



Code Connection

Continuity at Dwelling Separations for Townhouses in the IRC

The code sections quoted below are from the indicated edition of the International Residential Code® (IRC). The quoted code sections are from the Model IRC and do not reflect any duly enacted local amendments.

by WTCA Staff

The IRC requires either two one-hour separation or one two-hour separation at the wall common to townhouse units. In addition, Section R317.2.1 includes a requirement for "continuity." The question often arises as to what is meant by the concept of continuity in this context. "Continuity" applies to the rating of the wall or the assembly that makes up the total wall, not necessarily of the wall construction or membrane itself.

Can one interrupt the vertical separation wall with a horizontal floor/ceiling or roof/ceiling assembly without impacting the requirement for continuity?

Code Background

The sections of the 2003 IRC regarding continuity at townhouse unit separation are as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exception: A common 2-hour fire-resistance-rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.

R317.2.1 Continuity. The common wall for townhouses shall be continuous from the foundation to the underside of the roof sheathing, deck or slab and shall extend the full length of the common wall including walls extending through and separating attached accessory structures.

The 2006 IRC section on continuity has been modified as proposed by the National Association of Homebuilders (NAHB) in code change RB98-04/05. The text is presented here in strike-through/underscore style to highlight the changes and includes the proponent's reason:

at a glance

- ❑ Per the 2003 IRC, "each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies."
- ❑ In townhome construction applications, the 2003 IRC defines the concept of continuity as "the common wall for townhouses shall be continuous from the foundation to the underside of the roof sheathing."
- ❑ Most jurisdictions allow the use of appropriately rated wall assemblies from foundation to the underside of the roof sheathing with the integration of sacrificial material.

R317.2.1 Continuity. The ~~common~~ fire-resistance-rated wall or assembly for separating townhouses shall be continuous from the foundation to the underside of the roof sheathing, deck or slab. ~~The fire-resistance rating and~~ shall extend the full length of the ~~common~~ wall or assembly, including walls ~~extending extensions~~ through and separating attached accessory structures.

Reason: As these are the terms used in Section R317.2 and its Exception, this clarifies that continuous separation of the townhouse buildings by a fire-resistance-rated wall or assembly is required, not just a continuous common wall.

It was accepted as submitted:

RB98-04/05

Committee Action: Approved as Submitted

Committee Reason: This code change proposal provides clarity on the issue of fire-resistant rated assembly continuity and better organizes

Here is how the section in question appears in the 2006 IRC:

R317.2.1 Continuity. The fire-resistance-rated wall or assembly separating townhouses shall be continuous from the foundation to the underside of the roof sheathing,

deck or slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed accessory structures.

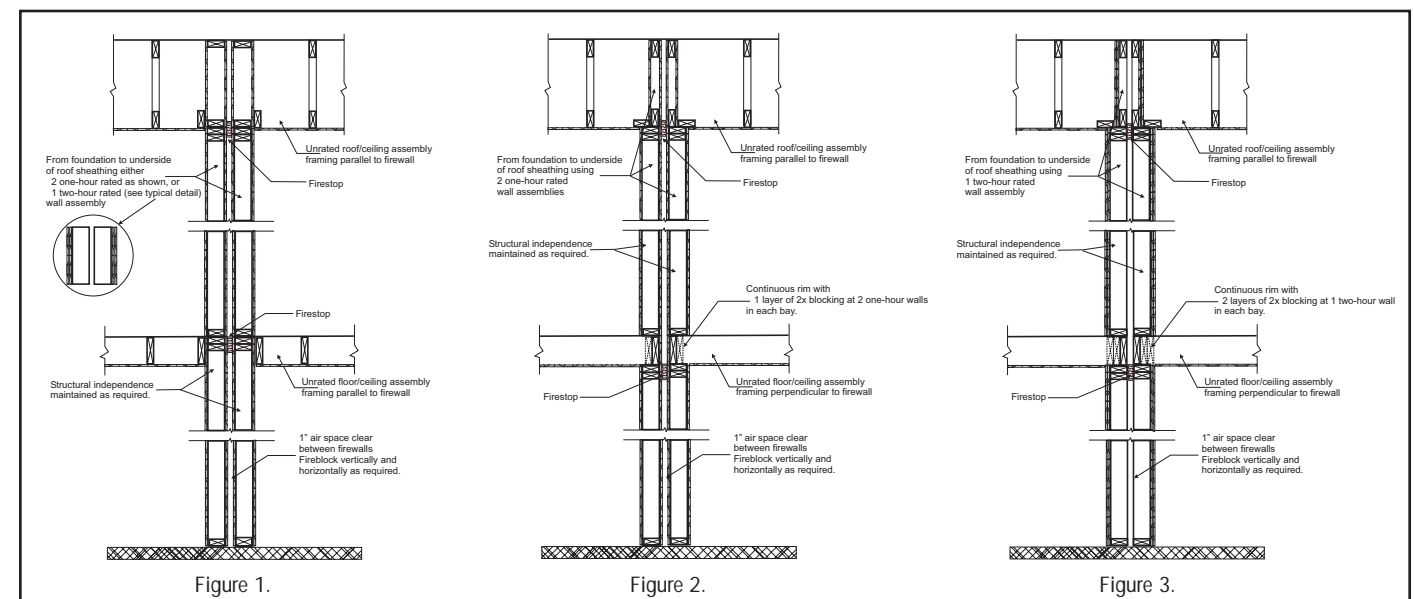
Discussion

The changes made to Section R317.2.1 in IRC 2006 still do not adequately address what constitutes continuity of the wall or assembly separating townhouse units. It has been deemed acceptable in most jurisdictions to allow the use of appropriately rated wall assemblies from foundation to the underside of the roof sheathing with the integration of sacrificial material.

Sacrificial material may consist of any approved product. The following illustrations are based upon the typical charring properties of wood which allows one hour for each 1.5" of material thickness (each layer of 2x nominal blocking is equivalent to one hour).

The following figures are not intended to be comprehensive illustrations. Rather, they are intended to illustrate the concept of continuity in the context of townhouse separation. Any structural material may be used for floor/ceiling or roof/ceiling members (wood or steel trusses, sawn lumber, I-joists, or engineered wood products) assuming appropriate attention has been given to the installation detailing of the sacrificial material to maintain the required fire-resistance rating.

Figure 1 illustrates an idealized representation for providing continuity of separation - continuous fire-resistance-rated wall, fire-blocked, with continuous membrane from foundation to underside of roof sheathing shown using two one-hour assemblies.



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Figure 2 illustrates an acceptable use of sacrificial material for a separation using two one-hour wall assemblies.

Figure 3 illustrates an acceptable use of sacrificial material for a separation using one two-hour wall assembly.

Summary

Assuming proper attention to the detailing and to quality installation of the details, the figures illustrate the use of sacrificial material to demonstrate that an equivalent level of protection can be provided similar to that of a continuous wall with a continuous membrane. **SBC**

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