

Summary of Significant Changes from the 2003 Model Codes to the 2006 Model Codes

Significant Changes in 2006 Uniform Plumbing Code (UPC)

UPC 313.12.4 Rat proofing. – Includes a new way of rat proofing.

UPC deletion after 405.3 Prohibitive Fixtures.– Fixtures constructed of concrete and cement materials had been prohibited in the past because they were not smooth or impervious. This is no longer the case due to new materials used to seal concrete and cement so it can meet the smooth and impervious test and is allowed as a material for designer sinks.

UPC 505.1 Water heater requirements; location. – Now requires a closet with door with gasket and self closing door and no other use of the closet. This change meets NFPA 54 and 80 requirements for water heater in bedrooms and bathrooms in a closet.

19.06.1.604.2 Materials. –The exception is deleted due to the observed history of pin hole leaks with the use of Type M copper. Many installations in Juneau have had problems with pin hole leaks and typically Type M copper was used.

19.06.1.704.3 Fixture connections (drainage). In order to be consistent with ADEC requirements it was determined that no part of 2006 UPC 704.3 will be proposed to be deleted. This will result in a change that designers will need to be aware of; certain commercial kitchen fixtures will need a separate floor drain.

UPC 710.13 Macerating toilet systems. – This is an important change which deleted requirement that a macerating toilet system could be used only in a single user situation. Impact is that now it could be allowed in commercial buildings.

19.06.1.UPC Appendix L Alternate plumbing systems. – Must use double wall heat exchangers or use of single wall heat exchangers only if no propylene glycol or any other additives unless they can show the substance is essentially non-lethal/or Class 1 toxicity rating.

Significant Changes in 2005 National Electrical Code (NEC)

19.08.100(1) Definitions; general. – Definition of “abandoned” further modified to be “of all types” This change will decrease fire loads.

NEC 200.7(C)(1) – Added a sentence to the end defining the required identification of the insulation where it is white or gray or has three continuous white strips and is used for other than a grounded connector.

NEC 210.8(A)(7) – Added laundry, utility, and wet bar sinks to rooms in which GFCI protection is required when receptacles are installed within 6 ft. of edge of sink.

NEC 210.8(B)(2), (4), and (5) – In buildings other than Dwelling Units GFCI protection will now be required in commercial and institutional kitchens, outdoor public spaces, and other outdoor locations where installed to comply with 210.63.

NEC 210.8(C) – Boat hoist locations will now be required to have GFCI protection for outlets that supply boat hoists installed in dwelling unit locations.

19.08. 210.11 (C) Branch circuits required; dwelling units. – CBJ local modification to this section has been further modified to increase clarity of this section by adding a requirement that garbage disposals need to be on their own circuit. NEC as written indirectly says this by saying what garbage disposals can not be added to. By default the only circuit it could be added to would be a light circuit which causes problems due to surges of lights dimming and overloading the circuit.

NEC 210.12(B) Arc-Fault Circuit-Interrupter Protection. – Combination type changed. After January 1, 2008 it has to be new type of AFCI and that AFCI can be at other than origin of branch circuit.

NEC 250.118(5)(d) – Requires that if flexible metal conduit is used where flexibility is necessary, an equipment grounding conductor shall be installed.

NEC 300.4 (A) through (E) – Revises protection requirements for cables and raceways.

The following sections are noted as a significant change that electricians and inspectors should be aware of:

NEC 314.23(B)(1.) Conductor Fill

NEC 314.27(D) Boxes for Ceiling Fans

NEC 314.30 Handhole Enclosures

NEC 330.30(D)(2) MC Cable Support

NEC 334.15(B) & (C) Cable Protection

NEC 334.80 Revised Ampacity for NM cables

NEC 353 High density polyethylene conduit: type HDPE conduit. – New product

19.08.334.14 Nonmetallic-sheathed cables: Types NM, NMC, and NMS; abandoned cables. For clarification a local modification to this section was added to require the accessible portion of abandoned cables shall be removed.

NEC 404.8(B) – New requirement for switches.

NEC 406.8(C) – Prohibits receptacle in shower or bath area.

NEC 408.4 – Requires circuit directory or circuit identification.

NEC 408.7 – New section for unused openings.

NEC 409 – New Article for industrial control panels.

NEC 410.4(D) – Revised requirements for luminaires in bathtub and shower areas.

NEC 410.4(E) – New subsection for luminaires in sports facilities.

NEC 410.14(B) – Revised wording to clarify access requirements for luminaire boxes.

NEC 410.73(F)(5) – New subsection for metal halide lamps which is effective January 1, 2008.

NEC 410.73(G) – New subsection for fluorescent ballast disconnects which is effective January 1, 2008.

NEC 422.12 Exception 2 – New exception permits air conditioning on the same branch circuit as heating.

NEC 422.16(B)(4) – New requirements for range hoods limit application of cord-and-plug connections.

NEC 2005 Section 422.31(B). – The IRC doesn't require the disconnecting means to be locking or within sight therefore this provision of the NEC will apply to IBC scope buildings only. IRC and NEC conflicts in the requirement.

NEC 422.51 – New section requires GFCI protection for vending machines.

NEC 430.102(B) – Revises locking requirement for motor disconnect.

NEC Part X – New part for adjustable-speed drive systems.

NEC 440.14, Exception 1– Revises locking requirement for equipment disconnect.

NEC 513.12 – New section requires GFCI protection in airplane hangars.

NEC 514.13 – Revises locking requirement for equipment disconnect.

NEC 605.6 – Revises disconnect requirements for multiwire branch circuits supplying power to fixed-type partitions.

NEC 605.7 – Revises disconnect requirements for multiwire branch circuits supplying power to freestanding-type partitions.

NEC ARTICLE 682 – New article that applies to the installation of electrical wiring for, and equipment in and adjacent to natural or artificially made bodies of water.

NEC 725.56(F) – New section for audio system circuits.

NEC 760.21 – New section clarifying smoke detection and alarms are not on the same circuit as ground-fault circuit interrupters or arc-fault circuit interrupters.

Significant Changes in 2006 International Fire Code (IFC)

19.10.405.10 Emergency evacuation drills; false alarms. – Although this CBJ modification was in the code last adoption cycle it is important for the public to take note that false alarms may not be counted as a fire drill for the purposes of this section.

19.10.510.2 Fire department access to equipment; electrical disconnect. – Added to clearly state where the Fire Department wants an electrical disconnect for buildings.

Add a new subsection as follows:

"510.2 Electrical disconnect. Electrical disconnects or shunt trip controls for a building shall be accessible from the exterior of the building or in a room with direct access to the exterior. Such room shall be separated from remainder of the building by construction capable of resisting the passage of smoke. Doors shall be self-closing or automatic-closing upon detection of smoke. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80."

19.10.605.10 Portable electric space heaters. – New local modification created per fire department recommendation to address the high risk of fires in buildings containing Group I occupancies and in buildings over 35 feet high by prohibiting the use of portable electric space heaters. On large buildings the Fire Department has huge challenges relying on a volunteer force with the delays that this creates. Some of our large buildings do not have sprinklers in them. (State Office Building is one.) With the large number of plastic trash cans and other combustibles in office spaces it is very common to find space heaters under desks. The buildings that fall under this section would be large office buildings that mostly have a huge impact on the community if there is even a small fire. One of the leading causes of fires in the CBJ is misuse of space heaters and most are plugged into extension cords violating the UL listing.

IFC 901.9 Recall of fire protection components. – This new provision provides a regulatory basis to require recalled fire protection system components be replaced and authorizes fire code official to enforce the recall. Also owners are required to notify fire code official when replacement is complete.

19.903.2.1.2 Automatic sprinkler systems; Group A-2. – CBJ modification of the IFC reduces the occupant number from 100 to 50 as the threshold to require automatic sprinkler systems. This was recommended due to Juneau's local condition of small size bars on So. Franklin St.

IFC 903.2.7 Automatic sprinkler systems; Group R. – This section requires all R occupancies to be sprinkled if under the scope of the IBC. The sprinkler requirement does not apply to R occupancies under the IRC (International Residential Code.) The state fire marshal regulations have removed exception 1 so CBJ must also remove the exception. The following CBJ exceptions have been deleted and no longer allow exemption from sprinkling requirement:

1. Occupant Group R-1, where guestrooms are not more than three stories above the lowest level of discharge and each guestroom has at least one door leading directly to an exterior exit access that leads directly to approved exits.
2. Occupant Group R-2, if the R-2 fire area is less than two stories in height, including basements, or where there are less than sixteen dwelling units or sleeping rooms.

IFC 903.3.1.2.1 NFPA 13R sprinkler systems; balconies and decks. – Sprinklers were required for balconies in the 2003 edition. This section has been modified in the 2006 IFC to also include decks on some multifamily dwellings.

IFC 1003.2 General means of egress; ceiling height. – The means of egress is now required to have a minimum height of 7 feet 6 inches. The previous requirement was 7 feet. There are exceptions for projections and doorways. This provides consistency between IBC code section 1208.2 and IFC section 1003.2.

IFC 1004.1 Design occupant load. – A new exception that allows the building official to assign an occupant load that is less than the calculated requirements of Table 1004.1.1 on a case by case basis. Previously the highest occupant load by using either the Table 1004.1.1 or actual number if higher than calculated number was required and there were no provisions for situations where the actual number was to be less than the calculated number. In addition, changes in this section give the building official guidance to select occupant load factors when a use is not listed in Table 1004.1.1.

Significant Changes in 2006 International Mechanical Code (IMC)

IMC 304.3.1 Parking garages. – New paragraph spells out separation requirements between a room containing fuel fired appliances and a parking garage.

IMC 306.5.2 Equipment and appliances on roofs or elevated structures; electrical requirements. – Requires a receptacle be provided near mechanical equipment on roofs.

IMC 506.3.3.1 Grease duct test. – (first edition of IMC) and located at section 506.2.5 (third edition of IMC). This new code section requires a test to be performed in the presence of a code official prior to use or concealment of any portion of grease duct.

IMC 507.1 Commercial kitchen hoods; general. – Requires Type I range hoods to automatically activate when cooking operations occur.

IMC 510.6.1 Hazardous exhaust systems; fire dampers. – This section was revised to prohibit fire dampers in hazardous ducts. It is important for designers and inspectors to be aware of this change.

IMC 603.17.2 Registers, grilles and diffusers; prohibited locations. – Includes a new paragraph that prohibits grilles to be located in the floors of toilet or bathing rooms that are required to have hard non-absorbent floors.

IMC 1105.9 Emergency pressure control system. – This new section requires an emergency pressure control system where refrigerant systems contain more than 6.6 pounds of flammable, toxic, or highly toxic refrigerant or ammonia.

IMC 1301.5 Tanks abandoned or removed. – This section clarifies that fill piping is to be removed when a fuel tank is abandoned.

Significant Changes in 2006 International Building Code (IBC)

IBC 402.11 Children's playground structures. – Under the covered mall building code section there are new regulations with respect to children playground equipment that exceed 10 feet in height or 150 sq. ft. in area.

IBC 406.2.5 Ramps. – Vehicle ramps can count as required exit if meet pedestrian requirements.

IBC Table 414.2.5(2) Maximum allowable quantity of flammable and combustible liquids in wholesale and retail sales occupancies per control area. – New table.

IBC 502.1 Definitions; basement. – One of the three methods (50% of perimeter method) utilized for identifying when a basement must be considered as a story above grade plane was eliminated.

IBC 505.2 Exception 2 Mezzanines; area limitations. – New exception for mezzanines which allows area to be increase to 1/2 the floor area below instead of the previous limitation of 1/3 the floor area below. The building must be of Type I or II construction, be fully sprinkled and have emergency voice/alarms communication systems installed.

IBC 506.4.1 Mixed Occupancies. – New method of working with mixed occupancies where separated use provisions of 508.3.3 are applied. The sum of ratio is allowed to equal 2 for 2-story building and 3 for 3-stories and more type buildings.

IBC 507.3 Exception 3. Unlimited area buildings; sprinklered, one story. – New exception that allows A-1 and A-2 occupancies of other than Type V construction to be located in one-story unlimited area buildings, provided they meet the criteria of construction type, occupancy separation, floor area and means of egress.

IBC 508 Mixed use and occupancy. – All requirements from Section 302 in the 2003 IBC have been relocated to Chapter 5 in the 2006 IBC. The incidental use Table 302.3.2 in the 2003 IBC has been relocated to Chapter 5 Table 508.3.3 in the 2006 IBC.

IBC 508.3.1 Accessory occupancies. – This section has been moved to Chapter 5 and reformatted. Technical criteria for accessory occupancies have been revised. Accessory occupancies are not allowed to be increased with height and area increases allowable under Sections 504 and 506. The revised provisions clarify that accessory uses are to be classified individually on the basis of use, rather than the occupancy of the buildings major use when applying other code sections such as means of egress, accessibility requirements, and plumbing fixture requirements. Sprinkler requirements in Chapter 9 are based on the most restrictive requirements of the accessory uses and major use are to be applied throughout the entire building.

IBC 508.3.1 Exception 2 Mixed use and occupancy; accessory occupancies. – Assembly areas accessory to Group E occupancies are not considered separate occupancies except when applying Chapter 11, assembly requirements still apply.

IBC 508.3.1.1 Occupancy classification. – Accessory uses shall be individually classified except that in regard to section 403 (high rise buildings) and Chapter 9 (fire protection systems) the most restrictive use is to be applied to the entire building.

IBC 508.3.1.2 Allowable height and area. – Area and height increases do not apply to accessory uses. Area and height increases only apply to the main occupancy.

IBC 508.3.1.3 Separation. – No separation is required between accessory and main use unless it falls in the H occupancy exception in this section.

IBC 508.3.2.1 Occupancy classification. – Clarifies that when there are non-separated uses that the most restrictive use requirements of Chapter 9 and Section 403 (high rise) applies but other code requirements apply specific to each occupancy.

IBC Table 508.3.3.3 and Section 508.3.3 Separated occupancies. – These provisions have been relocated from chapter 3 but are essentially unchanged.

IBC Table 602 Fire-resistance rating requirement for exterior walls based on fire separation distance; footnote d. – Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.

IBC 704.2.3 Combustible projections. – Fire retardant wood is now allowed where 1-hr fire resistant rated construction was required for combustible projections.

IBC Table 704.8 Maximum Area of exterior wall openings, footnote i. – New footnote that added “by Table 601 or 602”, this change means that if Tables 601 and 602 do not require fire-resistance-rated exterior walls then Table 704.8 does not apply and there is no limit on openings in exterior walls.

IBC 706.2.1 Fire-resistance-rated glazing. – This change allows fire-resistance-rated glazing to be used as a fire barrier and evaluated as a wall. Change in this section also specifies label/listing requirements for such glazing.

IBC 715.4.6.3.1 Identification. – New subsection that specifies identification requirements for glazing located within fire-door assemblies.

IBC 1003.2 Ceiling height. – Changed requirement for ceiling height from 7’ to 7’-6” to be consistent with section 1208.2 Interior space dimensions so height requirements for all parts of means of egress are the same.

IBC 1003.3.2 Free standing objects. – Changed requirement from 12” to 4”, which is consistent with protruding objects requirements under ICC/ANSI A117.1-2003 accessibility standards.

IBC 1004.1.1 Occupant load; areas without fixed seating. – New exception in areas without fixed seating that allows an option of using the actual number of occupants where approved by the building official.

Table 1004.1.1 Occupant load; maximum floor area allowances per occupant. – added a new category for Day Care to be calculated at one occupant per 35 sf net.

IBC 1007.1 Accessible means of egress. – Exception #2 has been modified so that platform lifts are now permitted to be an element in the accessible means of egress under certain qualifying conditions.

IBC 1008.1.6 Thresholds. – The exception in the section has been modified so that instead of ½ ” a 7 ¾” threshold is allowed for exterior doors that do not swing over a landing or step. This applies to Groups R-2 and R-3 when these doors are not components of the required means of egress and not on a accessible route as required by Chapter 11 and the door is not part of an Accessible unit, Type A or Type B.

IBC 1008.1.9 Panic and fire exit hardware. – A paragraph is added requiring panic hardware in electrical rooms with equipment rated greater than 1200 amperes or that is greater than 6 ft wide. These changes are in line with changes in the NEC.

IBC 1013.6 Guards; roof access. – New section that mandates guards in all applications where a roof hatch is provided and located within 10 feet of a roof edge due to the fact that the roof is used as a staging or work area and to provide minimum safety to persons using the roof in times of darkness or inclement weather. Openings in these guards are to prohibit the passage of a 21” diameter sphere consistent with guards for other elevated areas not accessible to the public.

IBC 1105.1 Accessible entrances; public entrances. – This IBC section has been changed to increase the number of required accessible public entrances from 50% to 60% of public entrances present.

IBC 1109.2 exception 3 Toilet and bathing facilities. – Has a change in the 2006 that increases the number of accessible toilet or bathing rooms where a multiple rooms are clustered in a single location from 5% to 50% of the total number of rooms. Also toilet and/or bathing rooms designated for use by children in day-care and primary school occupancies must now be accessible as that exception was deleted in the 2006 IBC.

IBC 1405.12.2 Window sills. – New code provision requiring a guard on openable window in R-2 occupancies if the sill height is less than 24 inches from the floor and the window is greater than 6 ft. to the finish grade or other surface below. Measurement is to be from the lowest point of the window opening. Where guard is to be used on a window required for emergency escape and rescue, it must comply with ASTM F2090, addressing window fall prevention devices with emergency egress release mechanisms.

1504.8 Gravel and stone. – New code provision that prohibits the use of gravel or stone on roofs with a table that prohibits the use based on wind speed, height of the building, and exposure category. This will apply to areas in Juneau.

IBC 1604.10 Wind and seismic detailing. – Lateral-force-resisting systems shall meet seismic detailing requirements and limitations prescribed in this code and ASCE 7, even when wind code prescribed load effects are greater than seismic load effects.

IBC 1605.3.1 Basic load combinations. – Equation 16-15 has been changed so the reduction value was changed to .7 from 1.0 earthquake load. The complexity has increased but the loads have decreased. Change in complexity is a result of reacting to the Northridge earth quake.

IBC 1605.3.2 Alternative basic load combinations. – Where wind load is counteracted by the mass of the building, then the dead load shall be calculated as 2/3 the actual building mass.

IBC 1607.5 Partition loads. - Live loads for partitions have decreased from 20 psf to 15 psf. In office buildings and in other buildings where partition locations are subject to change, provisions for partition weight shall be made, whether or not partitions are shown on the construction documents, unless the specified live load exceeds 80 psf. The partition load shall not be less than a uniformly distributed live load of 15 psf.

IBC Table 1704.7 Special inspections; soils. – Soils inspection requirements are now in this table. Continuous special inspection is now required during the placement of controlled fills greater than 12 inches deep. This new requirement will add costs to projects.

IBC 1706 Structural tests and special inspections; contractor responsibilities. – Contractor responsibility now has its own section. Contractor has to sign that they are aware of special inspection requirements.

IBC 2308.9.3.2 and associated figure. Alternate braced wall panel adjacent to a door or window opening. – Contains a new prescriptive method for providing a narrow braced wall panel adjacent to a large window or door opening.

Significant Changes in 2006 International Residential Code (IRC)

IRC 19.04.R309.1 Garage; opening protection. – 2003 IRC removed the requirement for self closers as fire statistics have proven fires are from kitchen and not the garage. Committee decided to delete the self closer requirement of Title 19 and to use 2006 IRC as written but to still retain the requirement that door openings between the house and garage shall be equipped with tight-fitting doors.

IRC 408.3 Unvented crawl space. – New section that adds requirements for mechanical ventilation to allow for unvented crawl spaces. This section has been modified at CBJ 19.04.408.3.

IRC R506.2.4 Reinforcement support. – This is new section that requires slab-on-grade reinforcement to be suspended so as to remain in place, from the center to the upper one third of the slab, for the duration of the concrete placement. This will prohibit the practice of pulling up mesh after the concrete has been poured.

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IRC R602.11 Framing and connections for Seismic Design Categories D₀, D₁, and D₂. – New requirement for all anchor bolts on braced wall lines to have 3" x 3" square washers. To allow for bolts to be installed close to the sheathed side of the braced wall, washers with diagonal slotted holes are permitted, with a standard cut washer added under the nut.

IRC R613.1 Exterior windows and glass doors; general. – New requirement that requires flashing on windows to be per the manufactures instructions. Incorrectly installed window flashing has shown to be the cause of rot in walls in Juneau.

Table R602.3(5), Maximum Stud Spacing - 116 mph and Table R602.3(6), Maximum Stud Spacing – 105 mph. – The tables are changed to accommodate the modified wind speeds from 120 to 116 mph and 110 to 105 mph; removal of SPF type studs which are rarely used in Juneau as they are a special order and more expensive, and to include 2 x 4 stud sizes in the few situations where the calculations work.

IRC R613.2 Window sills. – New window restrictions to prevent children from falling through operable windows were opening are 24 inches or less from the floor when window is greater than 72 inches above the ground. Openings must be less than 4 inches unless guards are provided. Statistics from ICC say that more than 1000 children a year fall through windows.

IRC R613.5 Vehicular access doors. – New section that requires testing for vehicle access doors. This will mean doors used for garages for vehicles will need to be listed for that use.

IRC Table R703.4 Exterior Covering; attachments. – There are increased requirements for water-resistant siding attachment and added sizing 6 d, 8 d nails, etc in this Table.

IRC Chapter 11 Energy Efficiency. – This chapter in the 2006 IRC was completely rewritten and reformatted. Title 19 previous local modifications to this chapter were examined in light of this rewrite. The changes are mostly formatting changes. There are a couple of contractor related changes addressing certification of R-values for blown and spray-on insulation that should be reviewed by contractors. Also a certificate will be required to be attached in or on the electrical panel listing all R-values and U-values of building components.

IRC M1305.1 Appliance access. – New wording that specifies a working space.

19.04.E3603.2 Kitchen and dining area receptacles. – Adds a new sentence to require a separate 20 ampere circuit for each garbage disposal.

IRC E3605.4.4 Conductors of Type NM cables. – Revises the ampacity for NM cables where more than two NM cables containing two or more current-carrying conductors are bundled together and pass through wood framing that is to be fire- or draft-stopped using thermal insulation or sealing foam.

19.04.E3802.11 Ground-fault and arc-fault circuit-interrupter protection, bedroom outlets. To be deleted from Title 19 as GFCI and Arc-fault circuit-interrupter protection is now covered by the appropriate model codes.

IRC E3802.12 Arc-fault protection of bedroom outlets. – Revised section on arc-fault protection. A combination AFCI is now required. Combination AFCI combines the arc detection of a branch/feeder AFCI with low level series arc detections. The protection is for the branch circuits and outlets.

IRC Table E4001.5 Disconnection means. – Revises locking requirement for appliance disconnect.

IRC Table E4102.3 Double insulated pool pumps. – Revises the allowable applications for wiring methods.

Significant Changes in 19.01 Administration Code

19.01.102.8.1 Historic Buildings; repairs, alternations and additions. – After consultation with CBJ historic issues planner, this section as been deleted as work in Historic buildings is covered under the International Existing Building Code (IEBC).

19.01.105.2.5 Exempt plumbing work. – The replacement of electric or indirect water heaters of the same size and configuration that is accomplished without modifying piping or electrical branch circuits accessory to one and two family dwellings, or townhouses has been added to the exempt from permits list.

19.01.105.2.7.1 Ordinary maintenance and replacement work. – A new paragraph to be inserted after the existing first paragraph in this section will address the scope that \$50,000 is considered a major renovation and thus qualifies for permit issuance and subsequent sales tax exemption for building materials. This will address concerns of local builders that do major remodels or renovations that is a combination of exempt and non-exempt work typically found when there is a fire or frozen pipes.

19.01.108 Fees. – Hourly fees have been increased from \$50 to \$54 to reflect the total hourly cost to the City and Borough of Juneau, whichever is greater. Review of building division expenses show this basic cost needs to be updated. The last time these charges were updated was 5 years ago. Starting fee for permit valuations has been adjusted to be at least the minimum fee of one hour.

03.30 Code Enforcement - Fine Schedules for Fire and Building Codes

03.30.057 Fire Code Fine Schedule. – New offenses have been added to allow citations to be written for obstruction of fire access roads; unlawful obstructions of fire protection water supplies; work performed without fire suppression or fire alarm installer license; and unlawful maintenance of means of egress.

03.30.064 Building Code Fine Schedule. – New offense has been added to allow for citations to be written for failure to obtain cross connection control inspection.