

# Connecticut Code Chronicle

An occasional publication by Harwood Wallace Loomis, Consulting Architect,  
for the use and information of the design and code enforcement communities

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## LET'S TALK ABOUT EAVE (INSULATION) BAFFLES

A recent discussion on The Building Code Forum brought to my attention that there may be some misunderstandings about the IRC requirement for baffles at eaves of sloped roofs in residential construction. Notably, the person who posted the question (in January of 2025) asked about the “new” eave baffle requirement—meaning that this was all news to him.

In reality, this isn't anything new. Although the specific provisions and requirements have been refined over the years, we can find a version of the requirement for eave baffles all the way back to when we were under the *CABO One- and Two-Family Dwelling Code*.

**806.3 Vent clearance.** Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of 1-inch (25 mm) space shall be provided between the insulation and the roof sheathing at the location of the vent.

While this provision didn't explicitly call for eave baffles, the products we now know as eave baffles were developed in response to this requirement. What does the requirement say today, and how far back does it go? It's found in section 1102.2.3 of the 2021 IRC, and it says:

**N1102.2.3 (R402.2.3) Eave baffle.** For air-permeable insulation in vented attics, a baffle shall be installed adjacent to soffit and eave vents. Baffles shall maintain a net free area opening equal to or greater than the size of the vent. The baffle shall extend over the top of the attic insulation. The baffle shall be permitted to be any solid material. The baffle shall be installed to the outer edge of the exterior wall top plate so as to provide maximum space for attic insulation coverage over the top plate. Where soffit venting is not continuous, baffles shall be installed continuously to prevent ventilation air in the eave soffit from bypassing the baffle.

The ICC Commentary on this section provides additional insights into the reason for the requirement:

❖ Baffles help prevent wind from degrading the attic insulation performance. Baffles serve to keep vents open, insulation in place and the wind from blowing through the insulation and reducing its effectiveness. In order to ventilate the attic according to Section R806.2, a minimum net free area is called out. For air to go out of the roof vent, air must enter through the eave vent and if the net free area is not equal at the eave vent and the path the air takes from the eave to the roof vent above the insulation, the required ventilation cannot occur. Thus, the inclusion of the language “net free area” for the defined ventilation created with the baffle.

Commentary Figure N1102.2.3 illustrates baffles above the raised-heel trusses and wind dams behind the trusses that will keep wind from blowing the cellulose insulation away from the eaves.

This requirement is nontradable and not specific to R-values or U-factors; it is applicable to all compliance paths (see commentary, Sections R406.2 and N1105.2).

Of particular importance is that “This requirement is nontradable and not specific to R-values or U-factors; it is applicable to all compliance paths.” In other words: there are no exceptions. Eave baffles are required.

The requirement has been moved to section 1102.2.4 in the 2024 IRC, but the language has not been changed:

### **N1102.2.4 (R402.2.4) Eave Baffle.**

For air-permeable insulation in vented attics, a baffle shall be installed adjacent to soffit and eave vents. Baffles shall maintain a net free area opening equal to or greater than the size of the vent. The baffle shall extend over the top of the attic insulation. The baffle shall be permitted to be any solid material. The baffle shall be installed to the outer edge of the exterior wall top plate so as to provide maximum space for attic insulation coverage over the top plate. Where soffit venting is not continuous, baffles shall be installed continuously to prevent ventilation air in the eave soffit from bypassing the baffle.

Is this requirement new? Not really. A somewhat shorter version was first introduced in the 2012 IRC, which was adopted by Connecticut as our 2016 CSBC:

2012 IRC/2016 CSBC:

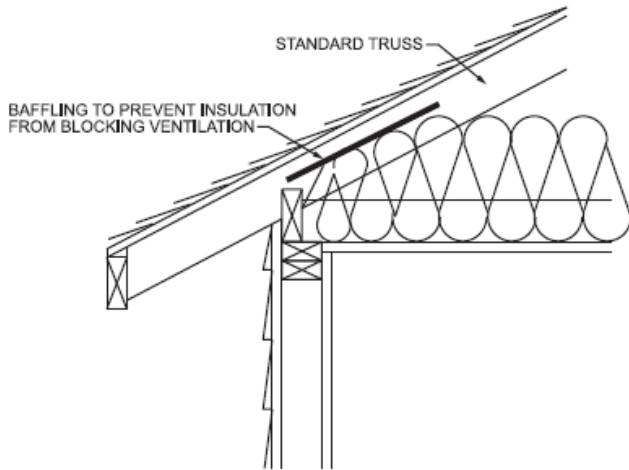
**N1102.2.3 (R402.2.3) Eave baffle.** For air permeable insulations in vented attics, a baffle shall be installed adjacent to soffit and eave vents. Baffles shall maintain an opening equal or greater than the size of the vent. The baffle shall extend over the top of the attic insulation. The baffle shall be permitted to be any solid material.

This version does not include that last part of the current version, which addresses the baffle extending to the outer edge of the top plate. The shorter version remained unchanged in the 2015 IRC, which was adopted in Connecticut as part of our 2018 CSBC, and the shorter version is also what appeared in the 2018 IRC (which was not adopted in Connecticut).

What this means is that the provision calling for the baffle to be installed the exterior edge of the exterior wall top plate was now to us here in Connecticut as of the 2022 CSBC. What does this mean to us as code officials??

The traditional insulation baffles we've seen since the CABO days just went beneath the roof sheathing. There was no vertical leg or component. This type of baffle is essentially what is depicted in a figure from the ICC 2021 IRC Commentary for section N1102.2.1:

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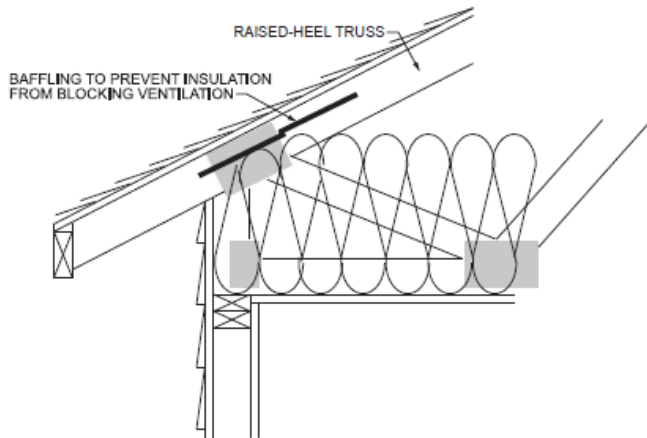


**Commentary Figure N1102.2.1(1)  
TYPICAL ROOF ASSEMBLY**

However, this illustration dates back to the 2018 Commentary, and even then it had errors. First, note that as the insulation approaches the exterior wall, it gets compressed in height by the baffle. That doesn't work, because if it's blown-in cellulose there's less insulation so the thermal value is reduced, and if it's fiberglass batts they lose insulating value when compressed.

In addition, the vertical 2x6 sitting on the top plate doesn't allow the insulation to extend the full width of the wall plate. In order to be allowed to reduce the thickness of ceiling insulation, the insulation has to extend over the top plate and cannot be compressed [see IRC sections N1102.2.1 and N1102.2.2.]

Beginning with the 2018 IRC Commentary, the ICC also provides another illustration that addresses these concerns:



**Commentary Figure N1102.2.1(2)  
RAISED-HEEL TRUSS**

As drawn in this figure, however, there is a gap between the top of the wall sheathing and the insulation baffle. It's this gap that the added language in the new, longer version of the code section addresses. The intent is to close off that gap so that outdoor air cannot blow into or through the insulation. Just as the

original eave baffle products were developed three decades ago in response to the original requirement to maintain ventilation air flow over the top of insulation, new baffle products are coming on the market that respond to the requirement for the baffle to extend down to the top plate:



Although the requirement for the eave baffle to extend down to the top plate to protect the insulation has been in effect in Connecticut since October of 2022 and has been in the IRC since the 2018 edition, many builders and home designers in Connecticut are not aware of the requirement. The following illustration is taken from a set of plans submitted for a building permit in 2024 or 2025. While it is drawn so that it doesn't appear that supplemental baffle panels are needed under the roof sheathing—the drawing is deceptive.

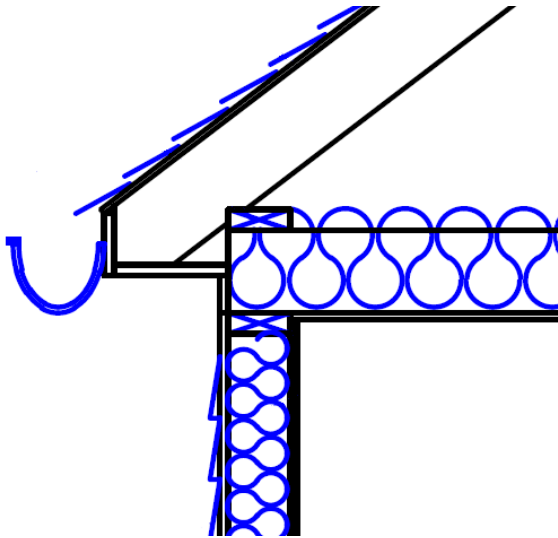
Although most of the fundamental requirements about insulation materials and installation have been fairly well-settled

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for several code cycles, the actual required R-values have been increasing. In the course of my career, I can remember going from R-30 to R-38 to R-49. And now?

IRC Table N1102.1.3 of the 2022 CSBC tells us that ceiling insulation in Connecticut requires an R-value of R-60. The highest rated fiberglass batt insulation is R-49, which has a thickness of 15 inches. To obtain an R-value of 60 requires two layers of R-30 batts. Standard R-30 batts are 9½ to 10¼ inches thick, depending on the manufacturer. R-30C batts are 8¼ inches thick. This means the minimum thickness for batt ceiling insulation is 16½ inches. Blown-in, loose-fill fiberglass requires 20.5 inches to obtain an R-value of R-60. Blown-in cellulose requires about 18 inches to obtain an R-value of R-60. And this full thickness has to be maintained across the full width of the top plate of the exterior walls.

It should be obvious that the detail below doesn't come close to satisfying these requirements. The insulation will actually be at least twice as thick/deep as what's shown, which will mean that baffles are probably be required.



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The editor is a licensed architect and a licensed building official, with more than 40 years of experience. I offer non-structural plan review services for projects of any size, with special rates for municipal building departments.

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## CONCLUSIONS

Eave baffles have been required for several code cycles. The requirement for eave baffles to extend vertically to the top plate of the exterior walls was introduced to us in Connecticut with the 2022 CSBC. The requirement will remain in place in the forthcoming 2025 CSBC (unless Connecticut amends or deletes it, which seems unlikely). Plan reviewers and building officials should be aware that standard details (such as the one shown above) that were originally drawn when the requirements were less restrictive) can no longer be relied upon to show conditions that comply with the code. Unfortunately, many (probably most) home designers don't customize these details for each project; they have standard details, and they just recycle them from one project to the next, and to the next ... often without reviewing them each time a new code is adopted. This needs to be addressed at the design and plan review stage. If we allow the structure to be framed and then realize that, "Oh gosh golly, the insulation won't fit into the space over the wall plates"—it's too late.

What topics would you like to see discussed in future issues? It helps all of us if we can all be on the same page, to avoid those "But I never have to do that in [town]" complaints.

Send me an e-mail if you think of any issues that affect all building officials, everywhere.