

2010 CALIFORNIA RESIDENTIAL CODE



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CRC CODE COMMITTEE
OF
ICC LA BASIN CHAPTER

CRC Code Committee Goals



- To study the 2010 CRC
- To propose any necessary amendments to the code.
- To have as many jurisdictions as possible, locally and throughout the State, adopt our proposed amendments.
 - Currently dialoguing with several key individuals from Northern and Southern California.

CRC Code Committee Progress Report



- Recently, the issue of when engineering would be required was resolved in our last meeting based on a general consensus of the committee members and participants of my survey that was sent to all LA Basin Chapter members two months ago.
 - The resolution is to require construction documents to be approved and stamped by a California licensed architect or engineer when a woodframe structure is greater than one-story.
 - Current debates include whether the construction documents shall include engineering calculations or not, and whether the prescriptive methods meet or exceed the higher degree of structural safety typically required by local jurisdictions. (SEAOSC has volunteered to assist with this evaluation.)

Purpose of the IRC



- To serve as a complete, comprehensive code regulating the construction of buildings limited to three stories above grade plane for:
 - Single-family houses
 - Two-family houses (duplexes)
 - Townhouses consisting of three or more units.
- To allow for residential and nonresidential code provisions to be distinct and tailored to the structures that fall within the appropriate code's scope.
- To consolidate all applicable residential code requirements into one code.

California's Version of the IRC



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California's Version of the IRC



- HCD indicated that designers of residential buildings have the option to apply either the IBC or IRC.
 - Section 101.2 of the IBC states the following:
 - ✦ 101.2 Scope
The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the International Residential Code.
 - However, HCD did not adopt this language. As such, a residential building can be designed under the IBC or IRC.

California's Version of the IRC



- ~~To consolidate all applicable residential code requirements into one code.~~
 - CA only adopted Chapters 1 to 10, 44, and Appendix H.
 - ✦ Consists of the Administrative, Definitions, Fire-Life Safety and Structural Provisions only.
 - ✦ References Mechanical and Plumbing Provisions to the Uniform Codes.
 - ✦ References Electrical Provisions to the National Electrical Code.
 - SFM added the Special Provisions For Licensed 24-Hour Care Facilities In a Group R-3.1 (R325), Large Family Day Care Homes (R326), and Materials and Construction Methods For Exterior Wildfire Exposure (R327).
 - ✦ References the CBC Chapters 6, 7, 8, 9, 10, etc.

References of CBC



- When a building of otherwise conventional construction contains structural elements exceeding the prescriptive methods of the CRC, these elements shall be designed in accordance with accepted engineering practice of the CBC.
 - The IRC has no references to the IBC for fire-life safety issues.
- However, care facilities in the CRC, which are regulated by SFM, make reference to the CBC.
- Accessibility is referenced to Chapter 11a of CBC.

Prescriptive Wall Bracing Methods In Seismic Design Categories D and E



- Applications of the CRC prescriptive wall bracing methods shall be limited to only woodframe and masonry construction.
 - Per the CRC Code Committee recommendation, woodframe structures greater than one-story shall require construction documents to be approved and stamped by a California licensed architect or engineer.
 - Per the Business and Professions Code, masonry structures shall require construction documents to be approved and stamped by a California licensed architect or engineer.
(R606.1.1)

Prescriptive Wall Bracing Methods In Seismic Design Categories D and E



- Applications of the CRC prescriptive wall bracing methods of concrete, cold-formed steel, and structural insulated panels (SIPs) are not within the scope of this code.
 - Concrete construction:
 - ✦ Walls constructed in accordance with the provisions of this section shall be limited to detached one- and two-family dwellings and townhouses assigned to Seismic Design Category A or B, and detached one- and two-family dwellings assigned to Seismic Design Category C. (R611.2)
 - Cold-formed steel construction:
 - ✦ In Seismic Design Categories Do, D1 and D2 in addition to the requirements of this code, cold-formed steel framing shall comply with the requirements of AISI S230. (R301.2.2.3.5)
 - Structural insulated panels (SIPs):
 - ✦ Walls constructed in accordance with the provisions of this section shall be limited to sites subjected to ... Seismic Design Categories A, B, and C. (R613.2)

Climatic and Geographic Design Criteria



**TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA**

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY ^f	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP ^e	ICE BARRIER UNDERLAYMENT REQUIRED ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
	Speed ^d (mph)	Topographic effects ^k		Weathering ^a	Frost line depth ^b	Termite ^c					

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

- a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., “negligible,” “moderate” or “severe”) for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.
- b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.
- c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
- d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.
- e. The outdoor design dry-bulb temperature shall be selected from the columns of 97¹/₂-percent values for winter from Appendix D of the *International Plumbing Code*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official.
- f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.
- g. The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction’s entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of all currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.
- h. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall fill in this part of the table with “NO.”
- i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99%) value on the National Climatic Data Center data table “Air Freezing Index- USA Method (Base 32°)” at www.ncdc.noaa.gov/fpsf.html.
- j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F)” at www.ncdc.noaa.gov/fpsf.html.
- k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall indicate “NO” in this part of the table.

Questions?



**INTERESTED IN JOINING THE
CRC CODE COMMITTEE?**

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