



South Carolina Building Codes Council

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Request for Statewide Code Modification

Jurisdiction or Organization: Structural Engineers' Association of South Carolina (SEASC)

Representative: Michelle Motchos, PE Title: Code Advisory Committee

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Signature:  Date: 6/1/2018

Code: Residential Code Edition: 2018 Section: Section R506.2.3 Vapor Retarder

Check One: Delete and substitute the following Delete without substitution Add the following Modify the following
Type or print proposed modification. Use additional pages if necessary. Underline New language. Line Through Deleted Language.

R506.2.3 Vapor retarder.

A ~~6-mil (0.006 inch; 152- μ m)~~ 10-mil (0.010 inch) polyethylene or *approved* ground contact vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.

Reason: Unusually Restrictive Impractical Threat to Human Injury or Life Safety
Type or print the reason for the proposed modification. Use additional pages if necessary.

Requiring vapor retarders not less than 10-mils thick and meeting ASTM E1745 for use under concrete slabs-on-grade is consistent with the recommendations of ACI 302.1R – Guide for Concrete Floor and Slab Construction.

ASTM E1745 is the industry standard for plastic vapor retarders used under concrete slabs or in contact with soil.

ASTM E1745 "Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs" is the main standard for evaluating plastic films that will be used in this application. Three performance classes are outlined A, B and C (with Class A being the strongest). Permeance levels are the same for each class, less than 0.1 perms. Tensile Strength and Puncture Resistance change with each class.

ASTM E1745 refers to ASTM E154 "Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, On Walls or as Ground Cover," which describes test methods for testing the performance of a plastic film after it is subjected to certain elements. These standards outline the methodology whereby plastic vapor retarders are tested.

Simply having a low perm rating is not enough when it comes to real-life conditions. Vapor retarders/barriers must also be tough enough to endure the rigors of construction, since this will determine their true long term ability to protect against water vapor intrusion.