

DOCKETED	
Docket Number:	21-BSTD-01
Project Title:	2022 Energy Code Update Rulemaking
TN #:	238385
Document Title:	Extruded Polystyrene Foam Association (XPSA) Comments - RE Calif Title 24 Express Terms
Description:	N/A
Filer:	System
Organization:	Extruded Polystyrene Foam Association (XPSA)
Submitter Role:	Public
Submission Date:	6/21/2021 4:06:00 PM
Docketed Date:	6/21/2021

*Comment Received From: Extruded Polystyrene Foam Association (XPSA)
Submitted On: 6/21/2021
Docket Number: 21-BSTD-01*

XPSA Comments RE Calif Title 24 Express Terms

Additional submitted attachment is included below.

June 21, 2021

Docket 21-BSTD-01
Express Terms 2022 Energy Code, Title 24 Parts 1 and 6
Express Terms 2022 Energy Code, Reference Appendices

Thanks for the opportunity to comment on the Express Terms 2022 Energy Code, Title 24 Parts 1 and 6, and the Express Terms 2022 Energy Code, Reference Appendices. The Extruded Polystyrene Foam Association (XPSA) appreciates the opportunities for involvement in the energy code development process.

While reviewing, and re-reviewing, the express terms, we identified an opportunity for revisions of the requirements for insulation installed on roofs above the roofing membrane. Please consider the recommended revisions illustrated below.

Revise as follow:

Section 110.8(h)

(h) ~~Wet Insulation Systems.~~ Insulation Above Roofing Membrane. When insulation is installed on roofs above the roofing membrane or layer used to seal the roof from water penetration, ~~the effective R-value of the insulation shall be as specified in Reference Joint Appendix JA4~~ the insulation have a water absorption rate for the insulation material alone without facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead referencing Appendix JA4, which requires a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1.

The most common application of insulation above the roofing membrane is protected membrane roof assemblies (PMRA) used for vegetative roofs, green roofs, occupiable roofs, and similar roofs. Several informative web pages:

<https://www.waterproofmag.com/2014/04/protected-membrane-roofing/>

<https://www.buildings.com/articles/35085/protected-membrane-roof-systems>

<https://ccpia.org/the-difference-between-a-conventional-roof-system-and-a-protected-membrane-roof/>

<https://www.usgbc.org/education/sessions/overview-protected-membrane-roof-assemblies-10593953>

<https://erdc-library.erdcdren.mil/jspui/bitstream/11681/9243/1/CR-76-2.pdf>

Appendix JA4, Table 4.2.1 - U-factors of Wood Framed Attic Roofs

Revise note 2 as follows:

~~2. In climate zones 1 and 16 the insulating R-value of continuous insulation~~ Insulation materials installed above the roofs waterproof membrane shall be multiplied by 0.8 before choosing the table column for determining assembly U-factor ~~have a water absorption rate for the insulation material alone without~~

facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead of a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1.

In addition, the provisions of this (revised) note should apply to all climate zones, not just climate zones 1 and 16.

Appendix JA4, Table 4.2.2 – U-factors of Wood Framed Rafter Roofs

Revise Note 5 as follows:

5. ~~In climate zones 1 and 16 the insulating R-value of continuous insulation~~ Insulation materials installed above the roofs waterproof membrane shall ~~be multiplied by 0.8 before choosing the table column for determining assembly U-factor~~ have a water absorption rate for the insulation material alone without facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead of a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1.

In addition, the provisions of this (revised) note should apply to all climate zones, not just climate zones 1 and 16.

Appendix JA4, Table 4.2.3 – U-factors of Structurally Insulated Panels (SIPS) Roof/Ceilings

Revise Note 5 as follows:

5. ~~In climate zones 1 and 16 the insulating R-value of continuous insulation~~ Insulation materials installed above the roof waterproof membrane shall ~~be multiplied times 0.8 before choosing the table column for determining assembly U-factor~~ have a water absorption rate for the insulation material alone without facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead of a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1.

In addition, the provisions of this (revised) note should apply to all climate zones, not just climate zones 1 and 16.

Appendix JA4, Table 4.2.4 – U-factors of Metal Framed Attic Roofs

Revise note 2 as follows:

~~2. In climate zones 1 and 16 the insulating R-value of continuous insulation~~ Insulation materials installed above the roofs waterproof membrane shall be multiplied by 0.8 before choosing the table column for determining assembly U-factor have a water absorption rate for the insulation material alone without facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead of a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1.

In addition, the provisions of this (revised) note should apply to all climate zones, not just climate zones 1 and 16.

Appendix JA4, Table 4.2.6 –U-factors for Span Deck and Concrete Roofs

Revise note 1 as follows:

~~1. In climate zones 1 and 16 the insulating R-value of continuous insulation~~ Insulation materials installed above the roofs waterproof membrane shall be multiplied by 0.8 before choosing the table column for determining assembly U-factor have a water absorption rate for the insulation material alone without facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead of a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1. One common application of insulation above the roof's waterproofing membrane is protected membrane roof assemblies (PMRA) commonly used for vegetative roofs, green roofs, occupiable roofs, and similar assemblies.

In addition, the provisions of this (revised) note should apply to all climate zones, not just climate zones 1 and 16.

Appendix JA4, Table 4.2.7 – U-factors for Metal Building Roofs

Revise Note 5 as follows:

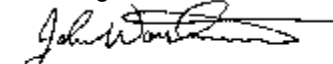
~~5. In climate zones 1 and 16 the insulating R-value of continuous insulation~~ Insulation materials installed above the roof waterproof membrane shall be multiplied times 0.8 before choosing the table column for determining assembly U-factor have a water absorption rate for the insulation material alone without facings no greater than 0.3 percent when tested in accordance with Test Method A – 24-Hour-Immersion of ASTM C272.

Reason:

Instead of a reduction to 80% of the rated R-value applicable to all insulation types regardless of a specific insulation's compatibility with the intended application, the proposed revision sets moisture absorption performance requirements for insulation placed where moisture may be present consistent with existing requirements in the California Energy Code. This proposed revision is based on the existing requirements for insulation for heated slab floors in Section 110.8(g)1.B. and the existing requirements for slab edge insulation in Section 150.0(f)1.

In addition, the provisions of this (revised) note should apply to all climate zones, not just climate zones 1 and 16.

Best regards,



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