



# Densotherm™ Application Specification

## 1.0 Scope

- 1.1 Application Specifications for the use of Densotherm Hot-Applied Bitumen Tape.

## 2.0 General Requirements

- 2.1 Contractor shall comply with all written recommendations of the manufacturer regarding applications of the specified system.
- 2.2 To obtain the specified materials contact Denso North America, 9710 Telge Road, Houston, TX 77095, Tel: (281) 821-3355 or 90 Ironside Crescent Unit 12, Toronto, Ontario, Canada M1X1M3, Tel: 416-291-3435. E-mail: info@densona.com.

## 3.0 Materials

- 3.1 Material shall be Densotherm and Primer D as manufactured by Denso North America, 9710 Telge Road, Houston, TX 77095 (Tel) 281-821-3355 (Fax) 281-821-0304 or 90 Ironside Crescent Unit 12, Toronto, Ontario, Canada M1X1M3 (Tel) 416-291-3435 (Fax) 416-291-0898. E-mail: info@densona.com.
- 3.2 Material shall meet the physical properties of the attached product data sheet.
- 3.3 Storage: Material shall be stored in a warm, dry place. Care shall be taken to insure the Denso Primer D is stored up right (arrows on boxes facing up). Note: If the material is kept cold, it will become very viscous.

## 4.0 Surface Preparation

- 4.1 Clean all bare steel minimally with a power brush removing all disbonded foreign matter such as dirt, rust, scale, etc. A suitable solvent clean may be necessary where foreign matter exists. Heat the weld with a propane torch so as to remove all moisture from the steel. When working on operating gas pipeline in warmer temperatures, wiping with rags may become more practical when removing moisture from the pipe surface.

## 5.0 Application

- 5.1 Apply a uniform coat of Denso Primer D to the pipe surface extending 3-4 inches (75 - 100 mm) onto the coating on both sides of the weld area. Allow the primer to get tacky and/or dry to the touch. Heating of the pipe should be done before the application of primer. It is not necessary to apply additional heat over the primer. Continuous brushing of the surface, without adding additional primer to the brush, will help with the drying process. Given that the steel surface is warmed initially, primer should only take 3-5 minutes to get tacky or dry to the touch. If primer is applied and left overnight, moisture must be removed and the re-priming of the pipe must occur before Densotherm is applied.
- 5.2 Generously heat one side of the Densotherm Tape (80 mil / 2030 microns thickness) with a wide-mouthed propane torch, so as to create a glossy, wet, drippy look surface of bitumen. Wrap the Densotherm Hot-Applied tape over the pipe with the heated side placed against the pipe surface. In cold weather application, heat over the outside portions of tape where overlaps occur. Apply the tape with a certain degree of tension leaving no mislapses or unbonded areas during the application. A spiral-wrap application is preferred, however on larger pipe a cigarette-wrap of strips may be more practical. A bead of bitumen should be in place where overlaps in tape occur, thus assuring for good application. Make sure that the tape extends over the weld cutback area and onto the mill coating 3-4 inches (75 - 100 mm) on either side of the weld. A 50% overlap of tape is preferred, thus allowing for 150 mils (3810 microns) of total coating thickness.
- 5.3 Once applied to the pipe, flash the exterior of the tape surface with plenty of heat so as to witness the lap seams fusing together. Apply a significant amount of heat when glossing over the product with heat. Sufficient time should be allowed before backfill occurs. Backfill can occur immediately after the tape has cooled.

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## 6.0 Patching of Damaged Pipe

- 6.1 If the "holiday" or defective coating is disbonded from the pipe surface, it must be removed by scraping using a suitable hand tool. Primer should then be applied over the entire "holiday" area and adjacent coating surface. Using the procedure outlined above, a piece of hot-applied bitumen tape should be cut and cigarette-wrapped longitudinally around the pipe surface covering the "holiday" or defective coating area. On coal-tar or X-TRU Coat coated pipe, the bitumen tape should be pressed into the "holiday" area while hot. Again, one should generously heat over the bitumen tape once applied.

On patching fusion-bonded (FBE) coating, no pressing of hot-applied tape is necessary as is required with coal-tar or X-Tru Coat. However, a "cigarette-wrap" is still necessary where applicable. Spot patching may be applicable where conditions do not allow for a complete wrap.

## 7.0 Step Down Sleeve Application

- 7.1 The thickness of a steel sleeve to pipe can be approximately 3/4"- 1" (19 - 25 mm) therefore Denso Weld Bead Filler Tape can be used to provide a gradual contour from sleeve to pipe. Apply Denso Weld Bead Filler Tape circumferentially with a 50% overlap starting at the end of the sleeve and proceeding minimally 12" (300 mm) past each side of the sleeve onto the pipe. Apply as many layers circumferentially as needed to create a gradual step down effect from each side of the sleeve. Press down and mold the adhesive into the annular space around the end of the sleeve making sure the tape is in contact with the sleeve. In colder weather, a light heating of the adhesive with a propane torch of the Weld Bead Filler Tape will be required to achieve more conformability and tackiness. In warmer weather, no heating of the bitumen adhesive is required. After a gradual step down is achieved apply Densotherm using a 6" (150 mm) roll to the entire area including the steel sleeve and on top of the Denso Weld Bead Filler Tape.



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