



# DOCKET

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April 10, 2012

CALIFORNIA ENERGY COMMISSION  
Attention: Docket No. 12-BSTD-1  
Dockets Office  
1516 Ninth Street, MS-4  
Sacramento, CA 95814

**VIA E-MAIL ONLY**  
[DOCKET@energy.ca.gov](mailto:DOCKET@energy.ca.gov)

Re: Docket No. 12-BSTD-1  
California Title 24, Part 6, Building Energy Efficiency Standards,  
Proposed Revisions, 45-Day Language

The EPS Industry Alliance (EPS-IA), the trade association representing the expanded polystyrene industry, appreciates the opportunity to submit the following comments on the proposed changes to the 2013 California Building Energy Efficiency Standards. Building and construction products comprised of EPS include rigid foam insulation, insulating concrete forms, structural insulated panels, high-density sub-slab insulation, sheathing, roof insulation and many other innovative building and construction solutions closely aligned with California's goal of achieving Net-Zero building efficiency over the next 18 years.

EPS is a closed cell rigid foam insulation material that delivers high R-value, stable long-term thermal performance, durability and resiliency at a cost competitive level. Some sections of the 2013 Building Energy Efficiency Standards needlessly limit consumer and builder options in material selection without a stated rationale as to the performance criteria set forth.

Section 110.8(g) Insulation Requirement for Heated Slab Floors, subsection 1, currently reads:

1. *Insulation materials in ground contact must:*
  - A. *Comply with the certification requirements of Section 110.8(a); and*
  - B. *Have a water absorption rate for the insulation material alone without facings that are no greater than 0.3 percent when tested in accordance with Test Method A – 24 hour – Immersion of ASTM C272.; and*

Section 150.0 Mandatory Features and Devices, subsection (I) reads as follows:

- (I) *Slab Edge Insulation. Material used for slab edge insulation shall meet the following minimum specifications:*
  1. *Water absorption rate for the insulation material alone without facing no greater than 0.3 percent when tested in accordance with Test Method A – 24 Hour-Immersion of ASTM C272.*
  2. *Water vapor permeance no greater than 2.0 perm/inch when tested in accordance with ASTM E96.*

There is no rationale to support a minimum 0.3% water absorption rate for rigid foam insulation used in contact with the ground or in other below grade applications. The minimum performance properties for rigid foam insulation are 0.3% for extruded polystyrene and 3% for expanded polystyrene. This means that each of these materials meet the performance criteria to achieve their intended function at their respective levels. Both EPS and XPS rigid foam insulation are approved for use in below grade applications and there is no data to support a 0.3% water absorption threshold. This has been substantiated by third-party research agencies including the National Research Council of Canada and the NAHB Research Center, and the International Residential Code recognizes the suitability of both EPS and XPS for these specific applications.

Extensive laboratory and in-situ testing confirm that the water absorption results determined using ASTM C272 “Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Materials” cannot be correlated to the in-service performance of foam insulation. The main reason is that the laboratory test procedures call for partial or full submersion conditions which are not encountered in field applications. In fact, laboratory test methods were not developed for predicting actual performance, but are intended for use in material specification as a means of comparing relative physical properties of different cellular plastics and for product evaluations and quality control.

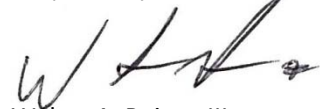
Without any substantiation to qualify that rigid foam plastics fail to provide their intended insulation values at this threshold, the CEC’s proposal effectively eliminates the choices of insulation materials available in these important applications. As a part of CEC’s mission statement to promote cost-effective solutions to improve building energy efficiency, an arbitrary, and unsubstantiated, performance specification that eliminates competing insulation materials is counteractive.

Therefore, EPS-IA recommends deleting Section 110.8(g)1.B and Section 150.0(l)1. If properly manufactured to specification, different materials can achieve the same performance function – thermal insulation – but may not necessarily exhibit the exact same physical properties.

As set forth above, the stated water absorption performance parameter is artificially and needlessly low, effectively eliminating a consumer’s choice as to which insulation material to use. The subparagraph should either be eliminated or provide proper substantiation to justify criteria that virtually eliminates alternative material solutions.

Thank you for your time and consideration of these comments. Please contact us if you have any questions or need additional information.

Respectfully submitted,



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*References:*

*National Research Council Canada, [Report No. 3131.2 – December, 1999](#)  
[EPS-IA Below Grade Series 101 – August 2008](#)*