

Bureau of Materials and Physical Research

Illinois Laboratory Test Procedure

Effective Date: May 1, 2006

Revised Date: [October 29, 2012](#)

Evaluation of Vertical and Overhead Adhesion for Polymer Modified Portland Cement Mortar

This test procedure applies to the [Polymer Modified Portland Cement Mortar Guide Bridge Special Provision](#).

Reference Test Procedure(s):

1. AASHTO M 201 (Illinois Modified), Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concrete
2. AASHTO T 23 (Illinois Modified), Making and Curing Concrete Test Specimens in the Field
3. AASHTO R 39 (Illinois Modified), Making and Curing Concrete Test Specimens in the Laboratory

1. GENERAL

This procedure describes the testing performed to evaluate the vertical and overhead adhesion. The test material is consolidated on a Variable Speed and Friction Test (VST) specimen. For more information on VST specimens go to (O:\MATERIALSGEN\concrete\winword\Procedure Manual\14 Variable Speed Friction Test (VST) to see how the specimens are made.

2. PROCEDURE

- a. The vertical and overhead tests shall be performed using two VST specimens.
- b. A plastic ring of greater height (0.5 in (13 mm)) than the ledge on the VST specimen is placed on the top of the VST specimen to produce an area above the exposed aggregate surface. The VST specimens shall have exposed aggregate showing on top of the mold with no dust or film on them.
- c. Brush some of the prepared test material on to the exposed aggregate surface of the VST specimen using a stiff bristled brush.
- d. Then put the plastic ring on the VST specimen and overfill it slightly. Use a damp trowel to consolidate (pressing the mortar into the mold with the trowel) and strike off the mortar leaving a flat smooth surface flush with the top of the plastic ring mold.
- e. Holding on to the plastic ring mold and one of the VST specimens, turn it upside down for one minute. Put the other VST specimen on its side for one minute. If the mortar changes shape in either test the product fails.
- f. After the test is complete remove the mold and wash off the mortar so the VST specimen can be used again. Be sure to scrub the exposed aggregate surface of the VST specimen with a brush to release the mortar that may be between the exposed aggregates.