



ResoCoat 301 Concrete and Fiberglass Pool and Spa Surface Coating Technical Bulletin (Revision B)

PHYSICAL PROPERTIES

Bond strength of ResoCoat 301 coating over ResoSeal 800 and ResoBond 805 on concrete (ASTM D-4541)	Concrete failure
Bond strength of ResoCoat 301 coating over ResoBond 805 on Fiberglass (ASTM D-4541)	>800 psi
Finish appearance	Smooth surface with semi-gloss finish
Type	Ready to use Polymer Thermal Spray dry powder <400 micron (40 mesh)
Coatings VOC (g/L)	None
Shelf life	Minimum of one year when stored at 70° F in unopened original sealed container
Application Rate	70 to 100 square feet per hour
Thickness (1 coat)	10-15 mils
Coverage	20 ft ² at 10 mils thickness (See Coverage section below)

Physical properties were determined on specimens prepared under laboratory conditions using applicable ASTM procedures. Actual field conditions may vary and yield different results; therefore, data are subject to reasonable deviation.

ResoCoat 301 Concrete and Fiberglass Pool and Spa Surface Coating is a zero VOC, Thermal Spray applied polymeric pool coating finish that is engineered to flow out quickly into a complete, pinhole free polymer surface. The coating is formulated for superior adhesion to the substrate, and provides outstanding resistance to ultra-violet light, color fade, water treatment chemicals, extreme temperatures, and physical damage. The coating is ready for immediate use following application.

ResoCoat 301 Pool and Spa finish materials may be applied directly to properly prepared fiberglass surfaces. Concrete and other cementitious surfaces must be prepared for PTS coating with the application of ResoSeal 800 Concrete Sealer and ResoBond 805 Tie-Coat to prevent the formation of pinholes and other defects due to outgassing of air and moisture from the concrete. ResoSeal 800 is specifically formulated to provide a non-permeable barrier, even at the elevated temperatures of the thermal spray process, and yield a pinhole free topcoat surface.

ResoCoat 301 is applied with the Resodyn PTS-30 Polymer Thermal Spray (PTS) system to thickness of 10-15 mils. A single layer provides a complete, non-porous, continuous

surface with all the desired properties for a beautiful long-lasting pool and spa finish. ResoCoat 301 Pool and Spa Surface coating finish is available in a variety of solid and blended colors. Resodyn also offers custom color matching services for special projects.

CHARACTERISTICS

- Creates a complete flowed -out, pinhole free surface
- Variety of color options
- Zero VOCs
- Excellent adhesion
- Easy repair and touch-up

Application Working Environment

ResoCoat 301 may be applied to dry substrates at temperatures above 40° F. Polymer Thermal Spray application rates will decrease at lower ambient temperatures due to the time and thermal energy required to preheat and maintain the substrate surface at the proper temperature for good adhesion and material flow-out.

Substrates that readily absorb heat at a fast rate such as concrete require more preheating before beginning the coating material application than a composite surface such as fiberglass. Concrete coated with ResoSeal 800

and ResoBond 805 sealers will provide noticeably reduced time to preheat and much improved flow characteristics over unsealed concrete, with application rates approaching that of fiberglass or other composite substrates.

Surface Preparation and Cleaning

All substrate structures must have the necessary strength to withstand imposed loads during normal use and operation. If a smooth finish is desired, the surface should be floated free of ridges or depressions and all voids and surface imperfections should be filled. Cure new concrete for 28 days prior to application.

Prior to the application of any coating or over-coating, surfaces must be free of dirt, dust, oil, grease, water, and other contaminants that may inhibit bonding. New concrete must be dry, firm and have achieved full 28 day cure prior to coating. When preparing old concrete, mechanical methods should be utilized to remove laitance, old paints, protective coatings, and attacked or deteriorated concrete. All structural cracks, bug holes, and major imperfections should be repaired prior

to application of pool and spa coating products.

Concrete surfaces must be sealed with ResoSeal 800 Concrete Sealer and coated with ResoBond 805 Tie-Coat to prevent outgassing from the concrete during Thermal Spray application and provide good adhesion of the ResoCoat 301 finish. Read and follow all instructions for these sealer materials to ensure a pinhole free, well-adhered surface for top coating.

Fiberglass and other resin composite surfaces must be prepared by lightly sanding the surface with 100 grit sandpaper to remove any contaminants, waxes, or oxidation. Clean the surface with compressed air or vacuum after sanding, and then wipe the surface with a residue free solvent such as acetone, alcohol, or MEK.

APPLICATION

Installation

ResoCoat 301 Concrete and Fiberglass Pool and Spa Surface Coating is ready to use as supplied, and requires no mixing. Pour material directly from the container into the fluidized bed powder feed hopper to approximately one-half full.

Apply using the Resodyn PTS-30 Polymer Thermal Spray system. System operational parameters and powder feed rates will vary based on substrate type, ambient temperature, and other process variables. Refer to the Resodyn PTS-30 Users Guide for information regarding setting and adjusting process parameters specific to your equipment and application. The process of PTS coating application utilizes methods and skills similar to that of spray painting. Practice of the application process using the PTS-30 system on a non-vital, similar substrate may be required prior to actual job-site use of the system to achieve a satisfactory coating deposition.

Initial PTS-30 Parameter Settings

Applicator: Level 5 Power Setting

Powder Fluidizer: 3-8 psi as required

Powder Transport: 3-7 psi

Powder Feed: 8-20 psi. Adjust as required.

Note: The above general system parameters are suggested beginning parameters only. Final applicator power level and material feed settings must be determined by the operator during spray application. Adjustments will be required to optimize the application rate, coating thickness, and material flow-out based on environmental and substrate variations, and other processing conditions. Refer to the PTS-30 Users Guide section "Applying a Coating with the PTS-30 System" for a detailed discussion on system operation and coating application.

Process Parameters

Pre-heat temperature: 203-212°F (95-100° C)

In-process target temperature range: 385-300° F (140-150° C)

Maximum process temperature: 350°F (175° C) for seconds only!

Applicator stand-off distance: 18-24" as required for temperature control and spray pattern.

Note: Accurate determinations of the substrate preheat temperature and in-process coating surface temperature is mandatory to ensure a well adhered quality coating. Use of an Infrared (I.R.) Thermometer is highly recommended to easily and accurately read the surface temperatures throughout the entire process. Resodyn offers an optional hands free I.R. thermometer accessory handle for the PTS-30 applicator. See the PTS-30 User Guide or Resodyn website for details.

The listed pre-heat temperature is specific to the coating material, and must be reached before beginning the material deposition to achieve proper wetting and adhesion. Pre-heat is also

required to achieve proper flow-out of the material during continued application.

Exceeding the maximum temperature during the application process may degrade the physical properties of the coating material causing discoloration and reduced performance over the life of the coating.

The applicator gun to substrate stand-off distance must be varied by the operator to control the amount of heat input into the substrate and coating. Holding the applicator at a distance closer to the substrate increases the amount of heat available for the coating process. Moving the applicator farther away from the substrate reduces the thermal energy input to the process and should be used when required to avoid exceeding the materials maximum temperature.

Apply the material to a uniform thickness of 8-10 mils (0.008" - 0.010") over the entire surface. Ensure complete coverage and overlap of spray passes. Achieving the optimum application rate will require adjustment of the feed rate and power level settings to allow for a steady application of material in a continuous, smooth, back and forth application pattern, with previously applied material flowing out from residual substrate/coating heat combined with current processing heat as each subsequent pass is deposited. Excessive material feed rates and/or inadequate power levels will result in the need to stop material feed and return to post-heat previously deposited material to continue the melt and flow-out process to achieve a smooth continuous coating surface. Inadequate feed rate and/or excessive power level selection will result in the rapid overheating of the coating material, sealers, or substrate.

The optimized process will be a balance of the correct power level, feed rate, applicator stand-off distance, and applicator traverse speed to yield a high application rate of a fully processed coating.

COATING REPAIR & TOUCH-UP

Damage and physical wear to the coating surface can be easily repaired by simply reheating the surface to remelt and flow the materials at the area of damage. If required, additional matching coating material may be applied to the heated area to completely fill and cover the damage. All materials should flow together to produce a coating repair that is not readily detectable, and will continue to provide outstanding performance.

COVERAGE

1 pound \approx 20 ft² at 10 mils thickness
*Coverage will vary depending upon surface conditions, porosity, application techniques, and project specifics.

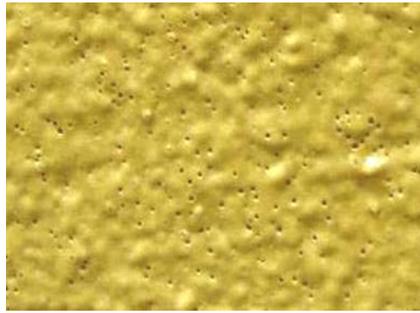
CURING/RETURN TO SERVICE

ResoCoat 301 Concrete and Fiberglass Pool and Spa Surface Coating is fully cured after it cools. Upon reaching ambient temperature the coating is ready for immediate service, and the pool/spa may be filled with water. Allow the coating to cool unaided by fans, water spray, water fill, or any other means of accelerated rate cooling.

ResoCoat 301 Concrete and Fiberglass Pool and Spa Surface Coating applied over fully cured ResoSeal concrete sealer is pictured below. The coating is pinhole free, well adhered, and has a flowed-out smooth finish.



The PTS top coating shown below is an example of pinhole formation as a result of application over an improperly applied and cured sealer coating. The coating also exhibited very weak adhesion.



PACKAGING

25 and 50 pound bag lined cartons with desiccant packet.

CLEAN-UP

Follow the User Guide instructions for powder hopper removal from the PTS-30 control cart. Pour the remaining unused powder back into its original bag lined container. Ensure the desiccant packet remains with the powder inside the bag liner and reseal the bag. Vacuum the remaining powder residue from the hopper canister and from inside and around the powder feed pump. Engage the "purge" button on the control panel for 10 seconds to blow any remaining powder through the umbilical feed hose and from the applicator feed tube. The system is now ready for the next use.

SHELF LIFE

ResoCoat 301 Concrete and Fiberglass Pool and Spa Surface Coating has a shelf life of at least one (1) year when stored in the original, unopened, tightly sealed containers in a dry location at 70°F.

Return all unused material to the original container immediately after use. Remove as much air from the bag liner as possible and reseal tightly ensuring the desiccant packet remains inside the sealed bag. Agglomeration of the powder particles may occur when exposed to humidity and moisture for extended periods, causing poor fluidization and powder flow.

CAUTION and SAFETY

Consult Material Safety Data Sheets and container label Caution Statements for detailed explanations of the hazards and personal protection required in handling these materials.

WARNING! May cause eye, skin and respiratory tract irritation.

INHALATION: Inhalation of dusts may cause respiratory irritation.

INGESTION: May cause irritation to the mouth, throat, and abdomen. May also cause nausea or vomiting.

SKIN CONTACT: Prolonged contact may cause irritation

EYE CONTACT: Contact with eyes may cause irritation.

CHRONIC EXPOSURE: No known chronic health effects.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

PERSONAL PROTECTION

VENTILATION SYSTEM: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

PERSONAL RESPIRATORS (NIOSH APPROVED): Not expected to require personal respirator. If the exposure limit is exceeded a respirator may be required. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

An example of an OSHA approved air purifying cartridge respirator is pictured for reference below.



SKIN PROTECTION: Wear protective clothing as appropriate.

EYE PROTECTION: Use safety glasses and/or goggles, as appropriate where dusting or contact is possible.



GOOD HYGIENE CONDITIONS: Wash with soap and water before eating any food.

FIRST AID MEASURES

INHALATION FIRST AID: If individual develops breathing difficulties, remove to fresh air and seek medical attention if breathing difficulties continue.

SKIN CONTACT FIRST AID: Use good hygiene practices and wash skin with soap and water after handling.

EYE CONTACT FIRST AID: Remove contact lens if present. Hold eyelids apart, initiate and maintain gentle and continuous irrigation for 15 minutes lifting upper and lower eyelids occasionally. Get medical attention immediately.

INGESTION FIRST AID: Induce vomiting ONLY as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice immediately.

NOTE TO PHYSICIANS: Treat symptoms.

WARRANTY

We warrant that our goods will conform to the description contained in the order, and that we have good title to all goods sold. WE GIVE NO WARRANTY, WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE OR OTHERWISE, EXPRESS OR IMPLIED, OTHER THAN AS EXPRESSLY SET FORTH HEREIN. We are glad to offer suggestions or to refer you to customers using Resodyn materials for a similar application. Users shall determine the suitability of the product for intended application before using, and users assume all risk and liability whatsoever in connection therewith regardless of any suggestions as to application or construction. In no event shall we be liable hereunder or otherwise for incidental or consequential damages. Our liability and your exclusive remedy hereunder or otherwise, in law or in equity, shall be expressly limited to our replacement of nonconforming goods at our factory or, at our sole option, to repayment of the purchase price of nonconforming goods.

Information concerning government safety regulations available upon request. Visit our Website at www.resodyn.com for downloadable versions of MSDS and Technical Data Sheet.