

City of Bullhead City
Development Services/Public Works

Residential
Permit Submittal Requirements



INSULATION INSTALLATION

Contact Information:

Building Division (928) 763-0124

Planning & Zoning Division (928) 763-0123

Engineering Division (928) 763-0128

PERMIT APPLICATION

**CITY OF BULLHEAD CITY
DEVELOPMENT SERVICES DEPARTMENT
2355 TRANE ROAD
BULLHEAD CITY, AZ 86442**

APPLICATION DATE: _____
LOG NUMBER: _____
OFFICE USE ONLY

- | | |
|---|---|
| <input type="checkbox"/> Residential Construction Permit | <input type="checkbox"/> Commercial Construction Permit |
| <input type="checkbox"/> Manufactured Home Placement Permit | <input type="checkbox"/> Gas Permit |
| <input type="checkbox"/> Electrical Permit | <input type="checkbox"/> Plumbing Permit |
| <input type="checkbox"/> Other _____ | |

Project Description: _____

Project Address _____

A.P.N.: _____ Subdivision: _____

Tract: _____ Block: _____ Lot: _____ Parcel: _____

Applicant: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: (Home/Office) _____ (Cell) _____ (Fax) _____

Property Owner: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: (Home/Office) _____ (Cell) _____ (Fax) _____

Architect/Engineer: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: (Office) _____ (Cell) _____ (Fax) _____

Owner Builder: _____ (Please complete an owner builder statement and agreement)

Contractor: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: (Office) _____ (Cell) _____ (Fax) _____

Arizona State Contractors License Number: _____

Arizona Transaction Privilege Number: _____

City of Bullhead City Business License Number: _____

Water Supply: Community Water system: _____ Well: Existing: _____ Proposed: _____

Power: Existing: _____ Proposed: _____ Gas: L.P.G. _____ Natural: _____

Sewer: Community Sewer System: _____ Septic Tank, Existing: _____ Proposed: _____ (Provide a copy of the installation permit from Mohave County Environmental Health Department)

Manufactured Home/Park Trailer Serial Number: _____ Valuation \$ _____

I hereby acknowledge that the information I have provided is correct and I agree to comply with all State, County and City laws and ordinances regulating construction. I also acknowledge I am aware of CC&R's in general; that the City is not responsible for reviewing compliance with any CC&R's that apply to the project; and that in my opinion no CC&R exists or applies or has been or will be complied with. I understand and agree the City of Bullhead City has no obligation to explain every requirement and ordinance to me prior to approval of my project. I also acknowledge by signing this application I authorize any City of Bullhead City personnel access to the property at all reasonable times to ascertain relevant information, including the current condition of the property, and perform any and all inspections.

The issuance of a permit based on plans, specifications and other data shall not prevent the building official from thereafter requiring the correction of errors in said plans, specifications and other data, or preventing building operations when in violation of this code or of any State, County or City laws, rules or regulations.

Owner/Agent Signature

Date

Applicant's Signature

Date

(By signing as 'Agent' I am signing on behalf of the owner and I have the owner's permission and authority to do so.)

OFFICE USE ONLY

Census: _____ Number of Bedrooms: _____ Area, Carport: _____ Patio: _____

Area, Basement: _____ 1st Floor: _____ 2nd Floor: _____ 3rd Floor: _____ Garage: _____

Type of Construction: _____ Occupancy Classification: _____ Zoning: _____ Lot Size: _____

Minimum Setbacks: Front: _____ Sides: _____ Rear: _____ Flood Zone: _____

Easements: _____

Pre-Paid amount \$ _____ Paid By: _____ Receipt # _____

Valuation: _____ Permit Fee: _____ Plan Review: _____

Comments: _____

Procedures for Proper Installation of Insulation

The purpose of envelope insulation is to provide a continuous thermal barrier to minimize heat flow through the walls, ceiling and floor. Insulation serves to keep a home comfortable and reduce costs for heating and cooling. The home will not be as comfortable and energy costs will be increased if insufficient insulation is installed, or it is installed incorrectly, such as being compressed or installed with gaps

Background: Recent studies have found that over a third of new homes have lower levels of insulation installed than specified and an additional fifth have serious installation problems that will result in significantly decreased effectiveness of the insulation. In addition, virtually all of the homes studied were found to have numerous insulation installation defects that reduce the performance of the insulation well below its rated R-value. These cost-effective procedures will improve comfort and reduce energy use.

Use of these Procedures: The purpose of this document is to provide the tools to ensure insulation is properly specified and installed, resulting in a comfortable, energy-efficient home.

Builder: You may include these materials in your bidding and contracting documents. It is meant to form the basis of a scope of work for both bidding and contracting. Its use will help ensure consistent bids and quality installations. Attachment I-1 and I-2 are to be followed by the insulation contractors. Attachment I-2 is an installation checklist to be completed by the site superintendent.

Criteria for a Quality Thermal Envelope

Insulation should:

1. Provide a continuous barrier between the inside conditioned space and the outside,
2. Be installed to the proper R-value,
3. Be installed without gaps,
4. Avoid excessive compression,
5. Be properly labeled or indicate the proper depth to achieve the specified R-value.

Procedures to Install Insulation for a Quality Thermal Envelope

The following steps should be followed in the installation of insulation to ensure efficiency and comfort (for details, see Attachment I-1):

1. Work with the architect and framer to minimize spaces that are difficult to insulate.
2. Use materials that meet the International Residential Code standards.
3. Install R-values that meet or exceed design specifications.
4. Install insulation to completely fill all cavities without gaps and with minimal compression.
5. Account for special characteristics of the materials used, such as settling, flammability, or water permeability.

ATTACHMENT I-1 INSULATION INSTALLATION PROCEDURES

WALL INSULATION

Unfaced batt installation; batts shall be:

- Correctly sized to fit snugly at the sides and ends.
- Installed to completely fill the cavity.
- Cut to fit properly -- there should be no gaps, nor should the insulation be doubled-over or compressed.
- Non-standard-width cavities shall be filled by batt insulation cut approximately one inch (1") wider than the space to be filled.
- Cut to butt-fit around wiring and plumbing, or be split (delaminated) so that one layer can fit behind the wiring or plumbing and one layer fit in front.

Faced batt installation, where used as a vapor barrier: additional instructions:

- Facing should be placed toward living spaces.
- Faced insulation must be properly stapled over the face of the studs; it must be continuous with no penetrations.
- Stapling: the batt flange should be stapled to the face of the framing; flanges from adjacent cavities should overlap per manufacturer's specifications on facing.
- Each batt should be stapled approximately every eight (8) inches, or according to manufacturer's specifications on facing.
- All tears or breaks in the facing six (6) inches or longer shall be sealed with duct tape or other waterproof tape. Tears and breaks in the facing should be minimal.

Narrow-framed cavities and "chinking:"

- Non-standard-width cavities shall be filled by batt insulation cut approximately one inch (1") wider than the space to be filled.
- Narrow spaces (2" or less) at windows, between studs at the building's corners, and at the intersections of partitions and walls shall be filled with small pieces of insulation; care should be taken not to compress the insulation.

Special situations:

Installations prior to exterior sheathing or lath

- All exterior channels (e.g., at wall junctions and corners) must be filled with insulation.
- All exterior walls adjacent to tubs and showers must be filled with insulation.

Obstructions

- Insulation shall be cut to fit around wiring and plumbing without compression.
- Insulation shall be placed between the sheathing and the rear of electrical boxes.
- Insulation shall be cut to fit around junction boxes.

Rim joists

- All rim joists shall be insulated to the same R-value as the walls.
- As necessary, insulation shall be cut to fit into the rim joist.
- An alternative to fitting insulation in a web truss located at the rim joist is to completely cover the truss with insulation, snug to the upper and lower floors.

Knee walls and Skylight shafts with framing that will support insulation

- All knee walls and skylight shafts shall be insulated to a minimum of R-13.
- The insulation shall be installed without gaps and with minimal compression.

BATT CEILING INSULATION

Unfaced batt installation:

- Batts shall be correctly sized to fit snugly at the sides and ends.
- Batts should fill the cavity.
- Where necessary, batts shall be cut to fit properly -- there should be no gaps, nor should the insulation be doubled-over or compressed. When batts are cut to fit a non-standard cavity, they should be cut to be one inch (1") wider than the cavity.
- Batts should be cut to butt-fit around wiring and plumbing, or be split (delaminated) so that one layer can fit behind the wiring or plumbing and one layer fit in front.
- For batts that are taller than the trusses, full-width batts should be used so that they expand to touch each other over the trusses.
- The insulation must cover the wall top plates.
- Hard covers or draft stops should be placed over all deep drops and interior wall cavities to keep insulation in place and stop air movement. If hard covers or draft stops are missing or incomplete, they should be completed before insulation is completed.
- Required ventilation must be maintained: for eaves or soffit vents, one-inch (1") of unblocked free air space between the roof sheathing and the insulation is required.
- Where necessary, use baffles to keep the insulation from blocking the passage of air.
- Insulation shall cover all IC rated lighting fixtures.

Faced batt installation, where used as a vapor barrier: additional instructions:

- Facing should be placed toward living spaces.
- Stapling: the batt flange is stapled to the face of the framing; flanges from adjacent cavities should overlap.
- Each batt should be stapled approximately every eight inches (8") or per manufacturer's specifications on the facing.
- All tears or breaks in the facing six inches (6") or longer shall be sealed with appropriate tape approved by the insulation manufacturer. Tears and breaks in the facing should be minimal.

Insulation at bridging (cross bracing)

- Batts shall be split lengthwise at the center and packed half into the lower opening and half into the upper opening of bridging (cross bracing) of ceiling and/or floor joists.
- Alternatively, insulation is butted to the bridging and the space is filled with scrap insulation.

Rafter ceilings

- An inch of air space should be maintained between the insulation and roof sheathing.
- Facings and insulation should be kept three inches (3") away from heated flue pipes or chimneys; follow flue manufacturer's recommendations.

HVAC platform

- Verify that appropriate batt insulation is placed below any plywood platform or walks for HVAC equipment installation and access.

Attic access

- Permanently attach rigid foam or a batt of insulation to the access cover using adhesive or mechanical fastener.

BLOWN-IN CEILING INSULATION

- Baffles must be placed at eaves or soffit vents to keep insulation from blocking attic ventilation; required ventilation must be maintained: for eaves or soffit vents, one-inch (1") of unblocked free air space between the roof sheathing and the insulation is required.
- Hard covers or draft stops must be placed over all deep drops and interior wall cavities to keep insulation in place and stop air movement. If hard covers or draft stops are missing or incomplete, they should be completed before insulation is completed.
- Small, inaccessible openings shall be hand packed with pieces of batt insulation.
- Attic rulers appropriate to the material installed must be placed around attic to verify depth: 1 ruler for every 300 square feet, evenly distributed around the attic and clearly readable from the attic access.
- Insulation shall be blown to a uniform thickness throughout the attic, with no high or low spots.
- Insulation must go underneath and on both sides of obstructions such as cross-bracing and wiring.
- Insulation shall be applied all the way to the outer edge of the wall top plate.
- Insulation shall cover IC rated lighting fixtures.
- Fixtures that are not IC rated (e.g., heat lamps) need to be enclosed in a drywall box and the box covered with insulation. there shall be no excessive compression of insulation material.
- Clearances around fossil-fuel appliances and heat-exhaust vents shall follow local fire protection codes.
- No insulation or facing shall be placed in air spaces surrounding metal chimneys or fireplaces; follow manufacturer's recommendations.
- Batt or rigid foam insulation shall be installed in areas where blown-in insulation has not been applied, such as access panels and doors.

HVAC platform

- Pressure-fill the areas under any plywood platform or walks for HVAC equipment installation and access or verify that appropriate batt insulation has been installed.

Attic access

- Permanently attach rigid foam or a batt of insulation that is equal or exceeds the R-value of the insulation on the attic floor to the access cover using adhesive or mechanical fastener.

RAISED FLOORS AND FLOORS OVER GARAGES

- Batts must be correctly sized to fit snugly at the sides and ends, but not be so large as to buckle -- batts should be no more than one inch (1") wider than the cavity.
- Batts must be cut to fit properly -- there should be no gaps, nor should the insulation be doubled-over or compressed.
- Batts should fill the cavity.
- Batts should be cut to butt-fit around wiring and plumbing, or be split (delaminated) so that one layer can fit behind the wiring or plumbing and one layer fit in front.
- Where there is an air space between the insulation and flooring, the headers and band-joists must be insulated.
- If faced, facing should be placed toward living spaces.

MATERIALS SHALL:

- Comply with Chapter 11 of the International Residential Code.
- Be installed according to manufacturer specifications and instructions.

CERTIFICATES:

The insulation installer shall provide a certification listing the type, manufacturer and R-value of insulation installed in each element of the building thermal envelope. For blown or sprayed insulation (fiberglass and cellulose), the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed shall be listed on the certification. For sprayed polyurethane foam (SPF) insulation, the installed thickness of the area covered and R-value of installed thickness shall be listed on the certificate. The insulation installer shall sign, date and post the certificate in a conspicuous location on the job site and provide a copy for the inspector to place in the permanent file.

**ATTACHMENT I-2
INSULATION INSPECTION CHECKLIST**

- Insulation Certificate, signed by responsible party stating:
 - Manufacturer's name
 - Installed R-values for Walls, Ceiling and Floors
 - For Blown-in insulation: minimum weight per square foot

Walls

- No gaps
- No compression
- Insulation cut around obstructions
- Stapling correct: no gaps, cavity filled
- External channels, corners, and areas around tubs and showers insulated
- Small spaces filled
- Rim-joists insulated

Ceiling Batts

- No gaps
- No compression
- Insulation cut around obstructions
- All draft stops in place
- Batts cover trusses
- All top plates covered
- All venting clear: minimum 1" clearance
- IC rated fixtures covered
- Attic access insulated

Ceiling Blown-in

- All draft stops in place
- All drops covered with hard covers
- Insulation covers entire surface
- Insulation uniform depth
- Insulation at proper depth – insulation rulers visible and indicating proper depth
 - Note: cellulose insulation settles. Nominal settling for loose fill cellulose is 20% and for stabilized 5%; installers should either over-blow by these percentages or to manufacturer's specifications
- Insulation covering cavities, drops, scuttles, bracing, and IC rated fixtures
- Insulation covering top plates
- Baffles installed and eaves vents or soffit vents clear: minimum 1" clearance
- Bag labels cut out and stapled to truss vertical near attic access
- Attic access insulated

Floor

- Batts snug but not compressed or buckled
- All spaces insulated
- If web trusses, rim joists insulated

INSULATION INSTALLATION (SEE HANDOUT)

2006 IRC, Chapter 11 Table N1102.1, Zone 3	R-Value Minimum	R-Value Spec'd
Walls	R-13	
Floors	R-19	
Ceilings	R-30	
Mass Walls	R-5	
Basement Walls	NA	
Slabs	NA	
Crawl Space Walls	R-5 / R-13	
Supply and Return Ducts	R-8	
Ducts in Floor Trusses	R-6	
	U-Factor Maximum	U-Factor Spec'd
Fenestration Windows, Doors & Skylights	.65	
Glazed Fenestration SHGC Windows, Glazed Doors & Skylights	.40	