

PROTAL 7200™ REPAIR CARTRIDGE

Fast Cure Epoxy Repair Coating

Description

Protal 7200 Repair Cartridges are specially formulated for patching and repairing damaged FBE and other liquid coated pipelines. The repair cartridges are packaged in 2-component tubes that are applied with a dispensing gun (sold separately). Two convenient sizes (400 ml and 50 ml) are available.

Uses

Repair coating for damaged FBE and other liquid coated pipelines. Also used as coating of cadweld areas.

Features

- Excellent adhesion (compliments FBE coated pipe)
- Fast cure
- High build (up to 70 mils / 1778 microns in one coat)
- High abrasion resistance for drilling applications
- Can be used as an abrasion resistant coating (ARO)
- Does not shield cathodic protection
- Meets AWWA C-210-92 Standard
- Outstanding self-leveling characteristics
- CSA Z245.30 compliant

Application

Surface shall be roughened approximately 1" (25 mm) around all repair areas using a Carborundum cloth or 60 to 80 grit sandpaper and than remove the remaing dust with a clean, dry cloth, brush or clean compressed air. Material can be applied by injecting material into a small container and mixing until a uniform color is achieved or utilizing the Protal Static Mixing Tip. Material can then be brush applied to specified mil thickness (minimum 20 mils / 508 microns). Cure times are dependent on temperature and will be extended at cooler temperatures.



**Protal 7200
Repair Cartridge
(400 ml)**



**Protal Cartridge Gun
3:1 (400 ml)
Sold Separately**



**Protal Cartridge Gun
2:1 (50 ml)
Sold Separately**



**Protal 7200
Repair Cartridge
(50 ml)**



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Application

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 60 - 80 grit sandpaper or light sweep blasting.

Medium Sized Repairs: Surfaces of repair areas up to 4 in² (25 cm²) in size, shall be prepared by abrasive blasting, as specified in Section 4, 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.

Large Repairs: Surfaces of repair areas exceeding 4 in² (25 cm²) shall be repaired by abrasive blast cleaning as specified in Section 4.0 of the Protal Application Specification Guide.

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.

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.

For Accelerated Cure: With a propane torch or heat gun, pre-heat the area for at least three to six inches around the holiday to be coated up to approximately 230°F (110°C). Move the torch briskly back and forth over the area. Measure the temperature with an infrared non-contact thermometer. It should take approximately two minutes to reach the required maximum temperature. No darkening of the parent coating is acceptable and any charred coating must be removed. If using a propane torch, the repair area shall then immediately be lightly abraded. By using an infrared thermometer, the coating application can take place when the surface temperature has reached to 212°F (100°C) or lower.

There are two ways to use the cartridge.

- 1. With the Static Mixing Tips:** The first few pumps may not be completely mixed, eject the first few pumps and dispose of them as solid waste after they solidify. Pump out enough material to coat the abraded area directly onto the substrate. Spread out the coating to a uniform thickness with a spatula or paintbrush to a DFT of 25 mils (635 microns). Protal 7200 will harden in the static mixer in fifteen minutes at 77°F (25°C). If more than 15 minutes will elapse between repairs either replace the mixer or mix by hand.
- 2. Without the Static Mixing Tips:** To mix by hand, eject the required amount of coating material from the cartridge onto a clean tray or cup and hand mix the product with a stir stick until the coating color becomes uniform with no streaks. Apply the coating to 25 mils (635 microns) DFT on the area to be repaired using a spatula or paintbrush.

Postheating for Accelerated Cure: Using a heat gun, post heat the coating for one minute by briskly moving the gun back and forth over the new coating. Allow the coating to cool for approximately one minute. For holiday detection the coating only need reach a "dry to touch" condition for a spring probe or "tack-free" for a conductive rubber probe.

Holiday Inspection: After one minute of post-heating and one minute of cooling, the coating should reach a "dry to touch" condition (per ASTM D-1640). While this is not adequate for backfill, a spring-type holiday detector may be used over the patched area. If the spring leaves more than surface marks on the patched area, repair the area.

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TECHNICAL DATA SHEET

If the entire circumference has been tested by shielding the holiday and retesting with a spring holiday detector prior to patching, then a conductive rubber probe may be used for holiday detection of the repair. While the conductive rubber probe must be in physical contact with the holiday repair, no pressure need be exerted. Therefore, once the Protal 7200 has reached a tack-free condition where material will not adhere to the conductive rubber probe, holiday detection may proceed. A gloved hand may be used to determine when the Protal 7200 is no longer sticky.

Storage

Minimum 24 months when stored in original containers @ 40°F (4°C) to 105°F (41°C). On job site where temperatures are below 50°F (10°C) product should be kept warm to mix properly (65°F to 85°F optimal).

Cleaning

Clean equipment with MEK or equivalent solvent cleaner.

Health & Safety

Apply under well ventilated conditions. Wear suitable protective clothing and glasses. Refer to safety data sheets.

Packaging

400 ml and 50 ml dual cartridges.

Dispensing guns and static mixing tips (400ml or 50ml) sold separately.

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TECHNICAL DATA SHEET

Tech Data

Properties	Imperial	Metric
Solids Content	100%	100%
Mixed Material - (Mixed) @ 77°F (25°C)		
Specific Gravity	1.63	1.63
Viscosity	170,000 cps	170,000 cps
Color	Green	Green
Mixing Ratio (A/B) by Volume		
400 ml	3 Parts Base to 1 Part Hardener	3 Parts Base to 1 Part Hardener
50 ml	2 Parts Base to 1 Part Hardener	2 Parts Base to 1 Part Hardener
Cure Times		
Pot Life @ 77°F (25°C)	14 - 17 Minutes	14 - 17 Minutes
Pot Life @ 97°F (36°C)	7 - 8 Minutes	7 - 8 Minutes
Handling Time @ 77°F (25°C)	2.5 - 3 Hours	2.5 - 3 Hours
Handling Time @ 117°F (47°C)	1 Hour	1 Hour
Handling Time @ 157°F (69°C)	20 Minutes	20 Minutes
Recoat Window		
@ 57°F (14°C)	5 Hours	5 Hours
@ 77°F (25°C)	2 Hours	2 Hours
@ 97°F (36°C)	1 Hour	1 Hour
Theoretical Coverage	14 ft ² /30 mils/liter	1.3 m ² /30 mils/liter
Thickness - Weld Joints / FBE Repairs		
Minimum/Maximum	20/70 mils	508/1178 microns
Recommended	25 - 30 mils	635 - 762 microns
Thickness - Bore Pipe		
Minimum/Maximum	40/70 mils	1016/1178 microns
Recommended	45 - 60 mils	1143 - 1524 microns
Holiday Detection	Refer to NACE SPO188	Refer to NACE SPO188
Cathodic Disbondment Test (ASTM G95)		
28 Days @ 77°F (25°C)	3 mm	3 mm
28 Days @ 150°F (65°C)	4 mm	4 mm
28 Days @ 185°F (85°C)	6 mm	6 mm
28 Days @ 203°F (95°C)	6 mm	6 mm
Hardness (ASTM D-2240-02)	Shore D 80+	Shore D 80+
Impact Resistance (ASTM G14-04) @ 32°F (0°C)	70.6 in-lbs.	70.6 in-lbs.
Tabor Abrasion (ASTM 4060-07)		
-1000 cycles, CS-17 wheels, 1000 g. load	1,270 cycles per mil	1,270 cycles per mil
Gouge Resistance (Partech Test - 40 kg load)	15.4 mils	391 microns
Dielectric Strength (ASTM D-149)	450 V/mil	17,716 V/mm
Adhesion to Steel (ASTM D-4541-02)	3,956 psi	27.3 MPa
Adhesion to FBE (ASTM D-4541-02)	2,579 psi	17.8 MPa
Service Temperature	-40°F to 203°F	-40°C to 95°C
Application Temperature	-30°F to 212°F	-34°C to 100°C

Note: If temperature falls below 50°F (10°C), surface must be preheated and maintained throughout the cure process.



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