

STATE BUILDING CODE INTERPRETATION NO. I-16-06

July 5, 2006

Re: I-16-06

The following is offered in response to your June 26, 2006 FAX to me in which you seek official interpretations of the provisions of Section 506.4 of the 2003 International Building Code (IBC) portion of the 2005 State Building Code, which deals with determination of the maximum total area of a building of more than one story. This limitation of total building area is in addition to the requirements of Table 503 as modified by Sections 504 and 506.1 through 506.3.

Question 1: Exception 2 to Section 506.4 allows the maximum total area of a building protected by an NFPA 13R sprinkler system to be determined by multiplying the allowable area per floor by the number of stories. Is this method also permitted for a building that utilizes an NFPA 13 sprinkler system?

Answer 1: No. The intent of Section 506.4 is to limit the maximum total area of a building in recognition of the facts that the starting area values of Table 503 have been increased above those permitted in previous codes; the allowable area increases for buildings equipped with an NFPA 13 sprinkler system are significantly higher than in previous codes; and that the 2003 IBC does not contain multi-story building area reductions as found in previous codes. In utilizing Exception 2, which applies only to residential buildings with an NFPA 13R system, one must keep in mind that the 13R system does not allow the area increases that are available with a 13 system and the fact that a 13R system can only be used in a building up to and including 4 stories above grade. Thus, while it makes sense to calculate the maximum allowable area of a building with a 13R system by multiplying the area (not increased for sprinklers) by the building height in stories (which cannot exceed 4), it is not the intent of the code to determine the maximum allowable area of a building equipped with a 13 system in the same manner.

Question 2: Official Interpretation I-15-05 states that the provisions of Section 506.4.1 of the 2004 IBC Supplement shall be utilized to determine the total area of buildings with mixed occupancies. This section states, in part, that the sum of the ratios shall not exceed 2 for two story buildings and 3 for buildings three stories and higher. Is it the intent of this section that in sprinklered buildings the sum of the ratios shall not exceed the actual number of stories?

Answer 2: No. Since buildings of mixed occupancy that have automatic sprinklers must utilize an NFPA 13 system (a 13R system is only applicable to buildings of Group R up to and including 4 stories above grade in height), they are eligible for increased area per floor if they are sprinklered throughout. Because the sprinkler area increase is already applied to the allowable area per floor, and because a fully sprinklered building is eligible for a one-story increase in height, permitting the sum of the ratios in a sprinklered building to equal the number of stories above grade would result in defeating the intent of Section 506.4.