

DOCKETED

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CERTIFICATE OF INSTALLATION		CF2R-ENV-22-H
Quality Insulation Installation (QII) - Insulation Installation		(Page 1 of 4)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

A. Insulation Materials Installed

01	Roof Deck Insulation Material Installed	
02	Ceiling Insulation Material Installed	
03	Exterior Wall Insulation Material Installed	
04	Raised Floor Insulation Material Installed	
05	Slab Edge Insulation Material Installed	

B. All Surfaces

01	Air barrier installation and preparation for insulation was done and verified prior to insulation being installed.
02	All surfaces between conditioned and unconditioned space are sealed and insulated to meet or exceed the levels specified on the Certificate of Compliance.
03	All structural framing areas shall be insulated in a manner that resists thermal bridging through the assembly separating conditioned from unconditioned space. Structural bracing, tie-downs, and framing of steel, or specialized framing used to meet structural requirements of the CBC are allowed and must be insulated. These areas shall be called out on the building plans with diagrams and/or specified design drawings indicating the R-value of insulation and fastening method to be used.
04	All insulation was installed according to the manufacturer's installation instructions.
05	Labels or specification/data sheets for each insulation material shall be provided to the HERS rater. Loose-fill material includes insulation material bag labels or coverage charts.
06	Loose-fill insulation – The installed depth and density of insulation is verified in at least 6 random locations to ensure that the minimum thickness and installed density meet the R-value specified on the Certificate of Compliance, and are consistent with the manufacturer's coverage chart.
07	If kraft paper faced insulation is used, paper is installed on the conditioned (warm in winter) side of surface. Paper must be in contact with air barrier to within 2" framing (stud, joists, etc.).

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

C. Raised Floor Adjacent to Unconditioned Space

01	Insulation is in full contact with the subfloor.
02	Insulation hangers are spaced at 18 inches or less. Insulation hangers do not compress insulation.
03	Netting, or mesh, can be used if the cavity under the floor is filled and in contact with the subfloor.
04	When daylight basements are adjacent to crawlspaces, if the basement is conditioned the walls adjacent to the crawlspace are insulated to the R-value listed on the Certificate of Compliance. This includes framed stem walls, and vertical concrete retaining walls.
05	If access to the crawlspace is from the conditioned area the raised floor includes an airtight insulated access hatch. Where possible locate crawl space access on the exterior.

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

D. Wall Adjacent to Unconditioned Space

01	Insulation quality was verified prior to the installation of the interior air barrier (typically gypsum board).
02	Loose-fill and batt insulation is in contact with all six sides of wall cavities (top, bottom, back, left, right, front [to be installed later]) with no gaps, voids or compression. Exception: Where framing depth is greater than <u>minimum</u> required insulation thickness (e.g., R-19 batts in 2x10 walls).
03	Insulation fits snugly around obstructions (e.g., electrical boxes, plumbing and wiring) with no gaps, voids or compression.
04	Structural metal tie-downs and shear panels are insulated between exterior air barrier and metal.
05	Hard to access wall stud cavities, such as corner channels or wall intersections, are insulated to the proper R-value prior to the installation of exterior sheathing or exterior stucco lathe.
06	Insulation and interior air barrier are installed behind tub, shower, fireplace enclosures and stairwells to the R-value listed on the Certificate of Compliance when located against exterior walls.
07	All single-member window and door headers shall be insulated to a minimum of R-3 for a 2x4 framing, or equivalent width, and a minimum of R-5 for all other assemblies. If continuous exterior rigid insulation equal to or greater than R-2 is used, an insulated header is not required.
08	After insulation is installed: All insulated walls have interior and exterior air barriers, including kneewalls and walls of skylight wells. Exception: Rim joists. Interior air barrier (typically gypsum board) is sealed to top plate.

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E. Ceiling Adjacent to Unconditioned Space

01	Insulation extends to the outside surface of the exterior wall.
02	Insulation is in direct contact with the ceiling air barrier so there are no gaps, voids or compression.
03	Chimneys and flues (except zero clearance) have a sheet metal collar at the ceiling level to prevent contact with the insulation. The collar is at least as tall as the depth of the insulation. There is a minimum 1" clearance between the collar and the chimney/flue for double wall vent, and 6" for single wall vent, unless manufacturer's instructions require otherwise. The collar is sealed to the ceiling with high temperature sealant to prevent air leakage. The insulation is in contact with the sheet metal collar.
04	Recessed can lights penetrating the ceiling air barrier are covered with insulation to the depth needed to meet the ceiling R-value specified on the Certificate of Compliance.
05	External surfaces of steel studs, steel-framed kneewalls, skylight shafts, and gable ends are covered with insulation.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

F. Ceiling Insulation in Vented Attics

01	Required eave ventilation shall not be obstructed. The net-free ventilation area of the eave vent is maintained.
02	Eave vent baffles and dams are installed to prevent air movement under or into the ceiling insulation.
03	Attic access is insulated to the same R-value required by the Certificate of Compliance for ceiling insulation and the insulation is permanently attached using adhesive or mechanical fasteners.
04	Attic access must have a dam around the access to at least the same depth as the insulation.
05	Attic rulers specified to the installed loose-fill material (brand and type) are installed and evenly distributed throughout the attic to verify depth (one ruler for every 250 ft ²). The rulers are clearly readable and scaled to read inches of insulation and the R-value installed.
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G. Insulation in Unvented Attics

01	The roof sheathing is the air barrier and is sealed to prevent air movement to the outside.
02	Insulation is in full contact with the air barrier (roof sheathing).
03	If insulated using air permeable insulation, gable end walls are sealed and insulated the same as exterior walls, including interior air barrier.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

H. Insulation in Vented Attics (High Performance Vented Attics)

01	Insulation is in full contact with roof sheathing and firmly supported to prevent sagging.
02	Batt insulation between roof trusses is acceptable with minimal gaps and voids caused by roof truss members.
03	Insulation is not required on gable end walls.
04	Required roof deck insulation over any conditioned space, or HVAC ducts, is installed on the entire attic roof deck; even over unconditioned spaces (e.g., garage, covered porch). Roof deck of attic over unconditioned space without HVAC ducts and separated from other attics by a sealed air barrier do not need to be insulated.
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I. Special Requirements for Skylight Shafts and Attic Knee Walls

01	Insulation must meet all the requirements for walls and insulation is in contact with the air barrier on all six sides unless SPF is used.
02	Insulation shall be in full contact with the interior wall finish. Batt insulation must be cut to fit around 2x4's that are laid flat.
03	Skylight shafts and attic knee walls shall be completely enclosed by vertical and horizontal framing, including horizontal plates at the top and bottom of the insulation.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

J. Special Requirements for Floors Above Garages

01	If the air barrier is at the perimeter of the garage below the conditioned subfloor, then the insulation may be placed on the garage ceiling. The perimeter of the subfloor must also be insulated.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

K. Special Requirements for Cantilevered Floors

01	Sealed blocking shall be installed between joists where the wall rim joist would have been located in the absence of a cantilever. Insulation shall be placed on both sides of the block.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

QII - INSULATION INSTALLATION

CEC-CF2R-ENV-22-H (Revised 01/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF INSTALLATION		CF2R-ENV-22-H
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L. Special Requirements for Attached Porches

01	Exterior wall at the intersection of the porch roof is fully insulated above, below and behind the roof line.
02	Where truss framing is used, airtight blocking is used at the top and bottom of each wall/roof section and is insulated.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

M. Special Requirements for SPF Insulation

01	Installed product meets the claimed R-value per inch. Non-standard values are supported by an ICC Evaluation Service Report (ESR) number (e.g., ESR-xxxx) and documented on the CF2R-ENV-03. Non-standard values are anything greater than R-5.8/inch for closed cell and R-3.6/inch for open cell.
02	Installed thickness meets the required R-value from the Certificate of Compliance. Verified in at least 6 random places for each surface type: floors, walls, and ceilings.
03	Insulation is spray applied to fully adhere to structural assembly framing, floor and ceiling joists, and other framing surfaces within the construction cavity.
04	If multiple layers are applied, each foam lift (e.g., spray application) adheres to the substrate and foam interfaces.
05	Closed cell SPF: In areas where an air barrier is required the foam is at least 2" thick.
06	Open cell SPF: In areas where an air barrier is required the foam is at least 5.5" thick.
07	Open cell SPF: Depressions in the foam insulation surface are not greater than 1/2" of the required thickness provided these depressions do not exceed 10% of the surface area being insulated.
08	Open cell SPF: Insulation completely fills cavities of 2x4 framing.
09	SPF insulation is not applied directly to recessed lighting fixtures unless specifically allowed by manufacturer's instructions. When not allowed, can lights are: <ul style="list-style-type: none"> A. Covered with a <u>minimum of 1.5"</u> of mineral fiber insulation; or B. Enclosed in a manufacturer's approved box fabricated from an approved material, such as 18 gauge sheet metal or 1/2" gypsum board.
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QII - INSULATION INSTALLATION

CEC-CF2R-ENV-22-H (Revised 01/19)

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Documentation Author Company Name:	Date Signed:
Address:	CEA/HERS Certification Identification (If applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Installation is true and correct.
- I am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
- The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
- I understand that a HERS rater will check the installation to verify compliance and if such checking determines the installation fails to comply, I am required to offer any necessary corrective action at no charge to the building owner.
- I will ensure that a registered copy of this Certificate of Installation shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone	Date Signed:
Third Party Quality Control Program (TPQCP) Status:	Name of TPQCP (if applicable):	

CF2R-ENV-22 User Instructions

Quality Insulation Installation (QII) applies to the entire building (roof/ceiling, walls, and floor) for new construction and requires field verification by a third-party HERS Rater. For alterations to existing buildings, compliance credit can only be taken when the “existing, plus addition, plus alteration” approach is used, but credit will only apply the new surfaces in the new zone.

A. Insulation Materials Installed

1. Roof Deck Insulation Material Installed: Using the drop down menu, indicate what type of insulation material is being installed (e.g., Batt and Blanket, Rigid Board, SPF, etc.).
2. Ceiling Insulation Material Installed: Using the drop down menu, indicate what type of insulation material is being installed (e.g., Batt and Blanket, Rigid Board, SPF, etc.).
3. Exterior Wall Insulation Material Installed: Using the drop down menu, indicate what type of insulation material is being installed (e.g., Batt and Blanket, Rigid Board, SPF, etc.).
4. Raised Floor Insulation Material Installed: Using the drop down menu, indicate what type of insulation material is being installed (e.g., Batt and Blanket, Rigid Board, SPF, etc.).
5. Slab Edge Insulation Material Installed: Using the drop down menu, indicate what type of insulation material is being installed (e.g., Batt and Blanket, Rigid Board, SPF, etc.).

B. All Surfaces

The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.

C. Raised Floor Adjacent to Unconditioned Space

The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.

D. Wall Adjacent to Unconditioned Space

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E. Ceiling Adjacent to Unconditioned Space

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F. Ceiling Insulation in Vented Attics

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G. Insulation in Unvented Attics

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K. Special Requirements for Cantilevered Floors

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L. Special Requirements for Attached Porches

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M. Special requirements for SPF Insulation

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For information and data collection
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HERS provider