fort collins building & zoning
281 N. College Ave., P.O. Box 580; Fort Collins, CO 80522-0580; Voice: 970 221 6767 FAX: 970 224 6134

Fort Collins Amendments
Quick Reference Guide to

2003 International Residential Code

Section	Explanation
Administration	
R101.2	Applies to single family detached and attached townhome
R102.4.1-4	References to IBC shall mean 1997 UBC, IPC shall mean 2003 IPC
R102.8	References areas prone to flooding; see City Code chapter 10
R105.2	Permit exemption list
R105.3.2	**New**; Applications expire in **90 days,** one time extension of 90 days for cause
R105.5	Permits expire in 180 days, two extensions of 180 days allowed. All exterior components of a project shall be completed within 24 months.
R105.9	Permit number and address displayed and readable from the street
R105.10	Permits can be transferred, request in writing $50.00 fee, changes in plans require re-review and plan review fee
R106.1.3	Structures located in flood hazard areas, reference City Code chapter 10
R106.1.4	Applications shall include site grading plan
R106.1.5	Construction documents (exterior wall envelope) shall show details for energy, moisture control, materials, structural etc. with supporting data.
R108.1-6	Fees
R109.1.6	ILC Improvement Location Certificate is required
R112.1-4	Building Review Board process
R113.4	Violations are misdemeanor, tickets will be issued, fines of up $1,000.00/day
R113.5	Commencing work prior to permit, penalty fee of $50.00-$1,000.00 first time.
Definitions	
Basement	72 inches from basement floor to underside of framing above
City	**New**; as defined in the *Code of the City of Fort Collins*
Crawlspace	**New**; less than 72 inches from crawl surface to underside of framing above
Dwelling	As defined in the *Land Use Code*, copies attached
Dwelling Unit	As defined in the *Land Use Code*, copies attached
Family	**New**; as defined in the *Land Use Code*, copies attached
Floor Area	**New**; defined as surrounded by exterior walls
Grade	Includes the 5 foot rule in the current UBC
Habitable Space	Includes rooms for bathing and personal hygiene
Room, sleeping	**New**; room with the primary purpose as sleeping
Site	**New**; parcel of land bounded by property lines or right-of-way
Townhouse	Defines bounded by property lines and deeded
Unusually tight construction	Air infiltration rate of 0.40 air changes per hour (ACH) or less
Wall retaining	**New**; not supported at top and resist a lateral load

General Req.	
Tbl. R301.2(1)	Design criteria table,
R301.2.1.5	Basic wind speed 100 MPH, Exposure B
R302.1	**New**; exception 2, detached garages on one site with dwelling, separated by less than 36 inches, may have separation on garage side of ½ gypsum board
R303.1	**New**; ex. 3 allows open patios and sunrooms screened or 40 percent open to be used for natural ventilation
R303.2	**New**; ex.1 use of adjoining room for light and ventilation requirements
R303.7.2	**New**; required glazed openings permitted to open into open patios, screen sunrooms when sunroom ceiling height of 7 feet.
R303.8	Heating system shall be permanent
R304.2	Minimum room square footage, except bath and toilet rooms
R304.3	Minimum room dimension, except bath and toilet rooms
R305.1	Minimum ceiling height of 90 inches, (7.5 feet)
R309.2	Allows the garage side separation to use ½ inch fire-retardant treated wood, and clarifies new exception 2 of R302.1
R310.1	Requires all basements, regardless of habitability, to have an egress window and such window shall open onto yard, court, street or alley, **New**; except mechanical equipment basements 200 sq ft or less.
R310.2	**New**; ex 2, allows the window well to be stepped. Per itemized requirements
R311.2.1	Requires **all** exterior balconies to be anchored per section.
R311.4.3	Exception amended to allow 2 risers on the exterior side of a door.
R311.4.3	Second exception; landings at an exterior door, not more then 7 inches below top of threshold.
R311.5.3.1	Identifies minimum riser height of 4 inches
R311.5.8.1	Spiral stairs allowed as a required exit when serving 400 sq ft or less
R311.6.3.1	Ramp handrails are to be measured from vertical
R312.1.1	**New**; area wells within 36 inches of walking/or other defined surfaces requires guardrails, with exceptions
R313.1	**New**; ex 4, requires additional smoke detectors when ceiling height changes 24”
R316.6	**New**; Glass and mineral fiber insulation installed on walls or framing less than 72” from the floor is required to be protected by gypsum or equivalent
R317.1	**New**; in 2 family dwellings, separation not required when fire sprinkled, attic separation alternates.
R317.2.1	Adds property line to townhome walls
R317.2.2	Adds property line to townhome walls regarding parapet requirements and **New**; alternates to parapet construction as detailed in the 1997 UBC.
R318.1	Moisture control requirements
R318.2	**New**; Moisture control during construction required, no substantial of moisture in under floor space at time of CO
R322.1	Accessibility requirements when 4 or more units and reference to State of Colorado, Federal and building code requirements
R323.1	Flood hazard design per City code chapter 10
R323.1.3.1	**New**; Flood hazard, cumulative impact requirements
R323.1.7	Flood hazard, wood materials requirements
R323.2.2	Flood hazard, areas below flood level opening requirements
Foundations	
R401.1	Foundations, design requirements
R401.6	**New**; Backfill and placement around foundation requirements

R403.1.4	Footing minimum depth requirements with **New**; exceptions for detached accessory structures less than 400 sq ft and 10' in height and self supported decks
R403.1.6	**New**; exceptions 2 & 3 for short wall foundation anchorage
R404.5	**New**; retaining wall requirements
R405.1	Unless designed to daylight, masonry and concrete foundation drainage systems required to terminate at sump, with electric power and discharge pipe at least 60" away from the building.
R405.1.1	**New**; landscape irrigations system shall not irrigate within 60 " of the foundation
R406.1	Masonry and concrete foundation damp-proofing requirements
R406.2	Masonry and concrete foundation water-proofing requirements
Under floor space	Ventilation required
R408.1.1 thru R408.2	**New** Under floor space ventilation requirements based on: above grade floors, below grade floors, under floor space conditioned or mechanically ventilated.
Table R408.2.2	**New**; under floor space, through floor transfer opening sizes.
Figure R408.2.2 (1)	**New**; Under floor space ventilation detail using conditioned space above.
Figure R408.2.2 (2)	**New**; Under floor space below grade floor details
R408.3	**New**; Access and ventilation under designed, sealed, inorganic floor systems not required.
R408.7	**New**; Under floor minimum clearances where expansive soils, unless designed
Floors	
R506.2.4	**New**; Slab on grade required to be reinforced with welded wire of steel
Walls	
R602.6	Drilling and notching of stud requirements
R613.2	Exterior window installation and flashing requirements on site for inspection
R613.2.1	**New**; interior openable window sill height of at least 24" off the floor when 72" or more above grade below
Wall coverings	
R702.3.7	**New**; requirements for gypsum board installed in horizontal diaphragms
R702.4.4	**New**; Tub and shower enclosure tile backer material requirements
R703.1	Exterior wall weather resistive requirements and testing standards
R703.2	Exterior wall weather resistive membrane requirements, installation and location
Roof/ceiling	
R801.3	All dwellings required to have a roof drainage system that will discharge all roof water minimum of 5' from the foundation
R802.11	Roof assemblies required to be connected to framing, providing a continuous load path to the foundation that resist uplift per Table R802.11
Roof assembly	
R902.1	Roof covering Class A with exceptions for existing buildings
R905.1	Roof covering application per Table R301.2 (2) for height and exposure.
R905.2.6	Asphalt shingle attachment per manufacturer and/or height and exposure requirements
R907.1	Re-roofing with non-rated covering not to exceed 1 sq of non-rated roof, **New**; ex 2. re-roofing with same materials and classification of at least Class C
R907.3	**New**; ex 3. application of coating over existing spray polyurethane foam roofing system permitted when installed per ASTM D-6705

Chimneys/FP	
R1001.6.1	Spark arrestor requirements for chimneys serving wood burning appliances
R1004.1.1	Solid fuel fireplaces and appliances shall comply with City codes section 5-110

Energy Efficiency Chapter 11 New

Administration	
N1101.3	Minimum prescriptive and performance-related regulations
N1101.3.1	Exempt buildings
N1101.4.1	Existing installations, un-insulated basement walls required to be insulation prior to being used for living space
N1101.4.2	Additions, alterations, repairs to envelope and systems comply with new code
N1101.4.3	Change in occupancy required to comply with new code with exceptions
N1101.4.4	Mixed occupancy requirements
N1102.1	Alternate methods and materials provision
N1103.1&2	Construction documents required to show scope of work with R-Values, fenestration U-factors, systems and efficiencies, air sealing details
N1104.1-4	Inspection requirements
N1106.1&2	Reference standards
N1107	Definitions
Table N1109.1	Thermal Design Parameters
Materials	
N1110.3.1	Glass and mineral fiber insulation installed on walls or framing less than 72” from the floor is required to be protected by gypsum or equivalent
N1110.4	Maintenance information for the building/systems required to be provided
N1110.5	Insulation certificate provided near electric panel, identifies: R-values, U-factors for windows, type and efficiency of systems, R-values of ducts, insulation installed in accordance with City guidelines
Building Envelope	
N1111.1	Building Envelope shall comply with Table N1111.1
N1111.2	Insulation installed per *Insulation Guidelines* Established by the City
N1111.2.1.1	Attic blown insulation *markers* required numbers 1” high, 1/300 sq ft
N1111.3	Layered insulation materials shall be summed to compute the component R-value, does not include other building materials, just insulation materials
N1111.4	Assembly **alternate** U-factor allowed if less than Table N1111.1
N1111.5	Total UA **alternate** allowed if less then UA in Table N1111.1. Calculation methodology to be approved. ASHRAE approved.
N1111.6	Insulation trade-offs allowed if HVAC efficiencies increased.
Table N1111.1	Building component requirements for R-value and U-factors w/footnotes
Insulation requirements	
N1111.7.1	Roof/ceiling insulation, Allows R-30 in areas where R-38 can not be achieved not to exceed 500 sq ft of area, top of wall plate insulation R-value no less than wall

N1111.7.2	Mass wall criteria
N1111.7.3	Opaque doors, one opaque door allowed exempted from the U-factor requirement
N1111.7.4	Cantilevered floors over outside(garages not complying with energy section) R-30 min in contact with warm side and full depth of floor framing
N1111.7.5	Basement walls w/conditioned space insulate full wall or 120 " below grade, protect insulation, R-values per Table N1111.1or insulate exterior of wall.
N1111.7.6	Slab on ground and w/floor less than 12" below grade insulate per Table N1111.1
N1111.7.7	Vented to the outside crawlspaces require floor above to be insulated. Un-vented crawlspace walls to be insulated, R-values per Table N1111.1. exposed earth to be covered and joints in vapor retarder to be sealed at wall and joints
N1111.7.10	Exterior exposed insulation to be protected and extend 6" below grade
N1111.7.11	Thermally isolated sunroom R-24 ceiling, R-13 walls, separate heating system
N1111.7.12	Conditioned garages & accessory building, R-values for ceiling, walls, doors, windows, heating requirements
N1111.7.14	Steel framing criteria and calculations Table N1111.2
Fenestration	
N1111.8.1	U-factors per manufacturer, or use default Table N1111.3 if unknown
N1111.8.2	Area-weighted average of products allowed to satisfy U-factor requirements
N1111.8.2	Area-weighted average of products more than 50% permitted to satisfy SHGC
N1111.8.5	SHGC exempt due to orientation and overhang
N1111.8.6	Thermally isolated sunroom U-factor 0.50
N1111.8.7	Replacement windows must comply with new for U-factor and SHGC
N1111.8.8	Impact resistant labeled
Infiltration	
N1111.9.1	Exterior sealing requirements and locations or "Blower Door" test required
N1111.9.2	Fenestration infiltration rates windows & sliding glass doors 0.3 cfm/ sq ft Swinging doors 0.5 cfm/ sq ft
N1111.9.3	Recessed lighting sealed, IC rated or boxed with clearances
Systems	
N1112.2	HVAC efficiencies minimum standards
N1112.3	All heating and cooling equipment shall be sized and tested per M1401.3
N1112.4	At least one thermostat per equipment that controls range between 55 degrees and lower to 85 degrees or higher
N1112.4.2	Humidistat can't control use of fossil fuels between 30-60 percent humidity
N1112.5	Air distribution ductwork to be sized for the greater load, heating or cooling
N1112.5.1	Ductwork insulation in unconditioned spaces: Supply R-8, Ducts between floor trusses and return ducts R-6,
N1112.5.2	All ductwork all joints, including filter boxes to be sealed
N1112.5.3	Framing cavities as return duct allowed, provided system is leak tested and certified to leakage of less than 25% of system total flow, all joints sealed, except transfer type ducts
N1112.6	Mechanical ventilation systems provided with shut of device and balance dampers that close openings to the exterior when system is off

N1112.7	Mechanical system piping insulated to R-2 for pipes 2" or less, R-4 for pipes over 2"
N1112.8.1	Water heaters, storage tanks and boilers meet minimum performance of Table 504.2.1 of the *2003 International Energy Code (IECC)*
N1112.8.2	Hot water circulating system pipe insulation to R-2 in conditioned space and R-3 in unconditioned space. Provide switch to circulating system.
N1112.8.3	Vertical pipe risers on water heaters to be provided with heat traps
N1112.8.4	Hot water circulating systems be provided with controls to shut off
N1112.8.5	Water flow rates not to exceed; for single shower head 2.5 gpm, more than one head in shower total 3 gpm
N1112.9	All comfort heating & cooling system shall be provided with means to balance the system
N1112.10	All-air systems shall have an air transport factor of not less than 5.5. See Equation
N1112.11	Combination service water heating and space heating boilers and requirements
N1112.12	Swimming pool heated see: 504.3.1-504.3.3 of *2003 IECC*
N1112.12.1	Pool heaters shall be provided with shut off controls other than thermostat
N1112.12.2	Heated pools shall be equipped with pool covers
N1112.12.3	Heated pools equipped with heater time clocks
Sim. Perf. Alt.	**Analysis programs "Proposed Design"**
N1113.2	Must still comply w/ N1110 Systems, Materials, Equipment; N1111.9 Air infiltration; N1111.10 Moisture control; Systems efficiency; Air infiltration by testing. (blower door)
N1113.2.2	Simulated performance design must show energy use less than or equal to standard references design.
N1113.3.1	Software must conform to the requirements of this code
N1113.3.2	Compliance report must show proposed energy use less than or equal to standard design. Submit reports.
N1113.5.1-3	Calculation requirements
Table N1113.5.2(1)	Specification table for Standard Reference and Proposed Design
Table N1113.5.2(2)	Default distribution system efficiencies
Mechanical	
M1305.1	30" x 30" level working space in front of appliances required
M1305.1.4.1	Appliances supported on the ground by minimum 3" above ground
M1401.3	Heating & Cooling systems to be sized in accordance with ACCA Manual J
M1414 .1	Wood burning/solid fuel appliances shall meet the State Emissions
M1501.1	Air exhausted by mechanical duct shall terminate outdoors
M1501.2	Ducted exhaust shall not induce a negative pressure sufficient to cause backdrafting of appliances
M1502.3	**New** Dryer exhaust termination not closer than 36" from openings into conditioned space. Delete: exception ref. known make and model length limits
M1507.2	Bath exhaust shall discharge to the outdoors
M1601.1	Duct system serving heating and cooling shall be sized per ACCA Manual D

M1601.1.1	**New Item 7.5** Stud cavities used for air plenums shall be sealed and are to be tested for tightness.
M1601.3.1	All duct joints and seams to be sealed by approved means. Duct connections to flanges or trunks be sealed and mechanically fastened w/3 screws or rivets equally spaced around joint
M1601.3.9	**New** Mechanical air handling systems and ducts to be protected from debris during construction.
M1602.2	Item 5 exception 1 delete all references to "appliances not requiring a vent…"
Fuel Gas	
G2401.1	Delete exception reference to *International Existing Building Code*
G2403	Definitions: Connector, Appliance revised and **New** Connector , Chimney or Vent
G2406.2	Prohibited locations delete exceptions 3&4 references to un-vented appliances
G2407.5	Indoor combustion air is in compliance when air infiltration is demonstrated to be 0.40 air changes per hour or greater
G2407.11	Item 1 revised exception; unobstructed stud and joist space may be used for combustion air in existing conditions during alterations. **New** Item 9, combustion air ducts to be label
G2408.2	Elevation of ignition source delete exception ref. to "flammable vapor resistant"
G2408.4	Clearance from grade minimum 3", appliances supported on 3"
G2409.4.5	Clearance from central heating furnaces to supply ducts when bonnet temperature exceeds 150 degrees
Piping	
G2415.7	Exterior gas piping shall be elevated 6" minimum above ground
G2415.9	Underground piping minimum depth 18" below grade
G2415.9.1	Underground piping minimum depth 18" below grade to individual outdoor appliances. **New** exception: 6" minimum buried depth under 4" of concrete
G2415.12	Stubs for future gas line expansion shall be fitted with gas shut off valve and end capped gas tight. **New** exception: dirt or drip legs
G2416.1&2	Rigid metallic pipe bends by fittings or factory bends, no field bends
G2417.4.1	Piping test pressure not less than 10 psig
G2420.5	Remote shut off valves for appliances shall be operable on the same floor and within 12' of appliance
G2421.3	Regulator vent terminations shall not terminate within 3' of openings into the building
Chimneys	
G2425.8	Equipment to be vented, delete exception 7, ref. un-vented appliances
G2427.5.5.1	Chimneys shall be lined, delete exception ref. replacement of similar appliances
Dryers	
G2439.1	Dryer exhaust exterior termination not within 3' of openings to conditioned space, attics or crawls
G2539.5.1	Dryer exhaust maximum length, delete exception ref. to known make and model requirements
G2445	Delete Un-vented Room Heaters
Cooking	
G2447.2	Commercial appliances may be installed when installed per listing and no overhead cabinets located above

G2447.3	Cooking appliances shall be listed and installed in accordance with manufacturer listing for clearance to combustibles
G2447.5	**New** kitchens with gas ovens to be provided with exhaust system ducted to the outside, shall not induce negative pressure in excess of neg 3 Pa.
G2451.3	**New** no outdoor use of infrared radiant heaters supplied by premises fuels
Radon	**New Appendix F**
AF101.2	Applies to structures regulated by the *2003 International Residential Code*
AF102.1	Definitions
Requirements	
AF103.2	Gas permeable layer required under all subfloors, 5 options provided
AF103.3.1	Seal all floor openings around tubs, showers water closets, pipes, wires or other objects that penetrate the concrete
AF103.3.2	Seal all control joints in concrete slab & at slab to wall intersection
AF103.3.3	Condensate drains to be trapped and routed through non-perforated pipe to daylight
AF103.3.4	Sump pit covers sealed
AF103.3.5	Hollow block masonry foundations shall provide minimum one course of solid grout at or above finished ground surface to prevent of air from interior of the wall to the interior space.
AF103.3.6	Exterior foundation and block walls below grade to be damp-proofed
AF103.3.7	Crawl space air handling units to be sealed to prevent air from being drawn into the unit
AF103.3.8	Below slab ducts shall be seamless, sealed. Crawlspace ducts to be sealed
Sub-membrane system	**(below floors)**
AF103.4	Requirements for structural floors above under-floor spaces with exposed soils. Exception when ventilation installed per R408 as per depressurization
AF103.4.1	Crawl space and under-floor spaces require ventilation per R408
AF103.4.2	All exposed soils under floors to be covered with soil-gas-retarder, joints lapped and seal, edges sealed to foundation
AF103.4.3	Vent pipe “T” install under soil-gas-retarder, 3” or 4” pipe extended up through the building, terminate 12” above the roof, 10’ away from any opening into conditioned space which is 2’ below the exhaust, 10’ from openings in adjoining property.
Sub-slab system	
AF103.5.1	Vent pipe minimum 3” connected to “T” fitting under slab in sub slab aggregate, or, 3” interior perimeter drain tile loop or, through a sealed sump cover with sump exposed to aggregate or connected to it through a drainage system. Vent pipe route and termination as per AF103.4.3 above. Termination end protected by screens .25 inch to .50 inch in size.
AF103.6	Multiple vents required where interior footings separate the sub-slab-aggregate, may connect together and terminate once.
AF103.6	Vents shall be installed to provide positive drainage to the ground beneath the slab.
AF103.7	Vent pipes shall be accessible for future fan installation. Fan shall be located in attic or outside the habitable space
AF103.8	Vent pipe labeling requirements
AF103.9	Combination foundations (crawl/slab or crawl/basement) shall have a separate vent pipe for each section. Vent pipes may connect together or terminate separately
AF103.10	All ducts in unconditioned space to be sealed, thermal infiltration shall comply with the energy code and fire blocking required as per R602.8

AF103.11	Future fan provisions. Fan located outside conditioned space (no pressurized pipe “after the fan” shall be in conditioned space.), accessible space of 12” wide by 30” tall for fan, electric circuit within 4’ and within sight of fan. Duplex or single receptacle approved as disconnecting means.
AF103.12	Fan activation, install approved in-line fan in designated location, provide light fixture and fan couplings at fan location. Accessible manometer installed, separate permit required.
Appendix G	Swimming Pools, Spas, Hot Tubs adopted in it’s entirety
Appendix H	Patio Covers adopted in it’s entirety
Appendix J	Existing Buildings and Structures adopted in it’s entirety
	Effective January 1, 2005