Bureau of Materials and Physical Research
Illinois Modified AASHTO T131-12
Effective Date: January 1, 2007
Revised Date September 07, 2012

Standard Method of Test
for
Time of Setting of Hydraulic Cement by Vicat Needle

Modifications apply only when testing material according to Article 1001.01(d)(1) of the Standard Specifications for Road and Bridge Construction (January 1, 2012).

AASHTO Section[1]	***Illinois Modification***
6.1.1	Add to the last sentence as follows: The end of the rod used for measuring penetration shall have a straight steel removable needle, with a diameter of 1.00 ± 0.05 mm and length no less than 50 mm, except when testing rapid-hardening hydraulic cement for which the diameter shall be 2 ± 0.05 mm.
6.8 and 6.9	Delete these sections.
10.1.1	Add as follows: When testing rapid hardening hydraulic cement, prepare a new batch of paste by mixing 750 g cement and 2060 g graded standard sand (ASTM C 778) with 320 ml of mixing water, unless otherwise specified by the manufacturer. Mix according to the following procedure: • Thoroughly mix the dry materials (cement and sand) together in a clean container. • Place all the mixing water in the mixing bowl. • With the mixing bowl and paddle in place and the mixer operating at a slow speed (140 ± 5 revolutions/minute), add the entire quantity of dry materials within 10 seconds. Continue the mixing for 2 minutes, timing from the addition of the dry materials. • Stop the mixer, scrape down the sides of the mixing bowl with a rubber scraper for 15 seconds. • Finish by mixing at medium speed (285 ± 10 revolutions/minute) for 45 seconds.
11.1	Add to the Vicat apparatus requirements as follows: Diameter of needle when testing rapid hardening cement 2 ± 0.05 mm
12.1	Add after the first sentence as follows: […] maintaining the hands about 6 in. (150 mm) apart. When molding test specimens of rapid hardening hydraulic cement, do not toss the mortar ball.
12.2.1 New Section	When testing rapid hardening hydraulic-cement, determine the penetration of the 2-mm needle immediately after molding the mortar in the conical ring, and every 5 min thereafter. Determine the time when a penetration of 5 mm is obtained. This is the initial setting time.
12.3	Delete this section.

[1] Reference ASTM C 191-04