

## STATE BUILDING CODE INTERPRETATION NO. I-14-04

September 1, 2004

The following is offered in response to your August 30, 2004 letter to me in which you seek a formal interpretation of the provisions of Section 716 of the BOCA National Building Code/1996 portion of the 1999 State Building Code. Your question assumes a building of Use Group B and Construction Classification 2A.

**Question 1:** In a building as above where no exterior wall fire-resistance rating is required based on fire separation distance, is the exterior face of a loadbearing structural member located within the plane of an exterior wall required to be protected per Table 602?

**Answer 1:** Yes. Section 716.5 of the referenced code requires that structural members in exterior walls or along outer lines of a building or structure, be protected in accordance with Table 602. For a Construction Classification 2A building, the Table 602, Line 1 requirement for exterior loadbearing walls is 2 hours but not less than the rating required based on the fire separation distance. In the instant case, fire separation distance is not an issue and can thus be ignored. Section 716.5 also contains a requirement that the interior faces of structural elements in exterior walls are also regulated by Table 602 as interior structural members. In this case, where the fire separation distance is not an issue, the exterior face of the structural member along the exterior wall line must be protected to a fire-resistance rating of 2 hours, but the interior surfaces of such structural members are permitted to have a rating of between 1 ½ hours to 2 hours depending on the applicable requirements of Lines 8 and 9 of Table 602. (It should be noted that this provision does not apply to Construction Classifications 2C, 3B and 5B. Since they have no requirements for interior structural member fire-resistance rating, the members in exterior rated walls must be protected as required by Line 1 of Table 602 on all surfaces.)

**Question 2:** In a building as above where an exterior wall rating is required based on fire separation distance, is the exterior face of a loadbearing structural member located within the plane of an exterior wall required to be protected per Table 602?

**Answer 2:** Yes. Again, for a Construction Classification 2A building, the Table 602, Line 1 requirement for exterior loadbearing walls is 2 hours but not less than the rating required based on the fire separation distance. In a scenario where the exterior wall rating requirements of Table 705.2 equal or exceed those for exterior loadbearing members as determined by Line 1 of Table 602, the Table 705.2 requirements would prevail. For instance, if the building in question were Use Group M, with a fire separation distance of 0 to 5 feet, the exterior wall rating requirement would be 3 hours, rather than 2. In addition, Section 705.2 tells us that the fire-resistance rating of exterior walls with a fire separation distance of 5 feet or less shall be rated for exposure to fire from both sides. Thus, one could not reduce the fire-resistance rating of the interior surfaces of the structural members in accordance with Section 716.5 when the fire separation distance is 5 feet or less.

**Question 3:** Do the provisions of the 2003 International Building Code (as yet, not adopted but proposed as a portion of the 2005 State Building Code) have similar requirements?

**Answer 3:** The 2003 International Building Code, at Section 714.5, clarifies and simplifies this issue by stating that the fire-resistance rating of loadbearing structural members located within exterior walls or on the outside of a building or structure must be provided with the highest fire-resistance rating as determined by:

- 1) Table 601 for the type of building element based on the type of construction;
- 2) Table 601 for exterior bearing walls based on the type of construction; and

3) Table 602 for exterior walls based on fire separation distance.  
In the 2003 IBC, there is no longer a case where the interior surface of a structural member in an exterior wall would have a fire resistance rating different from the exterior surface.