



# Denso Petrolatum Tape System - Corrosion Protection System for Tie Rods Specification Guide

## 1.0 Scope

- 1.1 The tie rod corrosion protection system shall be applied prior to the tie rod installation, and in the dry. The wrapping shall be by the cold wrapping process. The coating system shall be the Denso Petrolatum System. The application method shall follow and be in full compliance with the instructions of the manufacturer.

## 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 at: 9747 Whithorn Drive, 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 Denso Paste
  - 3.1.1 The paste shall be comprised of saturated petroleum hydrocarbons (petrolatum), inert fillers, and passivating agents.
  - 3.1.2 The paste shall be an integral component of the tape system for the preparation of tie rods prior to wrapping. The paste shall displace moisture, passivate surface oxides, fill surface imperfections, and ensure intimate contact between tapes.
- 3.2 Denso Profiling Mastic
  - 3.2.1 The mastic shall be comprised of saturated petrolatum hydrocarbons (petrolatum) inert, fillers, reinforcing fibers, thermal extenders, beads of cellular polymer and flow control additives.
  - 3.2.2 The mastic shall be cold applied self-supporting mastic for molding around irregular shaped fittings to provide a suitable profile for applying anti-corrosion tapes.
  - 3.2.3 The physical specification values shall meet the values given on the data sheet for Denso Profiling Mastic.

- 3.3 Densyl Tape (Corrosion Protection Tape) and Denso Utility Tape (Mechanical Protection Tape)
  - 3.3.1 The tapes shall have a character stable in composition and plasticity over wide temperature range. The tapes shall be non-hardening and non-cracking. The tapes shall accommodate vibration and extreme movement of substrate. Superficial oxidation renders less tacky. The tapes shall be highly resistant to mineral acids and alkalis.
  - 3.3.2 The physical specification values shall meet the values given on the data sheets for Densyl Tape and Denso Utility Tape, respectively.

## 4.0 General Surface Preparation Requirements

- 4.1 Remove dirt, grease, and oil, including excessive moisture, in accordance with requirements of SSPC-SP-1, "Solvent Cleaning", as required, as determined by the Owner.
- 4.2 Remove weld spatter, sharp points, and edges, as required, as determined by the Owner.
- 4.3 Remove loose rust, paint, and foreign matter by hand and/or power tools, cleaning in accordance with SSPC-SP-2, or SSPC-SP-3, "Hand Tool Cleaning" or "Power Tool Cleaning", respectively.
- 4.4 High-pressure water blasting of 3,000 psi to 7,000 (20.6 - 48.2 MPa) may be used to prepare the surface.

## 5.0 Application of Denso Paste *(Required only for repairs or if tie rod(s) show signs of corrosion.)*

- 5.1 Apply Denso Paste by hand, brush, glove, rag, or roller.
- 5.2 Apply a thin uniform film over the entire surface to be wrapped.
- 5.3 Apply a liberal coating to threads, cavities, shoulders, pits, etc.

## 6.0 Application of Denso Profiling Mastic

- 6.1 Apply to protect complex surfaces and configurations, such as couplers and threaded sections of tie rods, by filling and packing to achieve a uniform contour to which tape can be applied without bridging of voids.

## 7.0 Applications of Densyl Tape and Denso Utility Tape

- 7.1 The tapes shall be spirally wrapped on tie rods using a minimum of 1 in. (25 mm) overlap on all applications. Densyl Tape shall be applied first, and Denso Utility Tape shall be applied over it.
- 7.2 The tapes may be applied longitudinally, i.e., "cigarette wrapped", where the space is too restricted or confined to apply in the preferred spiral manner. Use a minimum 1 in. (25 mm) overlap, and keep the overlap on the top side of the tie rod to provide a weatherboard effect.
- 7.3 Hold end of tape firmly against the starting point and firmly press on the surface. Unroll the tape, keeping the roll close to the surface. Do not get a long lead of tape, as it will tend to fold and gap on the surface being wrapped. The tape is best applied by rolling it around the tie rod and giving it proper tension.
- 7.4 Apply sufficient tension to provide continuous adhesion, but do not stretch the tapes. As application proceeds, press out all folds and air pockets that may occur.
- 7.5 Maintain a minimum 6 in. (150 mm) overlap when overlapping one roll with end of a new roll. Overlap must occur on the top half of the tie rod.
- 7.6 At the completion of each roll, smooth the overlaps by hand in the direction of the spiral to ensure sealing of the overlap.

## 8.0 Application of Tape System on Couplers

- 8.1 Following tape installation and installation of tie rods, the couplers and exposed sections of the tie rods and accessories, including the threads, heads, nuts, plates, washers, etc., shall be protected by applying Denso Paste, profiling of irregular shapes with Denso Profiling Mastic, and wrapping with Densyl Tape and Denso Utility Tape, as described above. After wrapping, all laps should be smoothed down with fingers to ensure a tight seal.

## 9.0 Repairs

- 9.1 Densyl Tape and Denso Utility Tape may be used to repair damaged coating or tapes. The following procedure shall be followed:
- 9.1.1 Remove damaged tape or non-adhering coating. Remove corrosion products. Apply thin coat of Denso Paste. Use small amount of mastic as a filler to eliminate the abrupt edge where the old coating or tape ends. Begin the application of tape a minimum of 2 in. (50 mm) back from the damaged area, utilizing a 1 in. (25 mm) overlap. Complete wrapping of repair area so that the tape overlaps at least 2 in. (50 mm) onto the original.
- 9.1.2 When repairing damaged tape, the damaged area frequently can be repaired by applying a patch or a full circumferential wrap. The new tape can readily be pressed onto the old tape. Patches shall only be installed on the top half of tie rod surface.



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