

*Chem***LINE**[®]

Application Procedures for

*Chem***LINE** Primer and *Chem***LINE** 784/32 (Optional Primer for porous concrete)

Ambient or Low Temperature Cure Protective Coating for Concrete Surfaces



“Performance Without Compromise”

1.0 SCOPE

- 1.1 *ChemLINE 784/32* and *ChemLINE Primer* are an ambient cured or low temperature forced cured protective lining for concrete floors, walls, containment areas and structural steel. The application procedures described herein provide the best available information regarding the application of this product for the purpose of ensuring the best possible results when using *ChemLINE 784/32* and *ChemLINE Primer*.
- 1.2 The coating contractor/applicator shall be pre-approved by Advanced Polymer Coatings, Ltd.
- 1.3 The coating contractor/applicator shall not deviate from these application procedures. The contractor/applicator shall sign a form acknowledging that the Application Procedures have been read and understood (see Appendix A). In addition, the contractor/applicator shall have a copy of the most current application procedures on the jobsite at all times.
- 1.4 Contractor shall ensure proper ventilation of the workplaces and furnish proper safety equipment and clothing for each worker using *ChemLINE* products. The contractor is also responsible for providing all necessary equipment and scaffolding for surface preparation, application of coating material and removal of dirt, debris and spent abrasives. The contractor or subcontractor is also responsible for supplying all necessary heating and dehumidification equipment.
- 1.5 This application note is specific to concrete substrates; however, *ChemLINE 784/32* can be applied to other substrates. Contact Advanced Polymer Coatings for details on preparing and coating other substrates.
- 1.6 The theoretical coverage of *ChemLINE 784/32* is 1,444 ft²/gal/mil.(36 m²/liter) *ChemLINE 784/32* has a recommended total DFT of 20-24 mils (500-600 microns); therefore, at this thickness the theoretical coverage would be 60-73 ft²/gal (1.6-1.8 m²/liter). However, some coating loss would be expected depending on the type of substrate, surface profile, substrate configuration, environmental conditions, operator technique and method of application. Estimated practical coverage would be 55-60 sq.ft/gal (1.3-1.4 m²/liter).

2.0 APPLICABLE DOCUMENTS

- 2.1 The most recent copies of these documents should be used:

ASTM D4138 measurement of Dry Film Thickness of protective Coating Systems by Destructive Means.

ICRI (International Concrete Repair Institute) standard guideline #03732 for coating concrete,

ASTM D 4263 Test Method for Indicating Moisture by the Plastic Sheet method.

NACE RPO 188 Discontinuity (Holiday) Testing of protective Coatings ASTM D512 "Test Methods for Chloride Ions in Water"

3.0 SURFACE PREPARATION

- 3.1 Compressed air shall be free of oil and water contamination.
- 3.2 All surfaces to be coated shall be cleaned prior to mechanical preparation.
- 3.2.1 For surfaces contaminated with grease and oils, degrease surface prior to mechanical preparation with a commercial degreaser, alkaline solution or with a hydro-blast at 5,000 psi (34.5 MPa) containing a degreasing solution which will remove dirt, oil and grease. ASTM D 4258 Standard Practice for Surface Cleaning Concrete and NACE 6G1 Surface Preparation of Contaminated Concrete for Corrosion Control.
- 3.2.2 For surfaces contaminated with soluble salts, the surface shall be steam cleaned or washed with warm, clean water (distilled or demineralized water is preferred).

NOTE - Check surface for soluble salt contamination before mechanical preparation.

- 3.3 Prepare the surface by mechanical means to roughen the surface and remove carbonation layer, laitance and other contaminants. Surface profile shall be CSP-3 to CSP-5 meeting ICRI (International Concrete Repair Institute) standard guideline #03732 . Preparation can be by abrasive blasting using sharp angular abrasives, e.g., 8-20 silica sand, 1240 Black Beauty 1240 or G-14 steel grit or by Blastrac machine using steel shot of SAE 230-330. Waterjetting and



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CL784/32- 403 Concrete
Rev. 1.5 2/2010

slurryblasting are also acceptable methods. Contact APC Technical Service department for additional details on repairing and preparing concrete.

3.4 Prior to the application of coatings, all bugholes, cracks, spalled or damaged concrete, expansion joints and seams shall be repaired and filled following Advanced Polymer Coatings Concrete Surface Preparation guidelines.

3.4.1 Prior to use, submit datasheets and MSDS sheets for any fluoroelastomer caulk and / or polymer based concrete repair materials to APC Technical Service department for review and approval for use for the project application.

3.5 After mechanical cleaning and repair, the surface shall be vacuumed with a bristle nozzle to remove all dust, grit and embedded abrasive. In addition, the surface shall be tested again for soluble salt contamination. (see Section 11.2).

3.6 Relative humidity must be less than 50% and the substrate surface temperature must be at least 60°F and 5°F (3°C) above the dew point during the surface preparation and application procedures.

3.7 Always wear clean gloves when touching mechanically cleaned surfaces. Salts and oils can be deposited onto the surface when touched with bare hands. These contaminants may adversely affect coating adhesion. In addition, always wear protective footwear when walking on mechanically cleaned surfaces.

4.0 MATERIAL STAGING AND CURING TIME

4.1 "B" Stage Definition. The "B" stage has been reached when the coating is firm-to-the-touch and has just lost its tackiness (i.e., coating is still solvent soluble); at this stage the solvent has evaporated from the coating.

"B" Staging Procedures. *ChemLINE 784/32* and *ChemLINE Primer* will "B" stage under ambient conditions (70°F [22°C]) in approximately 8-18 hours depending on atmospheric conditions. However, the "B" stage can be accelerated by blowing warm air across the coating surface at 90-100°F (32-43°C) for approximately 2-3 hours. (**NOTE:** This is air and not substrate temperature). Before advancing the "B" stage, allow the solvent to flash from the coating for 1-2 hours. It is important to ensure good air flow across the coating in order to remove solvent prior to forced air "B" staging. Care must be exercised when accelerating the "B" stage so the coating is not overcured prior to application of subsequent coats.

4.1.1 "B Stage test" A solvent wipe test is used to determine whether the coating is in "B" stage. Soak a clean, white cloth with clean acetone. Rub the same area of the coating 40-50 times in a back and forth motion while applying pressure. If the coating becomes soft and tacky or coating material is transferred to the cloth, the coating is in "B" stage. If there is no softening or color transfer then the coating is past the recoat window. This test should be performed in at least ten different section of the tank.

4.2 Recoat Time.

"B" Stage Air Temperature Curing Schedule

Air Temperature	Overcoat Time (hours)	
	Min.	Max.
60°F (16°C)	12	72
68°F (20°C)	8	72
77°F (25°C)	8	48
86°F (30°C)	6	48

The maximum recoat time begins after the "B" stage has been reached. If required, perform low temperature heat cure within 48 hours of reaching "B" stage on the final coat.

NOTE -- Sufficient air flow across the coating and/or through enclosed spaces is necessary in order to assist in removing solvent from the coating before applying the next coat.

NOTE: Temperatures listed are air temperature, not substrate temperature; Times provided are approximate only. Times may differ due to exact conditions.



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“B” Stage Surface Temperature Curing Schedule

Substrate Temp, C	Substrate Temp, F	Hours to B stage
18.4	65	20
21	70	16
25	77	11.5
30	86	7.5
33	91	4
40	105	3
50	122	2

4.3 Forced Cure Schedule, if required. The size of heating equipment and number of heaters is dependent on the size and configuration of the coated item to be cured (consult a heating contractor for more information). Direct or indirect forced air heating or inductive heating is acceptable. Use only propane or methane (natural gas) with indirect heated air supply for heating.

NOTE - Do not use kerosene, diesel fuel or heating oils for curing or heating the coating at any time.

Final Curing.

Substrate Temperature	Time to Reach Full Chemical Resistance
75F (24C)	14 days
90F (32C)	9 days
104°F (40°C)	7 days
122°F (50°C)	20 hours
149°F (65°C)	16 hours
160°F (71°C)	12 hours
180°F (82°C)	6 hours
212°F(100°C)	4 hours

NOTE -- For ambient temperature curing, allow coating to dry for a minimum of 24 hours before opening to foot traffic. Do not place coating into chemical service before full cure is achieved.

Contact APC for actual required cure time and temperature based upon conditions of service.

5.0 SPRAYING INFORMATION AND MIXING DATA

5.1 Airless Spray

- 30:1 to 45:1 airless pump, 3 gal./min minimum, air-operated; Teflon packing is highly recommend.
- 3/8 inch (0.95 cm) I.D. airless spray hose.
- 0.017-0.023 inch (0.4-0.6 mm) airless tips with a reversible cleaning valve.
- #50-#60 mesh in-line filter.
- Filter on siphon line is strongly recommended.
- Compressor specification -- minimum 54 CFM at 90 psi (0.6 MPa) output.
- Air input line - 3/4 inch (1.9 cm).
- New spray hoses are to be used (maximum 45 mtrs. In length). **DO NOT USE** spray hoses that have been used for other coating systems.
- Pumps and spray guns should be properly cleaned with Acetone or MEK, by recirculating the solvent through the pump for 15 minutes.

5.1.1 Brush or Roller

Use a 3/8” nap, phenolic core solvent resistant roller or solvent resistant brush if applying ChemLINE coatings by roller or brush.



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5.1.2 Mixing Process

- **MIXING:** ChemLINE is supplied in kits which contain the proper ratio of ingredients.
- **NOTE: Complete kits must always be used for mixing. Splitting of kits for the purpose of making smaller portions are under no circumstances allowed. Smaller units will be supplied.**
- Mechanically agitate using a high shear (SSPC recommended) mechanical mixer component "A" (resin) until color and consistency is uniform (usually 1-2 minutes).
- Slowly add component "B" (catalyst) and mix thoroughly for approximately 3-5 minutes using a high shear (SSPC recommended) mechanical mixer. Do not overwork, especially when the resin, catalyst and ambient temperatures are greater than 85°F (29°C).
- After mixing allow an induction time of a minimum of 5 minutes, maximum of 10 minutes at 77F (25°C)
maximum of 15 minutes at 65F (20°C)
maximum of 20 minutes at 59F (15°C)
- The mixture must be homogeneous and uniform in consistency before use. If thinning, slowly add Toluene/Xylene and continue mixing until the thinner is thoroughly mixed (approximately 2-3 minutes). Do not use more than 1 quart (946 ml) of Toluene/Xylene per 5 gallons (19 liters) of resin. Thinning beyond what is specified herein must be approved by Advanced Polymer Coatings.
- After mixing, pour *ChemLINE 784/32* through a 60 mesh screen into a clean container to remove any large particles.
- The area where mixing is to be performed shall be protected from rain, kept clean, and free of debris at all times. All empty drums shall be stacked in designated areas, and it is the contractor or inspector's responsibility to record the number of drums used and the associated lot numbers for both resin and catalyst for each coat in each tank.
- All *ChemLINE* materials are to be stored in climate controlled facilities at temperatures between 35F – 90F. Do not allow materials to freeze. Do not store in direct sunlight. Resin and catalyst shall be stored inside a "climate controlled" container for minimum of 48 hours prior to mixing and application in order to attain a coating temperature of 70°-75°F.

6.0 COATING PROCEDURES

6.1 Substrate temperature shall not be less than 60°F (16°C) or greater than 110°F (43°C) and the substrate surface temperature at least 5°F (3°C) above the dew point. Relative humidity shall not exceed 50%. The resin and catalyst temperature should be between 70°F (21°C) and 90°F (32°C).

6.1.1 Pot Life - The Pot Life of *ChemLINE 784/32*- 5 gallon kit is approximately 30 minutes at 75F after proper mixing and dwell time.

6.2 After the resin and catalyst are mixed and screened, place material under pump or insert siphon hose into the container.

6.3 Drying Between Coats

6.3.1 In general, allow stripe coat to cure dry until it is firm-to-the-touch.

6.3.2 On vertical and overhead surfaces, subsequent coats can be applied when the coating has lost its tackiness. On floors that require foot traffic in order to apply subsequent coats, the coating must be hard, i.e., one cannot damage the coating when walking on it.

6.4 In a safe area away from the structure or object to be coated, test spray gun and adjust according to the desired pattern. Increase the air supply to pump and/or pump pressure as needed until desired spray pattern is reached.

6.5 Coat scrap piece of steel, or similar, until desired spray pattern and wet film thickness is reached.

6.6 Recommend that equipment be exclusively used for *ChemLINE Primer and ChemLINE 784/32* to avoid contamination with other materials. It is imperative that a clean environment be maintained at all times.

NOTE: One gallon & One quart kits are available. Always mix a complete kit and at no time split or breakdown kit to make smaller portions



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Rev. 1.5 2/2010

6.7 Optional Primer Coat – Recommended for porous concrete surfaces, spray a coat of *ChemLINE Primer* {*ChemLINE Primer* can be thinned with Toluene/Xylene at about 5-6% for application.} *ChemLINE Primer* will seal the surface and prevent outgassing of the finish materials. The wet film thickness of this coating shall not exceed 3-5 mils (75-125 microns). Estimated practical coverage is 200 sq.ft/gal. Allow *ChemLINE Primer* to cure until firm to the touch (“B” staged, all solvent removed). Follow with two full coats of *ChemLINE 784/32* following procedures outlined in 6.9-6.12 for the second and third coats.

6.8 First Full Coat – Apply first full coat of *ChemLINE 784/32* {*Red*} in a cross-hatched pattern with 50% overlap. The recommended wet film thickness is 11-13 mils (275-325 microns) to achieve a DFT of 10-12 mil (250-300 microns).

6.9 Allow first coat to “B” Stage (allow solvent to burn off and coating to become tacky and semi-hard – reference section 4.0 and 6.3 for additional details).

6.10 Applicator shall wear protective footwear before stepping onto the first coat, e.g., cover shoes with protective plastic booties or similar.

6.11 Second Full Coat – Apply second full coat of *ChemLINE 784/32* {*Gray*} in a cross-hatched pattern with 50% overlap. The recommended wet film thickness is 11-13 mils (275-325 microns) to achieve a DFT of 10-12 mil (250-275 microns).

6.12 Allow second coat to “B” Stage (allow solvent to burn off and coating to become tacky and semi-hard reference section 4.0 and 6.3 for additional details).

6.13 After second coat has reached a “B” stage the initial inspections may be performed and repairs made prior to the final curing. {**DO NOT** use any wet type spark testing equipment while coating is in a “B” stage (See section 9.1 for additional details)}.

6.14 Final cure as per specification (contact Advanced Polymer Coatings for detailed final cure cycle for conditions of service).

7.0 THINNERS

ChemLINE Primer and *ChemLINE 784/32* coatings may require thinning for some spray applications. Thin *ChemLINE 784/32* with Toluene/Xylene only, no other solvents are acceptable.

NOTE -- Do Not Add More Than 1 Quart (946 ml) of Solvent to 5 Gallons (19 liters) of Part A – Resin. In general, no thinning is required for roll or brush applications.

NOTE -- Toluene and Xylene are moderately toxic, flammable liquid. It is important to remember when using any solvent or thinner that adequate ventilation is required, no one should smoke and all individuals using these materials should use a respirator, face shield and wear proper protective clothing.

8.0 INSPECTION, TESTING AND DOCUMENTATION

8.1 The surface profile must be verified after mechanical cleaning on a small area of the structure, e.g., 2 ft. x 2 ft. (61 cm x 61 cm), prior to continued mechanical cleaning. The anchor pattern should be equal to CSP3 to CSP5 meeting ICRI (International Concrete Repair Institute) standard guideline #03732 (see Section 3.5). Recycled abrasives must be checked regularly to ensure that a uniform profile is maintained and that the abrasive material remains free of soluble salt and oil contaminants. A final check of the anchor pattern shall be performed immediately after the mechanical cleaning operation is complete. Make a sufficient number of surface profile measurements on evenly spaced areas around the tank or structure so that a representative record is obtained.

8.2 Surface cleanliness shall be checked before and after mechanical cleaning and prior to coating if more than four (4) hours elapse between the mechanical cleaning and coating operations. This involves examining the surface for dust, debris, oil, grease, chemical contamination (particularly for chloride ions). The latter is problematic in high relative humidity environments, especially those surfaces with high levels of chloride ion contamination, and when there is a delay between the mechanical cleaning step and coating step.



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CL784/32- 403 Concrete
Rev. 1.5 2/2010

8.2.1 The surface shall be tested for soluble salt contamination before and after mechanical cleaning. This test is especially important when coatings are applied in close proximity to marine coastal environments. Perform a sufficient number of tests over the tank or structure so that a representative record of the surface contamination level is obtained. Make additional tests when several high readings are recorded.

8.2.2 Testing for contamination by soluble salts can be accomplished by using a “Chlor-Test™ Tester” or “KTA surface contamination analysis test kit” or by an extraction method followed by titration (ASTM 512). The acceptable level of chloride ion contamination is 5 µg/cm² or less. If after testing, the chloride ion level exceeds this limit, all contaminated areas shall be steam cleaned or pressure washed with warm, clean water (distilled or demineralized water is preferred). If soluble salt contamination is detected after mechanical cleaning, the surface shall be cleaned as outlined above. Check abrasive material for contamination before recleaning. (the maximum acceptable conductivity level for a 1:1 abrasive/distilled water mixture is 150 µS/cm).

8.3 Thickness measurements are necessary to be sure weak spots are not present which visual inspection might miss.

8.3.1 Wet film thickness (WFT) measurements made during the coating application will aid in determining if the specified amount of material is being applied so that the expected dry film thickness (DFT) is attained. Make frequent readings during the initial coating application to ensure that the proper thickness is being applied. e.g., the WFT should be about 11 mils in order to achieve a DFT of about 10 mils (this difference between wet and DFT may vary when thinner is added). Make regular wet film thickness measurements when a new area of the structure is coated or lined. No formal documentation of WFT is required; however, good coating practice dictates that a sufficient number of WFT measurements be made in order to ensure that the required dry film thickness is achieved.

8.3.2 DFT measurements made after the coating or lining has been applied will ensure that the proper thickness has been applied. The recommended DFT is 20-24 mils (500-600 microns); the minimum and maximum DFTs are 18 mils (450 microns) and 28 mils (700 microns), respectively. Make five separate spot measurements at random locations for every 200 ft² (19 m²) of coated surface. Each spot measurements should consist of an average of three different gage readings made in a small area. The average of the five spot readings must be within 20% of the specified dry film thickness. If the average coating thickness differs by more than 20% of the specified value notify the Owner’s Representative. Readings should not be made closer than 1/2 inch (1.3 cm) from edges, holes, inside corners, etc. unless validity of calibration for such measurements can be demonstrated. Details on ASTM D4138 measurement of Dry Film Thickness of protective Coating Systems by Destructive Means.**NOTE --** Make additional spot measurements if low DFT areas are found.

8.4 Large defects in the applied coating will be obvious, but such defects as small blisters, hairline cracks or pinholes will not be apparent without close examination. Edges and inside and outside corners will usually be most likely areas for defects.

8.5 The following test shall be performed to determine whether the coating is cured: coating hardness can be tested using a pencil hardness gage (e.g., Paul N. Gardner, Co., Inc.). A properly cured *ChemLINE 784/32* coating should have a pencil hardness value greater than or equal to "9H." If a hardness value of less than 9H is determined, notify the Owner’s Representative and an APC Technical Service department before recuring. In the absence of a pencil hardness tester, one may use a solvent wipe to determine whether the coating is cured. Soak a clean, white cloth with clean acetone solvent. Rub the same area of the coating 40-50 times in a back-n-forth motion while applying pressure. If the coating becomes soft and tacky or coating material is transferred to the cloth, the coating is not properly cured.

8.6 The Inspector(s)/Contractor shall record all pertinent information concerning inspections or work performed. Inspections will be recorded and kept on the Project Documentation Forms – Appendix B or owner/contractor forms approved by APC Technical Service department. Inspections will be performed after the following operations; however, other inspections may be conducted when requested by either the Owner’s representative or the APC Technical Service department.

- Coatings used and batch numbers
- Air temperature
- Surface temperature
- Relative Humidity
- Surface roughness results
- Soluble salt contamination results



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- Wet film thickness
- Dry film thickness

9.0 REPAIRS AND TOUCH-UPS

9.1 Prior to Heat Curing. The coating shall be sufficiently hard so one is able to walk on it before repairs are made. Make repairs and touch-ups with *ChemLINE 784/32*. Use pint or half-pint kits for this purpose.

9.1.1 Obvious defects and pinholes can be repaired prior to heat curing with minimum surface preparation. Open pinholes by hand using a small diameter drill bit (about 3/32" diameter). It is not necessary to enlarge pinholes such that bare substrate is exposed. If repairs are made in less than 24 hours, clean area to be touched-up with a clean cloth slightly dampened with clean solvent. Apply coating using a small, clean, stiff bristle brush. Work coating into the opened pinhole using the end of the brush in a twisting and dabbing motion. Lightly brush material over pinhole and a minimum of one inch around the repair site. Coating should be applied thick but not so thick that sags or runs are produced.

NOTE -- Preheat "drilled-out" hole with hot air gun before application of the coating.

12.1.2 Repairs made after the recoat window had passed requires the area around the opened pinhole to be roughened by hand using 50-80 grit abrasive paper before cleaning with solvent.

9.2 After Post Curing. The following procedures shall be followed when making repairs or touch-ups after the coating has complete post cure.

9.2.1 Open pinholes by hand using a small diameter drill bit (about 3/32" diameter). It is not necessary to enlarge pinhole such that bare substrate is exposed. Clean area to be touched-up with a clean cloth slightly dampened with clean solvent. Roughen area at least 1-2 inches around pinhole by hand using 50-80 grit abrasive paper. Heat area to be repaired with a hot air gun for 2-3 minutes. Apply coating using a small, clean, stiff bristle brush. Work coating into the opened pinhole using the end of the brush in a twisting and dabbing motion. Lightly brush material over pinhole and a minimum of one inch around the repair site. Coating should be applied thick but not so thick that sags or runs are produced. Heat patched area with hot air gun until coating is hard and has changed colors.

NOTE -- Preheat "drilled-out" hole with hot air gun before application of the coating.

9.2.2 Large areas that need to be repaired shall be brush blasted using vacuum blasting equipment or adjacent coating must be fully protected to prevent damage from open abrasive blasting. Remove all blasting dust and grit using a vacuum. Wipe down area using a clean cloth slightly dampened with clean solvent. Apply coating by spray, roll or brush application as directed by an APC Technical Service department. Heat patched area with hot air gun, infrared heater or similar until coating is hard and has changed color (substrate temperature in patched area should exceed 200°F [93°C]).

NOTE -- Be sure to remove shiny coating surface at least one inch (2.5 cm) around perimeter of pinhole to be patched by roughening with abrasive paper or carefully with disc sander. This step is necessary because the adhesion of the coating patch is poor to a cured coating.

10.0 RECOATING

ChemLINE 784/32 may be recoated after hardening (full cure); however, the surface shall be brush blasted to remove the shiny resin rich surface. Surface preparation procedures outlined in Section 3.0 and coating/curing procedures in Sections 4.0 to 6.0 shall be followed thereafter.

10.0 GENERAL NOTES

10.1 Tanks shall be adequately illuminated using safety/explosion-proof lighting. It is recommended that areas to be blasted or sprayed are illuminated at 1000 LUX.

10.2 Install adequate ventilation system in order to maintain an optimum air supply level, to minimize mechanical clean ing dust and to draw off solvent in order to promote faster "B" staging. It is recommended that the ventilation system is sufficient in order to ensure an air exchange of 4 times/hour in large tanks (e.g., > 2,000 m²) and 10 times/hour for small tanks, respectively.



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CL784/32- 403 Concrete
 Rev. 1.5 2/2010

10.3 Staging (scaffolding) shall be installed in a secure manner and designed so that all piping and boarding are a minimum of 12 inches (30 cm) from the surfaces to be blasted or sprayed and a maximum of 24 inches (61 cm) from these same areas.

10.4 The *ChemLINE 784/32* shall be stored in a "climate controlled" container, room or building that is weather proof and maintained at temperatures between 68-77°F (20-25°C) for a minimum of 48 hours prior to use. The material should be kept warm (68-77°F [20-25°C]) during the mixing and application processes.

WARNING: Keep resin and catalyst out of direct sunlight when the ambient air temperature is greater than about 75°F (24°C); in addition, keep material away from heat sources and open flames.

10.5 The coating preparation area outside the tank or away from the structure shall be sheltered from adverse environmental conditions including rain, wind, dust and cold temperatures (<50°F [<10°C]).

10.6 Surfaces that are difficult or impossible to abrasively blast or blastrac shall be prepared by using small blasting units or mechanical grinding tools.

10.7 Humidity and temperature control inside tanks are not as critical during the blasting operation, as it is before, during and after the coating operation.

10.8 It is important to maintain adequate ventilation to control dust and for safety reasons.

10.9 Concrete must be at least 60F (16C) during the coatings application. Relative humidity must be maintained below 50%RH during the surface preparation and coatings application.

10.10 New Concrete must be cured 28 days prior to coatings application

10.11 Concrete to be coated shall have a moisture content of less than 3.5% as measured by Delmhorst moisture meter or by using ASTM D4268-88 plastic sheet method.

11.0 SAFETY EQUIPMENT

- 1 - Safety goggles or face shield
- 2 - Respirators - Willson 1200 series (or equal) with organic vapor/dust mist cartridge (122110/122110S). For enclosed spaces, use full face external air supplied face mask (3M or equal)
- 3 - Rubber gloves (e.g., natural rubber, neoprene)
- 4 - Protective coveralls over long pants and long-sleeve shirts
- 5 - See material safety data sheet (MSDS) for handling instructions and health hazard data



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CL784/32- 403 Concrete
Rev. 1.5 2/2010

12.0 SAFETY PRECAUTIONS FOR HANDLING *ChemLINE 784/32*

NOTE -- Consult the materials safety data sheet before using this product. Industry accepted safety and health practices regarding the handling and application of high performance protective coatings should be followed. This material should be applied under applicable local, state and federal regulations and in accordance with OSHA and ANSI bulletins on safety.

Use following procedures for handling this product are:

- 1 - Ventilate tank at all times when spraying
- 2 - Apply skin lotion-containing lanolin to hands, arms and face prior to working with coating
- 3 - Wear protective clothing:
 - A) When mixing, preparing or repairing: wear rubber gloves, protective coveralls, chemical goggles and a gas/vapor purifying respirator;
 - B) When spraying, wear rubber gloves, protective coveralls, plastic boots, protective hood and full face positive air pressure mask. Tape closed all openings.
- 4 - Recommendation: Install small rubber hose inside protective coveralls and connect to air line to keep cool.

NOTE: Do not use solvents to remove *ChemLINE 784/32* coatings. Use only soap and water! Reapply skin lotion after washing.

Note to Physicians: For skin irritations, Cortisone cream or Beta-Val cream (Betamethasone Valerate, 0.1%) is recommended.

DISCLAIMER

The information set forth herein is manufacturer's recommended application procedures which must be followed as a condition of manufacturer's Limited Warranty. No new or additional warranties are created by following these recommendations. All technical data, directions and recommendations are based upon manufacturer's test results and experiences under controlled conditions. All information is subject to change based upon manufacturer's ongoing experience. End user and/or applicator should verify that it has the manufacturer's most recent recommendations before ordering or specifying material. All materials and any technical assistance is given subject to manufacturer's General Conditions of Sale and Limited Warranty.



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Rev. 1.5 2/2010

Appendix A

Contractor/Applicator Acknowledgment Sign-Off Sheet

The undersigned hereby acknowledges that he/she has completely read the most current version of the Advanced Polymer Coatings' Application Procedures for **ChemLINE** _____; and acknowledges that he/she understands all aspects of these procedures before the start of the coating/lining project located at

_____.

Signature:

Contractor/Applicator Representative (print)

Contractor/Applicator Representative (signature)

Date

Contractor/Applicator Information:

Company Name

Address

Address

Address

Telephone



Advanced Polymer Coatings, Ltd.
Avon, Ohio 44011 U.S.A.
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Appendix B

Project Documentation Forms



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ChemLINE
Project Documentation Forms
(Project Cover Sheet)

Project : _____ Location: _____

End User: _____ Contact: _____

Project Description (type of structure, dimensions, etc.):

Substrate: _____

Conditions of Service: _____

Project Start Date: _____ Project Completion Date: _____

APC Inspector: _____

Contractor: _____

Contractor Representative: _____

Subcontractors: _____



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Project : _____ Location: _____

Compressed Air Check

Check compressed air for water and oil contamination once per day during blasting operations.

Test #	Date	Time of Day	Pass/Fail

Surface Finish

Surface Classification: _____

Surface Preparation Approval: _____ Date: _____
Signature of Inspector

Surface Profile

Abrasive Type: _____

Grit Size: _____

Measurement #	Location Description	Surface Profile CSP Standard
1		
2		
3		
4		
5		
6		
7		
8		
9		
Average		



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FORM IS # 1.10

Project : _____ Location: _____

Environmental Parameters

Storage of Resin and Catalyst

Description of Storage Location: _____

Temperature of Storage Area: _____

Approval of Storage Area: _____ Date: _____

Signature of Inspector

Summary of Environmental Data

Environmental readings should be taken frequently. Enter environmental readings into table below for measurements made just prior to the start of the operations listed. Additional measurements should be entered in the table on FORM IS # 1.12.

Operation	Air Temp. (°F)	Substrate Temp. (°F)	Relative Humid. (%)	Dew Pt. Temp. (°F)
Mechanical Cleaning				
First Spray Coat				
Second Spray Coat				
Third Spray Coat ⁽¹⁾				
First Stripe Coat				
Second Stripe Coat				
Touch-up, 1				
Touch-up, 2				
Touch-up, 3				

⁽¹⁾ May not Apply



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FORM IS # 1.15

Project : _____ Location: _____

Heat Curing

Heating Contractor - _____ Heating Contractor Supervisor - _____

Start Date - _____ Start Time - _____ End Date - _____ End Time - _____

of Heating Ducts - _____ Location of Heating Ducts - _____

Type of Heating Equipment - _____

of Probes Inside Tank- _____ Location of Probes - _____

NOTE - Attach Heat Curing Data to Final Inspection Report

Check for Completion of Heat Cure

Hardness Measurements (Option A) Conduct pencil hardness measurements as outlined in the appropriate *Application Procedures*. Record the hardness values and the locations in the tank where measurements were made.

Measurement #	Location of Measurement	Hardness Value
Average Hardness Value		



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Solvent Wipe (Option B) Dampen a clean white cloth with APS solvent. Test a minimum of six (6) areas in the tank. Rub each spot, approximately 4 in. x 14 in., fifty or more times. Check for transfer of coating material to the cloth and feel surface to determine whether coating was softened or made tacky. If either of these occur, the coating was not properly heat cured.

Test #	Location of Test	# of Strokes per Test	Pass/Fail



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