

# GOT FIREBLOCKING?

## IRC SECTION R602.8.4 – THE PROTECTION OF PENETRATIONS IN SINGLE FAMILY HOMES

Is this a familiar sight in your area? Open voids at ceiling and floor levels made by the trades to run their mechanical items such as wires, pipes, ducts and vents? Were they still open penetrations at the time of your final rough or mechanical inspection? Did the insulation contractor stuff fiberglass in the holes or use an insulating foam sealant as a part of their air infiltration package? What was done to protect the openings from the free passage of flame in the tragic event of a fire?

If you haven't seen a brightly colored red or orange caulk in the holes, chances are that the contractors aren't doing their part to resume the "Fireblocking Integrity" of the built in fireblocks they have penetrated. Section R602.8.1.2 of the 2000 IRC (International Residential Code) refers to **Fireblocking Integrity**. The integrity of all fireblocks shall be maintained. Fireblocks are building materials installed to resist the free passage of flame to other areas of the building through concealed spaces. All model building code specifications require fireblocks at all inter-connections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, and cove ceilings and in concealed spaces between stair stringers at the top and bottom of the run. Many of these fireblocking requirements

are built in as a structural component of the home during framing. Section R602.8.4, however, is an important life safety requirement that is often overlooked or done with incorrect materials. Section **R602.8.4** of the IRC requires openings around vents, pipes, and ducts at ceiling and floor levels to be fireblocked with an approved material that is tested to demonstrate it can resist the free passage of flame and products of combustion.



Imagine a worst case scenario. A fire starts in an unfinished basement that has unprotected penetrations. Within seconds, the fire spreads into the wall cavity of an interior wall that is most often not insulated. This concealed space acts like a chimney sucking the flame through out the first floor ceiling cavity and up through other multiple penetrations to the second storey and then finally into the attic area. Within minutes, the fire could rapidly spread within the concealed spaces to new fuel sources allowing little time for the occupants to escape to safety.

A study done by the American Wood Council (American Forest & Paper Association AWC Technical Report 10)

found that wood burns at a rate of 1 ½" per hour. The intent of section R602.8.1.2 Fireblocking Integrity, is to fill the holes made when the trades run their wires, pipes, etc. with a material that is tested to have a burn time "equal to" or "greater than" the burn time of the wood fireblock being penetrated. This would ensure that the fire would have to burn through the fireblock before entering a new area of the building.

Currently, there are many fireblocking/firestopping caulks bearing the **ASTM-E136** (test for noncombustibility) or **ASTM-E814** (test for "through penetrations" in fire-rated systems) that are tested to meet or exceed the minimum requirements of section 602.8.4 for fireblocking penetrations in single family dwellings. Beware of allowing insulating spray foams for fireblocking, because these types of products burn easily and emit dense smoke and highly toxic gases. It is important to check the products testing applications and the product material safety data sheet for any flammability issues or limitations.

So please remember, the next time you perform your inspections, be sure to check the penetrations for the brightly colored caulk that may someday be the final barrier that allows occupants to escape to safety.

*For additional information pertaining to residential fireblocking refer to IRC Section R602.8 or please visit:*  
[www.firestoppingcaulk.com](http://www.firestoppingcaulk.com)