

Section/Topic	2006 IRC	2009 IRC	Notes/Additional Comments
Scope and Administration (Chapter 1)			
R101.2 Modification: 'Grade Plane' replaces the word 'grade' in determining the story limitations.	IRC provisions applies to 1-2 family dwellings & townhouses not more than 3 stories above grade.	Grade plane is an average of the finished ground level measured at the lowest point within 6 feet of the exterior wall. In practice new language will not	In practice new language will not change the outcome in most cases.
R101.2 Addition: A new exception allows a mix of residential & non-residential uses.		Live/work units complying with requirements of IBC 419 shall be permitted to be built as 1-2 family dwellings or townhouses not more than 3 stories above grade plane.	Requires fire suppressions per 419.5 of the IBC.
R105.2 Modification: The floor area for accessory structures that are exempt from permits has increased from 120 to 200 sq. ft.	The permit exemption was reduced to 120 sq. ft. due to concerns about building garages.	The permit exemption went back to 2003 standards.	Unattached decks 200 sq. ft. or under & not serving as required exit door & not more than 30 in. above grade do not need a permit.
R105.2 Modification: The code now provides a list of electrical repairs & installations considered sufficiently routine to forgo permitting & inspection as previous language was deemed too vague & subjective.	Electrical – A permit shall not be required for minor repair work.	Electrical: 1. Listed cord and plug connected temporary lighting. 2. Reinstallation of attachment plug receptacles but not the outlets therefore. 3. Replacement of branch circuit overcurrent devices of the required capacity in the same location. 5. Electrical wiring, devices appliances, apparatus or equipment operating at less than 25 volts and not capable of supplying more than 50 watts of energy.	Minor repair work remains in the list giving discretion to the building official to make a determination.
R106.1.1 Modification The code now lists specific wall bracing information to be included on drawings or other construction docs.		Requiring wall bracing details on construction drawings ensures that bracing is being considered during the design & review process. The builder will also readily see what is required. Foundation & attachment details must be identified.	As with other submittals, the building official is authorized to decide if such information is necessary for a particular project.
Definitions (Chapter 2)			
R202 Addition: Attic definition has been revised & a new definition for habitable attic has been added in order to be more inclusive.	The unfinished space between the ceiling joists of the top story & the roof rafters.	The unfinished space between the ceiling assembly of the top story and the roof assembly. Attic, Habitable: A finished or unfinished area, not considered a story, complying with the following: 1. Occupiable floor area is at least 70 square feet. 2. Occupiable floor area has	Habitable attics are not considered a story, but must meet minimum room size & ceiling height requirements, require a smoke detector, emergency escape and rescue opening and means of egress complying with R311.

		ceiling height in accordance w/R305. 3. Occupaible space is enclosed by the roof assembly above, knee walls on the sides and the floor-ceiling assembly below.	
R202 Modification: Definitions for labeled & listed have been revised for clarity & consistency.		The code now clarifies that the testing laboratory or testing agency must be nationally recognized.	
R202 Addition: IRC now includes prescriptive methods of construction using structural insulated panels (SIPs) with new definitions.	SIP – Factory fabricated panels of solid core insulation with structural skins of oriented strand board (OSB) or plywood.	SIP – A structural sandwich panel that consists of a light-weight foam plastic core securely laminated between 2 thin, rigid wood structural panel facings.	Added definitions for: Cap Plate Core Facing Spline
Building Planning (Chapter 3)			
R301.1.1 Modification: The IRC now recognizes a recently developed standard for log construction & the reference standard for cold formed steel framing has been updated.	1 – American Forest & Paper Association (AF&PA) Wood Frame Construction Manual. 2 – American Iron & Steel Institute (AISI) Standard for Cold Formed Steel Framing (COFS/PM) with Supplement to Standard for Cold-Formed Steel Framing – Prescriptive Method for 1 & 2 Family Dwellings.	Year 2004 AISI has been replaced with year 2007 AISI 230. The IRC now requires ICC-400 Standard on the Design & Construction of Log structures.	The prescriptive methods for cold-formed steel framing now apply to 3 story buildings – an increase from an allowable 2 stories in the previous standard & the 2006 IRC & are consistent with the height limits of conventional wood frame construction.
R301.2.1.1 Modification: The IRC now recognizes structural insulated panel (SIP) construction for high wind areas – bringing the list of design alternatives to 6.	1 - American Forest & Paper Association (AF&PA) Wood Frame Construction Manual for 1-2 Family Dwellings (WCFM); or 2 – Southern Building Code Congress International Standard for Hurricane Resistant Residential Construction (SSTD 10). 3 – Minimum Design Loads for Buildings & Other Structures (ACSE 7); or 4 – American Iron & Steel Institute (AISI), Standard for Cold Formed Steel Framing – Prescriptive Method for 1-2 Family Dwellings (COFS/PM). 5 – Concrete construction shall be designed in accordance with the provisions of this code.	2 – ICC Standard for Residential Construction in High Wind Regions (ICC-600) replaces SSTD 10. 4 – AISI S230 replaces AISI. 6 – Structural insulated panel (SIP) walls shall be designated in accordance with the provisions of this code.	
R301.2.1.2 & Table R301.2.1.2 Modification: Protection of glazed openings for garage doors is now specifically required in windborne debris region.	The IRC required glazing only in windows to be protected from windborne debris and did not specifically address protection of glazing in garage doors.	When wood structural panels are used for any opening protection, they must be predrilled & the mounting hardware must be permanently attached to the building to ease installation. The	

		<p>prescriptive methods for attaching wood structural panels now require additional anchors with greater embedment depth & resistance.</p> <p>The testing of the garage door in accordance with ANSI/DASMA 115 is also used to determine compliance with the component and cladding loads of Table R301.2.</p>	
<p>R301.2.1.5 and Table R301.2 (1) Addition: Under very limited circumstances in localized geographic areas, design of buildings sited on a hill, ridge, or escarpment must consider the effects of topographic wind speedup.</p>		<p>To determine wind speedup engineered designs according to ASCE 7 may be required or one may use the simplified method to design for an increased basic wind speed based on the slope of the topographic feature in accordance with Table R301.2.1.5.1.</p>	<p>The provisions for topographic wind speedup effects apply only where there are historical data of structural damage from such effects. These circumstances are most likely to occur in areas of the Pacific Northwest where there are dramatic changes in ground topography.</p>
<p>R301.2.2 Seismic Provisions Clarification Reorganization of the seismic provisions clarifies the design application within each seismic design category.</p>		<p>The seismic provisions have been rearranged in a sequential order to clarify when they apply.</p>	<p>The second confusing paragraph of the previous code was removed which had sent the user to provisions that applied to all SDCs.</p>
<p>R301.2.3 Snowloads Modification: Structural Insulated Panels (SIPs) have been added to the list of approved prescriptive construction methods that are limited to a maximum ground snow load of 70 psf.</p>		<p>The IRC now includes prescriptive requirements for construction with SIPs. Buildings located in areas where ground snow load exceeds 70 psf must be designed in accordance with accepted engineering practice.</p>	
<p>R301.3 Story Height Modification: Floor framing is now permitted to exceed 16 in. provided the overall story height is not exceeded. SIP bearing walls are limited to 10 ft. in height.</p>	<p>The code limited story height to the sum of the tabular value for stud wall height plus 16 in. for the floor framing height in order to limit story height, measured from the finished floor surface one 1 story to the finished floor of the next story.</p>	<p>The new language permits floor framing to exceed the 16 in. height limit provided the story height does not exceed 11ft. 7 in.</p> <p>For masonry walls, a maximum bearing wall clear height of 12 ft. plus a height of floor framing not to exceed 16 in.</p>	<p>For wood framed wall buildings with bracing in accordance with Tables R602.10.1.2(1) and R602.3(5), the wall stud clear height may be increased to 12 ft. without requiring an engineered design.</p>
<p>Table R301.5 Minimum Uniformly Distributed Live Loads Modification: The definitions for deck and balcony have been removed & the minimum uniform live load for balconies has been lowered.</p>		<p>The minimum live load for balconies has been lowered from 60 psf to 40 psf to be consistent with decks as both perform the same function.</p> <p>The criteria for determining a limited attic storage area now considers the required depth of the insulation relative to the truss bottom chord depth.</p> <p>Habitable attics & attics served</p>	<p>A new defined term in the 2009 IRC, habitable attics are occupiable space between the uppermost floor/ceiling assembly & the roof assembly.</p>

		with stairs have been added to the table and have a minimum live load of 30 psf.	
R302.1 and Table R302.1 Fire Resistant Construction at Exterior Walls Modification: R302 has been renamed <i>Fire-Resistant Construction</i> & pulls in related provisions from sections on separations, penetrations, and other fire-resistance requirements so that they reside in 1 section & can be more easily located.	Construction, projections, openings & penetration of exterior walls of dwellings & accessory buildings shall comply with Table 302.1. These provisions shall not apply to walls, projections, openings or penetrations in walls that are perpendicular to the line used to determine the fire separation distance.	All fire-resistance provisions have been reorganized & placed into Section R302. Exterior walls requiring a 1 hour fire-resistance rating due to fire separation distance must now meet requirements of ASTM E 119 or UL 263. Fire separation distances no longer apply to buildings on the same lot – no separation distance or fire-resistance rating is required between detached structures on the same lot. Changes to Table 302.1 clarify the application of the fire separation distance requirements.	Changes to the text of the various sections that are brought into R302 are minor & editorial. This new exception does not apply to townhouses or detached garages less than 3 ft. from a dwelling.
R302.2 & R302.3 Dwelling Unit Separation Modification: The dwelling unit separation provisions have been relocated from Section R317 to R302.	302.3 - Detached garages accessory to a dwelling located within 2ft. of a lot line are permitted to have roof eave projections not exceeding 4 in. 302.3 – Foundation vents installed in compliance with this code are permitted.	The fire-resistance rating for the common wall between townhouses has been reduced from 2 hours to 1 hour as fire sprinklers are now required in all new townhouses. Each townhouse shall be considered a separate building & shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302.1. Each individual townhouse shall be structurally independent. Dwelling units in 2 family dwellings shall be separated from each other by wall and/or floor assemblies having not less than 1 hour fire-resistance-rating when tested.	The code now recognizes UL 263 as an equivalent test standard to ASTM E 119 for fire-resistance. A common 1 hour fire resistance rated wall satisfies the townhouse separation requirements. The 1 hour fire-resistance rating wall assembly is permitted if the walls do not contain plumbing, or mechanical equipment, ducts or vents in the cavity of the wall.
R302.4 Rated Penetrations for Dwelling Unit Separation Modification: The rated penetration provisions for dwelling unit separation have been relocated from Section R317 to Section R302.		R317.1 has been replaced with R302.1. R317.2 has been replaced with R302.3. R317.3.1.1 has been replaced with R302.4.1.1 with no changes to the text. R317.3.1.2 has been replaced with R302.4.1.2 with no changes to the text.	The exception to Section R302.4.1 permits penetrating items of specified metal pipe or conduit in 2 instances in lieu of a listed assembly or penetration firestop system. In the 1 st instance, firestopping materials may be concrete, grout, or masonry. In the 2 nd instance, the code now recognizes UL 263 as an equivalent test standard to ASTM E 119.

		R317.3.2 has been replaced with R302.4.1 and R302.4.2	
R302.5 Garage Openings & Penetrations Modification: The dwelling/garage separation provisions in Sections R309.1 & R309.2 of the 2006 IRC have been relocated to Section R302 with the other fire-resistant construction provisions.	See Sections R309.1 & R309.2. Penetrations other than ducts required the opening around the penetrating item to be filled with approved material to restrict passage of combustion products.	Openings & penetrations through the walls or ceilings separating the dwelling from the garage shall be in accordance with Section R302.5.1 through R302.5.3. Penetration requirements reference the fireblocking provisions (previously R602.8) have been relocated to Section R302.11. R302.11 requires fireblocking to cut off all concealed draft openings & to form an effective fire barrier between stories & between a top story & the roof space The application of this change is to seal around openings of pipes, vents, cables, and wires penetrating the separation at the floor & ceiling level.	The provisions for door openings & duct penetrations through the separation between the dwelling & the garage have not changed.
R302.6 and Table R302.6 Garage Separation Clarification: The dwelling/garage separation provisions in sections R309.1 and R309.2 have been relocated to Section R302 with the other fire resistant construction provisions.	See Sections R309.1 & R309.2	For clarification, the provisions requiring the application of gypsum board on the garage side of the separation from a dwelling have been placed in a new table & the corresponding text has been deleted from Section R309.2.	No technical change to the code is intended with this revision to place the garage/dwelling separation requirements in an easier to read table format.
R305.1 Minimum Ceiling Height Modification: Ceiling Height requirements have been reorganized for clarification.	Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7 ft.	The 7 ft. ceiling height now specifically applies to habitable space as defined in Section R 202, hallways, bathrooms, toilet rooms, and laundry rooms. Bathrooms shall have a minimum ceiling height of 6 ft. 8 in. at the center of the front clearance area for fixtures as shown in Figure R307.1 Provisions for lower ceiling heights in portions of basement used for utility & storage have been moved to a separate subsection. For rooms with sloped ceilings, at least 50% of the required floor area of the room must have a	Corridors have been removed from the list because the term is not relevant to buildings regulated by the IRC. The exception allowing beams & girders to project below the required ceiling height has been removed.

		ceiling height of 7 ft with no ceiling height less than 5 ft..	
R308.1 & R308.3 Identification of Glazing & Human Impact Loads Modification: The code now recognizes ANSI Z97.1 as an alternative test procedure to CPSC 16 CFR 1201 for safety glazing products not regulated by the federal standard.	CPSC 16 CFR 1201 is a federal standard that mandates where & when safety glazing material must be in architectural applications & preempts any non-identical state or local standard.	The major difference between the 2 standards is their scope & function. The CPSC requires the installation of safety glazing materials meeting 16 CFR 1201 only in storm doors, combination doors, entrance-exit doors, sliding patio doors, closet doors, and shower & tub doors & enclosures. For other locations requiring safety glazing under the IRC, the code now recognizes testing with ANSI Z97.1 as well.	In an editorial change, exceptions from R308.4 have been relocated to Section R308.3 where they are more appropriately placed.
R308.4 Hazardous Locations Requiring Safety Glazing Modification: Requirements for safety glazing at hazardous locations subject to human impact have been reorganized in an easy to use format.	The 2006 IRC code identified 11 hazardous locations requiring safety glazing & in a separate list, provided 10 exceptions, each of which applied to 1 or more of the hazardous locations.	The 2009 code clarifies the application of the provisions by deleting repetitive or unnecessary language, organizing the material in logical manner, and moving exceptions to directly follow the rule to which they apply. The 11 rules of 2006 have been reduced to 8 by merging the information related to safety glazing in doors.	The 2009 change is largely editorial.
R310.1 Emergency Escape & Rescue Openings Modification: Habitable attics have been added to the locations requiring an emergency escape & rescue opening.	Basements & every sleeping room shall have at least 1 operable emergency escape & rescue opening.	Habitable attics are considered spaces for sleeping & so shall require an emergency escape & opening.	
R311 Egress Modification: The means of egress provisions have been reorganized in a systematic order to provide a better understanding of the requirements.	Stairways, ramps, exterior egress balconies, hallways & doors shall comply with all sections of the code. All egress doors shall be readily openable in the direction of the egress. A door with a nominal size of 3ft. by 6ft 8in. satisfied the size requirements for the 1 required exit door.	New language clarifies that the means of egress in the IRC ends when the occupant reaches grade at the exterior of the building & there are no requirements beyond that point. Net clear opening requirements have replaced the nominal door size for the required egress door to the exterior. The means of egress shall provide a continuous & unobstructed path of vertical and horizontal egress travel from all portions of the dwelling to the exterior of the dwelling at the required egress door without requiring travel through a garage. Habitable attics require a stair or ramp meeting the egress provisions of Section R311. The word 'egress' replaces the word 'exit' for the requirements of at least 1 egress door in Section 311.2. Now only the 1 required	The revision of the entire section organizes provisions in a user-friendly format but intends only minor technical changes.

		<p>egress door must be readily openable from the inside of the building.</p> <p>The code now specifies that the required net clear opening dimensions & the method for measuring when the door is opened to the 90 degree position. The minimum net opening dimensions are now consistent with the door requirements for means of egress & accessibility for persons with disabilities in the IBC.</p>	
<p>R311.7.2 Stairway Headroom Modification:</p> <p>The minimum headroom is measure above the usable area of the treads in an open stairway & does not apply to the ends of treads where they project under the edge of the floor opening above.</p>	<p>R311.5.2 states that the minimum headroom in all parts of the stairway shall not be less than 6ft. 8 in. measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform.</p>	<p>R311.7.2 replaces R311.5.2.</p> <p>The code now more clearly states the intent that minimum stair headroom height is required above only the area where a person normally walks on the stair.</p> <p>The exception states that where the nosing of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom a maximum of 4 ¾ in.</p>	<p>The code change permits stair openings & support walls to be positioned in line in the vertical plane without creating any hazard.</p>
<p>R311.7.3 & R311.7.4 Stair Treads & Risers Modification:</p> <p>New provisions defining the walk line intend to clarify the tread depth requirements for winders.</p>	<p>See R311.5.3</p>	<p>R311.7.3 replaces R311.5.3. The walk line across winder treads shall be concentric to the curved direction of travel through the turn & located 12 in. from the side of where the winders are narrower. The 12in. standard dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder. If the winders are adjacent within the flight, the point of the widest stair width of the adjacent winders shall be used.</p> <p>R311.7.4.1 replaces R311.5.3.1. For the purpose of this section all dimensions & dimensional surfaces shall be exclusive of carpets, rugs, or runners.</p> <p>R311.7.4.1 replaces R311.5.1 but does not change the text.</p> <p>R311.7.4.2 replaces R311.5.3.2. The minimum tread depth shall be 10in. It shall be measure horizontally between the vertical planes of the foremost projection</p>	<p>The IRC now provides for measurement of stair risers before carpet is installed. Carpet is not regulated by the code but is commonly considered in measuring stair riser height. Carpet may not be installed at the time of the final inspection or initial occupancy.</p> <p>A nosing is not required where the tread depth is a minimum of 11 in.</p> <p>The opening between adjacent treads is not limited on stairs with a total rise of 30 in. or less.</p>

		<p>of adjacent treads & at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more 3/8 in. Consistently shaped winders at the walk line shall be allowed within the same flight of stairs as rectangular treads & do not have to be within 3/8in. of the rectangular tread depth. Winder treads shall have a minimum tread depth of 6 in. at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walk line shall not exceed the smallest by more than 3/8 in.</p> <p>R311.7.4.3 replaces R311.5.3. The radius of curvature at the nosing shall be no greater than 9/16in. Risers shall be vertical or sloped under the tread above the underside of the nosing above at an angle not more than 30 degrees from the vertical.</p>	
<p>R311.7.7 Handrails Modification: Transition changes are now permitted to exceed the maximum handrail height of 38 in.</p>	R311.5.6	<p>R311.7.7 replaces R311.5.6 with no change of text.</p> <p>R311.7.7.1 replaces R311.5.6.1 with no change of text. However, the use of a volute, turnout, or starting easing shall be allowed over the lowest tread. The other exception is that when handrail fittings or bendings are used to provide continuous between flights, the transition from handrail height at the fittings or bendings shall be permitted to exceed the maximum height.</p> <p>R311.7.7.2 replaces R311.5.6.2 with change of text.</p> <p>R311.7.7.3 replaces R311.5.6.3 with no change of text except for Type I handrails, which adds that edges shall have a minimum radius of .01 in.</p>	<p>An editorial change clarifies that Type I handrails must have rounded edges consistent with the description of Type II handrails.</p>
<p>R312 Guards Modification: The provisions for guards have been reorganized into 3 separate sections – required locations, height, and opening limitations – and the technical provisions revised for clarification & consistency in application.</p>	<p>See R312 -- Porches, balconies, ramps or raised floor surfaces located more than 30 in. above the floor or grade below shall have guards not less than 36 in. in height. Open sides of stairs with a total rise of more than 30 in. above the floor or grade below shall have guards not less than 34 in. in height measured</p>	<p>Guards shall be located along open sided walking surfaces, including stairs, ramps, landings, that are located more than 30 in. measured vertically to the floor or grade below at any point within 36 in. horizontally to the edge of the open side. Insect screening shall not be considered as a guard.</p>	<p>The first section now only determines where guards are required & gives an objective means for measuring the height of the walking surface above the grade below.</p>

	<p>vertically from the nosing of the treads.</p> <p>Porches & decks which are enclosed with insect screening shall be equipped where the walking surface is located more than 30 in. above the floor or grade below.</p> <p>R312.2 Guard Opening Limitations – Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of a sphere of 4 in. or more in diameter. 2 exceptions are listed.</p>	<p>312.2 replaces Guard Opening Limitations with Height Requirements. Required guards at open sided walking surfaces, including stairs, porches, balconies, or landings, shall not be less than 36 in. high measure vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads with 2 exceptions listed.</p> <p>R312.3 replaces R 312.2. It takes out the word 'Guard' from 'Guard Opening Limitations.' Required guards shall not have openings from the walking surface to the required guard height which allow passage of a sphere of 4in. in diameter with the 2 exceptions also modified.</p>	
<p>R313 Automatic Fire Sprinkler Systems Addition: An automatic fire sprinkler system is now required in 1-2 family dwellings & townhouses.</p>		<p>An automatic fire sprinkler system installed in accordance with IRC Section P2904 or NFPA 13D is now required for 1-2 family dwellings & townhouses.</p> <p>In 1-2 family dwellings the ruling will not take effect until Jan 1, 2011.</p>	<p>The new standards uses less water, may be taken from water wells, and do not need to be placed in every room.</p>
<p>R314 Smoke Alarms Clarification: New text clarifies the maintenance & supervision requirements for household fire alarm systems.</p>	<p>See R 313.1</p>	<p>Reorganization of the smoke alarm provisions places all of the power requirements in 1 section and separates the alternative household fire alarm systems from the smoke alarm section.</p> <p>Section R314 replaces Section R313 with some editing.</p> <p>Where a household fire warning system is installed using a combination of smoke detector & audible notification devices, it shall become a permanent fixture of the occupancy & owned by the homeowner. The system shall be monitored by an approved supervising station & be maintained in accordance with NFPA 72.</p> <p>Exception 1 from the old R313.2.1 has been removed.</p> <p>R314.4 replaces R 313.3 and says that smoke alarms shall be interconnected. It also takes away a section from the old ruling & replaces it with 2 exceptions.</p>	<p>The requirement in the 2006 IRC for the household fire alarm systems to operate if the panel was removed has been deleted & language added to clarify these provisions. Such a system cannot function if the fire alarm panel is removed. The added language ensures system reliability by requiring the system to be owned by the occupant & to be electronically monitored & maintained.</p>

<p>R315 Carbon Monoxide Alarms Addition: Carbon monoxide alarms in new dwellings & in existing dwellings are required when work requiring a permit takes place.</p>		<p>R315.1 states that for new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel fired appliances are installed & in dwelling units that have detached garages.</p> <p>R315.2 states that where work requiring a permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel fire appliances exist, carbon monoxide alarms shall be provided in accordance with Section R315.1.</p> <p>R315.3 says that single station carbon monoxide alarms shall be listed as complying with UL 2034 & shall be installed in accordance with this code & the manufacturer's installation instructions.</p>	
<p>R317.1 Locations for Protection Against Decay Modification: Protection from decay is now required for wood siding & wall framing less than 2 in. above a concrete slab exposed to weather.</p>	<p>See Section R319</p>	<p>R317.1 replaces 319.1 but with only 1 text change from no. 5 where the new provision is added in.</p>	
<p>R317.3 Fasteners & Connectors in Contact with Treated Wood Modification: The fastener requirements have been expanded to include fasteners & connectors in contact with preservative-treated & fire-retardant-treated wood.</p>	<p>R319.3 says that fasteners for pressure-preservative & fire-retardant-treated wood shall be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper with 2 exceptions given.</p>	<p>R317.3 replaces R319.3 and says that fasteners and connectors in contact with pressure-treated wood & fire-retardant-treated wood shall be in accordance with this section. It keeps the 2 exceptions the same but does change out 'larger' with 'greater' in the first exception.</p> <p>R317.3.1 states that fasteners for preservative-treated wood shall be hot dipped zinc-coated galvanize steel, stainless steel, silicon, bronze or copper. Coating types & weights for connectors in contact with preservative treated wood shall be in accordance with the connector's manufacturer's recommendations, a minimum of ASTM A 635 type G185 zinc-coated galvanized steel, or equivalent, shall be used.</p> <p>R317.3.2 states that fastenings</p>	<p>Changes to this section related to fasteners & connectors in contact with preservative treated wood intend to clarify the applicable reference standards & the minimum zinc coating weights for galvanized products. The standards are different for fasteners & connectors.</p>

		<p>for wood foundations shall be as required in AF&PA Technical Report No. 7</p> <p>R317.3.3 states that fasteners for fire retardant treated wood used in exterior applications or wet or damp locations shall be of hot dipped zinc coated galvanized steel, stainless steel, silicon, bronze or copper. Fasteners others than nails & timber rivets shall be permitted to be mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum.</p> <p>R317.3.4 says that fasteners for fire Retardant treated wood used in interior locations shall be in accordance with the manufacturer's recommendations. In the absence of the manufacturer's recommendations, Section R317.3.3 shall apply.</p>	
<p>R317.4 Wood/Plastic Composites Addition: A definition & specific requirements for manufactured wood/plastic composites are introduced into the IRC.</p>	<p>Wood plastic composites were used with the approval of the building official under the alternative materials & methods of construction provisions based on available data from the manufacturer & other sources such as ICC Evaluation Services (ES) reports.</p>	<p>R317.4 states that wood/plastic composites used in exterior deck boards, stair treads, handrails and guardrail systems shall bear a label indicating the required performance levels & demonstrating compliance with the provisions of ASTM D 7032.</p>	
<p>R318.1 Subterranean Termite Control Methods Modification: When used for protection against termite damage, pressure-preservative-treated wood must now meet the location requirements for protection against decay in R317 in addition to the AWP standards.</p>	<p>See R320.1</p>	<p>R318.1 replaces R320.1 with a few minor changes.</p> <p>The definition of naturally resistant wood has been removed from Section R318 & revised definitions for naturally durable wood & termite-resistant material have been placed in Section R202.</p> <p>Steel is now specifically recognized as being termite resistant.</p>	<p>Alaska yellow cedar & western red cedar have been included in the list of termite resistant woods.</p>
<p>R319.1 Address Numbers Modification: The IRC now prescribes the minimum size of address numbers & requires a contrasting background for visibility.</p>	<p>See R 321.1</p>	<p>R319.1 replaces 321.1.</p> <p>Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 in. high with a minimum stroke width of ½ in.</p> <p>Where access is by means of private road & the building</p>	

		address cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.	
R322 Flood Resistant Construction Modification: The code now directly references ASCE 24 for the design & construction of buildings or structures in floodways & coastal high hazard V zones.	See R324.1 where the IRC previously referenced the IBC for design in flood prone areas.	R322.1 replaces R324.1 where the IRC now specifically references ASCE 24. R322.1.1 states that ASCE 24 is permitted in coastal high hazard areas. R322.2 states the flood hazard areas that have been delineated as subject to wave heights between 1.5 ft. & 3 ft. shall be designated as Coastal A Zones. R322.3.2 has added several new provisions in the elevation requirements, but deleted a few as well. The entire code change here is too extensive to be included here. Refer to Code Changes RB48-06/07, RB129-06/07, RB130-06/07, RB92-07/08, RB93-07/08, RB96-07/08, RB97-07/08, and RB100-07/08 in the 2009 IRC Code Changes Resource Collection.	The prohibition against fill beneath buildings in high hazard coastal areas was deemed overly restrictive & has been removed.
R323 Storm Shelters Addition: Storm shelters must be constructed in accordance with the new ICC/NSSA-500 Standard on the Design & Construction of Storm Shelters.		Shelters conforming to the ICC-500 standard are designed to withstand impact from winborne projectiles that are common to high wind events.	
R401.3 Surface Drainage Modification: Where it is not feasible to provide the prescribed fall of 6 in. within the first 10 ft. away from a foundation, the code includes new performance language requiring drainage away from the foundation without prescribing a slope.	The 2006 IRC afforded an alternative to provide a 5% slope adjacent to the foundation & to further direct the surface drainage with swales sloped not less than 2%.	The revised exception provides performance language to achieve surface drainage without specifying minimum slopes. The intent is to allow as moderate a grade as possible to prevent slope instability & erosion & still drain surface water to an approved location. The performance criteria recognizes that the appropriate slope for the lot is a function of the combined ground frost & moisture conditions, soil type, geological conditions, and local geographic conditions. The 2009 IRC maintains the minimum slope provisions of 25 (1/4 in. per ft.) for impervious surfaces within 10 ft. of the building.	

R401.4 Soil Tests Modification: The revised text defines the necessary criteria for requiring a soil test in more objective terms based on available scientific data.	The 2006 language giving authority to require a soil test was deemed subjective & open to various interpretations. At issue was the opening phrase 'in areas likely to have.'	The revised text requires that a determination be based on existing soil maps, test data records, or other documentation with quantifiable data that are based on accepted geotechnical methodologies. When the data exist, the code directs the building official to make a determination of whether to require soil testing or not.	
R402.3 Precast Concrete Foundation Materials Modification: Minimum specifications for materials used in the manufacture of precast concrete foundations have been added to the code.	Approved precast concrete foundations shall be designed & installed in accordance with the provisions of this code and the manufacturer's installation instructions.	The 2009 IRC establishes R402.3.1 that show minimum requirements for the materials used in the manufacture of precast concrete foundations in accordance with Section R404.5.	
R403.1.3.2 Seismic Reinforcing for Slabs-on-Ground with Turned Down Footings Modification: For turned-down footings in Seismic Design Categories (SDCs) D0, D1 & D2, this change clarifies that the exception permitting bars in the middle of the footing depth is an alternative to the top & bottom bar location of horizontal reinforcing in the footing.	The footings generally require a minimum of 1 No. 4 horizontal reinforcing bar continuous at the bottom of the footing. The exception allowed for greater reinforcing – 1 No. 5 bar or 2 No. 4 bars – located in the middle third of the footing depth.	To address the possibility that a code user might infer that reinforcing must be located in the middle third where the footing & slab are monolithic, the new wording clarifies that the exception is an alternative. Where the slab is not cast monolithically with the footing, No. 3 or larger vertical dowels with standard hooks on each end shall be provided in accordance with Figure R403.1.3.2. Standard hooks shall comply with Section R611.5.4.5.	
R403.1.6 Foundation Anchorage Modification: The revision & reorganization of Section R403.1.6 removes redundant language & clarifies the anchorage requirements for wood sill & sole plates resting on concrete & masonry foundations.	When braced wall panels are supported directly on continuous foundations, the wood sill plate or cold formed steel bottom track shall be anchored to the foundation in accordance with this section.	The code no longer allows wood plate anchorage to brick or solid masonry foundations. Anchor bolts must be placed in concrete or in the grouted cells of hollow concrete masonry units (CMUs). The bolting requirement for cold-formed steel bottom track has been removed in favor of references to applicable requirements for cold-formed steel framing. This deletion does not lessen the anchorage requirements for cold-formed steel framing. The applicable sections of R505.3.1 & R603.1.1 are still reference for the anchorage requirements for cold-formed steel framing systems. In addition, such systems must conform to the requirements of AISI S230.	It is important to note that this section applies to anchorage of wood sill & sole plates to continuous foundations.

<p>R403.4 Footings for Precast Foundations Addition: Prescriptive requirements for crushed stone footings supporting precast concrete foundations are now included in the code.</p>		<p>R403.4 Footings for precast concrete foundations shall comply with Section R403.4.</p> <p>R403.4.1 Clean crushed stone shall be free from organic, clayey, or silty soils. Crushed stone shall be angular in nature & meet ASTM C 33, with the maximum size stone not to exceed ½ in. & the minimum stone size not to be smaller than 1/16 in. Crushed stone footings for precast foundations shall be installed in accordance with Figure R403.4 (1) & Table R403.4. Crushed stone footings shall be consolidated using a vibratory in maximum of 8 in. lifts. Crushed stone footings shall be limited to Seismic Design Categories A, B, & C.</p> <p>R403.4.2 Concrete footings shall be installed in accordance with Section R403.1 & Figure R403.4 (2).</p>	<p>Crushed stone footings for precast concrete foundations are not allowed for building sites in Seismic Design Categories D0, D1, & D2.</p> <p>Requirements for concrete footings supporting precast concrete foundation walls match those for masonry & cast-in-place concrete foundation walls.</p>
<p>Tables R404.1(1) through R404.1(3) Deletion: The prescriptive lateral restraints provisions for the top of concrete & masonry foundation walls based on soil type, height of wall, and unbalanced backfill height have been removed from the code.</p>			<p>Deletion of these lateral restraint provisions brings the 2009 IRC into agreement with the 2000 & 2003 editions. Proponents of removing the top of foundation wall lateral restraint provisions reasoned that the traditional prescriptive provisions for anchor bolts & floor systems connections have performed well for many years without substantiated problems or failures.</p>
<p>R404.1 Concrete & Masonry Foundation Walls Modification: The technical provisions for concrete foundation walls have been substantially revised & are now separated from the masonry foundation provisions.</p>	<p>See 404.1 – in the 2006 IRC, the tables for removable form concrete walls required a yield strength of 60,000 psi (Grade 60) reinforcing steel, and the tables for ICF walls required 40,000 psi (Grade 40) steel</p>	<p>The prescriptive concrete provisions for Section 404.1 are based on PCA 100.</p> <p>The tabular values for vertical reinforcement are revised to reflect changes to the referenced standards ACI 318 & ASCE 7.</p> <p>In addition to the provisions of the referenced standards ACI 318 & ACI 332, PCA 100 is referenced as another option for alternate design of concrete foundation walls that are beyond the scope of prescriptive provisions of the IRC.</p> <p>With these changes, the prescriptive provisions for concrete foundation walls are</p>	<p>The 2009 IRC revises the prescriptive concrete foundation wall requirements to reflect the provisions of the new referenced Portland Cement Association standard PCA 100 Prescriptive Design of Exterior Concrete Walls for 1-2 family dwellings.</p>

		<p>more comprehensive. New provisions govern the location, cover, and continuity of reinforcement, lap splices & standard hooks, and installation of construction joints. The provisions also incorporate technical requirements for constructing concrete stem wall foundations not presently in the code.</p> <p>The vertical reinforcement tables for both removable form concrete walls & ICF walls are now based on reinforcement steel with a yield strength of 60,000 psi (Grade 60). However, a new table provides more flexibility for the use of different bar sizes or grades of steel than specified in other tables.</p> <p>The IRC now specifies the material & placement requirements for concrete mixing, delivery, aggregate size, proportioning, slump & consolidation (vibration). New requirements also specify approved materials for forms & form ties.</p>	
<p>R404.5 Precast Concrete Foundation Walls Addition: This new section in the IRC requires engineering & sets designs & labeling requirements for precast foundation walls.</p>		<p>R404.5 – the design & manufacture of precast concrete foundation wall panels shall comply with the materials requirements of Section R402.3 or ACI 318. The panel design drawings shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed in accordance with Section R106.1.</p> <p>R404.5.2 – precast concrete foundation wall design drawings shall be submitted to the building official & approved prior to installation. Drawings shall include Design Loading, Footing Design, Concentrated Loads & their points of application, Soil-Bearing Capacity, Maximum Allowable Total Uniform Load, Seismic Design Category, and Basic Wind Speed.</p> <p>R404.5.3 – precast concrete foundation wall panels shall be identified by a certificate of</p>	<p>The minimum performance design criteria in Section R404.5 do not favor or exclude any specific system, providing neutral & nonproprietary requirements.</p>

		inspection label issued by an approved 3 rd party inspection agency.	
R405.1.1 Precast Concrete Foundation Drainage Addition: Drainage pipe must be installed a minimum of 1 ft. beyond the edge of a wall to preserve the integrity of the effective bearing surface of the crushed stone footing.		R405.1.1 – precast concrete walls that retain earth & enclose habitable or useable space located below grade that rest on crushed stone footings shall have a perforated drainage pipe installed below the base of a wall on either the interior or exterior side of the wall, at least 1 ft. beyond the edge of the wall. If the exterior drainage pipe is used, an approved filter membrane material shall cover the pipe. The drainage system shall discharge into an approved sewer system or to daylight.	The type & location of the drainage pipe is instrumental in preserving the bearing capabilities of the crushed stone footing.
R406.4 Precast Concrete Foundation System Dampproofing Addition: Precast concrete basement foundations require panel joints to be filled & sealed and the exterior below-grade surface to be dampproofed to prevent water intrusion into the below grade space.		R406.4 – except where required by Section R406.2 to be waterproofed, precast concrete foundation walls enclosing habitable or useable spaces located below grade shall be dampproofed in accordance with Section R406.1. R406.4.1 – precast concrete foundation panel joints shall be sealed full height with a sealant meeting ASTM C 920, Type S or M, Grade NS, Class 25, Use NT, M, or A. Joint sealant shall be installed in accordance with the manufacturer's installation instructions.	
R407.3 Steel Columns Clarification: Steel Columns must be fabricated or not less than 3 in. diameter Schedule 40 pipe.	The columns shall be restrained to prevent lateral displacement at the bottom end. Wood columns shall not be less than in nominal size than 4x4 in. and steel columns shall not be less than 3 in. diameter standard pipe or approved equivalent.	The new reference to Schedule 40 pipe manufactured in accordance with ASTM A 53 Grade B clearly defines the wall thickness & strength properties required for steel pipe columns. The code still recognizes other steel columns that provide equivalent performance characteristics.	The previous reference to standard pipe for steel columns became unfamiliar to inspectors over time, resulting in a perceived inconsistent application of the requirement.
R408.1 & R408.2 Underfloor Space Ventilation Modification: This change re-establishes a provision found in the 2003 IRC for reducing the require net area of ventilation openings to 1/1500 of the underfloor area where the ground is covered with a vapor retarder.	See R408.1 - the 2006 IRC deleted a provision for reduced ventilation of crawl space where a vapor retarder covered the ground of the crawl space.	R408.1 – the minimum net area of ventilation openings shall not be less than 1 sq. ft. for each 150 sq. ft. of underfloor space area, unless the ground surface is covered by a Class I vapor retarder material. When a Class I vapor retarder material is used, the minimum net area of ventilation openings shall not be less than 1 sq. ft. for each 1500 sq. ft. of underfloor space area.	Polyethylene sheeting is the most commonly used material to satisfy the requirement of Class I vapor retarder.

		R408.2 – openings for underfloor ventilation now includes the exception that the total area of ventilation openings shall be permitted to be reduced to 1/500 of the underfloor area where the ground surface is covered with an approved Class I vapor retarder material & the required openings are placed so as to provide cross ventilation of the space. The installation of louvers shall not be prohibited.	
R502.2.2.1 & Table 502.2.2.1 Table Deck Ledger Addition: Prescriptive methods for securely attaching a wood deck to the dwelling structure are now included in the IRC.	Other than performance requirements that floors be capable of accommodating all loads & the deck provisions of Section R502.2.2, the 2006 IRC contained no specific methods for attaching a deck to the structure.	<p>R502.2.2.1 prescribes support specifications for deck ledger connections to band joist & all lag screws, bolts & washers shall be hot-dipped galvanized or stainless steel.</p> <p>R502.2.2.1.1 the lag screws or bolts shall be placed 2 in. from the bottom or top of the deck ledgers & between 2- 5 in. from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.</p> <p>R502.2.2.2 deck ledger connections not conforming to Table R502.2.2.1 shall be designed in accordance with accepted engineering practice.</p> <p>R502.2.2.3 the lateral load connection required by Section R502.2.2 shall be permitted to be in accordance with Figure R502.2.2.3.</p>	
R502.7 Lateral Restrain for Wood Joists Clarification: New text clarifies that installation of engineered wood products including lateral support to prevent rotation is determined by the installation instructions of the manufacturer.		502.7 adds the new exception that trusses, structural composite lumber, structural glued-laminated members & I-joists shall be supported laterally as required by the manufacturer's recommendations.	The prescribed lateral support requirements are intended to apply only to solid-sawn lumber joists. The 2009 IRC clarifies that the requirements do not apply to engineered wood products such as plate-connected trusses, I-joists, glued-laminated lumber & structural composite lumber.

<p>R505 Cold Formed Steel Floor Framing Modification: The prescriptive provisions of cold-formed steel framing now apply to 3 story buildings. This section has been reorganized & modified to clarify the application of the code. New provisions, tables & figures provides more options for the design & construction of dwellings using the prescriptive cold-formed steel framing provisions.</p>	<p>2006 IRC had prescriptive provisions of cold-formed steel framing for up to 2 story buildings.</p>	<p>Section R 505 has undergone significant revision & updating to incorporate provisions of the new American Iron and Steel Institute (AISI) Standard for Cold-Formed Steel Framing – Prescriptive Method for 1-2 Family Dwellings (AISI S230-2007).</p> <p>The most notable change is in the scope of application where the the height limitation has increased from 2 story to 3 story buildings, consistent with the height limits of conventional wood frame construction.</p> <p>Terminology has been updated throughout the text to reflect current usage by industry & to provide consistency in the code.</p> <p>Many minor modifications improve the organization, clarity & usability of the code provisions.</p> <p>In general the revisions provide m more options for the design & construction of dwellings using the prescriptive cold formed steel framing provisions.</p>	<p>The tolerances for floor joists located in line with cold-formed steel studs have been revised to account for the special case of the bearing stiffener located on the back side of the joist.</p> <p>Provisions concerning web holes & the web hole adjustments have been modified & placed into 1 location.</p> <p>The code user now has the choice to reinforce nonconforming holes, or design nonconforming holes, patch nonconforming holes, or design nonconforming holes in accordance with accepted engineering practice.</p> <p>Provisions for joist bracing & blocking have been divided into 4 distinct sections.</p> <p>4 tables have been added detailing the design of clip angle bearing stiffeners in order to permit more options for the builder.</p>
<p>Table 602.3(1) Fastener Schedule for Structural Members Modification: Table R602.3(1) has been reorganized & updated to reflect currently accepted industry standards & manufacturer's recommendations.</p>		<p>The fastening requirements for solid-sawn lumber framing members in R602.3(1) have been reorganized into 4 categories related to roof, wall, floor & beam/girder locations, and each condition has been given an item number.</p> <p>The fastening requirements for ceiling joist & rafter tie connections to rafters have been deleted because these connection requirements appear in Table R802.5.1.9, Rafter/Ceiling Joist Heel Joint Connections.</p> <p>The sheathing fastener schedule has been updated to reflect current industry recommendations & commonly used or available materials. Common nails are not recommended for attaching gypsum sheathing. The prescribed fastener spacing at the edges & in the field of gypsum sheathing panels is now 7 in. & matches the attachment</p>	<p>The new format makes it easier to locate appropriate nailing requirements.</p>

		<p>requirements for gypsum board used as wall bracing.</p> <p>Wood structural panels with a thickness of 5/16 in. are no longer commonly available or used in construction. The minimum thickness of wood structural panels recognized in Table 602.3(1) is now 3/8 in.</p>	
<p>R602.3 & Table R602.3(3) Wood Structural Panel Wall Sheathing Used to Resist Wind Pressures Modification:</p> <p>The component & cladding wind load requirements of Section R301.2.1 & Table R301.2(2) are now referenced in Section R602.3.</p>	<p>Table 602.3(3) provided the minimum thickness of wood structural panels attached to studs 16 in. & 24 in. on center based on the panel floor & roof span rating. Wood structural panel fastening requirements were located in Table 602.3(1).</p>	<p>Wood structural panels used as exterior wall sheathing must comply with the new Table 602.3(3), which now establishes minimum requirements for fastening, panel thickness, span ratings & stud spacing based on designed wind speed & wind exposure category.</p>	<p>Because the changing language of Section R602.10 applies to all exterior walls regardless of the exterior wall type covering type, the reference to the wall bracing section for foam plastic sheathing was considered unnecessary & has been deleted from Section R602.3.</p>
<p>Table 602.3(5) Size, Height & Spacing of Wood Studs Modification:</p> <p>A habitable attic, a new defined term in 2009 IRC, is treated the same as a typical roof & ceiling forming an attic in determining wood stud size & spacing in Table R602.3(5).</p>		<p>Placement of habitable attics in the wood stud table clarifies that wood studs of a size, height & spacing adequate for carrying a roof & ceiling also are adequate for supporting a habitable attic.</p>	<p>Footnote d places a limitation of 32 ft. for the roof span when using 2x4 studs to support a habitable attic. For greater roof spans, the code requires not less than 2x6 studs or an engineered design.</p>
<p>R602.6.1 Drilling & Notching Top Plate Modification:</p> <p>When a metal tie is required across the opening of a notched or drilled top plate, the tie must now extend at least 6 in. beyond each side of the opening</p>	<p>At least 16d nails were required to fasten the tie on each side of the opening & the minimum length of the tie was not specified.</p>	<p>To reduce the possibility of splitting the wood plate, the length of the nails used to attach the metal tie has been reduced from 3 ½ in. to 1 ½ in. & a tie of sufficient length to extend at least 6 in. beyond the opening on each side is now prescribed.</p> <p>Nails must have a minimum diameter of .148 in.</p>	<p>Though a 10d nail is 3 in. long, the intent of this change is that 1 ½ in. long nails with a diameter equivalent to 10d common nails (.148 in.) provide adequate shear capacity & satisfy the requirement.</p>
<p>R602.10 Braced Wall Lines & Braced Wall Panels Modification:</p> <p>The wood frame wall bracing provisions of Section R602.10 have been entirely rewritten to provide technical accuracy & clarity.</p>	<p>IRC 2006 definitions were circular in that they used the other term in the definition – a braced wall line was a series of braced wall panels & a braced wall panel was a segment of a braced wall line.</p> <p>It distinguished between exterior & interior braced wall lines. This led some to believe that the interior braced wall lines had to begin & end inside the building.</p> <p>The code was silent on mixing various types of bracing methods on the same building, though the practice of mixing methods was very common.</p>	<p>The code no longer differentiates between exterior & interior braced wall lines.</p> <p>The terms braced wall line & braced wall panel are more precisely defined.</p> <p>By introducing the term intermittent bracing to define the use of isolated wall panels within a braced wall line, the code now clearly distinguishes the 3 separate paths for compliance with the bracing requirements – the prescriptive methods using intermittent braced wall panels or continuous wall sheathing, or bracing in accordance with an engineered design.</p>	<p>Many of the changes are the result of work by the ICC Ad Hoc Committee on Wall Bracing including engineering analysis of the prescriptive methods used to resist lateral seismic & wind forces.</p> <p>In a structural sense, all braced wall lines act in the same way regardless where they are located.</p> <p>By inserting the exemption from R301.2.2 (Seismic requirements) into the beginning of Section R602.10. the code clarifies the application of wall bracing provisions for 1-2 family</p>

		The code now also specifically allows mixing of methods between stories & from one wall line to the next. Different bracing methods are also permitted within the same wall line in SDCs A, B, & C only.	dwelling. 1-2 family dwellings located in SDC C need only comply with the requirements for buildings located in SDCs A & B, which have no seismic requirements.
R602.10.1.2 Length of Wall Bracing Modification: Lateral bracing requirements related to wind loads & seismic loads have been placed in separate tables. The greater tabular value from the 2 tables based on the building location applies.	The amount of bracing was expressed as a percentage of the braced wall line.	<p>The amount of bracing is now expressed as length in feet. After all adjustments are made, the minimum total length of bracing in a braced wall line must be at least 48 in.</p> <p>Seismic loading is predominantly proportional to the length of the braced wall line, but the wind loading is proportional to the wall line spacing, the height of the walls, and the height of the roof relative to the eaves. Accordingly values in the seismic table are function of braced wall line length, and values in the wind table are a function of braced wall line spacing.</p> <p>R602.10.1.2 clarifies that for other than angled walls, only wall panels parallel to the braced wall line count in satisfying the amount of bracing requirements.</p> <p>Where exterior braced wall panels are subjected to wind uplift, connections must be provided unless the weight of the wall above offsets the wind uplift forces. When the net uplift at the bottom of wall exceeds 100 plf, connections such as straps must be provided from story-to-story to provide a complete load path from the roof to the foundation.</p>	<p>Walls perpendicular to the braced wall line do not count toward the bracing amount required in the direction of the braced wall panels that are subjected to wind uplift.</p> <p>Values in the wind table are based on an assumed 10 ft. high wall for each story & 10 ft. height between the eave & ridge of the roof.</p> <p>A footnote to the wind bracing table permits the required bracing length for methods other than let-in-bracing in 1 story or the top story of 2 or 3 story buildings to be reduced when tie down devices are provided at braced wall panels.</p>
R602.10.13 Angled Corners of Braced Wall Lines Addition: This new section allows angled wall segments to contribute to the amount of wall bracing in a braced wall line.		This change permits angled walls up to 8ft. long & no more than 45 degrees out of plane of the braced wall line to be included in the amount of required bracing.	
R602.10.1.4 Braced Wall Panel Location Modification: The location requirements for braced wall construction are now grouped together in a	The 2006 IRC permitted a maximum inset distance to 12.5 ft. from both ends of a braced wall line, provided the amount of bracing satisfied the percentage	The 2009 IRC limits the combined total inset distance to 12.5 ft. while still allowing inflexibility to inset a panel a distance of 12.5 ft. from 1 end.	The change is a result of concerns that 1 4ft. braced wall panel installed in the center of a 25ft. long braced wall line would not provide

single section & adds several figures.	requirements.	New text clarifies that all of the braced wall panels are allowed to be offset 4 ft. from the line that establishes the braced wall line & the total out-to-out offset of brace wall panels is not more than 8 ft.	adequate bracing even if it satisfied the minimum bracing length requirements.
R602.10.1.5 Braced Wall Line Spacing for Seismic Design Categories D0, D1 & D2 Modification: This change expands the exception to permit wall line spacing of 35ft. for buildings in Seismic Design Categories D0, D1 & D2 subject to adjustment factors to provide an amount of bracing adjusted to be equivalent to the 25ft. spacing requirements.	R602.10.11.1 the 2006 IRC permitted an increase to 35ft. braced wall line spacing for only 1 large room not exceeding 900 sq. ft.	R602.10.1.5 replaces & modifies the 2006 R602.10.11.1. The new exception allows spacing up to 35ft. throughout the building by increasing the amount of braced wall panels in the braced wall line. This exception also places limits on length-to-width ratio for the roof and floor diaphragms to ensure lateral loads are adequately transferred to the braced wall lines & increases the fastening for top plate splices to account for the increased span of the diaphragm.	The change does not reduce the seismic resistance but allows the same building plans to be used in Seismic Design Categories D0, D1 & D2 as are used in Seismic Design Category C when the appropriate bracing adjustments are applied.
R602.10.2 Intermittent Brace Wall Panel Construction Methods Modification: The bracing methods of the 2006 IRC listed as types 1-8 & the 2 alternate braced wall panel methods have been grouped into 1 table & given a 2-3 letter abbreviation to make the section more user friendly.		The code now uses the term 'intermittent' to describe bracing methods utilizing isolated braced wall panels & to clearly differentiate these methods from continuous sheathing methods. The intermittent bracing methods are now placed in tabular format with a description, illustrative icon & connection criteria. R602.10.2 the construction of intermittent braced wall panels shall be in accordance with 1 of the methods listed in Table 602.10.2 R602.10.2.1 intermittent <i>braced wall panels</i> shall have gypsum wall board installed on the side of the wall opposite the bracing material. Gypsum wall board shall be not less than 1/2 in. in thickness & be fastened in accordance with Table R702.3.5 for interior gypsum wall board. Exceptions: 1. Wall panels that are braced in accordance with methods GB, ABW, PFG & PFH. 2. When an <i>approved</i> interior finish material with an in-plane shear resistance equivalent to gypsum board is installed. 3. For methods DWB, WSP, SFB, PBS, PCP & HPS, omitting gypsum wall board is permitted	The new tabular format is intended to make it easier for code users to understand the options available. The reorganization & labeling intend to clarify the prescriptive bracing provisions & the 2 distinct paths for compliance – intermittent & continuous methods – to promote more consistent application.

		<p>provided the length of bracing in Tables R602.10.1.2(1) & R602.10.1.2(2) is multiplied by a factor of 1.5.</p> <p>The prohibition of adhesive attachment of wall sheathing in Seismic Design Categories C, D0, D1 & D2 is relocated from Section 602.10.11.5 of the 2006 IRC.</p>	
<p>R602.10.3 Minimum Length of Brace Wall Panels Modification: The code now recognizes braced wall panels less than 48 in. but not less than 36in. in length in Seismic Design Categories A,B & C.</p>	<p>R602.10.4 was inconsistent in terminology, expressing such braced wall panel measurements as width, length or percentage of the braced wall line.</p>	<p>R602.10.3 replaces & modifies the 2006 R602.10.4.</p> <p>The amount of bracing is now expressed as the minimum total length of braced wall panels measured in the direction of the braced wall line. In most cases, the length of the braced wall panel in the 2009 IRC is equal to the actual length of the braced wall panel in the horizontal direction, provided it is not less than 48 in.</p> <p>The added text in Section R602.10.3 mirrors the footnotes of the referenced tables in advising that the amount of gypsum board required by the applicable table must be doubled when gypsum board is applied to only 1 side.</p>	<p>For intermittent braced wall panels using methods other than in-bracing & gypsum board, the code now recognizes that panels less than 48in. in length contribute to the bracing of buildings.</p> <p>For braced wall panels not less than 36in. in length in Seismic Design Categories A, B & C, the new partial credit allowance maintains the bracing strength requirements while providing some flexibility.</p> <p>There is no partial credit for panels less than 48in. in length on 10ft. high walls or panels less than 42in. in length on 9ft. high walls.</p>
<p>R602.10.3.2 Method ABW – Alternate Braced Wall Panels Modification: A new figure replaces much of the text in this section to more clearly illustrate the construction details for alternate braced wall panels, now described as bracing method ABW.</p>	<p>R602.10.6 alternate braced wall panels shall be constructed in accordance with Sections R602.10.6.1 & R602.10.6.2.</p>	<p>R602.10.3.2 replaces & modifies the 2006 R602.10.6.</p> <p>The construction details for minimum materials, concrete reinforcement, hold-downs, anchoring, fastening & splicing are more clearly illustrated in drawing form rather than detailed code language. Much of the text of this section has been deleted in favor of the new figure without making technical changes to the method of construction.</p>	<p>Alternate braced wall panel construction (ABW), is 1 of the more complicated provisions in the wall bracing section.</p> <p>Other editorial changes to this section reflect the preferred terminology in an effort to provide accuracy & consistency.</p>
<p>R602.10.3.3 Method PFH – Portal Frame with Holds-Down Modification: The alternate bracing method for a braced wall panel adjacent to a door or window opening, typically used at large overhead garage door openings, is now known as portal frame with holds-down (Method PFH).</p>	<p>R602.10.6.2 Alternate Braced Wall Panel Adjacent to a Door or Window Opening.</p>	<p>R602.10.3.3 replaces & modifies the 2006 R602.10.6.2.</p> <p>The braced wall segments in Figure R602.10.6.2 are now labeled as ‘portal frames,’ a term that more accurately describes the configuration, prompting a change to designate this method of bracing as portal frame with holds-down (Method PFH). The text describing the materials & connection details has been deleted in favor of Figure</p>	<p>As with alternate braced wall panels (ABW), bracing method PFH provides equivalent strength to standard 48in. braced wall panel through very specific reinforcing & connection details. The lengthy text describing those details was viewed as cumbersome & confusing and has been deleted in favor of the line drawing illustration.</p>

		<p>R602.10.3.2 for illustrating this method of bracing construction.</p> <p>There is a minor revision which clarifies that 2 anchor bolts are required at the portal frame panel.</p>	
<p>R602.10.4 Continuous Sheathing Modification: The code now recognizes the practice of mixing intermittent bracing methods with the continuous sheathing method. The continuous sheathing method of bracing has undergone extensive revision & expansion to provide more flexibility in the design of & construction of dwellings.</p>	<p>R602.10.5 Length Requirements for Braced Wall Panels in a continuously sheathed wall did not clearly explain that continuous sheathing was a separate path from isolated wood structural panels for compliance with bracing provisions.</p> <p>Table R602.10.5 computed the panel length required based on the height of the adjacent door or window & the applicable maximum height to length aspect ratio.</p>	<p>R602.10.4 replaces & modified the 2006 R602.10.5.</p> <p>In an effort to clearly differentiate intermittent from continuous bracing methods, the continuous sheathing provisions are no longer tied to wood structural panel bracing method WSP (formerly method 3).</p> <p>Table R602.10.5 has been deleted & the minimum total length of braced wall panels for continuous sheathing appears in the applicable column of either Table R602.10.1.2(1), when wind controls, or Table R602.10.1.2(2), when seismic controls. The tabular value is no longer based on adjacent opening heights expressed as a percentage of wall heights.</p> <p>Amounts of required bracing are expressed as the length of braced wall panels in feet rather than a percentage of the braced wall line.</p> <p>The expanded Section R602.10.4 established 3 separate & distinct methods for bracing with continuous sheathing & assigns to the table for intermittent sheathing methods. The alternates for wood structural panel adjacent to garage openings (CS-G) & continuous portal frame (CS-PF) were developed from the footnotes that appeared in the 2006 IRC Table R602.10.5.</p> <p>Section 602.10.4 requires continuous wood structural panel sheathing on all sheathable surfaces on 1 side of braced wall lines of exterior walls. This change permits other bracing methods to be used at other braced wall lines at any story.</p> <p>The code clarifies the requirements for a minimum 24</p>	<p>The entire code change is rather extensive so refer to the 2009 IRC Code Changes Resource Collection for the complete text & history of the code changes related to Section R602.10.</p> <p>In SDC A, B & C where the basic wind speed is less than or equal to 100 mph, the code permits mixing of methods in the same story & from story to story. When using the continuous sheathing method in Seismic Design Categories D0, D1 & D2, or where the wind speed exceeds 100 mph, mixing is not permitted on the same story.</p> <p>When using the continuous portal frame method, the total amount of bracing in the braced wall line must still meet the applicable tabular values for continuous wall sheathing.</p>

		in. wood structural panel on both sides of the corner at each end of the continuously sheathed braced wall line. A hold down device with a capacity of 800 lbs. installed on the corner stud of the end panel of the braced wall line that provides overturning restraint is permitted to substitute the 24in. corner return segment that is perpendicular to the braced wall line.	
R602.10.6 & R602.10.7 Braced Wall Panel Connections & Support Modification: Requirements for braced wall panel connection to wood framing have been revised & the code now recognizes masonry stem wall construction for supporting braced wall panels & prescribes reinforcing when those walls are 48 in. or less in length.	Masonry stem walls were not addressed in relation to bracing in previous editions of the IRC. In particular, the absence of language addressing portal frame panels supported masonry stem walls, as sometime occur at garage doors & slab on grade conditions, has resulted in inconsistent application of the code.	<p>R602.10.6 Braced wall panels shall be connected to floor framing or foundations as follows:</p> <ol style="list-style-type: none"> 1. Where joists are perpendicular to a <i>braced wall panel</i> above or below, a rim joist, band joist or blocking shall be provided along the entire length of the <i>braced wall panel</i> in accordance with Figure R602.10.6(1). Fastening of top & bottom wall plates to framing, rim joist, band joist and/or blocking shall be in accordance with Table R602.3(1). 2. Where joists are parallel to a <i>braced wall panel</i> above or below, a rim joist, end joist or other parallel framing member shall be provided directly above & below the <i>braced wall panel</i> in accordance with Figure R602.10.6(2). Where a parallel framing member cannot be located directly above & below the panel, full-depth blocking at 16 in. spacing shall be provided between the parallel framing members to each side of the <i>braced wall panel</i> in accordance with Figure R602.10.6(2). Fastening of blocking & wall plates shall be in accordance with Table R602.3(1) & Figure R602.10.6(2). 3. Connections of <i>braced wall panels</i> to concrete or masonry shall be in accordance with Section R403.1.6. <p>R602.10.7 Braced wall panel support shall be provided as follows:</p> <ol style="list-style-type: none"> 1. Cantilevered floor joists, supporting <i>braced wall lines</i>, shall comply with Section R502.3.3. Solid blocking shall be provided at the nearest bearing wall location. In Seismic Design 	<p>The new connection details apply to buildings located in SDC D0, D1 or D2 or areas with wind speeds of 100 mph or greater, or when the roof member heel height exceeds 91/4in.</p> <p>The change also clarifies that these bracing connection requirements apply to the individual braced all panel segments, not the entire braced wall line.</p> <p>New figures illustrate the connection options to ensure proper installation without compromising the lateral load resisting capacity.</p> <p>New text also recognizes floor joist cantilever conditions to support braced wall panels consistent with the requirements of Section R502.3.3.</p>

		<p>Categories A, B & C, where the cantilever is not more than 24 in. a full height rim joist instead of solid blocking shall be provided.</p> <p>2. Elevated post or pier foundations supporting <i>braced wall panels</i> shall be designed in accordance with accepted engineering practice.</p> <p>3. Masonry stem walls with a length of 48 in. or less supporting <i>braced wall panels</i> shall be reinforced in accordance with Figure R602.10.7. Masonry stem walls with a length greater than 48in. supporting <i>braced wall panels</i> shall be constructed in accordance with Section R403.1 <i>Braced wall panels</i> constructed in accordance with Sections R602.10.3.2 & R602.10.3.3 shall not be attached to masonry stem walls.</p>	
<p>R602.10.8 Braced Wall Panel Joints Modification: The exception permitting horizontal joints without blocking in lower Seismic Design Categories has been deleted. The code now permits horizontal joints without blocking for panel sheathing except hardboard panel siding, provided the minimum required amount of bracing is doubled.</p>	<p>R602.10.7 panel joints – all vertical joints of panel sheathing shall occur over, and be fastened to, common studs. Horizontal joints in braced wall panels shall occur over, and be fastened to, common blocking of a minimum 1½ in. thickness.</p>	<p>R602.10.8 replaces & modifies the 2006 R602.10.7</p> <p>Blocking is now required for the horizontal joints of braced wall panel sheathing in all Seismic Design Categories. This change also clarifies that blocking is required only for the prescribed braced wall panels, not the entire braced wall line.</p> <p>Blocking at horizontal joints shall not be required in wall segments that are not counted as <i>braced wall panels</i>.</p> <p>Where the bracing length provided is at least twice the minimum length required by Tables R602.10.1.2(1) & R602.10.1.2(2) blocking at horizontal joints shall not be required in <i>braced wall panels</i> constructed using Methods WSP, SFB, GB, PBS or HPS.</p> <p>Gypsum board braced wall panels (Method GB) applied horizontally do not require attachment to horizontal blocking at the joints.</p>	<p>Blocking at intermediate joints increases stiffness to keep braced wall panels from buckling out of plane when subject to in-plane loads. Testing has shown a 50% reduction in the bracing strength of wood structural panels when the blocking is omitted.</p>
<p>R602.10.9 Cripple Wall Bracing Modification: This section has been relocated & the terminology updated to be consistent with other changes to Section</p>	<p>R602.10.2 Cripple Wall Bracing according to Table R602.10.1.</p>	<p>R602.10.9 replaces & modifies the 2006 R602.10.2.</p> <p>Table R602.10.1 has been replaced by separate Tables R602.10.1.2(1) & R602.10.1.2(2)</p>	

<p>602.10. Required bracing is now measured as length in feet rather than a percentage of the braced wall line & is determined from the wind or seismic table, whichever is greater value.</p>		<p>for determining the total length of bracing to resist the predominant loads from either wind or seismic forces.</p> <p>The 8 types of bracing using isolated braced wall panels & previously represented by numbers are now known as intermittent bracing methods & have been relabeled with short abbreviations.</p> <p>Method WSP now represents wood structural panel bracing replacing the method 3 designation.</p>	
<p>R602.11 Wall Anchoring Clarification: Braced wall panel connections to wood framing at interior & exterior wall locations have been consolidated in the appropriate connections provisions in Section 602.10.6.</p>	<p>R602.11 the framing & connections details of buildings located in Seismic Design Categories D₀, D₁ and D₂ shall be in accordance with Sections R602.11.1 through R602.11.3.</p>	<p>Section 602.11 now includes only those provisions related to anchorage of the braced wall line to concrete & masonry foundations.</p> <p>As part of the effort to reorganize the all bracing provisions of Sections 602.10 & R602.11, redundant language has been removed & all provisions related to braced wall panel connections to wood framing of floor & roof/ceiling diaphragms are now located in Section R602.10.6</p> <p>Section R 602.11, Wall Anchorage, consolidates requirements for anchoring the sill plate of the braced wall line to a concrete or masonry foundation. Reorganization of this section clarifies that Section R403.1.6 applies to the sill anchorage of braced wall lines for all buildings in Seismic Design Categories (SDC's) A & B, and for 1-2 family dwellings in SDC C. The anchorage provisions of Section 602.11.1 apply to all buildings in SDCs D₀, D₁ & D₂ and townhouses in SDC C. The stepped foundation provisions related to wall bracing do not apply to buildings sited in SDC A, B, or C.</p> <p>The code no longer differentiates interior from exterior braced wall panels or braced wall lines.</p>	<p>Changes in this section are consistent with the effort to place seismic provisions in the section where they are applicable to make bracing provisions more user friendly and eliminate the need to thumb back & forth throughout the code to locate requirements.</p>

<p>R603 Steel Wall Framing Modification: Section R603 has undergone extensive revision & expansion to clarify & update the prescriptive provisions for cold-formed steel light frame wall construction. These changes correlate the requirements to those in the new referenced standard AISI S230, Standard for Cold-Formed Steel Framing – Prescriptive Method for 1-2 Family Dwellings, 2007 edition.</p>	<p>R603.1 General elements shall be straight & free of any defects that would significantly affect structural performance. Cold-formed steel wall framing members shall comply with the requirements of this section.</p>	<p>The 2009 IRC expand the scope of the prescriptive methods to include 3 story buildings, an increase from the previous limitations of 2 stories.</p> <p>Section R603 now includes framing details & new header tables for gable end walls intended to clarify the prescriptive methods. All requirements concerning web holes & web hole adjustments are now consolidated in 1 location, clarifying that the code user has the choice to reinforce nonconforming holes, patch nonconforming holes, or design nonconforming holes with accepted engineering practice.</p> <p>Table R603.2(2) reflects current industry standardized thickness for structural members expressed as base steel thickness in mils. Reference Gage Number is no longer used in referencing structural members & has been removed from the table.</p>	<p>Many new figure have been added to the code to clarify the application of the cold-formed steel framing provisions.</p>
<p>R606.3 & R606.4 Corbeled Masonry Modification: Section 606.3 has been divided into 3 subsections to clarify the masonry corbelling requirements. The code now specifically recognizes masonry units filled with mortar or grout as adequate for corbelling.</p>	<p>The 2006 IRC prescribed solid masonry units for corbelling.</p>	<p>The 2009 IRC change recognizes that corbelled masonry units filled with mortar or grout act the same as solid units in supporting the construction above & distribute the load as effectively as solid masonry units.</p> <p>The requirement to fill the hollow space behind the corbel with mortar or grout has been relocated to the foundation support provisions in Section R606.4.</p>	<p>Solid masonry units are not always available, whereas units filled solid with mortar or grout can be readily made on the job site as they are needed, providing more flexibility to the builder.</p>
<p>R606.12.2.1 & Table R606.12.2.1 Minimum Length of Masonry Walls Without Openings Addition: This change adds prescriptive requirements for minimum lengths of masonry walls to provide wall bracing.</p>	<p>The 2006 IRC did not address minimum lengths of masonry walls to resist lateral loads parallel to the wall.</p>	<p>Section R606.12.2.1 & Table R606.12.2.1 add prescriptive masonry wall bracing requirements for high Seismic Design Categories (SDCs).</p> <p>The new provisions apply to above grade masonry wall construction for townhouses located in Seismic Design Category (SDC) C & all building sites in SDC D0, D1, or D2.</p>	<p>The minimum solid wall length along exterior masonry wall lines was developed in part to correlate to the minimum length requirements for insulated concrete form (ICF) walls.</p>
<p>R611 Exterior Concrete Wall Construction Modification: Section R611 has been completely revised to reflect the provisions of the new referenced Portland Cement Association standard PCA</p>	<p>The 2006 IRC Section R612 referenced the design & construction requirements of Section R611 for flat insulated concrete form (ICF) walls or ACI 318 with regard to above ground concrete wall provisions.</p>	<p>The 2009 IRC merges & correlated the conventionally formed concrete wall provisions with those of the ICF walls in the substantially revised provisions of Section R611.</p>	

<p>100 Prescriptive Design of Exterior Concrete Walls for 1-2 Family Dwellings. Conventionally formed above ground concrete wall provisions have been integrated with the insulated concrete form (ICF) wall requirements.</p>		<p>The applicability limits of Section 611 are generally consistent with the limitations of PCA 100 for building plan dimensions, height, projections, and dead loads. Section R611 is limited to detached 1-2 family dwellings & townhouses located in SDC A or B, and detached 1-2 family dwellings in SDC C.</p> <p>The limited provisions for concrete walls of buildings in high seismic areas that appeared in the 2006 IRC have been deleted but still appear in PCA 100. Townhouses in SDC C & all buildings in SDC D must now meet the requirements of PCA 100 or be designed in accordance with ACI 318.</p> <p>Revised figures & tables for constructing flat, waffle-grid & screen-grid ICF wall systems appear in Section R611.5. Additional provisions are included for constructing these concrete walls based on concrete, aggregate, and steel reinforcement materials used. New provisions govern the location, cover & continuity of the reinforcement & installation of construction joints.</p> <p>The prescriptive technical provisions for exterior concrete walls in R611.6 through R611.8 have been replaced entirely & reflect changes made to ACI 318 & ASCE 7. The new provisions cover horizontal & vertical reinforcement, reinforcement & shear wall (solid wall) requirements around openings & lintels over openings.</p> <p>Section R611.9 has also been replaced with the revised details for connecting wood & cold formed steel framing assemblies to exterior concrete walls.</p> <p>The IRC no longer includes prescriptive provisions for above ground concrete walls in high Seismic Design Categories (SDCs).</p> <p>Section R612 has been deleted.</p>	
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<p>R612.2 Window Sills Modification: Changes to Sections R612.2 through R612.4 clarify the child fall prevention alternatives to the minimum window sill height. In the 1st alternative, window fall prevention device replaces the term 'guard' as the barrier installed at operable windows with sills below 24 in. In the 2nd option, the code details the performance criteria for opening limiting devices, including provisions for emergency escape & rescue opening.</p>	<p>The 2006 IRC required a 24 in. minimum window sill height when the opening is more than 72 in. above grade & referenced the ASTM F 2006 Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape & Release Mechanisms.</p>	<p>The 2009 change clarifies & updates & expands the information on the alternatives for fall prevention when the sill is lower than 24in. above the floor – installing a barrier or limiting the dimensions of the window opening. With sills lower than 24 in. above the floor, barriers are required at the window opening that does not permit passage of 4 in. diameter sphere.</p> <p>Window fall prevention devices installed on any window must conform to ASTM F 2090, thereby complying with the operation provisions for emergency escape & rescue openings in Section R310. The ASTM F 2006 Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape & Release Mechanisms is no longer referenced.</p>	<p>An opening limiting device installed on any window must have an emergency release device that is clearly identified & that operates without the need for a key, tool, or special knowledge. The code also limits the opening force of the release mechanism.</p>
<p>R613 Structural Insulated Wall Panel Construction Addition: Prescriptive provisions for structural insulated panel (SIP) wall construction have been added to the code in a new Section R613.</p>		<p>The 2009 IRC includes prescriptive provisions recognizing structural insulated panels (SIPs) for exterior & Interior wall bearing construction.</p> <p>Similar to the prescriptive provisions for cold-formed steel framing, SIP wall construction in accordance with R613 is limited to 1-2 story buildings not greater than 40 ft. wide by 60 ft. long with 10ft. wall heights & sited in Seismic Design Categories A, B & C. Maximum design wind speed is 130 mph in Exposure C & maximum snow load is 70 psf.</p> <p>R613 contains prescriptive tables, materials specifications, bracing information & construction details similar to those found in the wood & cold formed steel framing & concrete wall sections of the code. The minimum thickness of SIP for a particular application is determined in accordance with Tables R613.5(1) & R613.5(2) based on building width, design wind speed, snow load & elements being supported.</p>	<p>The new provisions are based on testing using industry developed minimum properties for panels, adhesives & foam density. Tests included axial, shear & transverse loads, all conducted in accordance with the recognized test methods in developing panel capacities.</p>

<p>R703 & Table R703.4 Modification: Performance requirements for wind resistance have been added to the water resistance provisions of exterior wall covering systems in Section R703.1. Changes to Table R703.4 clarify the water resistive barrier requirements for various wall covering & cladding systems & update the fastening requirements to reflect current industry practices.</p>	<p>R703.1 General - exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing as described in Section R703.8. The exterior wall envelope shall be designed & constructed in a manner that prevents the accumulation of water within the wall assembly by providing a water-resistant barrier behind the exterior veneer as required by Section R703.2. and a means of draining water that enters the assembly to the exterior. Protection against condensation in the exterior wall assembly shall be provided in accordance with Chapter 11 of this code.</p>	<p>The provisions for weather resistance in Section R703.1 have been broken into 2 subsections to recognize both water & wind resistance for exterior wall covering systems.</p> <p>The water resistance requirements in this section remain unchanged. Section R 703.1.2 provides a testing & analysis of wind pressure resistance of all exterior covering systems, and references the component & cladding wind load requirements of Table R301.2(2) & R301.2(3).</p> <p>The change to Section R703.3.2 requires lap siding to be installed as recommended by the manufacturer.</p> <p>The omission of a water resistive barrier behind masonry veneer with a 1in. air space is no longer permitted by Table R703.4. The line item for 'stone veneer' has been deleted, the row for brick & masonry veneer has been changed to 'anchored veneer.' Anchored veneer now includes brick, concrete, masonry & stone that is secured to the structure with the code prescribed metal ties. Other changes included fastening requirements for wood structural panel siding & vinyl siding to recognize current industry & manufacturer's recommendations & test reports.</p>	
<p>R703.7.3 Lintels Modification: Steel lintels supporting masonry veneer above openings now require a shop coat of rust-inhibitive primer or other protection against corrosion. The 2009 IRC also provides an alternative prescriptive method for supporting veneer above measuring up to 18ft. 3 in. in length using a combination of a steel angle & masonry with horizontal reinforcing.</p>	<p>R703.7.3 Lintels.Masonry - veneer shall not support any vertical load other than the dead load of the veneer above. Veneer above openings shall be supported on lintels of noncombustible materials & the allowable span shall not exceed the value set forth in Table R703.7.3. The lintels shall have a length of bearing not less than 4 in.</p>	<p>Section R703.7.3 now specifically requires corrosion resistance for steel lintels to inhibit the development of rust & protect the integrity of the masonry veneer.</p> <p>R703.7.3.1 The allowable span shall not exceed the values set forth in Table R703.7.3.1.</p> <p>The new section R703.7.3.2 provides a cost effective alternative to the existing steel lintel table for spanning large masonry veneer openings such as occur at overhead garage doors. These prescriptive provisions combine a steel angle with masonry veneer & reinforcing above to form the noncombustible</p>	

		<p>lintel. Shoring is required to support steel lintel & veneer for a period of 7 days to allow the mortar to gain sufficient strength for the lintel to support the dead load of the masonry above.</p>	
<p>R703.7.4 Masonry Veneer Anchorage Modification: The code now prescribes the minimum embedment & cover dimensions for metal wall ties in the mortar of masonry veneer.</p>	<p>The 2006 IRC specified the type, size & spacing of the ties but lacked guidance on the embedment details.</p>	<p>The new text completes the necessary prescriptive requirements for anchorage of masonry veneer & provides consistency with ACI 530.1/ASCE 6/TMS 602 Specification for Masonry Structures (MSJC Specification).</p> <p>The code now prescribes a minimum embedment of 1 1/2 in. into the mortar or grout with not less than 5/8 in. cover on the face side of the veneer.</p>	
<p>R703.11.1.1 & R703.11.2 Vinyl Siding Addition: The 2009 IRC specifically requires vinyl soffit to be fastened in place in accordance with industry standards to ensure adequate wind resistance. New provisions address installations of vinyl siding over foam plastic sheathing based on design wind speed & wind exposure category.</p>		<p>Section R703.11.1 requires vinyl siding, soffit & accessories to be installed with the manufacturer's installation instructions, requirements that have not changed in the 2009 IRC. To provide more guidance to the installer & code user, the IRC now specifies that vinyl soffit must be attached to suitable backing or nailing strips.</p> <p>Section R703.11.1.2 has been added to improve wind resistance performance for vinyl siding applied over foam plastic sheathing, a common installation for meeting energy efficient requirements. The code now offers prescriptive fastening requirements for areas with a basic wind speed not greater than 90 mph & a wind Exposure B condition.</p>	<p>For basic wind speeds greater than 90 mph or locations in Exposure Category C or D, the design wind pressure rating of the exterior wall covering assembly is determined by applying a prescribed adjustment factor to a base value in the vinyl siding manufacturer's product specifications. The higher adjustment factor is based on wall assembly with gypsum board applied to the interior of the wall. The adjusted design pressure rating for the wall assembly must satisfy the component & cladding requirements of Tables R301.2(2) & R301.2(3).</p>
<p>R804 Cold Framed Steel Roof Framing Modification: Section 804 has been extensively revised & reorganized to clarify & update the prescriptive provisions for cold-formed steel light frame roof construction. Applicability of the prescriptive methods has expanded to include 3 story buildings from 2 story.</p>	<p>R804.1 – elements shall be straight & free of any defects that would significantly affect their structural performance. Cold-formed steel roof framing members shall comply with the requirements of this section.</p>	<p>All requirements concerning web holes & web hole adjustments are now consolidated in 1 location. The code user now has the choice to reinforce nonconforming holes, patch nonconforming holes, or design nonconforming holes in accordance with accepted engineering practice.</p> <p>In place of uncoated steel thickness, the code now uses the current industry standardized thickness for structural members expressed as base steel thickness in thousandths of an</p>	<p>The changes reflect the provisions in the new referenced standard AISI S230, Standard for Cold-Formed Steel Framing – Prescriptive Method for 1-2 Family Dwellings 2007 edition.</p>

		<p>inch. Reference Gage No. is no longer used in referencing structural members & has been removed from the associated tables.</p> <p>The in-line framing tolerance in Section R804.1.2 has been revised to account for the special case of the bearing stiffener located on the back side of the joist.</p> <p>Section R804.3.1, Ceiling Joists, has been modified to include the latest provisions from AISI S230-07 & to improve the understanding of the application. Minimum ceiling joist size, ceiling joist bearing stiffeners, ceiling joist bottom flange bracing & ceiling joist splicing have been relocated into individual subsections to clarify the different requirements.</p> <p>In similar fashion R804.3.2, Roof Rafters, places information for raft size, rafter support brace, rafter splice, rafter to ceiling joist & ridge member connection, & rafter bottom flange bracing into separate subsections.</p> <p>Figure R804.3.2.1.2 has been added to clarify the new subsections on eave overhangs & rake overhangs.</p> <p>The extensive changes to Section R804 also include new tables on roof rafter spans & for framing members & fastening requirements.</p> <p>Wind exposure Category A has been deleted from the cold-formed steel provisions because it no longer exists is ASCE 7-05.</p>	
<p>R806 Attic Ventilation Modification: The attic ventilation requirements now permit methods & materials other than wire mesh for protecting openings against the entry of insects.</p>	<p>The 2006 IRC required metal wire mesh to prevent insects from entering the ventilated area.</p>	<p>The minimum opening dimension has been reduced from 1/8 in. to 1/16 in.</p> <p>Vapor retarders are broken into 3 classes based on properties associated with the rate of restricting the passage of water.</p> <p>The provisions for unvented attic spaces have been rewritten for accuracy & clarification.</p>	<p>The change recognizes that modern manufacturing techniques produce products with punched, slotted, or hidden ventilation openings that do not require traditional insect screening.</p>

<p>R807.1 Attic Access Clarification: Section R807.1 now prescribes the methods to measure the height of attics requiring access & the height above the attic access opening.</p>		<p>The new text clarifies that measurements are taken from the framing members & not from the insulation. In determining attic height, the measurement is taken from the top of the ceiling joist or truss bottom chord to the bottom of the rafter or truss top chord. Conversely, the minimum clearance height above the attic access opening is measured from the bottom of the ceiling joist or truss bottom chord.</p> <p>The other change to this section clarifies that access openings through a wall require a minimum height of 30 in.</p>	<p>The intent of this change is to resolve some confusion regarding the methods for measuring heights of attics & the required height above attic access, and to promote uniform application of the provisions.</p>
<p>R905.2 Asphalt Shingles Modification: The changes to the asphalt shingle provisions clarify the attachment & wind resistance requirements & correlate to the applicable ASTM standards.</p>	<p>R905.2 Asphalt shingles - the installation of asphalt shingles shall comply with the provisions of this section.</p>	<p>New tables provide asphalt shingle classifications based on design wind speed & whether the shingles are sealed in accordance with ASTM D 7158 or unsealed in accordance with ASTM D 3161.</p> <p>The valley lining provisions have been revised to reference the appropriate standard for the use of self adhering polymer modified bitumen underlayment in a closed valley application.</p> <p>The code now prescribes the minimum dimensions for step flashings.</p> <p>Editorial changes improve the mandatory language.</p>	
<p>R905.8.6 Wood shake Installation Modification: To improve longevity, the minimum spacing between wood shakes has increased to 3/8 in.</p>	<p>The 2006 IRC permitted keyway widths as small as 1/8 in.</p>	<p>The code now requires the space between adjacent wood shakes or keyway to be not less than 3/8 in.</p>	<p>The Cedar Shake & Shingle Bureau brought about this change.</p>
<p>R1001 & R1003 Masonry Fireplaces & Chimneys Modification: The 2009 IRC adds minimum thickness, parging, & lining requirements to the masonry fireplace smoke chamber provisions & references the applicable standards.</p>		<p>Masonry fireplace smoke chambers now specifically require protection from parging or clay flue liners able to withstand temperatures of 1800 degrees F.</p> <p>The new text in this section also references the appropriate ASTM standards & intends to preserve the integrity of masonry fireplaces.</p> <p>The references to protecting the cores of corbelled masonry units</p>	<p>The revised definition of masonry chimney provides consistency with language in the masonry fireplace & smoke chamber sections.</p>

		<p>has been removed.</p> <p>The revised definition for masonry chimney clarifies that approved materials include both solid & hollow masonry units be grouted solid. These materials are consistent with those approved for masonry fireplaces in Section R1001.5, Firebox Walls, and R1001.8, Smoke Chamber.</p> <p>Clay flue liners for masonry chimneys require a non water soluble refractory mortar in accordance with ASTM C 1283 & ASTM C 199.</p>	