Protal™ 7125

Spray Application Specifications

1.0 Scope

1.1 This specification covers the external surface preparation and coating of pipelines for rehabilitation, girth welds, directional drill pipe, fittings and fabrication.

2.0 Material and Storage

2.1 Material shall be Denso Protal 7125 liquid coating system 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 Protal 7125 product data sheet.

2.3 Storage of the material shall be in a dry room with temperatures between 33°F (0.5°C) and 80°F(27°C). These containers shall be stored up right. Do not allow to freeze.

3.0 Equipment

Please contact Eric Rennerfeldt with GRACO at 1-612-623-6077 for assistance in setting up the equipment.

3.1 Equipment shall be a Graco XM7B32 XM 70 Sprayer that has been modified to spray Protal 7125. The following is a list of required equipment.
Mix Ratio: 10:1 (A:B) by volume
Feed: Standard 7-gal hoppers gravity feeding into the XM pump lowers. Optional SST 10-gal (38 L) for durability and straight sides for easy cleaning
Heaters: 4000 W Viscon HP heaters. In cool weather climates, the heaters will be needed at a low setting to maintain approximately 70°F temperature. Increasing the temperature will reduce pot life quickly.
Heated hoses: ½ in. by ¼ in. x 50 ft. (12.7 mm by 6.3 mm x 15.2 m) Xtreme-Wrap™ water-heated hoses with Viscon® HP heater for heating fluid. Heated hoses should be used in colder weather to maintain approximately 70°F temperature to the remote mix manifold. Increasing the temperature will reduce pot life quickly.
Remote manifold: Standard XM remote mix manifold. NOTE: Use two restrictors on the “Part B” material side; one coming out of the fluid dosing control valve and one at the mix manifold. This is a standard configuration when using the XM machine with remote mix manifold.
Mix line: 3/8 in. x 25 ft. (9.5 mm x 7.6 m) integration hose, two (2) 3/8 in. x 5 in. (9.5 mm x 125 mm) plastic element static mixers with ¼ in. x 10 ft. (6.3 mm x 3 m) whip hose.
Gun: XTR-7 gun with XHD 525 tip.

3.2 A solvent such as Acetone or MEK shall be used to clean the equipment.

3.3 Wet film thickness gauges.

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 Xylene or MEK.

4.2 Material for abrasive cleaning shall be the appropriate blend of 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 abrasive 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 blasted clean to remove all dirt, mill scale, rust, corrosion products, oxides, paint and other foreign matter. Very light shadow, very light streaks or slight discoloration’s 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 original 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 7125 should be -4°F (-20°C) to 68°F (20°C). The substrate temperature must be a minimum of 5°F (3°C) above the dew point temperature before proceeding twith the coating operation.

5.3 If Protal 7125 Part A & B are below 68°F (20°C) the heaters shall be used to bring temperature up to 68°F (20°C) and circulate for several minutes. Do not heat material above 68°F (20°C). Operating pressure should be 5000 psi out of the machine and 2500 psi (17.2 MPa) at the gun. Once pressures are balanced complete a spray out on cardboard to make sure the material has a good mix of Part A & B.

5.4 Using the prescribed equipment (Sect. 3.0), Protal 7125 shall be applied using a wet on wet spray technique to the specified Dry Film Thickness (DFT). Protal 7125 can be applied in a single coat from 20 to 60 mils (508 - 1524 microns) WFT.

5.5 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.

6.0 Inspection

6.1 The finished coating shall be free of runs, sags and/or holidays. All surfaces shall have the required minimum/maximum DFT.

6.2 After the Protal 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 70. The "thumb nail test" can also be used. The thumb nail test is defined by when one can no longer make a permanent indention in the coating using one's thumb nail.

6.4 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.

6.5 Denso and/or 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.

6.6 Recoating: If a second coat is required and passes the cure test as described in section 6.3, the surfaces shall be roughened by sweep blasting. If the coating is soft, no surface preparation is required.

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^2 (25 cm^2) 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^2 (25 cm^2) 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.

7.6 Refer to "7125 Repair Cartridge Product Data Sheet" for additional information on repairs.

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 7125 liquid coatings.

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

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