



Commercial Buildings Frequently Asked Questions Building Height Area

IBC 1011.7, 510.2 A building constructed using the special provisions of IBC s. 510.2 requires the building below the 3 hr. horizontal assembly to be of Type IA construction and allows the building above the 3 hr. horizontal assembly to be of any type of construction permitted by the code for the building use, size, and height. When a fire resistance rated stair enclosure extends through the 3 hr. rated horizontal assembly, can the materials used for the stair construction within the rated enclosure be combustible if the building above the horizontal assembly is permitted to be of combustible construction?

Answer: Yes. The building below the horizontal assembly is required to be of Type IA fire resistive class of construction which requires with few exceptions the use of noncombustible materials, while the building above the horizontal assembly can be of any class of construction which is appropriate for the building use, size and height. When a fire resistance rated stair enclosure extends through and creates a discontinuity in the horizontal assembly, the fire resistance rated walls of the stair enclosure create the building separation between classes of construction. Therefore, in accordance with IBC s. 1011.7, the stairs within the fire resistance rated stair enclosure can be constructed of combustible materials if the building class of construction above the 3 hr. horizontal assembly allows combustible materials to be used in its construction (types III, IV, and V class of construction).

IBC 503.1 and 508.4.3 Specific to the construction of a new multi-story building that is to have multiple uses, how do the separated use provisions prescribed in IBC 508.4.3 interact with the story above grade plane limitations of Table 504.3?

Answer: This is an instance where the intent of the code is to allow the limitation for the building to be based on what might be viewed as a less restrictive provision for the various uses located within the building. The uses that have a more restrictive limit are in compliance by being restricted to the fire area that corresponds to the story above grade plane in the building that matches up with the limitation in Table 504.3. For example an un-sprinkled building of Type VB construction that is of a 2-story above grade plane configuration and 9000 SF per floor can be designed to include mixed uses of Mercantile (M) and Business (B) within. To comply, a horizontal fire barrier of 2HR fire-resistance rating must be provided between the first and second stories above grade plane and the M uses must be limited to locations on the first story above grade plane, or below, as specified in Table 504.3. The same methodology can be used for other mixes of use and classes of construction. (September 1, 2011)

IBC 503.1 Is the area of an occupied roof counted as part of the building area, in determining the maximum building area permitted by IBC chapter 5?

Answer: No. The area calculations in IBC chapter 5 only include areas within stories, and a roof is not a story. However, the number of occupants for a roof must be included in establishing compliance with the means-of-egress requirements for the building (June 30, 2008)

IBC 506.3 What are the required characteristics for a fire lane that provides access to an open space along the side of a building, in order to include that side's perimeter when calculating a building-area increase for frontage?

Answer: IBC Section 506.3.1 simply states that the open space "must be accessed from a street or approved fire lane." By definition in SPS 362.0202 (2) (a), "approved" means acceptable to the department, and the department will accept any proposed fire lane that is acceptable to the local fire department as meeting the requirements of IBC 506.3.1. (September 1, 2011)

IBC Table 506.2 Can an automatic fire sprinkler system that complies with NFPA 13R be used to obtain the building-area increase for sprinklering that is permitted by IBC chapter 5?

Answer: No. Only an NFPA 13 automatic sprinkler system can be used to obtain a building-area increase for sprinklering. (June 30, 2008)

IBC Table 509 Does IBC Table 509 require the creation of a furnace room for a furnace that has an input greater than 400,000 Btu per hour, or the creation of a boiler room for a boiler over 15 psi and 10 horsepower?

Answer: IBC Table 509 does not require the creation of a furnace room for a furnace of this capacity, but if a furnace room is provided for such a furnace, the room must either have a fire-separation rating of one hour or be protected by an automatic fire-extinguishing system. The same relationship exists for boiler rooms and boilers. If a boiler room is provided for boilers over 15 psi and 10 horsepower the room must either have a fire-separation rating of one hour or be protected by an automatic fire-extinguishing system. However, a manufacturer's listing for a specific furnace or boiler may include additional enclosure requirements.

See IMC section 202 for definitions of furnace room and boiler room. (September 1, 2011)