



Proudly Serving Rural Routt County \* City of Steamboat Springs \* Town of Hayden \* Town of Oak Creek \* Town of Yampa \* Routt County School Districts

## Tiny Home Construction Informational Brochure

### **How Do Can I Design a Tiny Home to Obtain a Building Permit?**

**Site Build Construction:** A Tiny House can be constructed on site as a permanent dwelling unit in accordance with the current adopted Building Codes. Routt County Regional Building Department reviews permit applications in accordance to the 2015 International Residential Building Code and also adopted (Appendix Q Tiny Houses) from the 2018 IRC to allow additional design options for tiny homes. All new homes are required to also meet the adopted 2015 International Plumbing, Mechanical, Fuel Gas, and Energy Code requirements, and all Electrical work must meet the 2017 National Electrical Code. Please visit the below web link for more information and code presentations on our Adopted Codes within Routt County before you begin to design your home. [http://www.co.routt.co.us/537/2015-Building-Code-](http://www.co.routt.co.us/537/2015-Building-Code-Update)

### **Update**

**Manufactured or HUD Homes and Factory Built Housing:** The Colorado Department of Local Affairs through the Division of Housing regulates and certifies all manufactured and factory built housing. Please contact the State Division of Housing for further information on all manufactured or factory built homes prior to purchasing any homes to make sure they are pre-approved by the State of Colorado. **Snow Load Requirements:** Also contact the Routt County Regional Building Department prior to purchasing or starting construction on a manufactured or factory built home so we can provide you with the proper Ground Snow Load requirements based on the geographic location of where the home will be set.

A manufactured house is allowed to be put on a block and tie-down foundation, or a permanent frost protected foundation. If a block and tie-down foundation is used, then it must be in accordance with the State Division of Housing's installation manual. If a permanent foundation is being used, the foundation will need to be designed by a Colorado licensed design professional or in accordance with our adopted Building Codes. Building Permits are required for all Manufactured, HUD, or Factory Built homes, please contact the Routt County Regional Building Department directly or visit our website.

### **What is Required for Tiny Homes on Wheels?**

**Motor Vehicles (DMV Registered):** One way to construct and use a tiny house is as an ANSI-RVIA vehicle (RV) that is registered as a motor vehicle with the DMV. This requires that the unit is licensed and self-contained. The unit must also remain on the wheels and obtain its support from the wheels and chassis jacks. Blocks and tie-downs are not allowed under a motor vehicle. Any electrical, water or sewer hook-ups must meet the requirements of the currently adopted codes and the regulations set forth by the authorities having jurisdiction over these matters, such as, but not limited to, the local Utility Department, the Health Department, or the State of Colorado. A Building Permit is not required through the PPRBD for a motor vehicle. Permits may be required for electrical, gas and plumbing connections.

**Other Important Considerations:** The Planning and Zoning, Sanitation, Electric, and Water authorities having jurisdiction over the parcel of land being used all need to be contacted regarding the specific type of Building or RV being proposed prior to installation, construction, or parking. There may be differences in the applicable regulations regarding each different type of building or RV. For example, an RV or Tiny Home on Wheels may have a time limit on how long it can be parked, or where it can be parked, or if you can live it while it's parked. It's the responsibility of the applicant/owner before building, setting, or parking any permanent or temporary structure including those on wheels to be sure it's within compliance of the Local Authority Having Jurisdiction.

Routt County Regional Building Department

136 6th Street, Ste 201, Steamboat Springs, CO 80487 PH: 970-870-5566 Fax 970-870-5489 Email: [Building@co.routt.co.us](mailto:Building@co.routt.co.us)

# 2015 BUILDING CODES APPENDIX Q TINY HOUSES

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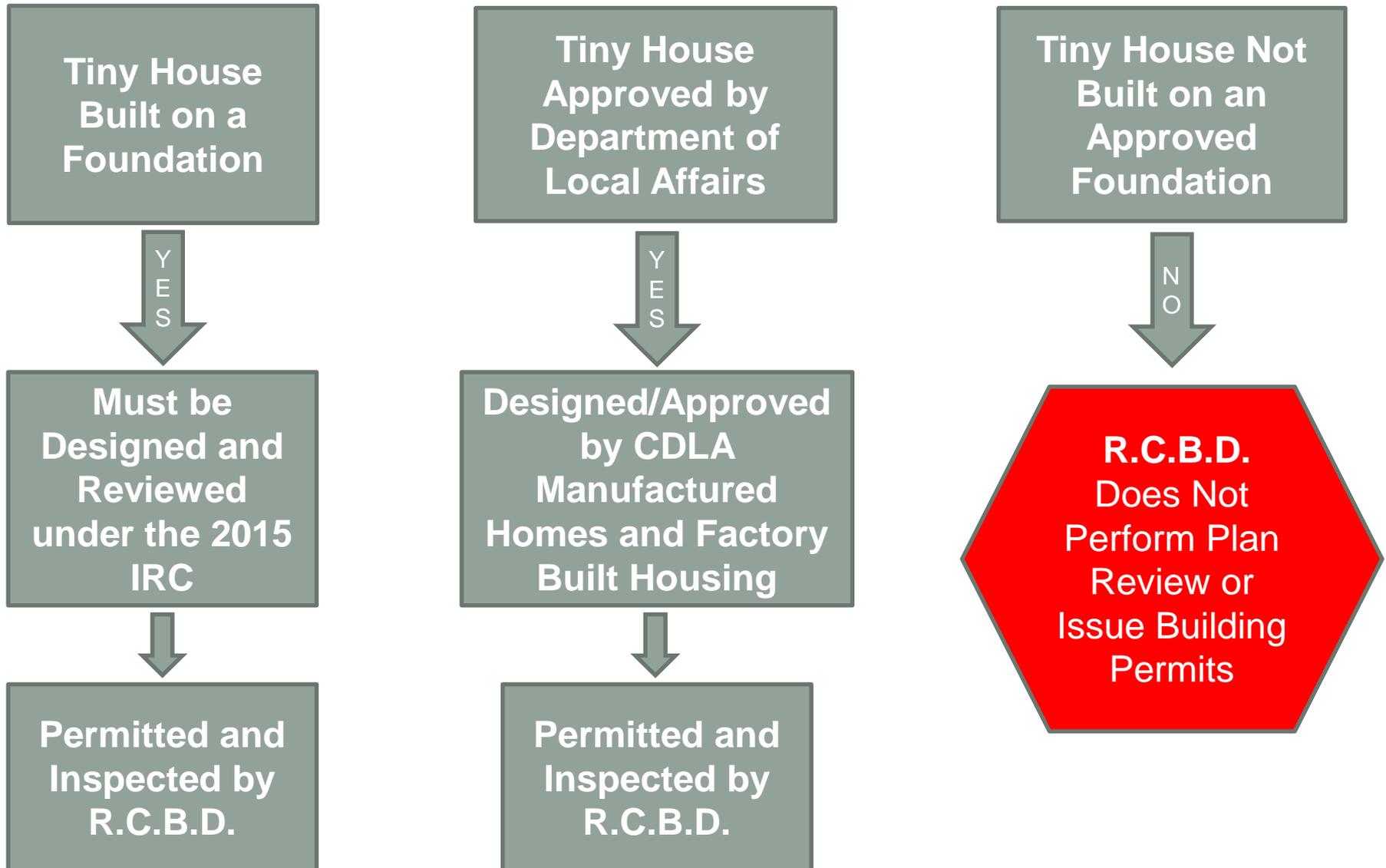
Routt County Regional Building Department



# Overview

- Building Permitting Flow Chart
- Tiny Houses Appendix Q Definitions
- Size and Space Requirements
- Stairs/Ladder/Lofts/Guards
- Emergency Escape Openings
- Manufactured/Factory Built Tiny Home Requirements
- Energy Code/Foundation Options

# Building Permitting Flow Chart



# Building Code Appendix Q Tiny Homes

## *What is Appendix Q ?*

- ❖ *The Appendix is applicable to Tiny Houses used as single dwelling units.*
- ❖ *Tiny houses shall comply with the International Residential Code Except as otherwise Stated in the Appendix Q*

# Building Code Appendix Q Tiny Homes

## *How Big Can My Tiny Home BE?*

- ❖ *Unincorporated Routt County = 400 SQ FEET*
- ❖ *City of Steamboat Springs = 400 SQ FEET*
- ❖ *Town of Oak Creek = 500 SQ FEET*
- ❖ *Town of Yampa = 500 SQ FEET*

# Building Code Appendix Q Tiny Homes

## Definitions of Terms Used

- ❖ **EGRESS ROOF ACCESS WINDOW.** A skylight or roof window designed and installed to satisfy the *emergency escape and rescue opening* requirements in Section R310.2.
- ❖ **LANDING PLATFORM.** A landing measuring two treads deep and two risers tall, provided as the top step of a stairway accessing a *loft*.
- ❖ **LOFT.** Any floor level located above the main floor and open to it on at least one side, with a *ceiling height* less than 6 feet 8 inches (2032 mm), complying with the area, access, and guard requirements of Section AV104, and used as a living or sleeping space.
- ❖ **TINY HOUSE.** A *dwelling* which is 400 or less square feet (37 m<sup>2</sup>) in floor area excluding *lofts*.

# Building Code Appendix Q Tiny Homes

## *What is the Minimum Ceiling Height ?*

### ❖ **AQ103.1 Minimum ceiling height**

*Habitable space* and hallways in *tiny houses* shall have a *ceiling height* not less than 6 feet 8 inches (2032 mm). Bathrooms, toilet rooms, and kitchens shall have a *ceiling height* not less than 6 feet 4 inches (1930 mm). **No obstructions** shall extend below these minimum ceiling heights including beams, girders, ducts, lighting, or other obstructions.

# Building Code Appendix Q Tiny Homes

## *What is the Minimum Room Dimensions?*

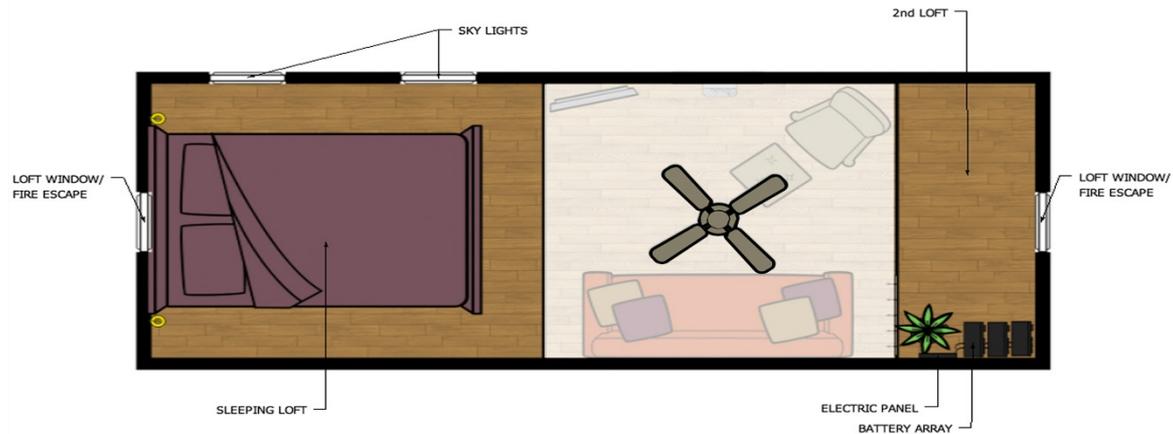
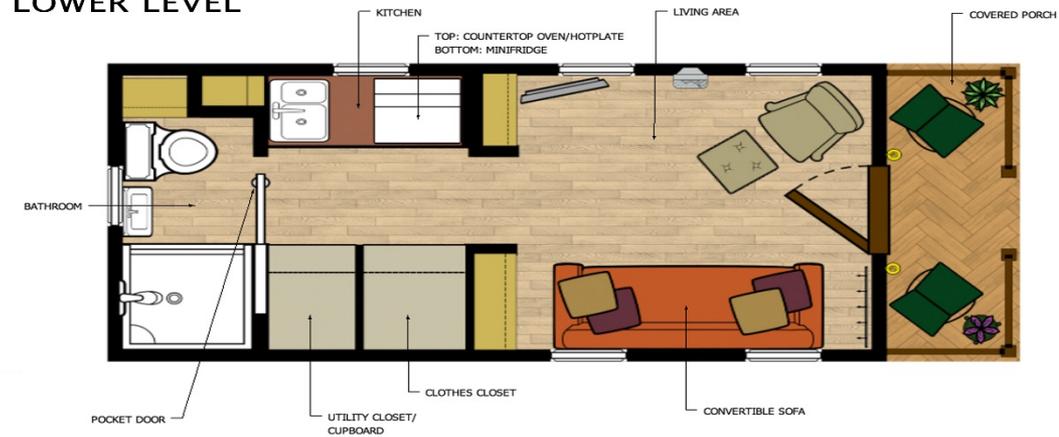
- ❖ Habitable rooms shall have a floor area not less than 70 SQ Feet
- ❖ *Exception: Kitchens*
- ❖ Habitable rooms shall not be less than 7 Feet in any direction
- ❖ Kitchens: Each dwelling unit needs a kitchen area and shall be provided with a sink.
- ❖ Bathrooms: Water Closet, Shower or Bathtub, Lavatory and meet minimum sizing and clearances per R307.1
- ✓ 15" From Center of Water Closet each way, and 21" in front of water closet. Shower 30"x30" minimum with 24" clearance in front of shower. Lavatory must have 21" clearance in front.



# Building Code Appendix Q Tiny Homes

## My Tiny House Plans

### LOWER LEVEL



### UPPER LEVEL



# Building Code Appendix Q Tiny Homes

## *How are LOFTS Designed ?*

- ❖ **AQ104.1 Minimum loft areas.** *Lofts* used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections AV104.1.1 through AV104.1.3.
- ❖ **AQ104.1.1 Minimum area.** *Lofts* shall have a floor area of not less than 35 square feet (3.25 m<sup>2</sup>)
- ❖ **AQ104.1.2 Minimum dimensions.** *Lofts* shall be not less than 5 feet (1524 mm) in any horizontal dimension.

# Building Code Appendix Q Tiny Homes

## *How are LOFTS Designed ?*

- ❖ **AQ104.1.3 Height effect on loft area.** Portions of a *loft* with a sloping ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.
- ❖ **Exception:** Under gable roofs with a minimum slope of 6:12, portions of a *loft* with a sloping ceiling measuring less than 16 inches (406 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.

# Building Code Appendix Q Tiny Homes

## *How are LOFTS Designed ?*

- ❖ **AQ104.2 Loft access.** The access to and primary egress from *lofts* shall be of any type described in Sections AV104.2.1 through AV104.2.4
- ❖ **AQ104.2.1 Stairways.** Stairways accessing *lofts* shall comply with this code or with Sections AV104.2.1.1 through AV104.2.1.5



# Building Code Appendix Q Tiny Homes

## *Stair and Landing Design Requirements*

- ❖ **AQ104.2.1.1 Width.** Stairways accessing a *loft* shall not be less than 17 inches (432 mm) in clear width at all points at or above the permitted handrail height. The minimum width below the handrail shall not be less than 20 inches (508 mm).
- ❖ **AQ104.2.1.2 Headroom.** The headroom in stairways accessing a *loft* shall not be less than 6 feet 2 inches (1880 mm) measured vertically from the sloped line connecting the tread nosings in the middle of the tread width.
- ❖ **Exception:** The headroom for *landing platforms* shall not be less than 4 feet 6 inches

# Building Code Appendix Q Tiny Homes

## *Stair and Landing Design Requirements*

- ❖ **AQ.104.2.1.3 Treads and Risers.** Risers for stairs accessing a *loft* shall be a minimum of 7 inches (178 mm) and a maximum of 12 inches (305 mm). Tread depth and riser height shall be calculated with the following formulas:
  - ✓ Tread depth = 20 inches (508 mm) minus  $\frac{4}{3}$  riser height
  - OR
  - ✓ Riser height = 15 inches (381 mm) minus  $\frac{3}{4}$  tread depth
- ❖ **Exception:** *Landing platforms* shall measure two treads deep and two risers tall.

# Building Code Appendix Q Tiny Homes

## *Handrail/Guards Design Requirements*

- ❖ **AQ104.2.1.4 Handrails.** Handrails shall comply with Section R311.7.8.
  - ✓ Required on one side of stairs with four or more risers
  
- ❖ **AQ104.2.1.5 Stairway guards.** *Guards* at open sides of stairways shall comply with Section R312.1.
  - ✓ Required on open sided walking surfaces, stairs, landings, that are located more than 30 inches measured vertically above the finished floor at any point within 36 inches horizontally to the edge of the open side.

# Building Code Appendix Q Tiny Homes

## *What About Building a Ladder ?*

- ❖ **AQ104.2.2 Ladders.** Ladders accessing *lofts* shall comply with Sections AV104.2.2.1 and AV104.2.2.2
- ❖ **AQ104.2.2.1 Size and capacity.** Ladders accessing *lofts* shall have 12 inches (305 mm) minimum rung width and 10 inches (254 mm) to 14 inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 200 pound (75 kg) load on any rung. Rung spacing shall be uniform within 3/8-inch (9.5 mm).
- ❖ **AQ104.2.2.2 Incline.** Ladders shall be installed at 70 to 80 degrees from horizontal

# Building Code Appendix Q Tiny Homes

## *Alternating Tread Devices/Ship Ladders ?*

- ❖ **AQ104.2.3 Alternating tread devices.** *Alternating tread devices* accessing *lofts* shall comply with Sections R311.7.11.1 and R311.7.11.2. The clear width at and below the handrails shall be not less than 20 inches (508 mm).
- ❖ **AQ104.2.4 Ships ladders.** *Ships ladders* accessing *lofts* shall comply with Sections R311.7.12.1 and R311.7.12.2. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

# Building Code Appendix Q Tiny Homes

## *How Not To Fall Out of Your LOFT !*



- ❖ **AQ104.3 Loft guards.** Loft *guards* shall be located along the open side(s) of *lofts* located more than 30 inches (762 mm) above the main floor. Loft *guards* shall be not less than 36 inches (914 mm) in height or one-half the clear height to the ceiling, whichever is less.

# Building Code Appendix Q Tiny Homes





# Building Code Appendix Q Tiny Homes

## *Emergency Escape and Rescue Openings*

- ❖ **AQ105.1 General.** *Tiny houses* shall meet the requirements of Section R310 for *emergency escape and rescue openings*.
- ❖ **Exception:** *Egress roof access windows* in *lofts* used as sleeping rooms shall be deemed to meet the requirements of Section R310 where installed with the bottom of their opening no more than 44 inches (1118 mm) above the loft floor.
- ❖ **Size Requirements:** Net Clear Opening 5.7 SQ. Feet and be a minimum of 20" width and 24" height.

# Building Code Appendix Q Tiny Homes

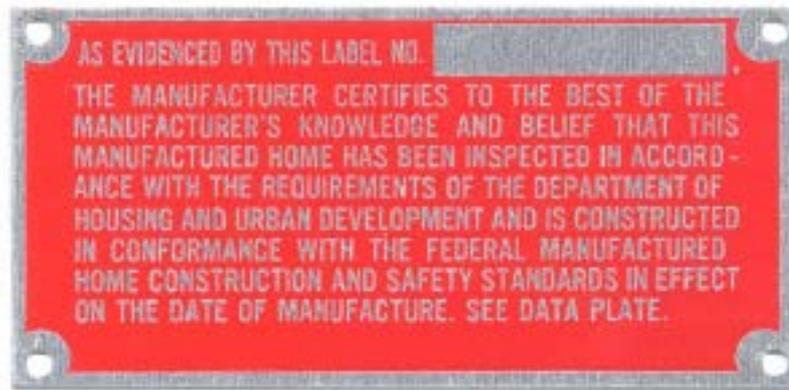
## *Emergency Escape and Rescue Openings*



# Manufactured Homes or Factory Built Housing Approved by HUD or CDLA

*Data Cards are Provided for RCBD Staff to Verify*

- ❖ State of Colorado Division of Housing CDLA Approved Data Card
- ❖ HUD Approved Data Card





# Manufactured Homes or Factory Built Housing Approved by HUD or CDLA

## *Why Is this Important ?*

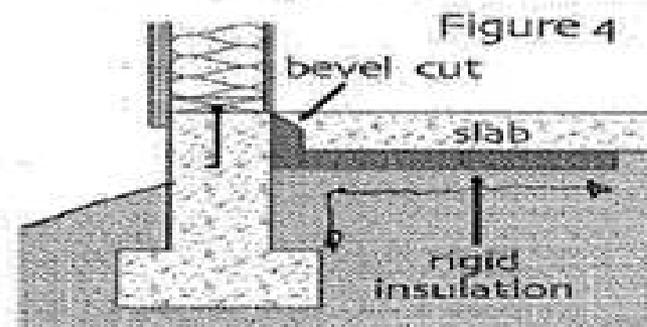
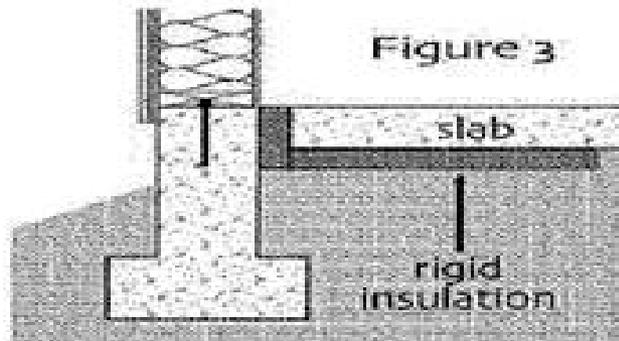
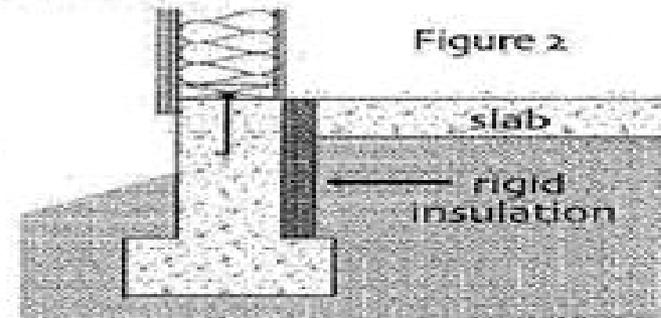
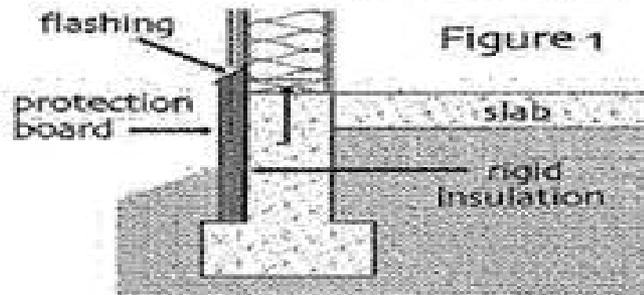
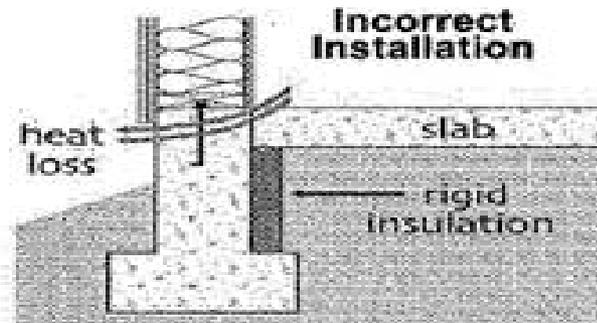
- ❖ Ensure the home is constructed in accordance with local climate zone requirements. Snow/Wind/Seismic/Footings or Tie-Downs
- ❖ Oversight of Factory Built homes for quality and life safety issues
- ❖ Installation of Manufactured/Factory Built Homes by Licensed installers to Ensure the Building is Safe
- ❖ Meet Code Requirements per CDLA Division of Housing

## 2015 International Energy Conservation Code Checklist for General Prescriptive Method

<b>Building Components Thermal Envelope R402: General Prescriptive Method to Compliance</b>	
Vapor Retarder: Class I =Poly Class II =Kraft-Faced insulation Class III = Paint	Follow IRC Section R702.7 or IBC Section 1405.3 Class of vapor retarder is based upon selected methods of insulating the exterior walls of the structure.
Windows and Doors U-Factor = 0.32	R402.1.5 Total UA Alternative may be used to lower the U-Factor
Skylights U-Factor = 0.55	R402.1.5 Total UA Alternative may be used to lower the U-Factor
Ceiling Insulation with Attic Space = R49	R402.2.1 reduction to R38 wherever the full height of uncompressed R-38 extends over the wall top plate at the eaves.
Ceiling Insulation without Attic Space = R-49	R402.2.2 reduction to R30 provided when roof/ceiling assemblies don't have sufficient space.
Wood Framed Wall Insulation : 2x6 wall = R20/5 Wood Framed Wall Insulation: 2x6 wall = R22/3 Wood Framed Wall Insulation: 2x6 wall = R27/0	R20 in the cavity of the wall and R5 continuous insulation, R22 in the cavity of the wall and R3 continuous insulation, or R27 in the cavity of the wall and no continuous insulation. Walls with Structural Sheathing see Section R402.2.7 for reduction
Wood Framed Wall Insulation: 2x4 wall = R13/10	R13 in the cavity of the wall and R10 continuous insulation. Walls with Structural Sheathing see Section R402.2.7 for reduction
Mass Walls R-19/21	Defined & Reviewed based upon formula from Section 402.2.5
Floor Insulation = R38	See Section 402.2.8 for definition and exception
Basement Wall Insulation = R-15/19	See Section 402.2.9 for definition R15 continuous on either side or R19 on interior side. See footnotes in R402.1.2 for alternatives
Concrete Slab on Grade Insulation = R10/4ft	See Section R402.2.10 Insulation depth shall be depth of the footing minimum of 4 feet.
Crawl Space Wall Insulation = R15/19	See Section R402.2.11 for definition R15 continuous on either side or R19 on interior side.
Fenestration Air Leakage: windows, sliding doors, skylights	</= 0.3 cfm/sf Exception for site built windows, skylights, and doors.
Fenestration Air Leakage: Swinging Doors	</= 0.5 cfm/sf Exception for site built doors.
Air Leakage: The building thermal envelop shall be constructed to limit air leakage.	All products installed in accordance with manufactures instructions and be labeled in accordance with the requirements of the 2015 IECC.
Fireplaces new wood-burning units	See Section R402.4.2 Information on tight fitting doors and labels required.

# 2015 Energy Conservation Code

## Foundation and Slab Insulation Examples



# QUESTIONS?

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