

***Duchesne County***  
***Department of Building Safety***

734 North Center St., P.O. Box 317  
Duchesne, Utah 84021-0317  
Phone (435) 738-1153  
Karl D. Mott  
Building Official



**BUILDING PERMIT PROCESS**

Revised February 2005

**DOCUMENTS TO BE SUBMITTED TO THE DUCHESNE COUNTY DEPARTMENT OF BUILDING SAFETY FOR THE BUILDING PERMIT APPLICATION PROCESS**

1. Submit name, address and phone number of the owner of the project and property. Submit all of the contractors names, business addresses, phone numbers, Utah State license numbers and copy of their business license that will be working on the project. If the project is to be an owner builder project, an owner builder exemption form will be required.
2. Legal description of property and proof of ownership. This can be a Tax Notice, Recorded deed or a Notarized Purchase Contract. The documents must include proof of legal deeded access to property from a public right of way.  
**NOTE:** If access is from a Duchesne County maintained road/highway, an approach permit from the Duchesne County Road Department may also be required. Contact the Duchesne Road Department at (435)738-2468. If access is from a State maintained highway, an approach permit from the Utah State Department of Transportation may also be required. Contact Barry Sawsak at (801) 227-8000.
3. Plot plan showing where home is to be placed on property. Plans must have accurate dimensions showing distances (set backs) from property lines, location of septic tank, drain field, building sewer lines, culinary water lines as well as all underground or overhead electrical lines. All building sites must meet minimum zoning requirements prior to the issuing of any building permit. Plot plan may be required to be a surveyed site plan for the issuance of a legal address.  
**Note: If the building site is a division off of a larger parcel of land, a survey by a Utah-licensed surveyor will be required prior to issuing any building permit.** For more information about County zoning laws, contact:  
Department of Planning, Zoning & Community Development  
Mike Hyde AICP, Community Development Administrator  
Duchesne County Administrative offices  
(435) 738-1151 or (801) 363-9029 ext. 1151
4. Proof of a legal connection to an approved sewer treatment facility or a copy of an on site Waste Water Disposal Permit from the Tri-County Health Department confirming that the building site will sustain its' own individual waste water disposal system. Contact:  
Jennifer Corser or Cindy Austreng at the  
Tri-County Health Department  
281 East 200 North  
Roosevelt, Utah 84066  
(435) 722-5085 ext 20

**Building Permit Process Continued**

5. For Residential or Business uses, evidence of an approved culinary water source / supply will be required.

**P2602.2 Individual water supply.** Where a potable public water supply is not available, individual sources of potable water supply shall be utilized provided that the source has been developed in accordance with Sections 73-3-1 and 73-3-25, Utah Code Ann. (1953), as amended, as administered by the Department of Natural Resources, Division of Water Rights. In addition, the quality of the water shall be approved by the local health department having jurisdiction. This can be proven by;

- A A receipt for connection to a State approved culinary water system.
- B Proof of an existing culinary water well or existing connection to a State approved culinary water system.
- C A permit for a new culinary water well.  
(For a water well permit or questions concerning water wells contact the State Engineers Office at (435) 781-0770.)
- D Submitted design for an individual culinary water cistern system. Design for cistern systems will be reviewed for minimum health and water supply requirements prior to approval by the Building Official.

6. Indicate what type of use the building is for and the approximate valuation, excluding land cost, of the project. Identify and describe the work that is to be covered by the permit. This will require the following;

Submit two (2) sets of plans showing the following:

- a. Plot plan showing set backs from property lines, right-of-ways, and location of roads and utilities.
- b. Footing and foundation details, reinforcement, ventilation, water proofing, etc.
- c. Floor plans showing room size and use, location of window and door with sizes and types, attic and crawl space access location and size, location of furnace and water heater.
- d. Elevations of all four sides of buildings.
- e. Framing detail plans for floor and roof showing size and spacing of framing members, details and cross sections adequate to show structural integrity of building and insulation type and R-values.
- f. Electrical plan showing wiring methods and size and number of outlets on each circuit along with the fixture, outlet and distribution panel locations. Building load calculations and service sizing may also be required.
- g. Plumbing layout showing number of fixtures on each line and vents.
- h. Details of stair cross section, fireplace cross section, and other special features.

**Section 15.06.011 Duchesne County Code Information on Construction Documents.**

Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted when approved by the building official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the building official.

## **Building permit process continued**

A plan review will be conducted on the above plans to confirm compliance with the provisions of the adopted minimum building safety standards. If the plans do not show compliance, they will be returned for revision. **NOTE: Any structural items that are not in compliance with the 2003 edition of the International Residential Code and the Utah State Foundation Amendment, will be required to be designed by a Utah Licensed Engineer.** Plans that indicate compliance will be stamped approved. One set will be returned for on site inspection use and must be present during all inspections. The other will remain a record in this office for a period of one year after project completion or permit expiration.

## **PERMIT FEES**

Building permit fees are based on an estimated construction cost valuation. This may be determined by the contractor bid or by the Counties adopted construction valuation schedule. Using the construction valuation schedule, the project valuation for a typical 1500 Square foot single level home with 500 square foot attached garage is \$ 89,000.00. The building permit fee this project would be \$ 937.75. Other additional fees would be a 1% state surcharge required on all issued building permits and a plan review fee that may be as much as 65% of the building permit fee.

## **EXPIRATION OF PERMIT**

Every permit issued by the Department of Building Safety under the provisions of the adopted minimum safety standards shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within 180 days from the issue date of such permit, or if the building or work authorized by such permit is suspended or abandoned at any time for a period of 180 days after the work has commenced.

## **EXTENSION OF PERMIT TIME**

Any person holding an unexpired permit may apply for an extension of the time within which work may commence under that permit when the permit holder is unable to commence work within the time required for a good and satisfactory reason. The Building Official may extend the time for action by the permit holder for a period not exceeding 180 days on written request by the permit holder showing that circumstances beyond the control of the permit holder have prevented action from being taken.

## **INSPECTION REQUIREMENTS**

**ALL BUILDINGS OR STRUCTURE SHALL BE INSPECTED** according to the approved plans. Any changes to the approved plans or substitute of materials shall be submitted to the building official for approval by the owner, builder and/or architect / engineer prior to any changes being incorporated in the structure.

## **INSPECTION NOTIFICATION**

Due to the area coverage size, a minimum 24-hour notice will be required for any afternoon inspections and a 48-hour notice will be required for any morning inspections. **Conformation of appointment day will be given however time of inspection will not be guaranteed.**

**Building permit process continued**

**INSPECTION SCHEDULING AND CONFIRMATION**

For inspection scheduling and confirmation please call Glenna in Duchesne at (435) 738-1150 or from S.L.C. at (801) 363-9029 ext. 1150 **NOTE: Messages left on voice mail will not be considered notice**, however a message must be left for our office to return your call to schedule and confirm an inspection appointment.

**APPROVAL REQUIRED**

No work shall be done on any part of the building or structure beyond the point indicated in each successive inspection without first obtaining an inspection and approval of the code official.

## REQUIRED INSPECTIONS

### **Inspections are required on the following:**

1. Pre-site; for confirmation of setbacks, property location and soil conditions. Property lines must be identified by a minimum of survey stakes at the corners at this inspection.
2. Footings; for confirmation of reinforcement placement when required and footing form size. Also confirms location of building on parcel.
3. Foundation; for confirmation of reinforcement placement, anchoring provisions, basement window/door or crawl space access locations, proper underfloor vent sizing and locations and form shoring.
4. Bond beams; for masonry foundation wall or masonry wall construction only.
5. Foundation waterproofing when required. (below grade livable space, Masonry foundation walls).
6. Underground utility; building sewer line from home to septic tank or sewer, water line from home to water source, any underground gas lines and any underground electrical lines.
7. Under floor slab; building drain line installation and pressure test, any electrical, any heat ducts and insulation, any required reinforcement and any required moisture barrier.
8. Floor framing prior to sheathing; to confirm proper joist size for span, proper lumber grade and proper connections to sill plate.
9. Roof and wall sheathing prior to finish coverings; to confirm proper nailing and joint offsets, proper panel usage and to determine if moisture barrier will be required,
10. Utah Amendment **R109.1.5 Weather-resistive barrier and flashing inspections**. An inspection shall be made of the weather-resistive barrier as required by Section R703.1 and flashings as required by Section R703.8 to prevent water from entering the weather-resistant exterior wall envelope.
- \* 11. Rough electrical; wire and box installation and distribution panel location.
- \* 12. Rough plumbing; pressure test and installation of DWV piping, gas piping, water piping.
- \* 13. Rough mechanical; duct and vent installation and sizing and fire blocking.
- \* 14. Rough framing prior to insulation or any other coverage.
15. Insulation and moisture barrier installation; confirm insulation R values and window U values for compliance with the Energy Code requirements.
16. Fire Code dry wall and drywall installation prior to plastering.
- \*\* 17. Final electrical.
- \*\* 18. Final plumbing.
- \*\* 19. Final mechanical.
- \*\* 20. Final framing.
- \*\* 21. Final exterior grading for drainage and access to building.

\*The above items with one asterisk can be conducted at the same time.

\*\*The above items with two asterisks can be conducted at the same time.

## OCCUPANCY REQUIREMENTS

**THERE SHALL BE A FINAL INSPECTION AND APPROVAL, AND A CERTIFICATE OF OCCUPANCY SHALL BE ISSUED ON ALL BUILDINGS AND STRUCTURES PRIOR TO THEIR BEING OCCUPIED OR USED.**

**GENERAL DESIGN INFORMATION FOR RESIDENTIAL SINGLE FAMILY DWELLING  
CONSTRUCTION**

For determining minimum Building Safety Standards, Utah State and / or Duchesne County has adopted the following:

- The International Building Code (IBC) 2003 edition,
- The International Plumbing 2003 Edition,
- The International Mechanical Code 2003 edition,
- The National Electric Code 2002 edition and
- The International Fire Code 2003 edition.

Other codes adopted by reference are;

- The International Residential Code 2003 edition for one and two family dwelling,
- The International Fuel Gas Code 2003 edition and
- The International Energy Conservation Code 2003 edition

Some of the general provisions for residential construction are as follows;

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

GROUND SNOW LOAD	WIND SPEED e (mph)	SEISMIC DESIGN CATEGORY g	SUBJECT TO DAMAGE FROM				WINTER DESIGN TEMP f	ICE SHIELD UNDER-LAYMENT REQUIRED i	FLOOD HAZARDS h	AIR FREEZING INDEX j	MEAN ANNUAL TEMPk
			Weathering a	Frost line depth b	Termite c	Decay d					
Note 1	90	C / D1	Severe	30"	Slight to Moderate	None to Slight	-2°	Yes	Note 2	2841	45°

For SI: 1 pound per square foot = 0.0479 kN/m<sup>2</sup>, 1 mile per hour = 1.609 km/h

- 1- Ground snow load will vary due to elevation. See Utah State IBC amendment 1608.1.1.
- 2- Duchesne city and Myton city have FEMA flood plan maps available. The rest of Duchesne County has to be evaluated on a site specific basis.

**SECTION R303 LIGHT, VENTILATION AND HEATING**

**R303.1 Habitable rooms.** All habitable rooms shall be provided with aggregate glazing area of not less than 8 percent of the floor area of such rooms. Natural ventilation shall be through windows, doors, louvers or other approved openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. The minimum openable area to the outdoors shall be 4 percent of the floor area being ventilated. See section 303 of the IRC for Exceptions.

**R303.2 Adjoining rooms.** For the purpose of determining light and ventilation requirements, any room shall be considered as a portion of an adjoining room when at least one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room but not less than 25 square feet. See section 303.2 for Exception.

**R303.3 Bathrooms.** Bathrooms, water closet compartments and other similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet, one-half of which must be openable.

**Exception:** The glazed areas shall not be required where artificial light and a mechanical ventilation system are provided. The minimum ventilation rates shall be 50 cfm for intermittent ventilation or 20 cfm for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside.

**R303.6 Stairway illumination.** All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Interior stairways shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not less than 1 foot-candles (11 lux) measured at the center of treads and landings. Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway.

**Exception:** An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stairway section.

**R303.6.1 Light activation.** The control for activation of the required interior stairway lighting shall be accessible at the top and bottom of each stairway without traversing any steps. The illumination of exterior stairways shall be controlled from inside the dwelling unit.

**Exception:** Lights that are continuously illuminated or automatically controlled.

**R303.8 Required heating.** When the winter design temperature in Table R301.2(1) is below 60 degrees F, every dwelling unit shall be provided with heating facilities capable of maintaining a minimum room temperature of 68 degrees F at a point 3 feet above the floor and 2 feet from exterior walls in all habitable rooms at the design temperature. The installation of one or more portable space heaters shall not be used to achieve compliance with this section.

## **SECTION R304 MINIMUM ROOM AREAS**

**R304.1 Minimum area.** Every dwelling unit shall have at least one habitable room that shall have not less than 120 square feet of gross floor area.

**R304.2 Other rooms.** Other habitable rooms shall have a floor area of not less than 70 square feet.

**Exception:** Kitchens.

**UTA R304.3 Minimum dimensions.** Habitable rooms shall not be less than 7 feet in any horizontal dimension.

**Exception:** Kitchens shall have a clear passageway of not less than 3 feet between counter fronts and appliances or counter fronts and walls.

**R304.4 Height effect on room area.** Portions of a room with a sloping ceiling measuring less than 5 feet or a furred ceiling measuring less than 7 feet from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required habitable area for that room.

## **SECTION R305 CEILING HEIGHT**

**R305.1 Minimum height.** Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7 feet. The required height shall be measured from the finish floor to the lowest projection from the ceiling. See section R305 of the IRC for Exceptions.

## **SECTION R306 SANITATION**

**R306.1 Toilet facilities.** Every dwelling unit shall be provided with a water closet, lavatory, and a bathtub or shower.

**R306.2 Kitchen.** Each dwelling unit shall be provided with a kitchen area and every kitchen area shall be provided with a sink.

**R306.3 Sewage disposal.** All plumbing fixtures shall be connected to a sanitary sewer or to an approved private sewage disposal system.

**R306.4 Water supply to fixtures.** All plumbing fixtures shall be connected to an approved water supply. Kitchen sinks, lavatories, bathtubs, showers, bidets, laundry tubs and washing machine outlets shall be provided with hot and cold water.

## **SECTION R307 TOILET, BATH AND SHOWER SPACES**

**R307.2 Bathtub and shower spaces.** Bathtub and shower floors and walls above bathtubs with installed shower heads and in shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet above the floor.

## **SECTION R309 GARAGES AND CARPORTS**

**R309.1 Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1-3/8 inches in thickness, solid or honeycomb core steel doors not less than 1-3/8 inches thick, or 20-minute fire-rated doors.

**R309.1.1 Duct penetration.** Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gage sheet steel or other approved material and shall have no openings into the garage.

**R309.2 Separation required.** The garage shall be separated from the residence and its attic area by not less than 1/2-inch gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than 1/2-inch gypsum board or equivalent.

**R309.3 Floor surface.** Garage floor surfaces shall be of approved noncombustible material. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

**R309.4 Carports.** Carports shall be open on at least two sides. Carport floor surfaces shall be of approved noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages.

**Exception:** Asphalt surfaces shall be permitted at ground level in carports. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

## **SECTION R310 EMERGENCY ESCAPE AND RESCUE OPENINGS**

**R310.1 Emergency escape and rescue required.** Basements with habitable space and every sleeping room shall have at least one openable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section 310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.

**R310.1.1 Minimum opening area.** All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet.

**Exception:** Grade floor openings shall have a minimum net clear opening of 5 square feet .

**R310.1.2 Minimum opening height.** The minimum net clear opening height shall be 24 inches.

**R310.1.3 Minimum opening width.** The minimum net clear opening width shall be 20 inches.

**R310.1.4 Operational constraints.** Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

**R310.2 Window wells.** The minimum horizontal area of the window well shall be 9 square feet (0.84 m<sup>2</sup>), with a minimum horizontal projection and width of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

**Exception:** The ladder or steps required by Section R310.2.1 shall be permitted to encroach a maximum of 6 inches (152mm) into the required dimensions of the window well.

**R310.2.1 Ladder and steps.** Window wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladders or steps required by this section shall not be required to comply with Sections R311.5 and R311.6. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.

**R310.3 Bulkhead enclosures.** Bulkhead enclosures shall provide direct access to the basement. The bulkhead enclosure with the door panels in the fully open position shall provide the minimum net clear opening required by Section R310.1.1. Bulkhead enclosures shall also comply with Section R311.5.8.2.

**R310.4 Bars, grills, covers and screens.** Bars, grills, covers, screens or similar devices are permitted to be placed over emergency escape and rescue openings, bulkhead enclosures, or window wells that serve such openings, provided the minimum net clear opening size complies with Sections R310.1.1 to R310.1.3, and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening.

## **SECTION R311 MEANS OF EGRESS**

**R311.1 General.** Stairways, ramps, exterior exit balconies, hallways and doors shall comply with this section.

**R311.2.2 Under stair protection.** Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2-inch gypsum board.

**R311.3 Hallways.** The minimum width of a hallway shall be not less than 3 feet.

**R311.4.1 Exit door required.** Not less than one exit door conforming to this section shall be provided for each dwelling unit. The required exit door shall provide for direct access from the habitable portions of the dwelling to the exterior without requiring travel through a garage. Access to habitable levels not having an exit in accordance with this section shall be by a ramp in accordance with Section R311.6 or a stairway in accordance with Section R311.5.

**R311.4.2 Door type and size.** The required exit door shall be a side-hinged door not less than 3 feet in width and 6 feet 8 inches (2032 mm) in height. Other doors shall not be required to comply with these minimum dimensions.

**R311.4.3 Landings at doors.** There shall be a floor or landing on each side of each exterior door.

**Exception:** Where a stairway of two or fewer risers is located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door.

The floor or landing at the exit door required by Section R311.4.1 shall not be more than 1.5 inches lower than the top of the threshold. The floor or landing at exterior doors other than the exit door required by Section R311.4.1 shall not be required to comply with this requirement but shall have a rise no greater than that permitted in Section R311.5.3.

**Exception:** The landing at an exterior doorway shall not be more than 7-3/4 inches below the top of the threshold, provided the door, other than an exterior storm or screen door does not swing over the landing.

The width of each landing shall not be less than the door served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel.

### **R311.5 Stairways.**

**R311.5.1 Width.** Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than

**R311.5.1 Stairway Width cont.**

4.5 inches on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31.5 inches where a handrail is installed on one side and 27 where handrails are provided on both sides.

**R311.5.2 Headroom.** The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform.

**UTA R311.5.3 Treads and risers.** The maximum riser height shall be 8 inches and the minimum tread depth shall be 9 inches. The riser height shall be measured vertically between leading edges of the adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The walking surface of treads and landings of a stairway shall be sloped no steeper than one unit vertical in 48 units horizontal (2-percent slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

**UTA R311.5.3.3 Profile.** The radius of curvature at the leading edge of the tread shall be no greater than 9/16 inch . A nosing not less than 3/4 inch but not more than 1 1/4 inches shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed shall not exceed the smallest nosing projection by more than 3/8 inches between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed 1/2 inch. Risers shall be vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch diameter sphere.

**Exceptions.**

1. A nosing is not required where the tread depth is a minimum of 10 inches.
2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches or less.

**R311.5.4 Landings for stairways.** There shall be a floor or landing at the top and bottom of each stairway.

**Exception:** A floor or landing is not required at the top of an interior flight of stairs, provided a door does not swing over the stairs.

A flight of stairs shall not have a vertical rise greater than 12 feet between floor levels or landings. The width of each landing shall not be less than the stairway served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel.

**UTA R311.5.6 Handrails.** Handrails shall be provided on at least one side of stairways consisting of four or more risers. Handrails shall have a minimum height of 34 inches and a maximum height of 38 inches measured vertically from the nosing of the treads. All required handrails shall be continuous the full length of the stairs from a point directly above the top riser to a point directly above the lowest riser of the stairway. The ends of the handrail shall be returned into a wall or shall terminate in newel post or safety terminals. A minimum clear space of 1-1/2 inches shall be provided between the wall and the handrail.

UTA R311.5.6 Handrails cont.

**Exceptions:**

1. Handrails shall be permitted to be interrupted by a newel post at a turn.
2. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.

UTA R311.5.6.3 **Handrail grip size.** The handgrip portion of handrails shall have a circular cross section of 1-1/4 inches minimum to 2-5/8 inches maximum. Edges shall have a minimum radius of 1/8 inch.

**Exception:** Non-circular handrails shall be permitted to have a maximum cross sectional dimension of 3.25 inches measured 2 inches down from the top of the crown. Such handrail is required to have an indentation on both sides between 0.625 inch and 1.5 inches down from the top or crown of the cross section. The indentation shall be a minimum of 0.25 inch deep on each side and shall be at least 0.5 inch high. Edges within the handgrip shall have a minimum radius of 0.0625 inch. The handrail surface shall be smooth with no cusps so as to avoid catching clothing or skin.

**R311.5.8.1 Spiral stairways.** Spiral stairways are permitted, provided the minimum width shall be 26 inches with each tread having a 7 1/2-inches minimum tread depth at 12 inches from the narrower edge. All treads shall be identical, and the rise shall be no more than 9 1/2 inches. A minimum headroom of 6 feet 6 inches shall be provided.

**R311.5.8.2 Bulkhead enclosure stairways.** Stairways serving bulkhead enclosures, not part of the required building egress, providing access from the outside grade level to the basement shall be exempt from the requirements of Sections R311.4.3 and R311.5 where the maximum height from the basement finished floor level to grade adjacent to the stairway does not exceed 8 feet, and the grade level opening to the stairway is covered by a bulkhead enclosure with hinged doors or other approved means.

**SECTION R312 GUARDS**

**R312.1 Guards required.** Porches, balconies or raised floor surfaces located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height. Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads. Porches and decks which are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches above the floor or grade below.

**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 4 inches or more in diameter.

**Exceptions:**

1. The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches cannot pass through.
2. Openings for required guards on the sides of stair treads shall not allow a sphere 4-3/8 inches to pass through.

## **SECTION R313 SMOKE ALARMS**

UTA **R313.1 Single- and multiple-station smoke alarms.** Single- and multiple-station smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and cellars but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

All smoke alarms shall be listed and installed in accordance with the provisions of this code and the household fire warning equipment provision of NFPA 72.

UTA **R313.2 Carbon monoxide alarms.** In new residential structures regulated by this code that are equipped with fuel burning appliances, carbon monoxide alarms shall be installed on each habitable level. All carbon monoxide detectors shall be listed and comply with U.L. 2034 and shall be installed in accordance with provisions of this code and NFPA 720.

UTA **R313.3 Interconnection of alarms.** When multiple alarms are required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. Approved combination smoke- and carbon-monoxide detectors shall be permitted.

UTA **R313.4 Power source.** In new construction, the required alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs, or additions regulated by Section R313.5

## **SECTION R319 PROTECTION AGAINST DECAY**

**R319.1 Location required.** In areas subject to decay damage as established by Table R301.2(1), the following locations shall require the use of an approved species and grade of lumber, pressure treated in accordance with AWPAC 1, C2, C3, C4, C9, C15, C18, C22, C23, C24, C28, C31, C33, P1, P2 and P3, or decay-resistant heartwood of redwood, black locust, or cedars.

1. Wood joists or the bottom of a wood structural floor when closer than 18 inches or wood girders when closer than 12 inches to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
2. All wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches from the exposed ground.
3. Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
4. The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 0.5 inch on tops, sides and ends.

**R319 PROTECTION AGAINST DECAY R319.1 Location required cont.**

5. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches from the ground.
6. Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.
7. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below grade except where an approved vapor retarder is applied between the wall and the furring strips or framing members.

**R319.1.1 Ground contact.** All wood in contact with the ground and that supports permanent structures intended for human occupancy shall be approved pressure preservative treated wood suitable for ground contact use, except untreated wood may be used where entirely below groundwater level or continuously submerged in fresh water.

**R319.2 Quality mark.** Lumber and plywood required to be pressure preservative treated in accordance with Section R319.1 shall bear the quality mark of an approved inspection agency that maintains continuing supervision, testing and inspection over the quality of the product and that has been approved by an accreditation body that complies with the requirements of the American Lumber Standard Committee treated wood program.

**R319.2.1 Required information.** The required quality mark on each piece of pressure preservative treated lumber or plywood shall contain the following information:

1. Identification of the treating plant.
2. Type of preservative.
3. The minimum preservative retention.
4. End use for which the product was treated.
5. Standard to which the product was treated.
6. Identity of the approved inspection agency.
7. The designation .Dry,. if applicable.

**Exception:** Quality marks on lumber less than 1 inch nominal thickness, or lumber less than nominal 1 inch by 5 inches or 2 inches by 4 inches or lumber 36 inches or less in length shall be applied by stamping the faces of exterior pieces or by end labeling not less than 25 percent of the pieces of a bundled unit.

**R319.3 Fasteners.** Fasteners for pressure preservative and fire-retardant-treated wood shall be of hot-dipped galvanized steel, stainless steel, silicon bronze or copper.

**Exception:** One-half-inch diameter or greater steel bolts.

**MINIMUM MATERIAL STANDARDS**

**SECTION R502 WOOD FLOOR FRAMING**

**R502.1 Identification.** Load-bearing dimension lumber for joists, beams and girders shall be identified by a grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with DOC PS 20. In lieu of a grade mark, a certificate of inspection issued by a lumber grading or inspection agency meeting the requirements of this section shall be accepted.

## SECTION R602 WOOD WALL FRAMING

**R602.1 Identification.** Load-bearing dimension lumber for studs, plates and headers shall be identified by a grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with DOC PS 20. In lieu of a grade mark, a certification of inspection issued by a lumber grading or inspection agency meeting the requirements of this section shall be accepted.

## SECTION R604 WOOD STRUCTURAL PANELS

**R604.1 Identification and grade.** Wood structural panels shall conform to DOC PS 1 or DOC PS 2. All panels shall be identified by a grademark or certificate of inspection issued by an approved agency.

## SECTION R605 PARTICLEBOARD

**R605.1 Identification and grade.** Particleboard shall conform to ANSI A208.1 and shall be so identified by a grade mark or certificate of inspection issued by an approved agency. Particleboard shall comply with the grades specified in Table R602.3(4).

## SECTION R802 WOOD ROOF FRAMING

**R802.1 Identification.** Load-bearing dimension lumber for rafters, trusses and ceiling joists shall be identified by a grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with DOC PS 20. In lieu of a grade mark, a certificate of inspection issued by a lumber grading or inspection agency meeting the requirements of this section shall be accepted.

## SECTION N1102 BUILDING ENVELOPE

**N1102.1 Thermal performance criteria.** The minimum required insulation *R*-value or the area-weighted average maximum required fenestration *U*-factor (other than opaque doors which are governed by Section N1102.1.3) for each element in the building thermal envelope (fenestration, roof/ceiling, opaque wall, floor, slab edge, crawl space wall and basement wall) shall be in accordance with the criteria in Table N1102.1.

Prescriptive insulation requirements for one and two family dwelling per 2003 IRC, TABLE N1102.1

R value for the walls shall be R-21

Basement walls shall be R-11

R value for the roof shall be R-49

Conditioned crawl space walls shall be R-20

R value for the floor shall be R-21

**Note:** Insulation values may vary pending quality of materials and components used for construction. Compliance may also be determined by using the RES Check software program.  
<http://www.energycodes.gov/>

## **FOUNDATION REQUIREMENTS**

### **Utah State Amendment to Section 1805 of the 2003 International Building Code.**

**1805.5.8 Empirical foundation design.** Group R, Division 3 Occupancies three stories or less in height, and Group U Occupancies, which are constructed in accordance with Section 2308, or with other methods employing repetitive wood-frame construction or repetitive cold-formed steel structural member construction, shall be permitted to have concrete foundations constructed in accordance with Table 1805.5(5).

**Table 1805.5(5)**, entitled "Empirical Foundation Walls, dated September 1, 2002, published by the Department of Commerce, Division of Occupational and Professional Licensing is hereby adopted and incorporated by reference. Table 1805.5(5) identifies foundation requirements for empirical walls.

**TABLE 1805.5(5)  
EMPIRICAL FOUNDATION WALLS (1,7,8)**

Max Height	Top Edge Support	Min Thickness	Vertical Steel (2)	Horizontal Steel (3)	Steel at Openings (4)	Max Lintel Length	Min Lintel Depth
2' (610 mm)	None	6"	(5)	2-#4 Bars	2- #4 Bars above; 1- #4 Bar each side 1- #4 Bar below	2' (610 mm)	2" for each foot of opening width; min. 6"
3' (914 mm)	None	6"	#4 @ 32"	3- #4 Bars	2- #4 Bars above; 1- #4 Bar each side 1- #4 Bar below	2' (610 mm)	2" for each foot of opening width; min. 6"
4' (1219 mm)	None	6"	#4 @ 32"	4- #4 Bars	2- #4 Bars above; 1- #4 Bar each side 1- #4 Bar below	3' (914 mm)	2" for each foot of opening width; min. 6"
6' (1829 mm)	Floor or roof diaphragm (6)	8"	#4 @ 24"	5- #4 Bars	2- #4 Bars above; 1- #4 Bar each side 1- #4 Bar below	6' (1829 mm)	2" for each foot of opening width; min. 6"
8' (2438 mm)	Floor or roof diaphragm (6)	8"	#4 @ 24"	6- #4 Bars	2- #4 Bars above; 1- #4 Bar each side 1- #4 Bar below	6' (1829 mm)	2" for each foot of opening width; min. 6"
9' (2743 mm)	Floor or roof diaphragm (6)	8"	#4 @ 16"	7- #4 Bars	2- #4 Bars above; 1- #4 Bar each side 1- #4 Bar below	6' (1829 mm)	2" for each foot of opening width; min. 6"
Over 9' (2743 mm)	Engineering required	Engineering required	Engineering required	Engineering required	Engineering required	Engineering required	Engineering required

Footnotes:

- (1) Based on 3,000 psi (20.6 Mpa) concrete and 60,000 psi (414 Mpa) reinforcing steel.
- (2) To be placed in the center of the wall, and extended from the footing to within three inches (76 mm) of the top of the wall; dowels of #4 bars to match vertical steel placement shall be provided in the footing, extending 24 inches (610 mm) into the foundation wall.
- (3) One bar shall be located in the top four inches (102 mm), one bar in the bottom four inches (102 mm) and the other bars equally spaced between. Such bar placement satisfies the requirements of Section 1805.9. Corner reinforcing shall be provided so as to lap 24 inches (610 mm).
- (4) Bars shall be placed within two inches (51 mm) of the openings and extend 24 inches (610 mm) beyond the edge of the opening; vertical bars may terminate three inches (76 mm) from the top of the concrete.
- (5) Dowels of #4 bar at 32 inches on center shall be provided in the footing, extending 18 inches (457 mm) into the foundation wall.
- (6) Diaphragm shall conform to the requirements of Section 2308.
- (7) Footing shall be a minimum of nine inches thick by 20 inches wide.
- (8) Soil backfill shall be soil classification types GW, GP, SW, or SP, per Table 1610.1. Soil shall not be submerged or saturated in groundwater.