



2006 *International Residential Code*[®]

The City and County of Broomfield Building Division has adopted the 2006 *International Residential Code*[®], effective February 28, 2008. **This handout will summarize the major changes in the 2006 IRC compared to the previously adopted 2003 IRC.**

1. The equivalent basic wind conversion table (R301.2.1.3) has changed the ratio of the 3 second gust figures relative to the fastest mile figures. When a structural engineer uses a 90 mph fastest mile design wind speed (as we have typically seen in Broomfield in the past) – this will now be converted to only 105 mph 3 second gust instead of 110 mph 3 second gust as in the 2003 IRC. The City & County of Broomfield has adopted 110 mph 3 second gust as our design wind speed. Section R301.2.1.3 requires that when the referenced documents are based on fastest mile wind speeds, the three second gust basic wind speed shall be converted to fastest mile wind speed using this table. Structural calculations now have to show 95 mph fastest mile wind speed in order to comply with our adopted 110 mph 3 second gust.
2. Table R301.5 now requires the design live load on the bottom chord of engineered roof trusses to be 20 psf instead of the typical 10 psf when there are two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high or greater by 24" wide or greater, measured between the top of the bottom chord and bottom of any truss member; and provided that the attic area is accessible by a pull down stairway or framed opening in accordance with Section R807.1, and the truss has bottom chord pitch less than 2 : 12. This may result in some trusses being designed for bottom chord loads differently than other trusses. It is the responsibility of builder to verify this before the frame inspection (before trusses are set).
3. Section R302.1 and Table R302.1 now requires that the minimum fire separation distance (distance from the exterior wall to the property line) shall be 5 feet in order for the exterior wall to be non fire-resistance rated. If the exterior wall is closer than 5' to the property line, it will need to be one hour fire-resistance rated (fire rated wall assembly tested from both sides).

Projections, such as eaves or soffits, shall not extend more than 12" into the area where openings are prohibited (i.e. no closer than 2 feet to the property line); and these projections shall be one hour fire-resistance rated on the underside with no openings (i.e. no soffit vents). **In the first printing of the 2006 IRC there is a discrepancy in the wording of Section R302.1 and the dimensions shown in table R302.1. The wording in the text is correct and the dimension in Table R302.1 showing 4 feet for minimum fire separation distance for projections should be 2 feet. This will be changed by errata from ICC.**

Penetrations in walls that are closer than 5' to property line will need to be protected in accordance with Section R317.3. This will include such items as electrical boxes for light fixtures, gas pipe entries, hose bibbs, etc.

Openings in walls located from 3' to 5' from the property line are restricted to 25% maximum of the wall area and allowed to be unprotected. Openings in walls less than 3' from the property line are prohibited.

4. 2003 Section R303.6.1 required the control for the mandatory stairway illumination to be accessible at the top and bottom of the stairway without traversing any steps. 2006 Section R303.6.1 deletes the language about not having to traverse any stairs and clarifies that wall switches are only required at top and bottom floor levels when the stair has six or more risers. This now corresponds with the National Electrical Code.
5. Section R308.4, exception #4 has been reworded to clarify that approved safety glazing shall be provided in a wall that is perpendicular to the plane of a door if the door swings towards this wall. This will now match the requirements in the IBC.
6. New Section R310.5 clarifies that when an emergency escape window (for bedroom or sleeping room) is located under a deck or porch the window shall be able to be fully opened and a path not less than 36" high shall be provided to a yard or court.
7. Section R311.4.3 was changed to clarify requirements for landings at exterior doors. The major change in this section is that door landing slopes are now regulated. They will need to have a slope that does not exceed 2%. This applies to any exterior door.
8. Section R319.1.5 now requires that glued-laminated timbers exposed to the weather and not properly protected by a roof, eave, or similar covering be pressure treated with preservative, or be manufactured from naturally durable or preservative-treated wood.
9. Section R323 was added to give guidance on requirements for elevators and platform lifts. This gives us direction to ASME A17-1 (the elevator code).
10. Section R408.3 now gives direction for "unvented" crawl spaces. There is still a Broomfield amendment regarding ventilation of a crawl area below a structural floor that is entirely below grade.
11. Section R613.2 now requires that where the opening of an operable window is located more than 72 inches above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finished floor of the room in which the window is located. Glazing between the floor and 24 inches shall be fixed or have openings through which a 4 inch diameter sphere cannot pass. This will also apply to windows that are directly above a basement window well.
12. Section R702.4.2 now requires the use of cement, fiber cement, or glass mat gypsum backers behind wall tile in tub and shower areas and behind wall panels in shower areas. Moisture resistant drywall (green board) is no longer acceptable in these areas.
13. **Section R703.4 now requires that, in areas where the basic wind speed is 110 mph or higher, attachment of exterior siding meet the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3). The contractor shall verify the fastening requirements with the manufacturer for all wall coverings.**
14. Table 703.4 now requires approved water resistive barriers behind all siding materials.
15. Section R905.2.6 will now require that asphalt shingle wrappers used in Broomfield have a label indicating compliance with ASTM D 3161, Class F.

16. Section R907.3, #4 does not allow an overlay of asphalt shingles on re-roofing since Broomfield is considered a “moderate” hail damage area per Figure R903.5.
Therefore all re-roof permits will require a complete removal of old roofing.
17. Chapter 11 (Energy Efficiency) has been revised in its entirety. Please also see the handout for the 2006 Energy Codes. One of the bigger changes is that Table N1102.1 will require the exterior wall insulation to be R-19 or R-13 with an R-5 insulated sheathing covering the exterior. There is an exception that allows the R-5 to be reduced to R-2 if structural sheathing covers more than 25% of the exterior. This will effectively not allow a 2 X 4 wall with the typical R-13 unless there is additional R-2 or R-5 insulated sheathing added. Installing R-15 within the wall without the insulated sheathing will not be approved since the intent is to have the insulated sheathing completely cover the entire wall framing. This applies for buildings using the prescriptive method of compliance. Builders will be able to use the performance method of compliance if they choose. This could consist of using a Home Energy Rating Service (HERS), which will check the overall performance of the house including appliances, insulation, and tightness of house. The HERS contractors also typically do blower door tests for the house and an air test to check for leakage in the ductwork. These tests are performed by approved third party companies and complete documentation shall be submitted to the Building Division. This method might still allow a builder to use 2 X 4 exterior walls, depending on the overall combination of elements within the building. The 2006 RESCheck is available and it appears to be very similar to the prescriptive tables. It does appear that you can use higher insulation values in 2 X 4 exterior walls but would need to drastically increase insulation values elsewhere to get the overall structure to comply.
18. Section N1103.2.1 will now require all ducts to be insulated to a minimum of R-8 when located in the attic (unconditioned space). Ducts located within floor trusses (also in unconditioned space) will need to be insulated to a minimum of R-6.
19. Section N1103.3 requires mechanical system piping that is capable of carrying fluids above 105 degrees F or below 55 degrees F to be insulated to a minimum of R-2.
20. Section N1103.4 requires circulating hot water systems to be insulated to a least R-2. Circulating hot water systems shall include automatic or readily accessible manual switch that can turn off the hot water circulating pump when the system is not in use.
21. Section N1103.5 requires that outdoor intake and exhausts installed for mechanical ventilation systems shall have automatic or gravity dampers that close when the ventilation system is not operating.
22. Section N1103.6 requires heating and cooling equipment to be sized as per section M1401.3 (Manual J).
23. Section M1302.1 requires that appliances regulated by this code to be listed and labeled for the application in which they are installed and used.
24. Section M1305.1 now requires appliances to have a level 30” wide and 30” deep working space unobstructed by other appliances, pipes or ducts.
25. Section M1305.1.3 and Section M1305.1.4 have a new exception that will allow access to appliances by unobstructed passageways up to 50’ long in attics and unlimited length under floors, provided that the passageway is not less than 6’ high and 22” wide. These provisions are also in IMC Sections 306.3 and 306.4.

26. Section M1308.3 is a new section requiring outdoor mechanical systems supported by foundations or supports to be raised at least 3" above finished grade and conform to the manufacturer's installation instructions.
27. Section M1401.3 requires heating and cooling equipment to be sized based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies. **We will start requiring this report which shows the sizes of heating and cooling equipment. This report shall be submitted for review and approval before building permit can be issued. This is also in IMC Section 312. See the Energy Code Handout for additional details.**
28. Section M1411.3.1, #4 is a new requirement for condensate disposal drain systems without a secondary drain or auxiliary drain pan to have a water level monitoring device installed. This device will shut off the equipment in event that the primary drain becomes blocked. This is also a requirement in IMC Section 307.2.3.1.
29. Section M1411.4 is a new section requiring Category IV condensing appliances that produce condensate to have an auxiliary drain pan where damage to any building component will occur due to condensate drain system stoppage. These pans will need to be installed in accordance with the applicable provisions of Section M1411.3. An exception allows fuel fired appliances that automatically shut down operation in the event of stoppage in the condensate drainage system (see G2404.10).
30. There is new Section M1501 that clarifies that all air removed by mechanical exhaust systems within the house needs to be discharged to the outdoors. This is also in IMC Section 501.2.
31. There is new Section M1502.2 that requires that the dryer duct exhaust termination be at least 3 feet in any direction from openings into the building. This is also in IMC Section 501.2.1.
32. Section M1502.6 has eliminated booster fans as a means to obtain an exception to the maximum length of dryer exhaust duct systems. A new exception #2 allows engineering calculations to determine the duct length reductions for bends where manufactured large radius 45 degree and 90 degree bends are installed. This may effectively increase the permitted maximum length of the dryer exhaust duct mandated by Section M1502.6.
33. Section M1507.2 now requires that exhaust air from bathrooms and toilet rooms be discharged to the exterior (not allowed to discharge to attic or crawl space). This is also in IMC Section 501.2. Note: the first printing of the 2006 IRC has typo errors in a few section numbers in this chapter.
34. Section M1601.1 requires that duct systems that serve heating, cooling and ventilation equipment be fabricated in accordance with the provisions of this section and ACCA Manual D or other approved methods. **We will start requiring this report which will show supply and return duct sizes and locations of all supplies and returns for all permits for new houses. This report and drawing shall be submitted to the Building Division for review and approval before rough mechanical inspection. This is also in IMC Section 603.2.**
35. Section M1601.3.1 now requires mechanical fasteners for use with flexible nonmetallic air ducts to comply with UL181B and to be marked 181B-C.

36. Section G2404.3 clarifies that appliances regulated by this code shall be listed and labeled for the application in which they are used.
37. Section G2405.3 prohibits cutting and notching of engineered wood products except as specifically permitted by the manufacturer or as designed through structural analysis by a registered design professional.
38. Section G2414.5.3 requires that corrugated stainless steel tubing be listed in accordance with ANSI LC 1/CSA 6.26.
39. Section G2414.6.3 now requires PVC piping used for gas regulator vent piping conform to UL 651 and cannot be installed indoors.
40. Section G2415.1 will now specifically prohibit gas piping to be run through other units in a townhome project. Each townhome unit will have to have an individual gas line feed from the exterior.
41. Section G2415.5 now requires that gas piping that is other than black or galvanized steel to be protected by nail plates $\frac{1}{16}$ " thick when located within $1\frac{1}{2}$ inches of the nearest edge of the framing member.
42. Section G2415.6 now has additional requirements for gas piping installed in solid floors. Piping not installed in an accessible channel shall be run in conduits that extend at least 2" above floor and vented to the outdoors.
43. Table G2420.1.1 has been added to show the required manual gas valve standards for various pressure applications.
44. Section G2421.1 requires line gas pressure regulators be listed per ANSI Z21.80.
45. Section G2426.7 is added to require protection against damage for all appliance vents that are located within 1.5" from surface of framing members; shield plates shall be $\frac{1}{16}$ " thick steel, extending a minimum of 4 inches to each side of the framing members in the area of the vent.
46. Section G2428.3.9.1 clarifies that tee and wye fittings for appliance vents be considered as part of common vent and be constructed of materials consistent with that of the common vent.
47. Section G2428.3.16 clarifies that a Type B vent shall not be considered exposed to the outdoors where it passes through an unventilated enclosure or chase that is insulated to a value not less than R-8.
48. Section P2601.1 will now allow the installation of plumbing systems not addressed by the IRC, provided that they comply with the applicable provisions of the IPC.
49. Section P2708.1 has a new exception #2 that allows shower compartments to have not less than 25" in minimum dimension measured from the finished interior dimension of the compartment provided that the compartment has a minimum of 1,300 square inches of cross sectional area. This is also in IPC Section 417.4.

50. Section P2708.1.1 is a new section that requires the shower compartment access and egress opening to have a minimum clear and unobstructed finished width of 22". This is also in IPC Section 417.4.2.
51. Section P2708.3 includes a new sentence at the end clarifying that in-line thermostatic valves cannot be used for compliance of shower or tub/shower mixing valves. This is also in IPC Section 424.3.
52. Section P2708.4 is a new section that requires hand held showers to conform to ASME or CSA standards and be provided with a backflow device. This is also in IPC Section 424.2.
53. Section P2713.3 will now require temperature limiting devices conforming to ASSE 1070 for bathtub and whirlpool tub valves (unless protected by a complying combination tub/shower valve per Section P2708.3). These shall limit the water temperature to 120 degrees, matching the requirements for shower valves. The typical temperature limiting device requires some sort of access. This is also in IPC Section 424.5.
54. Section P2720.1 now specifies access opening sizes for circulation pumps. Where the manufacturer's installation requirements do not specify the location and size, a 12 inch by 12 inch minimum size access opening shall be installed to provide access to the circulation pump. Where pumps are located more than 24" from the access opening, an 18 inch by 18 inch access opening shall be provided. In all cases, the access opening shall be unobstructed and be of the size necessary to permit the removal and replacement of the circulation pump. This is also in IPC Section 421.5.
55. Section P2721.2 will now require that the discharge water temperature from a bidet fitting be limited to 110 degrees by a water temperature limiting control device conforming to ASSE 1070. The typical temperature limiting device needs some sort of access. This is also in IPC Section 408.3.
56. Section P2801.5.1 will now clarify what type of piping material will be allowed for water heater safety pan drains (Table 2904.5). PVC piping will not be allowed. This is also in IPC Section 504.7.1.
57. Section P2803.6.1 has been reformatted and will now clarify piping requirements for water heater temperature and pressure relief valve discharge piping. This is also in IPC Section 504.6.
58. Section P2903.8 has added a new water piping design concept called a gridded system where every water distribution pipe is interconnected to provide two or more paths to each fixture supply pipe. This looped design helps balance the pressure throughout the system.
59. Arc-fault circuit interrupters shall be of the combination type.
60. Effective July 1, 2008, all branch circuits supplying outlets in dwelling unit family rooms, dining rooms, living rooms, parlors, dens, bedrooms, libraries, sunrooms, recreation rooms, closets, hallways, and similar rooms or areas shall be protected by a listed combination-type arc-fault circuit interrupter in accordance with 2008 NEC Article 210.12 (B).