



FW: Request for Assistance

1 message

Buddy Showalter <bshowalter@iccsafe.org>
To: Aaron Miller <aaron@texasinspector.com>

Tue, Mar 21, 2023 at 3:05 PM

Mr. Miller,

References below are from the 2021 IRC:

R802.7.1 Sawn lumber. Cuts, notches and holes in solid lumber joists, rafters, blocking and beams shall comply with the provisions of Section R502.8.1 except that cantilevered portions of rafters shall be permitted in accordance with Section [R802.7.1.1](#).

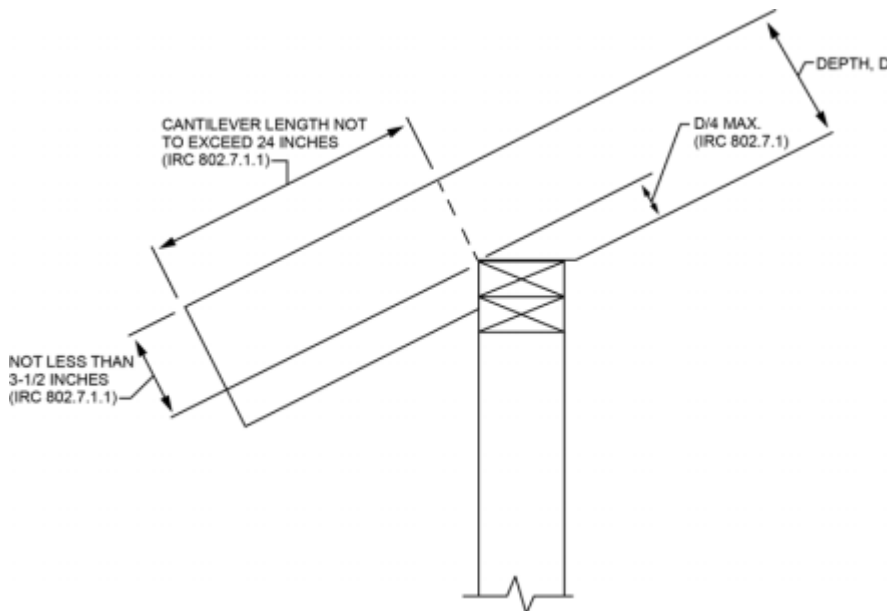
R802.7.1.2 Ceiling joist taper cut. Taper cuts at the ends of the ceiling joist shall not exceed one-fourth the depth of the member in accordance with Figure [R802.7.1.2](#).

R502.8.1 Sawn lumber. Notches in solid lumber joists, rafters and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member and shall not be located in the middle one-third of the span. Notches at the ends of the member shall not exceed one-fourth the depth of the member. The tension side of members 4 inches (102 mm) or greater in nominal thickness shall not be notched except at the ends of the members. The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2 inches (51 mm) to the top or bottom of the member, or to any other hole located in the member. Where the member

is notched, the hole shall not be closer than 2 inches (51 mm) to the notch.

These limits are intended to maintain the strength of rafters at their bearing. The taper cuts shown on the bottom of the rafters in the photos you provided will induce significant shear stresses on the rafter where it bears at the inside face of the top plate. A split will likely form at that location compromising the load-carrying capacity of the rafter. This is particularly problematic for what appears to be a hip rafter in at least one photo.

IRC Figure R802.7.1.1 shows what is commonly referred to as a “birds-mouth” notch. Note that the taper cut on the bottom of the rafter does not extend beyond the inside face of the top plate for the reasons stated above.



One of the photos appears to show an engineered wood rafter which is covered as follows:

R802.7.2 Engineered wood products. Cuts, notches and holes bored in trusses, *structural composite lumber*, structural glue-laminated members, cross-laminated timber members or I-joists are prohibited except where permitted by the manufacturer’s recommendations or where the effects of such alterations are specifically considered in the design of the member by a *registered design professional*.

I hope this information helps.

Buddy

John “Buddy” Showalter, P.E., M.ASCE

Senior Staff Engineer, Product Development

International Code Council

1-888-ICC-SAFE (422-7233) x4406

bshowalter@iccsafe.org

www.iccsafe.org



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From: Aaron Miller <aaron@texasinspector.com>
Sent: Friday, March 17, 2023 3:31 PM
To: Buddy Showalter <bshowalter@iccsafe.org>
Subject: Request for Assistance

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Sir:

I am an independent code inspector in the DFW, Texas area. Often I come across hip and valley rafters improperly supported by the top plate, as shown in the attached photos. I am at my wits end trying to find anything in the I-Codes that addresses this. I have also attempted to contact folks at the American Wood Council, to no avail.

Can you please direct me to information regarding this? I know that the installation is wrong. I need someone or something else to verify this for me.

Thank you for your time and consideration,

--

Aaron Miller, ICC R-5

Texas Inspector

3 attachments



3.jpg
598K



2.jpg
669K



1.jpg
691K