

2006 INTERNATIONAL BUILDING CODE

Number	Section	New / Continued
IBC 2006 01	403.3	Continued (IBC 2000 04)
IBC 2006 02	705.3	Continued (IBC 2000 02)
IBC 2006 03	Table 705.4	Continued (IBC 2000 03)
IBC 2006 04	1014.2 (1004.2.3 IBC 2000 and 1013.2 IBC 2003)	Continued (IBC 2000 08)
IBC 2006 05	1809.2.3.2.2	New

SOUTH CAROLINA MODIFICATIONS TO THE 2006 EDITION OF THE INTERNATIONAL BUILDING CODE

As authorized by Section 6-9-40 of the South Carolina Code of Laws, 1976 as amended, the South Carolina Building Codes Council has approved the following modifications to the 2006 edition of the International Building Code (IBC). Approved modifications under Section 6-9-40 are mandatory for all local jurisdictions and must be incorporated into the International Building Code.

The modifications are arranged by the affected IBC section numbers in ascending order. Modifications continued from a prior building code cycle were renumbered to coincide with the 2006 building code cycle numbering, and are distinguished by a note and reference to their prior modification numbers.

Modification Number: IBC 2006 01.

Section: 403.3 Reduction in fire-resistance rating.

Modification: Deleted without substitution.

Reason: Historically, fire protection for high-rise buildings of type I construction with unlimited height and area required a four-hour rating for columns and a three-hour rating for floors. For type II construction limited to 80 feet in height, the ratings could be reduced to a three-hour rating for columns and a two-hour rating for floors.

Allowable reductions contained in Section 403.3 of the IBC would further reduce the columns and floors in certain high-rise buildings with unlimited height and area to a two-hour rating and the columns and floors in buildings limited to 160 feet in height to a one-hour rating.

Note: Continued modification IBC 2000 04 and IBC 2003 01.

Proponent: Portland Cement Association.

Effective Date: July 1, 2001.

Modification Number: IBC 2006 02.

Section: 705.3 Materials.

Modification: The "Exception" was deleted without substitution.

Reason: Past provisions for fire walls required their construction in accordance with NCMA-TEK 5-8 or equivalent in brick, concrete or other nationally tested and recognized systems. The essence of those provisions was for firewalls to be composed of noncombustible materials.

Note: Continued modification IBC 2000 02 and IBC 2003 02.

Proponent: Portland Cement Association.

Effective Date: July 1, 2001.

Modification Number: IBC 2006 03.

Table: 705.4 Fire Wall Resistance Ratings.

Modification: Footnote a) was deleted without substitution. Change reference to footnote b) to footnote a).

Reason: Until the adoption of the IBC, a firewall was required to have a minimum of a four-hour rating. The IBC reduced that rating to three hours. Further reduction in fire resistance for certain occupancies and for less fire resistive and combustible types of construction is not technically justified.

Note: Continued modification IBC 2000 02 and IBC 2003 03.

Proponent: Portland Cement Association.

Effective Date: July 1, 2001.

Modification Number: IBC 2006 04.

Section: 1014.2. Egress through intervening spaces.

Modification: Deleted and replaced with substitute language.

The section now reads: "Means of egress shall consist of continuous and unobstructed paths of travel to the exterior of a building. Means of egress shall not be permitted through kitchens, closets, restrooms and similar areas nor through adjacent tenant spaces.

Exception: Means of egress shall be permitted through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or guest room.

When unusually hazardous conditions exist, the building official may require additional means of egress to assure the safety of the occupants."

Reason: Most hotel and motel suites built in South Carolina, are designed with a living room, a bedroom (sleeping area) a small kitchen and a bathroom, all utilizing a single means of egress. It is also customary to place "Murphy" beds, "roll-away" beds or sleeper sofas in the living room of the unit, thereby creating a second sleeping area when necessary. Section 1014.2 does not allow egress through a sleeping area, effectively prohibiting the construction of hotel or motel suites that do not have a second means of egress or an exit access corridor around the sleeping area (be it the living room or bedroom) closest to the exit door.

Note: Continued modification IBC 2000 08 and IBC 2003 04. In the 2006 edition the section number was changed from 1013.2 to 1014.2.

Proponent: Grand Strand Chapter, AIA.

Effective Date: July 1, 2001.

Modification Number: IBC 2006 05.

Section: 1809.2.3.2.2. Design in Seismic Design Category D, E or F.

Modification: Add new section.

The new section reads: "1809.2.3.2.2.1 Performance-Based Design of 10 inch 12 inch and 14 inch Square Piling. Where transverse reinforcement consists of circular spirals, the volumetric ratio of spiral transverse reinforcement in the ductile region shall comply with either the prescriptive requirements of Section 1809.2.3.2.2 (Point 5) or the performance-based provisions of this section. The performance-based provisions of this section may not be used if the factored axial compressive force on the pile considering load combinations with E exceeds $0.4f_g A_g$. In the ductile region of the piling, a curvature ductility capacity of 20 shall be provided by the pile cross section. Hence, required spiral quantity P_g shall be determined by moment curvature analysis of the pile cross section that accounts for the actual range of factored axial loads expected during the design earthquake. In no case, shall p_g provided in the ductile region be less than 0.014. Expected material properties and strain limits shall be determined by the design engineer and shall be in accordance with other nationally recognized standards. The maximum center-to-center spacing of the spiral as presented in Section 1809.2.3.2.2 (Point 3) may be ignored so long as strand buckling is accounted for in the moment curvature analysis. However, in no case shall the center-to-center spacing of the spiral in the ductile region exceed 3 in. Only Points 3 and 5 of the prescriptive requirements are modified for the performance-based design provisions of this section and the remainder of Section 1809.2.3.2.2 must still be satisfied.

Reason: The new section allows the design engineer to decrease the amount of spiral provided based on an assurance of adequate ductility measured as a ductility capacity of 20. The following layers of conservatism are provided for the performance based requirement presented above:

1. Building foundations are expected to respond elastically to the design earthquake, and theoretically, no ductility should be required.
2. The target curvature ductility capacity of 20 is approximately that required for special moment frames in building structures per ACI 318-05. It is also approximately 2 times that required by the PCI piling committee in 1993. Even if the actual forces resisted by the foundation exceed the elastic limit, ductility capacities of 20 should not be required.
3. Current research has shown that soil can be expected to provide concrete confinement of approximately 0.007 for below ground hinges. Hence the lower bound on the performance based methodology presented above is 0.021 minus 0.007 or 0.014.
4. MOTEMS (2005), Caltrans (2004), and SCDOT Seismic Provisions (2006) provide lower bound expected material properties and strain limits based on tests of materials across the United States.

Proponent: Structural Engineers Association of South Carolina.

Effective Date: July 1, 2008.