

Tapecoat®

Manufacturer's Qualified Application Procedure (MQAP)

1.0 SCOPE

This document contains general instructions and recommended practices for the application of the TC® 20 hot applied tape coating system in order to meet CSA Z245.30 2014. This coating system meets the manufacturer qualification coating test requirements for System FC7. For assistance in coating selection, surface preparation, application or inspection, please contact a Chase Representative.

2.0 MATERIALS

a. PRIMER

- Tapecoat Omniprime® - Liquid Adhesive/Primer required for the application of Tapecoat TC20. Uses a VOC exempt solvent.

b. COATING

- 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). Meets acceptance criteria for **System FC7**.

c. OUTERWRAP (OPTIONAL)

- 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.

d. TOOLS

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

- a. The use of an MD50 Electronic Magnum Torch, or similar style, is required to apply Tapecoat TC20.
- b. The Steel and adjacent coatings shall be cleaned with acetone, isopropyl alcohol (IPA),

xylylene, toluene or other fast drying solvents that do not leave any residue. Mineral spirits should not be used.

- c. 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. 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. Important to note: Clean the grit or shot off the pipe surface after blasting. The coating must be applied as soon as practical after cleaning to keep dirt and rust bloom from re-contaminating the pipe surface. Preheating may be required to achieve this. Tools commonly used to provide recommended cleaning include: scrapers, files, brushes, grinders and a wide mouth torch.
- d. Adjacent coating cleaning must meet SSPC-SP1. Epoxies and PP should be sanded with medium grit sandpaper prior to cleaning to increase bond strength.
- e. Tapecoat TC20 is compatible with FBE, Epoxy, PE, PP and CTE.
- f. 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.
- g. There is no specific surface temperature at which the substrate must exhibit during surface preparation. During application, the substrate shall be between 100-140°F (38-60°C). During the cure process, the surface temperature should not exceed 120°F (49°C).
- h. The temperature of the substrate must be 5°F (3°C) above the dew point temperature.
- i. Tapecoat TC20 does not require mixing or thinning. The Tapecoat Omniprime should be mixed or stirred using a paint stirrer or drill with attached blade at low speed. The Omniprime should be mixed until it is homogenous. Thinning is not required and should not be tried with the Omniprime.
- j. Tapecoat TC20 comes in preformed rolls at a specified thickness of 58 mils. The coating specification will determine if one or two or more layers of tape are required to meet the minimum requirement.

- k. Applying Tapecoat TC20 does require the use of Tapecoat Omniprime Primer.
 - i. Apply a thin 4 mil wet, 1-1.5 mil dry primer coating by brush. 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.
 - ii. 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.
 - iii. 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.
 - iv. Tape must be applied with sufficient tension to conform and bond to the pipe surface using either a manual or tape wrap machine method.
 - I. Preferred method: Apply tape in a spiral wrap with sufficient overlap to ensure a good lap seal.
 - II. Cigarette wrap tape when conditions do not allow for spiral wrapping.
 - v. The recommended overlap should be 50% of the tape width. When conditions require additional protection, a greater overlap or second wrap can be used.
 - vi. Field applied tape should extend at least 4 inches over the factory coating.
 - vii. 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.
 - viii. 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.
 - ix. The coating wrap should end on the down side of the pipe between the 1 to 5 o'clock positions.
 - x. 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.
- l. During the curing or cooling conditions of Tapecoat TC20, the coating will be in the

process of hardening from liquid form. This process should take no longer than 1 hour with substrate surface temperatures below 120°F (49°C).

- m. 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.

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.

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.

- n. Tapecoat TC20 can be backfilled when coating has fully hardened. In temperatures less than 120°F (49°C), the coating should harden in less than 1 hour.
- o. Tapecoat TC20 and Omniprime handling and storage requirements are as follows:
 - 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 (3 years from manufacture).
 - vi. Should be stored in their original, unopened containers and protected from all forms of physical damage.

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