Response submitted by email to: iracodes@hq.doe.gov

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The Polyisocyanurate Insulation Manufacturers Association\(^1\) (PIMA) appreciates the opportunity to comment on the above referenced Request for Information (RFI) on building energy code adoption and implementation. With respect to the required compliance plans referenced in the related Funding Opportunity Announcement (FOA) and this RFI, PIMA urges the Department of Energy (DOE) to emphasize the importance of improving compliance, training, and enforcement related to common and routine building alterations.

Building energy code requirements applicable to alterations have been an important, but often forgotten, part of model energy codes for over 20 years. These requirements take advantage of building life-cycle events, such as having to replace major building components as they wear out, which is a key strategy for improving building energy efficiency over time. Making these requirements a more important mechanism for improving energy performance in existing buildings will lay the groundwork for other major upgrades undertaken in the future (e.g., addition of onsite renewable energy) and complement other strategies such as building performance standards.

Compliance Plans

Due to the lack of resources and the priority given to new construction, it is our experience that code training and enforcement related to alterations is extremely poor. As a result, energy code compliance for alterations is a significant lost opportunity for improving energy efficiency in existing buildings. Based on this, PIMA urges the Department to specifically require consideration of alterations within grantee compliance plans. Full compliance, “active training,” and “active enforcement” should all have separate components addressing building alterations.

\(^1\) www.polyiso.org
Best Practices

In terms of “best practices,” compliance with the energy code during a building alteration can be significantly improved by having a dedicated building official that focuses on the energy code and alterations. Without this, compliance is often determined by an official whose primary responsibility is with one of the other disciplines, like structural or electrical. In fact, it has been our experience that many jurisdictions simply ask whoever is the last code official reviewing a submitted plan, regardless of training and experience, to review the plan for the energy requirements.

In addition, PIMA recommends the use of third-party entities to conduct plan reviews and inspections. Recognizing the resource constraints at local building departments and the priority given to the “life-safety” codes, authorizing the use of third-party entities can be a more sustainable approach. Some local communities have started to use third-party entities, but it is still uncommon and is sometimes used for just a subset of permits or building types. The use of third-party entities in Dallas, Texas to enforce energy code requirements for all commercial projects regardless of size and for both new construction and alterations has had a positive effect on compliance for alterations based on our industry’s experience with roof replacements.

Along with the use of third-party entities, the following strategies would also help to overcome the issue of constrained resources and PIMA urges their development for alterations:

- Greater availability of digital tools for permitting and review like Solar APP+; TRAKiT and eTRAKiT; Bluebeam Electronic Plan Review; and CodeCycle, would help simplify and streamline the enforcement process. DOE and NREL were instrumental in the development of Solar APP+, which could be a model for how to develop more digital tools or to expand existing ones for building alterations that impact energy efficiency (e.g., envelope retrofits/replacements, glazing upgrades). There is a need for a more streamlined permitting process that results in: (1) a simple process for populating forms; (2) automated checking of the information placed in the forms; and (3) a checklist-like output that makes inspections easier.

- Greater use of remote virtual inspections would result in more efficient enforcement, which DOE and the national labs could support through the development of digital tools and resources.

Building Alterations and Noncompliance

Approximately 46% of the current building stock floor area was constructed prior to when states typically started adopting energy codes (i.e., 1980).² It is understandable that when they were first constructed, these buildings would have significantly less roof insulation then what is required under current energy codes. Also, one might assume that most of the roofs on these older buildings would have been replaced in the last 20 years with energy code compliant roofs. However, the evidence suggests that this is not happening.

According to the most recent Northwest Energy Efficiency Alliance’s (NEEA) Commercial Building Stock Assessment of buildings in the Pacific Northwest states (Idaho, Montana, Oregon, and Washington), the weighted average R-value for existing low slope roofs over conditioned floor space is R-13.4 and the median R-value for these buildings is R-8. R-30 has been the required IECC-minimum for these CZs since 2015 (and R-25 since 2012 and R-20 since 2009). At least since 2004, the R-values were either R-15 (CZ 4) or R-20 (CZs 5 & 6). So, over the last 20 years, roofs in this region have failed to even achieve an average R-value that would be equal to the standard that was in place 20 years ago!

Respectfully submitted,

Justin Koscher, President

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