

Fire blocks and draft stops are required in *combustible* construction per UBC Section 708. Experience has shown that the greatest damage occurs to conventional wood-framed buildings during a fire when the fire travels unimpeded through concealed draft openings.

Wood Frame Construction

In wood-framed construction, it is common to use western platform framing and this provides adequate fire-blocking between stories in stud walls. The code requires that fire blocking be provided at 10 foot (3038mm) intervals horizontally and vertically. Fire-blocking materials can be wood, gypsum board, cement board, mineral or glass fiber. Only “bats” of mineral or glass fiber insulation should be used as fire blocking materials. Loose-fill insulation should not be used as a fire blocking material under any circumstance. Even in a case where it fills the entire cavity, a hole knocked into the gypsum panel protecting the wall cavity could allow loose fill insulation to fall out, thus negating its function.

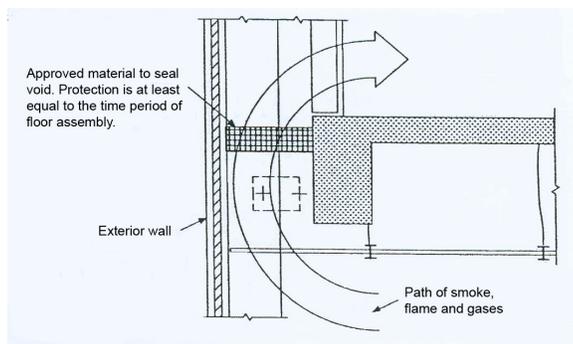
Steel Stud Framing

The installation requirements of light gauge metal framing are covered by the Uniform Building Code (UBC), ASTM C 754 and ASTM C 1007. These specifications cover the minimum requirements for the installation of interior load and non-load bearing steel framing, furring members and related accessories. The International Conference of Building Officials (the IBCO) publishes Evaluation Reports covering the minimum requirements for gypsum wall and ceiling assemblies. There is no requirement in any of these standards for fire-blocking for metal stud framing. However, the final decision rests with the building department and designer of record.

Fire resistive classifications are described in the Gypsum Association Fire-Design Manual. The fire tests conducted on metal stud framing tested assemblies were derived from full scale fire tests conducted in accordance with the requirements of ASTM E119. The assemblies were tested without fire blocking within the wall cavity.

Curtain Walls

The lack of requirement for fire blocking would not apply to exterior curtain walls that run past concrete floor slabs. The Code requires that the gap at the slab edge/curtain wall interface be treated to maintain the same fire integrity as the floor – ceiling assembly (see detail). These flame barriers are intended to prevent the “leap frogging” effect of a fire on the outside of a building. The standard industry procedure is to use safing insulation (mineral wool) and



impaling clips and is known as fire-safing. There are a variety of methods to provide fire safing depending on the curtain wall material such as granite, aluminum, glass, or gypsum sheathing. The hourly rating required is also a factor in design and detailing. Some sound attenuation blankets may not be suitable for fire safing, depending on the rating and specific detail. One item that should be carefully checked is the density of the fire attenuation safing (mineral wool). These products are also used as a forming or packing material for firestopping and can range from 2.5lb pcf to 4.0lb pcf. Manufacturers of mineral wool products can provide published fire test data to meet performance requirements.

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