



TEK GEL™ | A SYSTEM APPROCH FOR CONCRETE ETCHING

Tek Gel for Pre-Grinding | Tek Gel for Profiling | Tek Gel for Flattooing™

Technical Data Sheet

1. Description:

Tek Gel is a system of gelled acid products that can be used to clean, etch or profile cured concrete prior to the application of coatings and overlays; as a pretreatment before mechanical grinding; or for Flattooing which is the installation of standard and customized stenciled designs and patterns on the concrete's surface creating one of a kind graphics. Tek gel can be used on un-colored concrete, integrally colored concrete, color hardeners, and cementitious overlays.

Tek Gel can be applied to horizontal, vertical and overhead surfaces. Surface Gel Tek products are great for removing rust, mold, mildew, grease/oil, organic waste, as well as laitance, efflorescence, surface glaze, release agents and curing compounds from unsealed concrete. On hard trowelled concrete surfaces, the addition of Tek Gel for profiling will significantly improve the penetration of stains and dyes, and help obtain the proper profile for mechanical bonding of sealers, coatings and overlays. Used as an initial grinding aid (refer to section 1.1), Tek Gel can reduce the need for the initial course grinding phases normally done with metal diamond abrasives. Using Tek Gel as a pre-grind can help the overall project budget and is an ideal application for ground, honed or polished concrete.

Tek Gel's patented formulations are environmentally safe, user friendly and easy to apply by brush, roller or squeegee. They are ready to use without measuring or diluting. They contain no VOCs, are incombustible and nonvolatile. Clean up and neutralize with water.

Unlike other harsh, liquid chemical cleaners, Tek Gel controls and contains the waste residues for easier clean up and disposal. Tek Gel provides more consistent results and does not damage the concrete by deeply penetrating the concrete substrate, when compared to liquid acid cleaners. Tek Gel does not produce airborne silica dust as does sandblasting or dry grinding. The products are safe for indoor and outdoor use.

Tek Gel performs in accordance with ASTM D4260-05 - *Standard Practice for Liquid and Gelled Acid Etching of Concrete*. For professional use only.

1.1 Tek Gel for Pre-Grinding:

A heavy duty gelled acid for pre-treating concrete prior to mechanical cutting with metal bond abrasives, and should be used as a surface profiler for coatings and cementitious overlays. Tek Gel for Pre-Grinding may also affectively remove certain sealers and coatings that are not formulated for acid resistance, and open hard trowelled – burned concrete - surfaces. Fine aggregate (sand) in addition to larger course aggregates will be exposed. The treated surface will feel like and approximate the visual appearance of 80-100 grit sandpaper.

Note: Do not use Tek Gel for Pre-Grinding as preparation for an acid stain application.

1.2 Tek Gel for Profiling:

A medium duty gelled acid for removing dirt, organic material, grease/oil, and to profile for thin coatings and overlay applications typically less than 10 mills thick. When used properly, fine sands will be exposed. The treated surfaces will feel like and approximate the visual appearance of 120 grit sandpaper.

1.3 Tek Gel for Flattooing:

A light duty gelled acid for micro- etching concrete when used with Flattoo adhesive stencil patterns and designs. The gel consistency ensures clean crisp separation lines, shapes and artwork. Tek Gel for Flattooing can be used for light concrete cleaning, or as surface preparation for the application of water or acetone based dyes, and acid stains. A slightly mottled or suede-like surface will be created with no sand exposure. The treated surfaces will feel like and have the approximate visual appearance of 160 grit sandpaper.

2.	Applicable Standards or References:
<p>ASTM D4260-05 - <i>Standard Practice for Liquid and Gelled Acid Etching of Concrete</i></p> <p>ASTM D 4262 - <i>Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces</i></p> <p>ASTM D 4263 - <i>Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method</i> (This test only gives an indication that moisture may be present and should never be used as the final basis of decision.)</p> <p>ASTM-F-1869 – <i>Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride</i></p> <p>ASTM F-2170 – <i>Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In Situ Probes</i></p> <p>ICRI Technical Guideline No. 310.2 - <i>Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays</i></p>	
3.	Limitations:
<p>Ambient air temperature during application should be between 50° to 90° F. At lower temperatures the dwell time will increase. At higher temperatures, material may prematurely dry before the concrete surface is adequately cleaned, etched or profiled. On excessively hot concrete surfaces, (SSD - saturated, surface dry) should be obtained by pre dampening the substrate with cool water before applying Tek Gel.</p> <p>Application on frozen or wet concrete (standing water) may affect the performance of Tek Gel. Do not apply to concrete less than 28 days old without prior testing and evaluation. The use of plasticizing admixtures or fly ash in the concrete may affect Tek Gel performance.</p> <p>Tek Gel may tarnish and etch metal. Protect plant material by spraying plants and soil with water prior to neutralizing and flushing the concrete surface. Protect susceptible concrete surfaces with plastic sheeting during application. Clean up spills or application on susceptible surfaces immediately.</p>	
4.	Cautions:
<p>May cause eye, skin, and respiratory irritation. Do not take internally. Keep out of reach of children and animals. Wear eye protection, respirator and protective clothing during application. Ensure adequate ventilation during and after application. In case of accidental spillage, immediately neutralize with water, dispose of material in accordance with local, state, and federal regulations. Concrete surface will be slippery during application and removal. Before using Tek Gel, read Material Safety Data Sheet.</p>	
5.	Packaging:
<p>Tek Gel for Profiling and Tek Gel Pre-Grind are available in 1-gallon and 5-gallon pails and special order 30-gallon drums. Tek Gel for Flattooing is available in 1-gallon pails and special order 5-gallon pails or 30-gallon drums. Containers should be stored in a cool, climate controlled environment when not in use. Do not reuse empty container.</p>	
5.1	Shelf Life:
<p>1 year, when stored in original, unopened containers, in dry storage. Material that has been exposed to freezing temperatures must be re-acclimated to within the application temperature range, and thoroughly mixed before using.</p>	
6.	Coverage:
<p>One gallon of Surface Gel Tek products covers 300-350 square feet on a <u>smooth</u> trowelled surface. Apply full strength. Do not dilute with water or solvents. Coverage will vary depending on the surface texture and application method. Multiple applications may be needed depending on the compressive strength of the concrete mix design and depth of profile required. Coverage rates will decrease on previously treated (rougher) surfaces. Note: Prepare a test area on the actual concrete surface. Use the same tools and techniques that will be utilized on the job to determine coverage rates, product effectiveness, substrate compatibility, and removal requirements.</p>	

7.	Application tools:
<p>Apply Tek Gel with a brush, roller or squeegee. For larger applications, Tek Gel can be worked into the concrete using a slow speed (175rpm) rotary swing buffing machine equipped with a black pad or polyethylene bristled brush. When applying by roller or squeegee, overlap lines may be visible after the concrete is clear coated or sealed. Minimize overlap lines by immediately following the Tek Gel application with circular or random brushing strokes. Note: Do not vigorously brush Tek Gel when applying over Flattoo stencils. All application tools must be chemical resistant. Clean application tools with clean water immediately after use.</p>	
8.	Pre-application:
<p>Do not proceed with application until the test area has been approved by the project owner, owner's agent or architect. Contributing factors that can affect the performance of Tek Gel include the age of the concrete, mix design – particularly mix designs utilizing plasticizing admixtures and fly ash, the type of finish (smooth trowel, burnished), the amount of surface contaminants, and previous applications of wax, sealers or coatings. Always test for the presence of a wax or sealer by randomly dripping water on the concrete. Water will readily be absorbed and darken the concrete if no film forming materials are present. If the water beads up and does not darken the concrete, the residual wax or sealer must be removed before applying Tek Gel. Removal can be accomplished with a soy gel type coating stripper or by mechanically sanding with an 80 grit screen. Sealer type and thickness will affect the stripping process.</p>	
9.	Application:
<p>Always apply a uniform amount of Tek Gel to the concrete substrate, particularly along floor edges and in corners. If product does not fizz or bubble during application, penetrating contamination or coating residues may exist on the concrete. Protect metal, plant material, and concrete adjacent to the application with plastic sheeting. Prevent Tek Gel from dissolving the masking tape securing the plastic sheeting by double taping: remove the top layer of tape immediately after applying product, leaving in place the clean bottom layer of tape. Do not leave tape directly on concrete for extended periods, particularly if the surface is in the hot sun. Adhesive residues may inhibit the application of stains or sealers. Facilitate mixing by storing Tek Gel at moderate temperatures. Do not allow other trades to walk through or work over the concrete surface until Tek Gel has been neutralized and rinsed, and work has been accepted by the project owner or architect. Shake container or mix material by hand. Uniformly apply Tek Gel for consistent chemical etching across the concrete surface. Material that is over applied in depressed areas (bird baths) may produce a different level of reveal compared to the adjacent concrete. Important note: After the concrete has been treated with Tek Gel and before it is sealed, coated or overlaid, the concrete's pH and moisture content should be measured, and in compliance with the sealer, coating or overlay manufacturer's recommendations for the application and performance of their product. See section: 2. Applicable Standards.</p>	
9.1	Tek Gel for Pre-Grinding; Tek Gel for Profiling:
<p>Apply material evenly. For best results, the gelled acid should be worked into the concrete by brush, roller or squeegee across or perpendicular to the initial application, ensuring that the product is in contact with the concrete surface. Great care should be taken when hand brushing or machine buffing to minimize the appearance of overlap lines. On broomed, floated or similarly rough textured finishes, Tek Gel for Pre-Grinding and Tek Gel for Profiling must be brushed into the surface. For more aggressive results, rotary machine brushing with a polyethylene bristled brush is suggested. When applying and brushing material, work floor edges and inside corners consistent with the interior of the floor. If Tek Gel for Pre-Grinding or Tek Gel for Profiling does not fizz or bubble during application, review paragraph 8. Pre-application.</p>	
9.2	Tek Gel for Flattooing:
<p>The Flattooing process utilizes adhesive-backed, acid resistant stencils and Tek Gel for Flattooing to create intricate designs, lettering and patterns on clean, dry concrete. Once the stencil(s) are affixed to the clean concrete, apply Tek Gel for Flattooing with a roller or soft bristled brush. The surface should not be vigorously brushed during application, since it may push Tek Gel for Flattooing under the stencil, distorting the pattern or design. Once the gelled acid stops reacting, clean and neutralize with water on a damp cloth. Note: For more information about the application process for Flattooing, please visit our web site www.surfacegeltex.com and down- load the application process.</p>	

10.	Removal:
<p>Once Tek Gel for Pre-Grinding, Tek Gel for Profiling or Tek Gel for Flattoing is completely reacted and there is no additional fizzing and bubbling; clean and neutralize the surface with water. A plastic scraper or rubber squeegee can be used to initially remove residue, followed by water neutralization. Avoid using detergents that create excess soap suds, which are difficult to remove from the concrete. Water can be rinsed into drains without environmental concerns. If material dries before cleaning and rinsing, lightly mist the surface with water to re-emulsify the dried residues, followed by water flushing. Before water flushing, protect adjacent surfaces that may be damaged by the water or grit suspended in the runoff.</p> <p>Important Note: After the cleaning process and if Tek Gel for Pre-Grinding or Tek Gel for Profiling residue contains coating or sealer contaminants or other potentially harmful waste, do not flush material into drains. Wet vacuum rinsed residues and dispose according to local, state and federal regulations. If an automatic floor scrubber (walk-behind unit) will be used to remove Tek Gel residue, the floor should be initially neutralized with a mixture of baking soda and water (1 cup/5 gallons of water) or a similar solution with TSP or ammonia, before scrubbing and extracting with the automatic scrubber. Neutralization will prevent damage to any metal components of the scrubber and adjacent areas.</p>	
11.	Quality Control:
<p>Create a job site sample or test area prior to applying Tek Gel. Utilize all materials, tools, and techniques from the actual job in the jobsite sample. If the surface will be resealed, verify adequate wet and dry slip resistance of the sealed surface. Clarify the maintenance requirements of the sealer, coating or overlay. Site visits by Surface Gel Tek personnel are for making technical recommendations only, and not for supervising or providing quality control.</p>	
12.	Warranty:
<p>Since no control is exercised over product use, Surface Gel Tek, LLC represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE, IS AUTHORIZED OR WARRANTED BY SURFACE GEL TEK, LLC, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SURFACE GEL TEK, LLC WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING DELAYS OR LOST PROFITS. Communications of the warranty and its limitations to end-uses is not the responsibility of Surface Gel Tek, LLC, but should be communicated by those in direct contact with the end-user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end-user shall determine the suitability of the product for the intended use and assumes all risks and liability in connection therewith.</p>	