

Section 403.3.1 HIGH RISE TYPE OF CONSTRUCTION

403.3.1 Type of construction. The following reductions in the minimum construction type allowed in Table 601 shall be allowed as provided in Section 403.3:

1. For buildings not greater than 420 feet (128 m) in height, Type IA construction shall be allowed to be reduced to Type IB.

Exception: The required fire-resistance rating of ~~columns supporting floors~~ the structural frame shall not be allowed to be reduced.

2. In other than Groups F-1, M and S-1, Type IB construction shall be allowed to be reduced to Type IIA.

3. The height and area limitations of the reduced construction type shall be allowed to be the same as for the original construction type.

Reason. The structural frame is defined as the “columns and the girders, beams, trusses and spandrels having direct connections to the columns ...” (see Table 601 note “a”). Under this concept, beams and other structural members framing into columns are required to have the same fire resistance rating as the columns to which they are connected. This is consistent with the structural design of the column which usually relies on beams or other members framing into columns to provide lateral support for the column.

The approval of code change G53-04/05 has created a potentially unsafe inconsistency in the code. The code now permits the type of construction for buildings less than or equal to 420 feet in height to be reduced from Type IA to Type IB; however, columns supporting floors are not permitted to be reduced. This means that beams framing into columns of these buildings are permitted to have a 2-hour rating, as required for the structural frame of Type IB construction. On the other hand, columns in the building must have a 3-hour rating as required for the structural frame of Type IA construction. Since the required beam rating is one hour less than that of the column to which it is connected, failure of the beam after 2 hours but before 3 hours, could result in premature failure of the column. This code change will correct the inconsistency by requiring that the columns and beams framing into the columns have the same rating.