

WE CARE SAFETY - KLEEN CORP. MEMORANDUM

To: Robert Chopp
From: Todd Borowski
Date: April 16, 1999
Subject: A Test of the CHEMTEC ONE Concrete Sealer
Ref: 1243/3.10

Objective: To make sure the acid test given by CHEMTEC can accurately show that the Desired saturation level has been reached and if surface impurities interfere with this Test. Also, to test if the concrete sealer is impervious to short-term exposure of certain Solvents.

Materials/Methods: See Attached

Discussion: The acid test provided by the CHEMTEC company seems to be an acceptable Indicator of the desired sealant application. All three treated samples of concrete Exhibited no reaction when a drop of HCL was placed on the treated surface, while the Untreated sample of concrete exhibited a bubbling reaction (see attached Table 1). When The treated samples were placed in 24 hour contact with select solvents (PERC, THF and NMP), there was no noticeable reaction (see attached Table 2). These results suggest that the sealant provides at least, 24 hour protection for the concrete. After Placing the samples outside, allowing two weeks of exposure to the elements (i.e. rain, dirt, ect.) the acid test was run on each concrete sample and the same results were experienced as before the exposure (see attached table 3).

Conclusion: The CHEMTEC ONE acid test seems to work as a good indicator of proper application of concrete sealer. Surface impurities do not appear to interfere with his test. Also, the sealant is resistant to several strong types of solvents for at least a 24 hour period.

Materials: Three samples of concrete with one surface coated with CHEMTEC ONE, one untreated sample of concrete. PERC (Mallinckrode - lot#1933 KEJT), THF (Fisher- lot#921882-12), NMP (Aldrich - lot# 03623LZ), 28% HCL, three holding trays (glass and metal).

Methods:

1. Place one drop of 28% HCL on the treated surface of a concrete sample and record an observation of the reaction then wipe up the drop. (CHEMTEC's acid test, see attached)
2. Repeat step 1 on the other untreated samples and the untreated one.
3. Fill each holding tray with solvent (PERC< THF< and NMP respectively) to a depth of about 1 cm and place in tray a suspension device.

Note: A glass holding tray and suspension device was used for PERC & THF and a metal tray and device was used with the NMP.

4. Place one treated sample of concrete in each holding tray so that the sealed surface is submerged in the solvent but not touching the bottom of the tray.
5. Seal tray with parafilm and allow to sit for 24 hours. (3/30/99 8:45am – 3/31/99 8:45 am.
6. After he 24 hours, remove each sample of concrete and allow to dry (approx. 3 hours)
7. Repeat the acid test on each sample of concrete, noticing if the reaction has changed for the prior results.
8. Place all samples outside where they can be exposed to the elements for a period of two weeks. (Placed outside on 3/31/99 at 1:20)
9. After two weeks have expired (4/14/99), bring samples back inside.
10. Perform the acid test on each sample again, record results.

Acid Test Results Before Solvent Exposure (Table 1)

	Observations
Sample 1 (Treated)	No Reaction
Sample 2 (Treated)	No Reaction
Sample 3 (Treated)	No Reaction
Sample 4 (Untreated)	Bubbling and yellow color

Acid Test Results After Solvent Exposure (Table 2)

	Observations
Sample 1 (PERC)	No Reaction
Sample 2 (THF)	No Reaction
Sample 3 (NMP)	No Reaction
Sample 4 (Untreated)	None (Did not expose to solvent)

Acid Test Results After Exposure To Elements (Table 3)

	Observations
Sample 1 (PERC)	No Reaction
Sample 2 (THF)	No Reaction
Sample 3 (NMP)	No Reaction
Sample 4 (Untreated)	Bubbling and yellow color