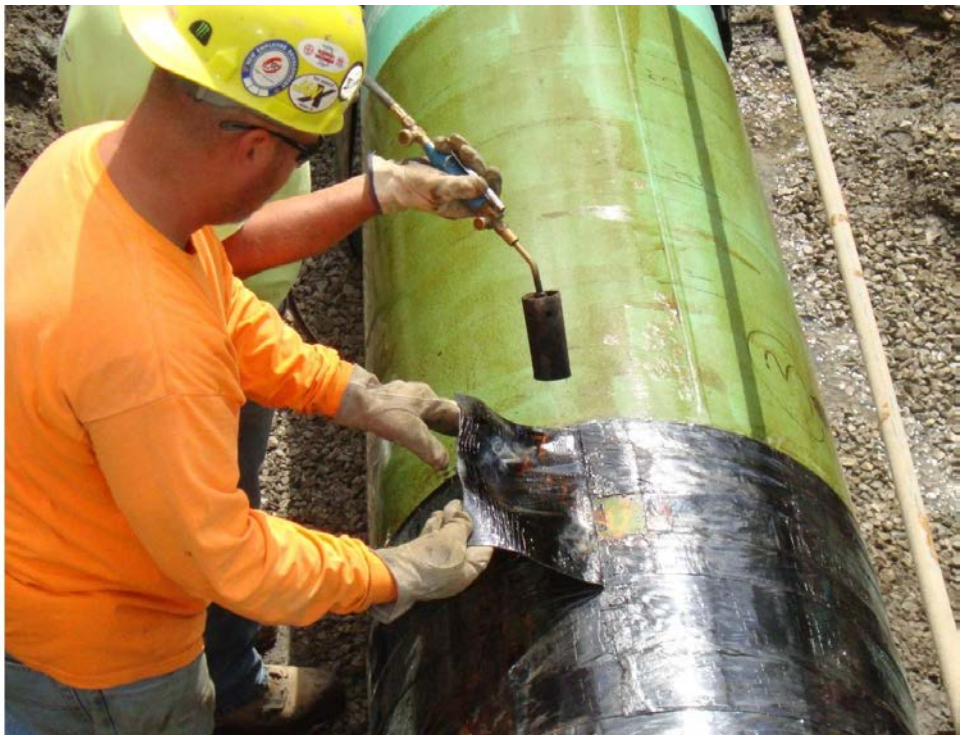

Figure 8: Heating last part of a precut piece, the piece will end facing down at the 1 o'clock position (Section 4.4)