

DOCKETED	
Docket Number:	19-BSTD-03
Project Title:	2022 Energy Code Pre-Rulemaking
TN #:	237051
Document Title:	Pre-Rulemaking Express Terms, 2022 Building Energy Efficiency Standards (Title 24, Part 6), Docket No 19-BSTD-03
Description:	N/A
Filer:	Cody Goldthrite
Organization:	PIMA
Submitter Role:	Public
Submission Date:	3/9/2021 8:08:13 AM
Docketed Date:	3/9/2021

Sent via Electronic Mail

March 9, 2021

California Energy Commission
Docket Unit, MS-4
Docket No. 19-BSTD-03
1516 Ninth Street
Sacramento, CA 95814-5512
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Re: Pre-Rulemaking Express Terms, 2022 Building Energy Efficiency Standards (Title 24, Part 6), Docket No. 19-BSTD-03

Dear Energy Commission,

Thank you for the opportunity to comment on the proposed changes to California's Building Energy Efficiency Standards (Title 24, Part 6) that were released for public comment on February 22. As stated in prior comments, the Polyisocyanurate Insulation Manufacturers Association¹ supports the proposed reforms affecting roof alterations in nonresidential and multifamily buildings. The purpose of these comments is simply to alert you to possible drafting issues that may cause confusion if not corrected in future versions of this proposed rule.

Section 141.0(b)1A (Nonresidential and Hotel/Motel Buildings)
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Explanation: The reference to Section 141.0(b)2Biii below should instead reference clause "Bii" (not "Biii"). This is because clause "Biii" is being changed to "Bii".

Language:

(b) **Alterations.** Alterations to components of existing nonresidential, high-rise residential, hotel/motel, or relocatable public school buildings, including alterations made in conjunction with a change in building occupancy to a nonresidential, high-rise residential, or hotel/motel occupancy shall meet item 1, and either Item 2 or 3 below:

1. **Mandatory Requirements.** Altered components in a nonresidential, high-rise residential, or hotel/motel building shall meet the minimum requirements in this Section.

A. **Roof/Ceiling Insulation.** The opaque portions of the roof/ceiling that separate conditioned spaces from unconditioned spaces or ambient air shall meet the requirements of Section 141.0(b)2Biii [*strike "Biii" and replace with "Bii"*].

¹ More information available at: www.polyiso.org.

Section 141.0(b)2Bii (Nonresidential and Hotel/Motel Buildings)

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Explanation: Definitions for “roof replacement” and “roof recover” will be added to the energy code’s definitions section (i.e., section 100.1) so readers can be directed to this section as well as the CA Building Code (CBC) (Title 24, Part 2). I would recommend that the language read, “as defined in Section 100.1 and Title 24, Part 2, Chapter 2”. The term “roof coating” is still defined only under the CBC and not the CA energy code.

Language: Existing roofs of a nonresidential or hotel/motel building being replaced, recovered or recoated, as defined in **Section 100.1** and **[add highlighted text]** Title 24, Part 2, Chapter 2, shall meet the requirements of Section....

New Section 180.2(b)1 (Multifamily Buildings)

Page 512-513

Explanation: Under the current Standards, the insulation requirements for roof alterations apply to roof replacements that affect “more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less” and the cool roof requirements for roof alterations apply to roof replacements, recovers and recoating that affect “more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less.” The proposed 2022 Standards would also expand the insulation requirements for roof alterations to include recovers. However, the language; “more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less”, which is found under **Subparagraph A of Section 180.2(b)1, Roofing Products**, seems disconnected from the requirements for **Subparagraph B of Section 180.2(b)1, Roof/Ceiling Insulation**. Also, there is no Clause “Aiii”. For these reasons, we believe that the “i through iii” language below should be changed to “Ai through Bii” or “Ai, Aii, Bi, and Bii”.

Language:

180.2(b) Prescriptive approach. The altered component and any newly installed equipment serving the alteration shall meet the applicable requirements of Sections 110.0 through 110.9 and all applicable requirements of Section 160.0, 160.1, 160.2(c) and (d), 160.3(a) through 160.3(b)5J, 160.3(b)6, 160.3(c), and 160.5; and

1. Envelope –

A. Roofing Products. Existing roofs being replaced, recovered or recoated, of a multifamily building shall meet the requirements of Section 110.8(i). Roofs with more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less, being altered the requirements of **i through iii** **[change to “Ai through Bii”]** below apply:

New Section 180.2(b)1Bii (Multifamily Buildings)

Page 514

Explanation: The words “and recovered” are missing from the paragraph below regarding Non Attic Roofs. The intent of this section appears to require R-14 for roof alterations (replacements and recovers), in all climate zones except CZs 3, 5-7 (and that there would be no insulation requirements for roof alterations in CZs 3, 5-7). Also, there would be three exceptions to the R-14 requirement: (1) a roof recover project that adds R-10 of ci; (2) the rooftop mechanical equipment/flashing height exception (but with an R-10 backstop); and (3) the existing exception for tapered insulation. However, the language is written in a way that the R-14 requirement only applies to roof replacements and not recovers, which would not make sense since exception #1 is specifically for recovers.

Language:

ii. **Non Attic Roof.** When low-sloped roofs are replaced and recovered [add highlighted text], and meets Section 180.2(b)1A or B, the replaced area shall be insulated to R-14 continuous insulation or a U-factor of 0.55 in Climate Zones 1, 2, 4, and 8 through 16.

EXCEPTION 1 to Section 180.2(b)1Bii: Roof recovers with new R-10 insulation added above deck do not need to be insulated to meet R-14.

EXCEPTION 2 to Section 180.2(b)1Bii: Roof replacements. When existing mechanical equipment is located on the roof and will not be disconnected and lifted, insulation added may be limited to the maximum insulation thickness that will allow a height in accordance with manufacturers' instructions from the roof membrane surface to the top of the base flashing or R-10, whichever is greater.

EXCEPTION 3 to Section 1180.2(b)1Bii: At the drains and other low points, tapered insulation with a thermal resistance less than R-14 may be used, provided that insulation thickness is increased at the high points of the roof so that the average thermal resistance equals or exceeds R-14.

**New Section 180.2(b)1Bii (Multifamily Buildings)
Page 514**

Explanation: Based on our understanding of similar language under the current 2019 Standards, we believe the intent and purpose of the language; "and meets Section 180.2(b)1A or B", is to ensure that in complying with insulation requirements for low-slope roof alterations, that the project also comply with the cool roof requirements and any reflectance/insulation tradeoff that may be necessary. However, section 180.2(b)1B would not be relevant for this purpose so we recommend deleting its reference as written below in the highlighted text.

Language:

ii. **Non Attic Roof.** When low-sloped roofs are replaced, and meets Section 180.2(b)1A **or B** [delete "or B"], the replaced area shall be insulated to R-14 continuous insulation or a U-factor of 0.55 in Climate Zones 1, 2, 4, and 8 through 16.

Information about the Polyisocyanurate Insulation Manufacturers Association

PIMA is the trade association for North American manufacturers of rigid polyiso foam insulation – a product that is used in most low-slope commercial roofs as well as in commercial and residential walls. Polyiso insulation products and the raw materials used to manufacture polyiso are produced in over 50 manufacturing facilities across North America.

Thank you for the opportunity to submit these comments.

Sincerely,



Justin Koscher
President