2007/2008 ICC CODE DEVELOPMENT CYCLE

ERRATA TO THE 2007/2008 FINAL ACTION AGENDA

1st Posting August 12, 2008
2nd Posting August 22, 2008 (see page 14)
3rd Posting August 25 (see page 1)

Introductory Pages, Volumes 1 and 2

page xxxii, "Tentative Hearing Order", make the following revisions:

Under "IBC-Structural"
- Delete S77-07/08
- Add S117-07/08 after S104-07/08
- Add S172-07/08 after S171-07/08

Under "IRC-Energy"
- Add EC84-07/08, Part II after EC81-07/08, Part II

Under "IECC"
- Delete EC31-07/08 (on consent agenda)
- Add EC66-07/08 after EC65-07/08, Part I
- Add EC79-07/08, Part I and EC79-07/08, Part II after EC78-07/08, Part II
- Delete EC84-07/08, Part I

PUBLIC COMMENTS
VOLUME 1

IBC MEANS OF EGRESS

Page 758, E14-07/08, Part I: In Public Comment 1, Section 3008.12 (previously 3008.15) "Elevator system monitoring", replace item 6 with the following:

6. Activation of any fire alarm initiating device in any elevator ~~hoistway (if provided), elevator~~ lobby, ~~or~~ elevator machine room or machine space, or elevator hoistway.

IBC STRUCTURAL

Page 986, S101-07/08: In Public Comment 1, Section 1614.1, change the proposed referenced section from "404" to "403".

Page 1006, S136-07/08: Replace the modification shown in the public comment with the following:

1708.3. Concrete reinforcement. Where reinforcement complying with ASTM A 615 is used to resist earthquake-induced flexural, shear and axial forces in special moment frames, special shear walls and coupling beams connecting special structural walls, in structures assigned to Seismic Design Category B, C, D, E or F, as determined in Section 1613, the reinforcement shall comply with Section 21.1.5.2 of ACI 318. Certified mill test reports shall be provided for each shipment of such reinforcement. Where reinforcement complying with ASTM A 615 is to be welded, chemical tests shall be performed to determine weldability in accordance with Section 3.5.2 of ACI 318.

S117-07/08: Add public comment as follows:

S117–07/08
Table 1704.4, 1912.2 (New)

Proposed Change as Submitted:

Proponent: Randall Shackelford, P.E., Simpson Strong-Tie, Co., Inc. representing himself

1. Revise table as follows:

TABLE 1704.4
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARDS	IBC REFERENCE
3. Where allowable loads have been increased or design strengths have not been decreased, inspect headed bolts, headed studs, and hooked bolts to be installed in concrete prior to and during placement of concrete ~~where allowable loads have been increased~~ and inspect expansion and undercut anchors during installation in hardened concrete.	X	—	ACI 318: Appendix D	1911.5, 1912.2

(Portions of table not shown remain unchanged)

2. Add new text as follows:

1912.2 Strength reduction for no special inspection. Where special inspection is not provided for the installation of anchors designed in accordance with this section, a 50-percent decrease in the tension design strength shall be taken. No decrease in shear design strength is required.

Reason: The purposes of the proposed code changes are to:
1) Utilize consistent language when referring to anchors, bolts, studs, etc between Table 1704.4 and IBC Sections 1911.1 and 1912.1.
2) Clarify that design strengths calculated under IBC Section 1912 presume that special inspection is provided.
3) Allow the design professional to eliminate the special inspection requirement provided that the design tension strengths calculated under IBC Section 1912 are decreased by 50 percent.

Justification (Reference the numbers above):
1) Use of inconsistent names for anchors between the code sections causes confusion and can lead users of the code to believe that some types of cast-in-place and post-installed anchors require special inspection while other types do not. The intent of the code is that the requirements for special inspection apply uniformly to all types of cast in place anchors and post-installed anchors, regardless of name.
2) The design strengths calculated under IBC Section 1912 (i.e. ACI 318 Appendix D) are based on the 5% fractile strengths of cast-in-place and post-installed anchors in concrete from research, theory, and testing. Unlike anchors in IBC Section 1911, no reductions have been pre-applied to the design strengths calculated in accordance with ACI 318 Appendix D to account for the removal of special inspection.
3) IBC Section 1911.5 allows design professionals the option of requiring or not requiring special inspection for anchors. If special inspection is not provided, the allowable tension load for anchors designed under Section 1911 is effectively reduced by 50 percent. The proposal permits design professionals to similarly eliminate the requirement for special inspection for anchors designed under Section 1912 by reducing design strength by 50 percent.

Cost Impact: The code change proposal will not increase the cost of construction.

Committee Action: **Disapproved**

Committee Reason: With the testimony on this proposal as well as S116-07/08, it was obvious that there are unresolved issues and no consensus on just how to incorporate the needed inspections of concrete anchors at this time. The addition of special inspections for drilled-in anchors has merit, but the requirements are not yet clear enough.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

John Silva, Hilti North America, representing himself, requests Approval as Modified by this public comment.

Modify proposal as follows:

TABLE 1704.4
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARDS	IBC REFERENCE
3. ~~Where allowable loads have been increased or design strengths have not been decreased,~~ Inspection of ~~headed~~ bolts~~, headed studs, and hooked bolts~~ to be installed in concrete prior to and during placement of concrete where allowable loads have been increased ~~and inspect expansion and undercut anchors during installation in hardened concrete.~~ or where strength design is used.	X	–	ACI 318 8.1.3, 21.2.8 ~~Appendix D~~	1911.5, 1912.1 ~~1912.2~~
4. Inspection of anchors installed in hardened concrete		X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1912.1

(Portions of table not shown remain unchanged)

~~**1912.2 Strength reduction for no special inspection.** Where special inspection is not provided for the installation of anchors designed in accordance with this section, a 50 percent decrease in the tension design strength shall be taken. No decrease in shear design strength is required.~~

Commenter's Reason: Currently, Table 1704.4 does not require special inspection for the following cases:
a. Bolts designed in accordance with the strength design procedures of ACI 318 Appendix D;
b. Anchors installed in hardened concrete (e.g., expansion and undercut anchors); and
c. All bolts and anchors designed to resist seismic loads.

While the ICC-ES Evaluation Service currently issues Evaluation Service Reports for expansion and undercut anchors with the requirement that continuous special inspection be provided in all cases, this is not explicitly supported by the code. The ICC-ES position is based on the global safety factor associated with anchor designs under Appendix D and on Section 1704.13; note however, that Section 1704.13 does not specify the type of special inspection, periodic or continuous, that is required. The imposition of continuous special inspection has created hardship for projects involving the installation of large numbers of anchors, whereby the simultaneous inspection of all installations is impractical and unwarranted. The omission of inspection requirements in Table 1704.4 for bolts designed in accordance with Appendix D (and, therefore, for all bolts and anchors designed to resist seismic loads) is simply in error.

S117-07/08 attempted to redress this situation by restoring the inspection requirements traditionally associated with the use of post-installed anchors under the allowable stress design rules (i.e., no special inspection for 50% tension resistance). This approach was rejected by the committee.

The proposal provided in this public comment adds "anchors installed in hardened concrete" as a new line item in Table 1704.4 and simultaneously clarifies the inspection requirements for CIP bolts ("bolts to be installed in concrete prior to and during placement of concrete") by adding "or where strength design is used" with the appropriate standard and section references. The inspection requirement for anchors installed in hardened concrete is given as "periodic". This reflects the usual manner in which anchor installations are treated in the inspection process and is also in conformance with Sections 1707.6, 1707.7 and 1707.8 for inspection of anchorage of architectural and mechanical components where seismic resistance is required.

This proposal is endorsed by the Concrete Anchor Manufacturers' Association and by the Rack Manufacturers Institute.

Final Action: AS AM AMPC____ D

S172-07/08: Add public comment as follows:

S172–07/08

1904.2 (New), 1904.2.1, 1904.2.2, 1904.2.3, 1904.3, 1904.4, 1904.5 (New), 1907.7, 1907.7.1, 1907.7.2, 1907.7.3, 1907.7.4, 1907.7.5 (New), 1907.7.6, 1907.7.7, 1908, 1909.6.1, 1909.6.3, 1912.1, Table 1704.3, 1708.3

Proposed Change as Submitted:

Proponent: Joseph J. Messersmith, Jr. PE, Portland Cement Association; Daniel Falconer, PE, American Concrete Institute

1. Add new text as follows:

1904.2 Exposure categories and classes. Concrete shall be assigned to exposure classes based on:

1. Exposure to freezing and thawing in a moist condition or deicer chemicals;

2. Exposure to sulfates in water or soil;
3. Exposure to water where the concrete is intended to have low permeability; and
4. Exposure to chlorides from deicing chemicals, salt, salt water, brackish water, seawater or spray from these sources, where the concrete has steel reinforcement.

2. Delete without substitution:

~~**1904.2 Freezing and thawing exposures.** Concrete that will be exposed to freezing and thawing, deicing chemicals or other exposure conditions as defined below shall comply with Sections 1904.2.1 through 1904.2.3.~~

~~**1904.2.1 Air entrainment.** Concrete exposed to freezing and thawing or deicing chemicals shall be air entrained in accordance with ACI 318, Section 4.2.1:~~

3. Revise as follows:

~~**1904.2.2**~~ **1904.3 (Supp) Concrete properties.** Concrete ~~that will be subject to the following exposures~~ mixtures shall conform to the ~~corresponding~~ most restrictive maximum water-cementitious materials ratios and minimum specified concrete compressive strength requirements of ACI 318, Section ~~4.2.2.~~ 4.3: based on the exposure classes assigned in Section 1904.2.

~~1. Concrete intended to have low permeability where exposed to water;~~
~~2. Concrete exposed to freezing and thawing in a moist condition or deicer chemicals; or~~
~~3 Corrosion protection of reinforcement in concrete exposed to chlorides from deicing chemicals, salt, salt water, brackish water, seawater, or spray from these sources.~~

Exception: For occupancies and appurtenances thereto in Group R occupancies that are in buildings less than four stories above grade plane, normal-weight aggregate concrete ~~shall~~ is permitted to comply with the requirements of Table 1904.2.2(2) based on the weathering classification (freezing and thawing) determined from Figure 1904.2.2 in lieu of the requirements of ACI 318, Table 4.3.1.a.

~~In addition, concrete that will be exposed to deicing chemicals shall conform to the limitation of Section 1904.2.3.~~

~~**1904.2**~~ **1904.4 Freezing and thawing exposures.** Concrete that will be exposed to freezing and thawing, in the presence of moisture, with or without deicing chemicals being present, ~~or other exposure conditions as defined below~~ shall comply with Sections ~~1904.2.1 through 1904.2.3~~ 1904.4.1 and 1904.4.2.

~~**1904.2.1**~~ **1904.4.1 Air entrainment.** Concrete exposed to freezing and thawing ~~or deicing chemicals~~ while moist shall be air entrained in accordance with ACI 318, Section ~~4.2.1~~ 4.4.1:

~~**1904.2.3**~~ **1904.4.2 Deicing chemicals.** For concrete exposed to freezing and thawing in the presence of moisture and deicing chemicals, the maximum weight of fly ash, other pozzolans, silica fume or slag that is included in the concrete shall not exceed the percentages of the total weight of cementitious materials permitted by ACI 318, Section ~~4.2.3~~ 4.4.2.

4. Delete without substitution:

~~**1904.3 Sulfate exposures.** Concrete that will be exposed to sulfate-containing solutions or soils shall comply with the maximum water-cementitious materials ratios and/or minimum specified compressive strength and be made with the appropriate type of cement in accordance with the provisions of ACI 318, Section 4.3.~~

~~**1904.4 Corrosion protection of reinforcement.** Reinforcement in concrete shall be protected from corrosion and exposure to chlorides in accordance with ACI 318, Section 4.4.~~

5. Add new text as follows:

1904.5 Alternative cementitious materials for sulfate exposure. Alternative combinations of cementitious materials for use in sulfate-resistant concrete to those listed in ACI 318, Table 4.3.1.b shall be permitted in accordance with ACI 318, Section 4.5.1.

6. Revise as follows:

1907.7 Concrete protection for reinforcement. The minimum specified concrete cover for reinforcement shall comply with Sections 1907.7.1 through 1907.7.7.

1907.7.1 Cast-in-place concrete (nonprestressed). Minimum specified concrete cover shall be provided for reinforcement in nonprestressed, cast-in-place concrete construction in accordance with ACI 318, Section 7.7.1.

1907.7.2 Cast-in-place concrete (prestressed). The minimum specified concrete cover for prestressed and nonprestressed reinforcement, ducts and end fittings in cast-in-place prestressed concrete shall comply with ACI 318, Section 7.7.2.

1907.7.3 Precast concrete (manufactured under plant control conditions). The minimum specified concrete cover for prestressed and nonprestressed reinforcement, ducts and end fittings in precast concrete manufactured under plant control conditions shall comply with ACI 318, Section 7.7.3.

1907.7.4 Bundled bars. The minimum specified concrete cover for bundled bars shall comply with ACI 318, Section 7.7.4.

1907.7.5 Headed shear stud reinforcement. For headed shear stud reinforcement, the minimum specified concrete cover shall comply with ACI 318, Section 7.7.5.

~~**1907.7.5**~~ **1907.7.6 Corrosive environments**. In corrosive environments or other severe exposure conditions, prestressed and nonprestressed reinforcement shall be provided with additional protection in accordance with ACI 318, Section ~~7.7.5~~ 7.7.6.

~~**1907.7.6**~~ **1907.7.7 Future extensions.** Exposed reinforcement, inserts and plates intended for bonding with future extensions shall be protected from corrosion.

~~**1907.7.7**~~ **1907.7.8 Fire protection**. When this code requires a thickness of cover for fire protection greater than the minimum concrete cover ~~specified~~ in Section 1907.7, such greater thickness shall be ~~used~~ specified.

1908.1 General. The text of ACI 318 shall be modified as indicated in Sections 1908.1.1 through ~~1908.1.16~~ 1908.1.9.

7**. Delete without substitution:**

~~**1908.1.1 ACI 318, Section 10.5.** Modify ACI 318, Section 10.5, by adding new Section 10.5.5 to read as follows:~~

~~*10.5.5 – In structures assigned to Seismic Design Category B, beams in ordinary moment frames forming part of the seismic-force-resisting system shall have at least two main flexural reinforcing bars continuously top and bottom throughout the beam and continuous through or developed within exterior columns or boundary elements.*~~

~~**1908.1.2ACI 318, Section 11.11.** Modify ACI 318, Section 11.11, by changing its title to read as shown below and by adding new Section 11.11.3 to read as follows:~~

~~*11.11 – Special provisions for columns.*~~
~~*11.11.3 – In structures assigned to Seismic Design Category B, columns of ordinary moment frames having a clear height-to-maximum-plan-dimension ratio of five or less shall be designed for shear in accordance with 21.12.3.*~~

8. Revise as follows:

~~**1908.1.3**~~ **1908.1.1 ACI 318, Section ~~21.1~~ 2.2.** Modify existing definitions and add the following definitions to ACI 318, Section ~~21.1~~ 2.2.

9. Add new definition as follows:

SPECIAL STRUCTURAL WALL. A cast-in-place or precast wall complying with the requirements of 21.2.3 through 21.2.7, 21.10, and 21.11, as applicable, in addition to the requirements for ordinary reinforced concrete structural walls *or ordinary precast structural walls, as applicable*. *Where ASCE 7 refers to a "special reinforced concrete structural wall," it shall be deemed to mean a "special structural wall."*

~~**1908.1.4**~~ **1908.1.2 ACI 318,** Section ~~21.2.1~~ 21.1.1. Modify ACI 318 Sections ~~21.2.1.2, 21.2.1.3 and 21.2.1.4~~ 21.1.1.3 through 21.1.1.5, to read as follows:

10. Delete and substitute as follows:

~~*21.2.1.2 – For structures assigned to Seismic Design Category A or B*, provisions of Chapters 1 through 18 and 22 shall apply except as modified by the provisions of this chapter. Where the design seismic loads are computed using provisions for intermediate or special concrete systems, the requirements of Chapter 21 for intermediate or special systems, as applicable, shall be satisfied.~~

~~*21.2.1.3 – For structures assigned to Seismic Design Category C*, intermediate or special moment frames, intermediate precast structural walls *or ordinary or special reinforced concrete structural walls* shall be used to resist *seismic* forces induced by earthquake motions. Where the design seismic loads are computed using provisions for special concrete systems, the requirements of Chapter 21 for special systems, as applicable, shall be satisfied.~~

~~*21.2.1.4 – For structures assigned to Seismic Design Category D, E or F*, special moment frames, *special reinforced concrete structural walls*, diaphragms and trusses *and foundations* complying with 21.2 through 21.10 *or intermediate precast structural walls complying with* 21.13 shall be used to resist forces induced by earthquake motions. Members not proportioned to resist earthquake forces shall comply with 21.11.~~

21.1.1.3 – Structures assigned to SDC B shall comply with Chapters 1 through 19 and 22. For a structure assigned to SDC B using ordinary moment frames as part of the seismic-force resisting system, the provisions of 21.1.2 and 21.2 shall apply. For a structure assigned to SDC B and using intermediate or special systems, the applicable provisions of 21.1.3 through 21.1.7, and 21.3 through 21.10 shall also apply.

21.1.1.4 – Structures assigned to SDC C shall comply with Chapters 1 through 19, and the seismic-force-resisting system shall be intermediate or special moment frames, intermediate precast structural walls, or ordinary reinforced concrete or special structural walls. For a structure assigned to SDC C and using intermediate moment frames as part of the seismic-force-resisting system the provisions of 21.1.2 and 21.3 shall apply. For a structure assigned to SDC C and using special moment frames, or intermediate precast or special structural walls, the applicable provisions of 21.1.3 through 21.1.7, and 21.4 through 21.10 shall also apply. Any structure assigned to SDC C shall satisfy 21.1.8. *Except for footings, pedestals and basement walls in accordance with 22.10 or as permitted by the International Building Code, structural elements of plain concrete are prohibited.*

21.1.1.5 – Structures assigned to SDC D, E or F shall comply with Chapters 1 through 19, and the seismic-force-resisting system shall be special moment frames, intermediate precast structural walls, or special structural walls. For a structure assigned to SDC D, E, or F, the provisions of 21.1.2 through 21.1.8 and 21.4 through 21.13 shall apply. *Except for footings, pedestals and basement walls in accordance with 22.10 or as permitted by the International Building Code, structural elements of plain concrete are prohibited.*

11. Delete without substitution:

~~**1908.1.5 ACI 318, Section 21.2.5.** Modify ACI 318, Section 21.2.5, by renumbering as Section 21.2.5.1 and adding new Section 21.2.5.2 to read as follows:~~

~~21.2.5 – Reinforcement in members resisting earthquake- induced forces.~~

~~*21.2.5.1 – Except as permitted in 21.2.5.2, reinforcement resisting earthquake-induced flexural and axial forces in frame members and in structural wall boundary elements shall comply with ASTM A 706. ASTM A 615, Grades 40 and 60 reinforcement, shall be permitted in these members if (a) the actual yield strength based on mill tests does not exceed the specified yield, fy, strength by more than 18,000 psi (124 MPa) [retests shall not exceed this value by more than an additional 3,000 psi (21 MPa)], and (b) the ratio of the actual tensile strength to the actual yield strength is not less than 1.25. For computing shear strength,* the value of *fyt* for transverse reinforcement, including spiral reinforcement, shall not exceed 60,000 psi (414 MPa).~~

~~*21.2.5.2 – Prestressing steel shall be permitted in flexural members of frames, provided the average prestress, fpc, calculated for an area equal to the member's shortes cross-sectional dimension multiplied by the perpendicular dimension shall be the lesser of 700 psi (4.83MPa) or fc /6 at locations of nonlinear action where prestressing steel is used in members of frames.*~~

~~**1908.1.6 ACI 318, Section 21.2.** Modify ACI 318, Section 21.2, by adding new Section 21.2.9 to read as follows:~~

~~*21.2.9 – Anchorages for unbonded post-tensioning tendons resisting earthquake induced forces in structures assigned to Seismic Design Category C, D, E or F shall withstand, without failure, 50 cycles of loading ranging between 40 and 85 percent of the specified tensile strength of the prestressing steel.*~~

~~**1908.1.7 ACI 318, Section 21.3.** Modify ACI 318, Section 21.3, by adding new Section 21.3.2.5 to read as follows:~~

~~*21.3.2.5 – Unless the special moment frame is qualified for use through structural testing as required by 21.6.3, for flexural members prestressing steel shall not provide more than one-quarter of the strength for either positive or negative moment at the critical section in a plastic hinge location and shall be anchored at or beyond the exterior face of a joint.*~~

12. Revise as follows:

~~**1908.1.13**~~ **1908.1.3 ACI 318, Section ~~21.13~~ 21.4.** Modify ACI 318, ~~Section 21.13, by renumbering Section 21.13.3 to become 21.13.4 and adding new Sections 21.13.3, 21.13.5 and 21.13.6~~ Section 21.4, by renumbering Section 21.4.3 to become 21.4.4 and adding new Sections 21.4.3, 21.4.5 and 21.4.6 to read as follows:

~~21.13.3~~ 21.4.3~~–~~ ~~Except for Type 2 mechanical splices, connection elements~~ Connections that are designed to yield shall be capable of maintaining 80 percent of their design strength at the deformation induced by the design displacement or shall use Type 2 mechanical splices.

~~21.13.4~~ 21.4.4– Elements of the connection that are not designed to yield shall develop at least 1.5 *Sy*.

~~21.13.5~~ 21.4.5 – Wall piers not designed as part of a moment frame shall have transverse reinforcement designed to resist the shear forces determined from ~~21.12.3~~ 21.3.3. Spacing of transverse reinforcement shall not exceed 8 inches (203 mm). Transverse reinforcement shall be extended beyond the pier clear height for at least 12 inches (305 mm).

Exceptions:

1. *Wall piers that satisfy ~~21.11~~ 21.13.*
2. *Wall piers along a wall line within a story where other shear wall segments provide lateral support to the wall piers and such segments have a total stiffness of at least six times the sum of the stiffnesses of all the wall piers.*

~~21.13.6~~ 21.4.6– Wall segments with a horizontal length-to-thickness ratio less than 2.5 shall be designed as columns.
~~**1908.1.8**~~ **1908.1.4 ACI 318, Section ~~21.7~~ 21.9** Modify ACI 318, Section ~~21.7~~ 21.9, by adding new Section ~~21.7.10~~ 21.9.10 to read as follows:

~~21.7.10~~ 21.9.10– Wall piers and wall segments.

~~21.7.10.1~~ 21.9.10.1 –Wall piers not designed as a part of a special moment frame shall have transverse reinforcement designed to satisfy the requirements in ~~21.7.10.2~~ 21.9.10.2.

Exceptions:

1. *Wall piers that satisfy ~~21.11~~ 21.13.*
2. *Wall piers along a wall line within a story where other shear wall segments provide lateral support to the wall piers and such segments have a total stiffness of at least six times the sum of the stiffness of all the wall piers.*

~~21.7.10.2~~ 21.9.10.2 – Transverse reinforcement with seismic hooks at both ends shall be designed to resist the shear forces determined from ~~21.4.5.1~~ 21.6.5.1. Spacing of transverse reinforcement shall not exceed 6 inches (152 mm). Transverse reinforcement shall be extended beyond the pier clear height for at least 12 inches (305 mm).

~~21.7.10.3~~ 21.9.10.3 – Wall segments with a horizontal length-to-thickness ratio less than 2.5 shall be designed as columns.

~~**1908.1.9**~~ **1908.1.5 ACI 318, Section ~~21.8~~ 21.10**. Modify ACI 318, Section ~~21.8.1~~ 21.10.2 , to read as follows:

~~21.8.1~~ 21.10.2 – Special structural walls constructed using precast concrete shall satisfy all the requirements of ~~21.7~~ 21.9 for cast-in-place special structural walls in addition to Sections ~~21.13.2 through 21.13.4~~ 21.4.2 through 21.4.4.

~~**1908.1.10**~~ **1908.1.6 ACI 318, Section ~~21.10.1.1~~ 21.12.1.1.** Modify ACI 318, Section ~~21.10.1.1~~ 21.12.1.1, to read as follows:

~~21.10.1.1~~ 21.12.1.1– Foundations resisting earthquake-induced forces or transferring earthquake-induced forces between a structure and the ground shall comply with the requirements of Section ~~21.10~~ 21.12 and other applicable provisions of ACI 318 *unless modified by Chapter 18 of the International Building Code*.

13. Delete without substitution:

~~**1908.1.11 ACI 318, Section 21.11.** Modify ACI 318, Section 21.11.2.2 to read as follows:~~

~~21.11.2.2 – Members with factored gravity axial forces exceeding (Agf _c/10) shall satisfy 21.4.3, 21.4.4.1(c), 21.4.4.3 and 21.4.5. The maximum longitudinal spacing of ties shall be so for the full column height. Spacing, so, shall not exceed the smaller of six diameters of the smallest longitudinal bar enclosed and 6 inches (152 mm). Lap splices of longitudinal reinforcement in such members need not satisfy 21.4.3.2 in structures where the seismic- force-resisting system does not include special moment frames.~~

~~**Section 1908.1.12ACI 318, Section 21.12.5**. Modify ACI 318, Section 21.12.5, by adding new Section 21.12.5.6 to read as follows:~~

~~21.12.5.6 – Columns supporting reactions from discontinuous stiff members, such as walls, shall be designed for the special load combinations in Section 1605.4 of the International Building Code and shall be provided with transverse reinforcement at the spacing, so, as defined in 21.12.5.2 over their full height beneath the level at which the discontinuity occurs. This transverse reinforcement shall be extended above and below the column as required in 21.4.4.5.~~

14. Revise as follows:

~~**1908.1.14**~~ **1908.1.7 ACI 318, Section 22.6. Modify ACI 318, Section 22.6**, by adding new Section 22.6.7 to read:

22.6.7 – Detailed plain concrete structural walls.

22.6.7.1 – Detailed plain concrete structural walls are walls conforming to the requirements of ordinary structural plain concrete walls and 22.6.7.2.

22.6.7.2 - Reinforcement shall be provided as follows:

(a) Vertical reinforcement of at least 0.20 square inch (129 mm2) in cross-sectional area shall be provided continuously from support to support at each corner, at each side of each opening and at the ends of walls. The continuous vertical bar required beside an opening is permitted to substitute for one of the two No. 5 bars required by 22.6.6.5.

(b) Horizontal reinforcement at least 0.20 square inch (129 mm2) in cross-sectional area shall be provided:

1. *Continuously at structurally connected roof and floor levels and at the top of walls;*
2. *At the bottom of load-bearing walls or in the top of foundations where doweled to the wall; and*
3. *At a maximum spacing of 120 inches (3048mm).*

Reinforcement at the top and bottom of openings, where used in determining the maximum spacing specified in Item 3 above, shall be continuous in the wall.

~~**1908.1.15**~~ **1908.1.8 ACI 318, Section 22.10**. Delete ACI 318, Section 22.10, and replace with the following:

22.10 – Plain concrete in structures assigned to Seismic Design Category C, D, E or F.

22.10.1 – Structures assigned to Seismic Design Category C, D, E or F shall not have elements of structural plain concrete, except as follows:

(a) Structural plain concrete basement, foundation or other walls below the base are permitted in detached one- and two-family dwellings three stories or less in height constructed with stud-bearing walls. In dwellings assigned to Seismic Design Category D or E, the height of the wall shall not exceed 8 feet (2438 mm), the thickness shall not be less than 71/2 inches (190 mm), and the wall shall retain no more than 4 feet (1219 mm) of unbalanced fill. Walls shall have reinforcement in accordance with 22.6.6.5.

(b) Isolated footings of plain concrete supporting pedestals or columns are permitted, provided the projection of the footing beyond the face of the supported member does not exceed the footing thickness.

***Exception**: In detached one- and two-family dwellings three stories or less in height, the projection of the footing beyond the face of the supported member is permitted to exceed the footing thickness.*

(c) Plain concrete footings supporting walls are permitted, provided the footings have at least two continuous longitudinal reinforcing bars. Bars shall not be smaller than No. 4 and shall have a total area of not less than 0.002 times the gross cross-sectional area of the footing. For footings that exceed 8 inches (203 mm) in thickness, a minimum of one bar shall be provided at the top and bottom of the footing. Continuity of reinforcement shall be provided at corners and intersections.

Exceptions:

1. *In detached one- and two-family dwellings three stories or less in height and constructed with stud-bearing walls, plain concrete footings without longitudinal reinforcement supporting walls are permitted.*
2. *For foundation systems consisting of a plain concrete footing and a plain concrete stem wall, a minimum of one bar shall be provided at the top of the stem wall and at the bottom of the footing.*
3. *Where a slab on ground is cast monolithically with the footing, one No. 5 bar is permitted to be located at either the top of the slab or bottom of the footing.*

15. Delete without substitution:

~~**1908.1.16 (Supp) ACI 318, Section D.3.3.** Modify ACI 318, Sections D.3.3.2 through D.3.3.5 to read as follows:~~

~~D.3.3.2 B *In structures assigned to Seismic Design Category C, D, E or F,* post-installed anchors for use under D.2.3 shall have passed the Simulated Seismic Tests of ACI 355.2.~~

~~D.3.3.3 B *In structures assigned to Seismic Design Category C, D, E or F,* the design strength of anchors shall be taken as 0.75nN_n and 0.75nV_n, where n is given in D.4.4 or D.4.5, and N_n and V_n are determined in accordance with D.4.1. D.3.3.4 B *In structures assigned to Seismic Design Category C, D, E or F,* anchors shall be designed to be governed by tensile or shear strength of a ductile steel element, unless D.3.3.5 is satisfied.~~

~~***Exception:** Anchors in concrete designed to support nonstructural components in accordance with ASCE 7 Section 13.4.2 need not satisfy Section D.3.3.4.~~

~~D.3.3.5 B Instead of D.3.3.4, the attachment that the anchor is connecting to the structure shall be designed so that the attachment will undergo ductile yielding at a load level corresponding to anchor forces not greater that the design strength of anchor specified in D.3.3.3, *or the minimum design strength of the anchor shall be at least 2.5 times the factored forces transmitted by the attachment*.~~

~~***Exception:** Anchors in concrete designed to support nonstructural components in accordance with ASCE 7 Section 13.4.2 need not satisfy Section D.3.3.5.~~

16. Add new text as follows:

1908.1.9 ACI 318, Section D.4.2.2. Modify ACI 318, Sections D.4.2.2 to read as follows:

D.4.2.2 – The concrete breakout strength requirements for anchors shall be considered satisfied by the design procedure of D.5.2 and D.6.2.

17. Revise as follows:

1909.6.1 Basement walls. The thickness of exterior basement walls and foundation walls shall be not less than 71/2 inches (191 mm). ~~Structural plain concrete exterior basement walls shall be exempt from the requirements for special exposure conditions of Section 1904.2.2.~~

1909.6.3 Openings in walls. Not less than ~~two~~ one No. 5 ~~bars~~ bar shall be provided around window ~~and~~ door and similar sized openings. ~~Such bars~~ The bar shall ~~extend at least 24 inches (610 mm) beyond~~ be anchored to develop f_y in tension at the corners of openings.

1912.1 Scope. The provisions of this section shall govern the strength design of anchors installed in concrete for purposes of transmitting structural loads from one connected element to the other. Headed bolts, headed studs and hooked (J- or L-) bolts cast in concrete and expansion anchors and undercut anchors installed in hardened concrete shall be designed in accordance with Appendix D of ACI 318 as modified by Section ~~1908.1.16~~ 1908.1.9, provided they are within the scope of Appendix D.

~~**Exception**: Where the basic concrete breakout strength in tension of a single anchor, Nb, is determined in accordance with Equation (D-7), the concrete breakout strength requirements of Section D.4.2.2 shall be considered satisfied by the design procedures of Sections D.5.2 and D.6.2 for anchors exceeding 2 inches (51 mm) in diameter or 25 inches (635 mm) tensile embedment depth.~~

The strength design of anchors that are not within the scope of Appendix D of ACI 318, and as amended ~~above~~ in Section 1908.1.9, shall be in accordance with an approved procedure.

TABLE 1704.3
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
5. Inspection of welding:	—	—		
a. Structural Steel:				
1) Complete and partial penetration groove welds.	X	—	AWS D1.1	1704.3.1
2) Multipass fillet welds	X	—		
3) Single-pass fillet welds > 5/16”	X	—		
4) Single-pass fillet welds ≤ 5/16”	—	X		
5) Floor and roof deck welds.	—	X	AWS D1.3	—
b. Reinforcing steel:	—	—		
1) Verification of weldability of reinforcing steel other than ASTM A706	—	X		
2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special ~~reinforced~~ structural walls of concrete ~~shear walls~~ and shear reinforcement.	X	—	AWS D1.4 ACI 318: 3.5.2	—
3) Shear reinforcement.	X	—		
4) Other reinforcing steel	—	X		

(Portions of table and footnotes not shown remain unchanged)

1708.3 Reinforcing and prestressing steel. Certified mill test reports shall be provided for each shipment of reinforcing steel used to resist flexural, shear and axial forces in reinforced concrete intermediate frames, special moment frames and boundary elements of special ~~reinforced~~ structural walls of concrete or special reinforced masonry shear walls. Where ASTM A 615 reinforcing steel is used to resist earthquake-induced flexural and axial forces in special moment frames and in wall boundary elements of shear walls in structures assigned to Seismic Design Category D, E or F, as determined in Section 1613, the testing requirements of ACI 318 shall be met. Where ASTM A 615 reinforcing steel is to be welded, chemical tests shall be performed to determine weldability in accordance with Section 3.5.2 of ACI 318.

Add update to referenced standard as follows:

ACI
318-~~05~~ 08 Building Code Requirements for Structural Concrete

Committee Action: **Approved as Modified**

Modify proposal as follows:

1904.2 Exposure categories and classes. Concrete shall be assigned to exposure classes in accordance with ACI 318, Section 4.2 based on:

1. Exposure to freezing and thawing in a moist condition or deicer chemicals;
2. Exposure to sulfates in water or soil;
3. Exposure to water where the concrete is intended to have low permeability; and
4. Exposure to chlorides from deicing chemicals, salt, salt water, brackish water, seawater or spray from these sources, where the concrete has steel reinforcement.

SPECIAL STRUCTURAL WALL. A cast-in-place or precast wall complying with the requirements of ~~21.2.3 through 21.2.7, 21.10, and 21.11~~ 21.1.3 through 21.1.7, 21.9 and 21.10, as applicable, in addition to the requirements for ordinary reinforced concrete structural walls *or ordinary precast structural walls, as applicable*. *Where ASCE 7 refers to a “special reinforced concrete structural wall,” it shall be deemed to mean a “special structural wall.”*

1908.1.2 ACI 318, Section 21.1.1. Modify ACI 318 Sections 21.1.1.3 ~~through 21.1.1.5~~ and 21.1.1.7 to read as follows:

~~*21.1.1.3 – Structures assigned to SDC B shall comply with Chapters 1 through 19 and 22.* For a structure assigned to SDC B using ordinary moment frames as part of the seismic-force-resisting system, the provisions of 21.1.2 and 21.2 shall apply. For a structure assigned to SDC B and using intermediate or special systems, the applicable provisions of 21.1.3 through 21.1.7, and 21.3 through 21.10 shall also apply.~~

21.1.1.3 – Structures assigned to Seismic Design Category A shall satisfy requirements of Chapters 1 to 19 and 22*; Chapter 21 does not apply*. Structures assigned to *Seismic Design Category* B, C, D, E, or F also shall satisfy 21.1.1.4 through 21.1.1.8, as applicable. *Except for structural elements of plain concrete complying with Section 1908.1.8 of the International Building Code, structural elements of plain concrete are prohibited in structures assigned to Seismic Design Category C, D, E or F.*

~~*21.1.1.4 – Structures assigned to SDC C shall comply with Chapters 1 through 19, and the seismic-force-resisting system shall be intermediate or special moment frames, intermediate precast structural walls, or ordinary reinforced concrete or special structural walls.* For a structure assigned to SDC C and using intermediate moment frames as part of the seismic-force-resisting system the provisions of 21.1.2 and 21.3 shall apply. For a structure assigned to SDC C and using special moment frames, or intermediate precast or special structural walls, the applicable provisions of 21.1.3 through 21.1.7, and 21.4 through 21.10 shall also apply. Any structure assigned to SDC C shall satisfy 21.1.8. *Except for footings, pedestals and basement walls in accordance with 22.10 or as permitted by the International Building Code, structural elements of plain concrete are prohibited.*~~

~~*21.1.1.5 – Structures assigned to SDC D, E or F shall comply with Chapters 1 through 19, and the seismic-force-resisting system shall be special moment frames, intermediate precast structural walls, or special structural walls.* For a structure assigned to SDC D, E, or F, the provisions of 21.1.2 through 21.1.8 and 21.4 through 21.13 shall apply. *Except for footings, pedestals and basement walls in accordance with 22.10 or as permitted by the International Building Code, structural elements of plain concrete are prohibited.*~~

21.1.1.7 – Structural systems designated as part of the seismic-force-resisting system shall be restricted to those *permitted by ASCE 7*. Except for *Seismic Design Category* A, for which Chapter 21 does not apply, the following provision shall be satisfied for each structural system designated as part of the seismic-force-resisting system, regardless of the *Seismic Design Category*:

(a) Ordinary moment frames shall satisfy 21.2.
(b) Ordinary *reinforced concrete* structural walls *and ordinary precast structural walls* need not satisfy any provisions in Chapter 21.
(c) Intermediate moment frames shall satisfy 21.3.
(d) Intermediate precast *structural* walls shall satisfy 21.4.
(e) Special moment frames shall satisfy 21.5 through 21.8.
(f) Special structural wall shall satisfy 21.9.
Special structural walls *constructed using precast concrete* shall satisfy 21.10.
All special moment frames and special structural walls shall also satisfy 21.1.3 through 21.1.7.

1908.1.9 ACI 318, Section D.3.3. Modify ACI 318, Sections D.3.3.4 and D.3.3.5 to read as follows:

D.3.3.4 Anchors shall be designed to be governed by the steel strength of a ductile steel element as determined in accordance with D.5.1 and D.6.1, unless either D.3.3.5 or D3.3.6 is satisfied.

Exception: *Anchors in concrete designed to support nonstructural components in accordance with ASCE 7 Section 13.4.2 need not satisfy Section D.3.3.4.*

D.3.3.5 Instead of D.3.3.4, the attachment that the anchor is connecting to the structure shall be designed so that the attachment will undergo ductile yielding at a force level corresponding to anchor forces not greater that the design strength of anchor specified in D.3.3.3.

Exception: *Anchors in concrete designed to support nonstructural components in accordance with ASCE 7 Section 13.4.2 need not satisfy Section D.3.3.5.*

~~**1908.1.9**~~ **1908.1.10 ACI 318, Section D.4.2.2.** Modify ACI 318, Section D.4.2.2 to read as follows:

D.4.2.2 – The concrete breakout strength requirements *for anchors* shall be considered satisfied by the design procedure of D.5.2 and D.6.2.

1912.1 Scope. The provisions of this section shall govern the strength design of anchors installed in concrete for purposes of transmitting structural loads from one connected element to the other. Headed bolts, headed studs and hooked (J- or L-) bolts cast in concrete and expansion anchors and undercut anchors installed in hardened concrete shall be designed in accordance with Appendix D of ACI 318 as modified by Section 1908.1.9 and 1908.10, provided they are within the scope of Appendix D.

The strength design of anchors that are not within the scope of Appendix D of ACI 318, and as amended in Section 1908.1.9 and 1908.1.10, shall be in accordance with an approved procedure.

(Portions of proposal not shown remain unchanged)

Committee Reason: This change updates the concrete provisions of the code to coordinate with the latest edition of the ACI 318 concrete standard. The modification updates section references to reflect the final published version of the 2008 edition of ACI 318. Similarly the modifications to Section 1908.1.2 reflect changes made after submittal of this proposal in the related portions of ACI 318 Chapter 21 based on public comments that ACI received. The modification also retains current section 1908.1.16, renumbered as 1908.1.9, in order to retain needed modifications that were added to the IBC in the 2006/2007 code cycle.

Assembly Action: None

Reason: Item 1: The changes proposed are necessary to update the concrete provisions to be consistent with the provisions of ACI 318-08.

Item 2: The changes proposed are necessary to update or delete as necessary, the modifications to ACI 318 for consistency with the provisions of ACI 318-08. The following modifications are being deleted because the modifications have been incorporated into ACI 318-08. Changes to individual sections are indicated below. Section numbers cited are based on the number in the 2006 IBC, unless noted otherwise.

1908.1.1 – This modification has been incorporated into ACI 318-08, Section 21.2.2.

1908.1.2 – This modification has been incorporated into ACI 318-08, Section 21.2.3.

1908.1.3 – The definition of "special structural wall" from ACI 318-08 has been included and modified for the following reasons. In ACI 318-05, a "special reinforced concrete structural wall" was a cast-in-place wall, and a separate definition applied to a "special precast structural wall." Under ACI 318-08, the definition of "special precast structural wall" has been deleted, and the former definition of "special reinforced concrete structural wall" has been revised to "special structural wall" which is now defined as "a cast-in-place or precast wall." The modification to the ACI 318-08 definition of special structural wall, by adding another sentence, is necessary since ASCE 7-05 Table 12.2-1 – Design Coefficients and Factors for Seismic Force-Resisting Systems – uses the ACI 318-05 term "special reinforced concrete structural wall." In addition, it does not mention "special structural wall." Therefore, the sentence is being added to coordinate new terminology used in ACI 318-08 with that used in ASCE 7-05.

1980.1.4 - These modifications to ACI 318-08 are necessary because ACI 318-08 does not indicate the seismic-force-resisting systems permitted in the various seismic design categories.

1908.1.5 – This modification has been incorporated into ACI 318-08, Section 21.5.2.5(a).

1908.1.6 – This modification has been incorporated into ACI 318-08, Section 21.5.2.5(d).

1908.1.7 – This modification has been incorporated into ACI 318-08, Section 21.5.2.5(c).

1908.1.11 - This modification has been incorporated into ACI 318-08, Section 21.13.3.2 since it only references 21.6.3.1 and does not reference 21.6.3.2.

1908.1.12 – This modification has been incorporated into ACI 318-08, Section 21.3.5.6.

1908.1.16 – This modification has been incorporated into ACI 318-08, Section D.3.3.

1908.1.9 (new) – This modification to Section D.4.2.2 of ACI 318 is already in Section 1912.1 as an exception. It is being relocated to Section 1908 to consolidate all ACI 318 modifications in one section. Also, see "reason" for item 4.

All other proposed changes are necessary because Chapter 21 of ACI 318-08 has been reformatted which resulted in section numbers being changed.

Item 3: The changes proposed are necessary to update the structural plain concrete provisions to be consistent with the provisions of ACI 318-08.

Item 4: The changes proposed are necessary because the modification to ACI 318-05 in Section 1908.1.16 has been incorporated into ACI 318-08; therefore, the modification is no longer needed. In addition, the modification to ACI 318, Section D.4.2.2 in the exception is being relocated to Section 1908.1.9.

Item 5 – For consistency with the change in ACI 318-08 from "special reinforced concrete structural wall" to "Special structural wall." Also, see reason for item 1, Section 1908.1.3.

Cost Impact: The code change proposal will not increase the cost of construction.

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Further modify proposal as follows:

1908.1.10 ACI 318, Section D.4.2.2, Modify ACI 318, Section D.4.2.2:

~~D.4.2.2 – The concrete breakout strength requirements *for anchors* shall be considered satisfied by the design procedure of D.5.2 and D.6.2.~~

D.4.2.2 – The concrete breakout strength requirements for anchors in tension shall be considered satisfied by the design procedure of D.5.2 provided Equation D-8 is not used for anchor embedments exceeding 25 inches. The concrete breakout strength requirements for anchors in shear with diameters not exceeding 2 inches shall be considered satisfied by the design procedure of D.6.2. For anchors in shear with diameters exceeding 2 inches, shear anchor reinforcement shall be provided in accordance with the procedures of D.6.2.9.

Commenter's Reason: Beginning with the 2000 code, the IBC has taken exception to the ACI 318 Appendix D scope limitation on the applicability of the concrete breakout strength equations. Since that time, additional information has become available on this issue. While there is some evidence that the predicted concrete breakout strength for anchors in tension as given by Eq. (D-7) can safely be extended to anchors with embedment depths exceeding 25 in., there is strong evidence that the breakout strength procedure in D.6.2 is unconservative for very large diameter anchors loaded in shear towards a free edge. It is therefore imperative that this exception be removed from the text of the code. The proposal above provides the necessary text. It disallows the use of the alternate, less conservative prediction of concrete breakout strength in tension given by Eq. (D-8) for embedments exceeding 25 in., and it notes that the equations in D.6.2 can only be used to satisfy the concrete breakout strength requirements in shear for anchor diameters not exceeding 2 in. Where larger anchor diameters are used and where concrete edge breakout would otherwise control the anchor strength, it is still possible to use anchor reinforcement in accordance with ACI 318-08 D.6.2.9.

Final Action: AS AM AMPC____ D

INTERNATIONAL EXISTING BUILDING CODE

Page 25, Volume 2, EB1-07/08: Revise Public Comment 2, Relocated Section 302.3, Item 1 by changing Section ~~302.3~~ to become 302.2 as shown:

302.3 ~~101.5.4.2~~ Compliance with reduced IBC level seismic forces. Where seismic evaluation and design is permitted to meet reduced *International Building Code* seismic force levels, one of the following procedures shall be permitted:

1. The *International Building Code* using seventy-five percent of the prescribed forces.—The *R* factor used for analysis shall be as specified in Section 302.2 ~~101.5.4.1~~ of this code.

INTERNATIONAL ENERGY CONSERVATION CODE

Page 676, Volume 2, EC81-07/08, Part I: Add the following line after the section numbers:

EC81-07/08, Part II
IRC N1103.7 (New), N1103.7.1 (New), N1103.7.2 (New), N1103.7.3 (New)

THIS CODE CHANGE WILL BE HEARD ON THE IRC ENERGY PORTION OF THE HEARING ORDER.

Page 681, Volume 2, EC84-07/08, Part II: Add the following line after the section numbers:

EC84-07/08, Part II
IRC R202 (New), N1104 (New), N1104.1 (New), N1104.2 (New)

THIS CODE CHANGE WILL BE HEARD ON THE IRC ENERGY PORTION OF THE HEARING ORDER.

Page 681, Volume 2, EC84-07/08, Part I: Add Part I as follows:

NOTE: PART I REPRODUCED FOR INFORMATIONAL PURPOSES ONLY – SEE ABOVE

EC84–07/08, Part I
202, 404, 404.1, 404.2 (New)

Proponent: Craig Conner, Building Quality, representing himself

PART I – IECC

1. Delete and substitute as follows:

SECTION 202
GENERAL DEFINITIONS

~~**HIGH-EFFICACY LUMINAIRE (Supp).** A lighting fixture that does not contain a medium screw base socket (E24/E26) and whose lamps have a minimum efficacy of:~~

~~1. 60 lumens per watt for lamps over 40 watts,~~
~~2. 50 lumens per watt for lamps over 15 watts to 40 watts,~~
~~3. 40 lumens per watt for lamps 15 watts or less.~~

DEFINITION: HIGH-EFFICACY LAMPS: Compact fluorescent lamps, T-8 or smaller diameter linear fluorescent lamps, or lamps with a minimum efficacy of:

1. 60 lumens per watt for lamps over 40 watts,
2. 50 lumens per watt for lamps over 15 watts to 40 watts,
3. 40 lumens per watt for lamps 15 watts or less.

404.1 (Supp) ~~Interior lighting power (Prescriptive).~~ ~~Lighting in spaces other than dwelling units, e.g. common areas, shall be high efficacy luminaires or shall comply with the interior lighting power requirements in Section 505.5~~

~~Exception:~~ ~~Dwelling units.~~

404.1 Scope. This section applies to lighting equipment, related controls and electric circuits serving the interior spaces and exterior building facades of all residential buildings, including accessory structures and garages.

2. Add new text as follows:

404.2 Lighting equipment. A minimum of fifty percent of the lamps in permanently installed lighting fixtures shall be high efficacy lamps.

(Renumber subsequent sections)

Reason: Lighting is about 12% of primary residential energy, making this requirement a substantial energy saver. The overwhelming majority of residential lighting is incandescent--the least energy efficient of all light types. More efficient lighting options are available.

One more efficient lighting option is the Compact Fluorescent Light (CFL). CFLs have become common and dropped markedly in price. 60 watt replacement CFLs are available for about $1.50 per bulb from multiple sources. (Ikea http://www.ikea.com/us/en/catalog/products/00067731, Wal-Mart http://www.walmart.com/catalog/product.do?product_id=5650618)

CFLs use about 80% less energy than standard incandescent lighting. CFLs last 6 to 10 times longer than incandescent. Assuming a cost of $1.50 per bulb, electricity at 9 cents per kwh, and that each light averages half hour per day of use, then the payback time is less than 2 years. Many lights are used more than an hour per day, yielding paybacks of less than a year.

Limiting this requirement to 50% of the lamps in a residence ensures there will be plenty of exceptions for situations where a CFL might not work as well, such as dimmable fixtures.

Cost Impact: The code change proposal will increase the cost of construction.

PART I – IECC
Committee Action: **Approved as Modified**

Modify the proposal as follows:

~~404.1 Scope.~~ ~~This section applies to lighting equipment, related controls and electric circuits serving the interior spaces and exterior building facades of all residential buildings, including accessory structures and garages.~~

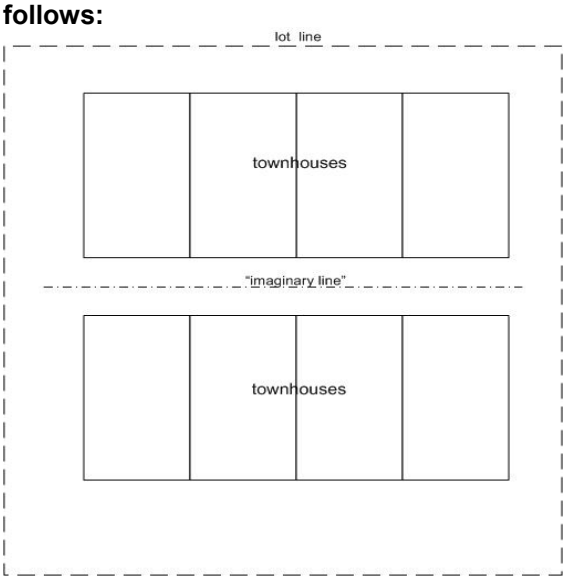
(Portions of proposal not shown remain unchanged)

Committee Reason: The proposal represents an opportunity for significant energy savings with technology that is presently in wide use. The modification was made to limit the scope to only lighting equipment.

Assembly Action: **None**

INTERNATIONAL RESIDENTIAL CODE

Page 110, RB22-07/08: Add the following diagram and photograph to the commenter's reason statement as follows:



RB22-07/08 Example
This example shows 8 townhouse units located on one lot. Without the "imaginary line" between the two rows of townhouses, there is no code provision requiring protection of openings in the walls that face each other.

Page 186, RB93-07/08: Replace public comment #2 with the following:

R324.2 Flood hazard areas (including A Zones). Areas that have been determined to be prone to flooding but not subject to high velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet shall be designated as Coastal A Zones. All buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R324.2.1 through R324.2.3.

R324.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the ~~base flood elevation plus one foot (305 mm), or the design flood elevation, whichever is higher~~ design flood elevation.
2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot, or to the design flood elevation, whichever is higher.

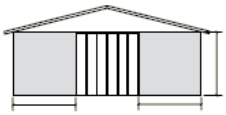
~~2.~~ 3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet on the FIRM ~~plus one foot (305 mm),~~ or at least 2 ~~3~~ feet (610 ~~915~~ mm) if a depth number is not specified.

~~3.~~ 4. Basement floors that are below grade on all sides shall be elevated to or above the ~~base flood elevation plus one foot (305 mm), or the design flood elevation, whichever is higher~~ design flood elevation.

Exception: Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R324.2.2.

Page 259, Volume 2, RB143-07/08: Further revise Public Comment #2, Table R602.10.2, last column, to read as shown:

TABLE R602.10.2
INTERMITTENT BRACING METHODS

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
GB	Gypsum board	$^1/_2$"		Nails or screws at 7" on center spacing at panel edges including top and bottom plates; for exterior sheathing nail or screw size, see Table R602.3(1); for interior gypsum board nail or screw size, see Table R702.3.5

(For SI:: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

(Portions of table not shown remain unchanged)