

Joint Reservoir Quality Control Wipe Test

FOREWARD

When properly installed and maintained, joint sealants prolong concrete pavement life by providing important protections. The most critical steps in getting the best value from joint sealing or filling are good reservoir preparation and proper installation of sealant materials. Everyone involved in the joint sealing process must be especially committed to performing thorough joint preparation and cleaning activities to get the best value from any of the available formed-in-place or preformed sealant materials. There is little doubt that poorly designed and/or installed joint sealants will fall short of expectations and will contribute little to pavement performance.



The concrete pavement industry has developed the Wipe Test to provide contractors and inspectors with a new tool for ensuring consistent, high-quality levels of joint preparation and cleaning prior to the installation of sealant materials.

The Wipe Test is intended as a quality control sampling test. It was neither developed with the intention to become a specification requirement, nor developed as a quality assurance or acceptance test. The Wipe Test is a quick, simple way to check the effectiveness of cleaning methods and techniques during field installation work. When performed properly, the test captures the relative amount of concrete dust, dried saw slurry, and other contaminants found on the joint reservoir walls and bottom.

This document describes the Wipe Test, including required equipment, materials, procedures and suggested documentation. ACPA gratefully acknowledges Wiss, Janney, Elstner Associates which was instrumental in developing and validating the method for industry.

TEST METHOD TITLE: ACPA Quality Control Wipe Test

STANDARD TEST REFERENCES:

1. Society for Protective Coatings SP 13/NACE 6, Surface Prep of Concrete (Section 5.4 and 6)
2. ASTM D 5295 -- Standard Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems

PURPOSE OF TEST:

Quality control measure of the cleanliness of a joint sealant reservoir prior to installation of joint sealant material.

EQUIPMENT / MATERIALS REQUIRED:

Cloth: Black-colored 100% cotton cloth; standard, 5.5-oz (155-g) tee shirt material.

Depressor: Standard adult-sized medical tongue depressor or other flat insertion tool made of wood, metal, or stiff plastic. Dimensions:

Length: Length of the depressor shall be sufficiently long to extend to the bottom of the reservoir with room to hold it above the surface of the concrete. [Standard tongue depressor length: 6 in. (152.4 mm)].

Width: Width of the depressor shall be sufficient to contact at least 1 inch (25 mm) of the cloth while rubbing against the side walls. [Standard tongue depressor width: 1.0625 inch (27 mm)].

Thickness: Thickness of the depressor shall be sufficiently thin to allow the depressor and cloth to be freely inserted, and the depressor to be rubbed against cloth/sidewalls and removed without damage. [Standard tongue depressor thickness: 0.0625 inch (1.6 mm)].

PROCEDURE:

Choose representative locations to conduct the tests where the sealant is to be installed during the same day. For each test location, follow the steps below and repeat with a new cloth at an additional location within 12 inches (305 mm) of the first test. Report the contamination level of the two samples as one quality control check (worst case controls).

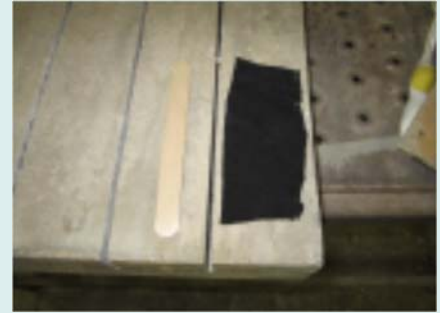
Step 1. Prepare Cloth — Cut the cloth into 2-inch (50-mm) wide strips. The length of the cloth strips should be sufficient to hold against the depressor while inserting, with free ends to allow removal. Use a minimum length two times the depth of the joint plus 2 inches (50 mm).

Step 2. Insert Cloth — Place the cloth strip around the tongue depressor and insert into the joint, perpendicular to the surface of the concrete slab/pavement.

Step 3. Sample — Firmly rub the entire width of the cloth against the surface of the joint with the tongue depressor over a 2-inch (50-mm) length of the joint. Rub the top 1.5 inches (38 mm) of the joint on both sides, ensuring the bottom of the joint is not contacted. Apply sufficient and consistent pressure so the level of contaminant removal is not affected by slight variations in pressure/technique.

Step 4. Remove — Remove the depressor and cloth. Use caution when handling the cloth to avoid dislodging contaminants or contaminating the cloth on other surfaces.

Step 5. Assess Condition — Examine the cloth for contaminants. Grade the degree of contamination per the visual standard.



EQUIPMENT NEEDED



STEP ONE

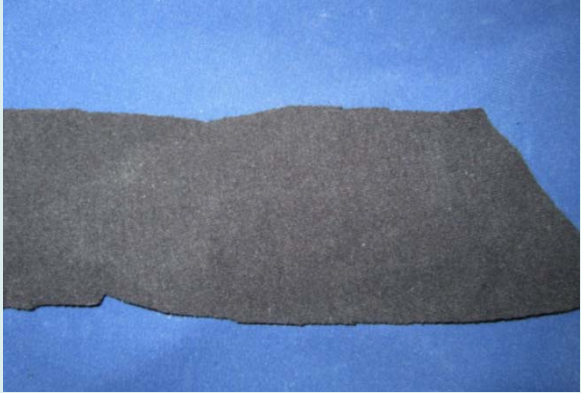


STEP TWO & THREE



STEP FOUR & FIVE

VISUAL STANDARD



NONE — Acceptable to Install Sealant



LIGHT — Additional Cleaning Recommended



MODERATE — Additional Cleaning Required



HEAVY — Reassess & Improve Cleaning Methods

LOG THE FOLLOWING DATA:

1. Sawcut width and depth at sample site
2. Joint preparation methods
3. Time and date of the QC sample
4. Location of QC sample (Station)
5. Length of sawcut joint represented by the test
6. Depth of test.
7. Average result of the two tests by visual standard level (None, Light, Moderate, Heavy).

REFERENCES

1. WISS, JANNEY ELSTNER, (2013) "Research of Test Methods to Evaluate Joint Preparation for Sealing", WJE No. 2011.0050 .
2. ACPA, (2018) "Concrete Pavement Joint Sealing/Filling", TB010-2018.

