



## Protal™ 7900HT

# Plural Spray Application Specifications

### 1.0 Scope

- 1.1 This specification covers the external surface preparation and coating of pipeline applications such as weld joints, special pipe sections, fittings and fabrication.

### 2.0 Material and Storage

- 2.1 Material shall be Denso Protal 7900HT as manufactured by Denso, Inc., 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.

- 2.2 Material shall meet the physical properties of the attached product data sheet.

- 2.3 Storage: Material shall be stored in a warm, dry place between 40°F to 100°F (4.4°C to 37.7°C). Care shall be taken to insure the material is stored up right (arrows on boxes facing up). *Note: If the material is kept cold, it will become very viscous.*

### 3.0 Equipment

- 3.1 Equipment shall be a plural component airless or hydraulic spray unit capable of pumping at the correct ratio for the specified Protal coating (see product data sheet). Heated hoppers, manifolds, and hoses are recommended in most cases. A Graco mastic gun, used with a 19 thou to 27 thou tip size, is recommended.
- 3.2 A solvent such as Xylene, MEK, Toluene, or a combination of the three is recommended to clean the equipment.
- 3.3 Wet film thickness gauges.
- 3.4 Also can refer to the Protal 7200 / 7900HT Air Cartridge Gun Set-up Procedure for air gun application.

### 4.0 Surface Preparation

- 4.1 All contaminants shall be removed from the steel surface to be coated. Oil and grease should be removed in accordance with SSPC SP-1 using non-oily solvent cleaner (i.e., xylene, MEK, ethanol, etc.).

- 4.2 Material for abrasive cleaning shall be the appropriate blend of grit to produce an angular surface profile of 2.5 - 5 mils (0.063 - 0.125 mm).

- 4.3 All surfaces to be coated shall be grit blasted to a near-white finish (SSPC SP-10, NACE No. 2 or Sa 2 1/2). *Note: Near-white finish is interpreted to mean that all metal surfaces shall be blast cleaned to remove all dirt, mill scale, rust, corrosion products, oxides, paint and other foreign matter. Very light shadow, very light streaks or slight discolorations shall be acceptable; however, at least 95% of the surface shall have the uniform gray appearance of a white metal blast-cleaned surface as defined by Swedish Pictorial Surface Preparation Standard Sa 2 1/2 or SSPC VIS-1.*

- 4.4 Edges of the existing coating shall be roughened by power brushing or by sweep blasting the coating for a distance of 1" (25 mm) minimum.

- 4.5 The Contractor shall check the surface profile depth by using a suitable surface profile gauge (Press-O-Film Gauge or equal).

- 4.6 Metal areas that develop flash rust due to exposure to rain or moisture shall be given a sweep blast to return them to their originally blasted condition.

### 5.0 Application

- 5.1 The surface shall have no condensation, precipitation or any other forms of contamination on the blasted surface prior to coating.
- 5.2 The substrate temperature range for application of Protal 7900HT is 40°F (4°C) to 220°F (105°C). The substrate temperature must be a minimum of 5°F (3°C) above the dew point temperature before proceeding with the coating operation.
- 5.3 Using the prescribed equipment (Sect. 3.0), Protal 7900HT shall be applied using a wet on wet spray technique to the specified Dry Film Thickness (DFT). Part A should be heated to 130°F - 140°F (54°C - 60°C) and Part B heated to 150°F - 160°F (65°C - 71°C). Hose bundle shall be set at 135°F - 145°F (57°C - 63°C). Protal 7900HT can be applied in a single coat from 25 to 60 mils (635 to 1,524 microns) WFT, depending on temperature of the substrate.

5.4 The thickness of Protal should be checked continuously by wet film gauge to achieve the minimum/maximum film thickness specified. Notification to the applicator of any inadequately coated sections must be made immediately and repaired.

5.5 Over-coating, when necessary, shall take place within 4 hours at 80°F (27°C). If recoat window has lapsed, The surface shall be roughed prior to application of the topcoat using 80 grit sand paper or by sweep blasting.

## 6.0 Inspection/Testing for Backfill

6.1 The finished coating shall be smooth and free of runs, sags and/or holidays. All surfaces shall have the required minimum/maximum DFT. In general, the surface of the coating shall be no rougher than the base or substrate material.

6.2 After the Protal 7900HT has cured to a hard cure condition, the owner's representative and/or contractor's inspector should measure the film thickness by magnetic gauge and notify the applicator of their acceptance.

6.3 For most applications, backfill can be accomplished when the coating reaches a Shore D of 80. Using a Shore D Durometer, measure the hardness on an area of the coating that measures a minimum 30 mils DFT. Several measurements should be taken at various locations circumferentially around the pipe to ensure sufficient cure.

6.4 An acceptable field test to check to see if the coating has a full chemical cure, a solvent such as Xylene, MEK or Toluene can be rubbed on to the coating. If the gloss/sheen is removed the coating is not fully cured.

6.5 Holiday detection shall be performed on all coated areas. Detection voltage should be based on the nominal coating thickness using the following chart:

- A. 20-50 mils – 4,000 volts
- B. 51-70 mils – 7,000 volts

Note that NACE SP0188 is an acceptable method of reference as well.

6.6 The owner's representative, immediately upon completion of the work, shall make final inspection of the completed application. Notification of all defects must be made within a reasonable time frame from completion of the work to allow for all repairs within the allowed time frame for the project.

## 7.0 Repairs

7.1 For small pinhole repairs: Surfaces of repair up to 1/16 inch (2 mm) in diameter, roughen the surface of the parent coating, to remove gloss, around the holiday for at least 1 inch (25 mm). Use 80 - 120 grit sandpaper or light sweep blasting.

7.2 Medium sized repairs: Surfaces of repair areas up to 4 in<sup>2</sup> (25 cm<sup>2</sup>) in size, shall be prepared by abrasive blasting, as specified in Section 11, or by power tool cleaning in accordance with SSPC- SP 11 to remove dirt, scale, rust, damaged coating and any other foreign material to a bare metal condition and retain or produce the surface profile required by Section 4.0.

7.3 Large repairs: Surfaces of repair areas exceeding 4 in<sup>2</sup> (25 cm<sup>2</sup>) shall be repaired by abrasive blast cleaning as specified in Section 4.0.

7.4 The adjacent parent coating and any holidays or damaged coating adjacent to the cutback area shall be roughened for at least 1 inch (25 mm) around the repair and the edges shall be feathered.

7.5 After abrading, all dust shall be removed from the prepared areas using compressed air, a clean, dry bristle brush, a clean dry cloth or removed in accordance with SSPC-SP-1 using acetone, xylene or MEK.

## 8.0 Safety Precautions

8.1 Follow the guidelines detailed in the Safety Data Sheets (SDS).

8.2 Keep containers closed when not in use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

8.3 No open flames, smoking or welding will be allowed in the immediate vicinity during the spray application of Protal 7900HT liquid coatings.

8.4 Always refer to project specifications as they may supercede Denso specifications.



DENSO, INC.

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