MATERIALS CHARACTERIZATION REPORT

Date: March 7, 2002

Test Performed by: ANALYZE, Inc.
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Report No.: 0203.04

Customer: Surface Gel Tek, LLC
Tamryn R. Doolan
10137 Huntsman Path
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Samples: Tek Gel™ for Profiling and HD24 Pre Grind
Concrete Surface Preparation and Treatment Products
12" x 12" x 2" Cast and Cured Portland cement slabs

Objective: Determine the pH of the Concrete Surface and Rinse Solution Following Etch of the Concrete Surface

SUMMARY

Tek Gel™ for Profiling/HD24 Pre Grind gel products were applied (ca. 1 gal/400-450 ft^2 loading) to the surfaces of separate cast and cured 12" x 12" x 2" Portland cement slab sections for 15 and 30 minutes. The surface was rinse with one quart of purified water. The pH of the rinse water in both cases is 5-6 as measured using moistened ColorpHast pH strips. For reference, a vinegar solution has a pH of 2.5.

The pH of the moistened concrete surface as a function of time is shown in the Table.

Gel Etch Time (min)	pH					
	Before Etch	Before Rinse	After Rinse As Function of Time			
			t=0	t=1.5 hr	t=3 hr	t=24 hr
15	8-9	2-3	4-5	6	8	8-9
30	8-9	2-3	4-5	6	8	8-9

INTRODUCTION

On March 6th, D. Doolan delivered one gallon bottle of "Tek Gel™ for Profiling and one gallon bottle of "HD24 Pre Grind", Concrete Surface Preparation and Treatment Gel products and a number of 12" x 12" x 2" cast cured Portland cement slabs.

The objective is to determine the pH of the aqueous solution used to rinse down the concrete surface after the gel had etched the surface for 15 and 30 minutes.

TESTING

ColorpHast Ph Strips (EM Science) covering pH ranges of 0-14, 0-2.5 and 2.5-4.5 were employed to determine the approximate pH of the solutions. The indicating areas of the strips were moistened with deionized water prior to making the measurement. The color was matched to the reference color bars within 15 sec of removal from the solution.

The testing was performed outside during a sunny day with an air temperature of 66 °F.

The slabs were washed free of dust with City of Chandler (AZ) tap water (pH 6-7) and allowed to air dry in direct sunlight. The temperature of slab is ca. 74 °F.

15 Minute Etch.

Tek Gel™ for Profiling and HD24 Pre Grind gel were carefully applied with a brush to the top surface in an amount that was estimated to provide a loading of ca. 1 gal/400-450 ft^2. The time was noted at the start of the application. A paper towel was used to wipe off the small amount of excess gel that had adhered as a thin strip along the top of the side walls. The loading of gel on the surface was estimated to be ca. 10 grams based on a weight of 1.01 g of gel being brushed onto a thinner, smoother surface tile (4.25" x 4.25") in a similar manner and allowing for some additional surface roughness on the concrete slab.

As applied, the pH of the gel was measured as 0-1. For reference, a purified water moistened concrete surface had a pH of 8-9 before the etch.

At 10 minutes, the brush was used to 'agitate' the gel on the concrete surface.

At 15 minutes, 960 ml (1.0 quart) of purified water in a graduated cylinder was used to rinse off the gel coated surface into a 5 gal plastic pail. The slab surface was held at an incline with one corner over the pail and then rotated several times to ensure that all corners were rinsed. The surface was rubbed with a toothbrush and/or a rubber gloved hand to insure that all gel was rinsed off. The volume (880 ml, 0.93 quart) of rinse water collected in the pail was measured with a graduated cylinder. The pH of the collected rinse water is 4-5.

Just prior to the rinse, the pH of the surface was 3-4. Immediately after the rinse the measured surface pH increased to 5-6. The pH as a function of time is shown in the Table.

30 Minute Etch.

The 30 minute etch was done in the same manner as for the shorter etch time. The gel on the surface was agitated after standing 20 minutes on the concrete.

The same volume of rinse water was applied (960 ml) at 30 minutes and collected (880 ml). The pH of the collected rinse water is 4-5.

The pH of the moistened concrete surface as a function of time is shown in the Table.

For reference, a one-gallon bottle of Heinz vinegar purchased from a local grocery store has a pH of 2.5.

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