

**Bureau of Materials and Physical Research**  
 Illinois Modified AASHTO T 161-08, Procedure B  
 Effective Date: May 1, 2010  
 Revised Date: October 26, 2012

Standard Method of Test  
 for  
**Resistance of Packaged, Dry, Combined Materials for Mortar to Rapid Freezing and Thawing, Procedure B**

**Modifications apply only when testing material according to the Packaged, Dry, Combined Materials for Mortar submittal document.**

<b>AASHTO Section</b>	<b>Illinois Modification</b>
2.1	Revise as follows: AASHTO R 39 (Illinois Modified)
3.5 New Section	The Illinois Department of Transportation shall use only Procedure B when testing Packaged, Dry, Combined Materials for Mortar. All procedures/requirements not specifically dedicated to Procedure A shall also be applied when running Procedure B.
4.6	Delete the paragraph and replace with the following:  Tempering Tank – with suitable provisions for maintaining the temperature of the test specimens in water, such that when removed from the tank and tested for fundamental transverse frequency the specimens will be within a temperature range of 23° ± 0.5° C (73° ± 1° F). The use of the specimen chamber in the freezing-and-thawing apparatus by stopping the apparatus at the end of the thawing cycle and holding the specimens in it shall not be considered as serving this requirement. A separate tank meeting the above requirements shall be provided.
7.1.1 New Section	<i>Packaged, Dry, Combined Materials for Mortar</i> —Three sonic (ASTM C 215) beams shall be made for testing this material.
7.3	Delete the section.
7.4	Delete the section.
8.2	Replace the first sentence with the following:  Immediately after the specified curing period, bring the specimen to a temperature within 23° ± 0.5° C (73° ± 1° F) by placing them in the tempering tank and hold them for a sufficient time to ensure that the specimens are completely thawed throughout each specimen. Test for fundamental transverse frequency, determine the mass, and determine the average length and cross-sectional dimensions of the concrete specimens within the tolerance required in ASTM C 215.

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8.3	Delete the paragraph and replace with the following:  Start freezing and thawing tests by placing the specimens in the thawing water at the beginning of the thawing phase of the cycle. Remove the specimens from the apparatus, in a thawed condition, at intervals of approximately 50 cycles of exposure to the freezing-and-thawing cycles, test for fundamental transverse with the specimens at the temperature of $23^{\circ} \pm 0.5^{\circ} \text{ C}$ ( $73^{\circ} \pm 1^{\circ} \text{ F}$ ), determine the mass of each specimen, and return them to the apparatus. To ensure that the specimens are completely thawed and at the specified temperature, place them in the tempering tank for a sufficient time for this condition to be attained throughout each specimen. Data have shown that 1.5 to 2 hours is sufficient to stabilize specimens in the tempering tank. Protect the specimens against loss of moisture while out of the apparatus and turn them end-for-end when returned. Return the specimens either to random positions in the apparatus or to positions according to some predetermined rotation scheme that will ensure that each specimen that continues under test for any length of time is subjected to conditions in all parts of the freezing apparatus. Continue each specimen in the test until it has been subjected to 100 cycles or until its relative dynamic modulus of elasticity reaches 80 percent of the initial modulus, whichever occurs first, unless other limits are specified (Note 5). Replace all failed beams with dummy beams.
Note 6	Delete the note.
9.3	Delete the section.
10.2.1	Delete the paragraph and replace with the following:  The ratio of water to material.
10.2.2	Delete the section.
10.2.3	Delete the section.
10.2.4	Delete the section.
10.2.5	Delete the section.
10.2.6	Delete the section.
10.2.7	Delete the section.
10.4	Delete the section.
10.5.3	Delete the section.
10.6	Delete the section and replace with the following:  Report values for the durability factor of each specimen, calculated to the nearest whole number and the number of cycles. Report values of loss or gain of mass for each specimen. Report any defects in each specimen which develop during testing, and the number of cycles at which such defects were noted.
11.2	Delete the section.