



CERTIFICATE OF INSTALLATION		CF2R-ENV-21-H
Quality Insulation Installation (QII) –Air Infiltration Sealing - Framing Stage for Batt, Loose Fill, and SPF (Page 1 of 3)		
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City	Zip Code

A. AIR INFILTRATION AND INSULATION INSTALLATION (QII) - FRAMING STAGE

- | | |
|----|---|
| 01 | The requirements below cover the required air sealing and installation of insulation that must occur in the framing stage. |
| 02 | Spray Foam Insulation (SPF) can be considered an air barrier when SPF covers the possible leakage area to a thickness of 5.5 inches for open cell SPF (ocSPF) and 2.0 inches for closed cell SPF (ccSPF). |

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

B. RAISED FLOOR

- | | |
|----|---|
| 01 | All gaps in the raised floor are sealed. |
| 02 | All chases sealed at floor level using a hard cover and the hard covers are sealed. |
| 03 | All Plumbing and electrical wires that penetrate the floor are sealed. |
| 04 | Subfloor sheathing is glued or sealed at all exterior panel edges, to create a continuous air tight subfloor. |

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

C. WALLS/KNEE WALLS

- | | |
|----|---|
| 01 | All penetrations through the exterior wall air barrier are sealed to provide an air-tight envelope to unconditioned spaces such as the outdoors, attic, garage and crawl space. |
| 02 | Exterior wall air barrier is sealed to the top plate and bottom plate in each stud bay. |
| 03 | All electrical boxes including knockouts that penetrate the air barrier to unconditioned space are sealed. |
| 04 | All openings in top and bottom plate, including all interior and exterior walls, to unconditioned space are sealed. Such as holes drilled for electrical and plumbing. |
| 05 | Exterior bottom plates (all stories) are sealed to the floor using the appropriate sealing method under the entire exterior bottom plate of the home. |
| 06 | All gaps around windows and doors are sealed. Proper sealant used was specified by window manufacturer. |
| 07 | Rim Joists all gaps/openings fully sealed. |
| 08 | Fan exhaust ducts that run between conditioned floors to exterior walls have a damper at the exterior wall. |
| 09 | Metal tie downs are insulated between exterior framing and tie down. |
| 10 | Insulation is installed in hard to access wall stud cavities, such as corner channels, wall intersections are insulated to the proper R-value prior to exterior sheathing, or the exterior stucco lath. |
| 10 | Insulation is installed behind tub, shower, fireplace enclosures, and exterior stairwells to the R-value listed on the CF1R when located against exterior walls. Insulation is required to be installed <u>before</u> tub, shower, and fireplace are installed. |
| 11 | A solid air barrier is installed on the interior wall from floor to ceiling before tub, shower, and fireplace enclosures are installed in exterior walls. Insulation in contact on all six sides of air barrier on exterior walls. |
| 12 | All window and door headers shall be insulated to a minimum of R-2 between the exterior face of the header and inside surface of the finish wall material. |
| 13 | Knee walls have solid and sealed blocking at the bottom, top, left side and right side of the knee wall. |

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

D. CEILING/ATTIC

- | | |
|----|---|
| 01 | For vented attics much of the ceiling air barrier is verified <u>after</u> the ceiling drywall is installed using the ENV-22. |
| 02 | For non-vented attics ensure all penetrations through the roof deck and gable ends are sealed and air tight. |
| 03 | All eave vents are covered with a rigid ventilation baffle that maintains the Net free-ventilation area. |
| 04 | All dropped ceilings/soffits are covered with hard covers and sealed to framing. |
| 05 | All chases are covered with hard covers and sealed to framing. |
| 06 | HVAC ducts that travel down a chase the chase is sealed at the ceiling level. |
| 07 | Chimney's and Flue's require sheet metal flashing. The flashing shall be sealed to the chimney/flue with fire rated caulk. The flashing shall be sealed to the surrounding framing. |
| 08 | All Eave/soffit baffles are installed to stop air movement around the baffle and into insulation. Net free-ventilation of the eave/soffit shall be maintained. |
| 09 | Double walls that open to attic are covered with an air barrier and cover has an air tight seal to the framing. |

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

E. CONDITIONED SPACE ABOVE OR ADJACENT TO GARAGE AIR BARRIER

- | | |
|----|---|
| 01 | All penetration in the subfloor above the garage into conditioned space must follow the raised floor air barrier requirements above. |
| 02 | The builder needs to ensure infiltration does not enter the house between the space above the garage and subfloor. Select the option used |

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	below:	
03	[Yes or No]	(a) Edges are Sealed at the garage ceiling (typical drywall) at the perimeter of the garage to create a continuous air tight surface between the garage and adjacent conditioned envelope. Seal all plumbing, electric and mechanical penetrations between the garage and the adjacent conditioned space. For an open-web truss, airtight blocking is added on four sides of the garage perimeter. Insulation can be placed on the garage ceiling.
04	[Yes or No]	(b) Seal band joist above the wall at the garage to conditioned space transition. Seal all subfloor seams and penetrations between the conditioned space and the garage. Insulation must be placed in contact of subfloor below conditioned space.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.		

F. WALLS FOR ATTACHED PORCH, ATTIC, DOUBLE WALL		
01	All walls that separate conditioned and unconditioned space includes a continuous air barrier on the interior and exterior wall.	
02	Exterior wall, air barrier required at the intersection of the porch and exterior wall when there is conditioned space on the other side. The exterior wall where the attic attaches to the conditioned space does includes an air barrier.	
03	Truss framing blocking is used at the top and bottom of each wall/roof section.	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.		

G. CANTILEVERED FLOOR AIR BARRIER		
01	Airtight blocking is installed between joists where the wall rim joist would have been located in the absence of a cantilever.	
02	Exterior sheathing is installed to the bottom of the cantilever so that there is a continuous air and weather barrier for the cantilever. The cantilevered joist must be insulated to the same R value as would be required for the subfloor prior to closing.	
03	Any gaps, cracks or penetrations in the air barrier of the cantilever are sealed. Can lights in the cantilever are IC and AT rated and properly sealed to sheathing.	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.		

G. MULTIFAMILY AIR BARRIER		
01	Multifamily buildings must meet all air sealing requirements for single family buildings listed above.	
02	Each dwelling unit must be air sealed to stop air movement from one unit to another.	
03	Floor AND Ceiling of each Dwelling Unit: All penetrations through the floor and ceiling of each unit are sealed including, electric and gas utilities, water pipes, drain pipes, fire protection service pipes, communication wiring.	
04	Elevator penthouse, mechanical penthouse, stairwell doors, roof access hatch, plumbing stacks sealed to reduce air transfer from attached spaces.	
05	Common Walls: Bottom plate between units is sealed to the subfloor. All penetrations in the common walls are sealed including electrical boxes, wiring and plumbing penetrations. Perpendicular Interior walls that open into the common walls are sealed.	
06	Vertical Chases for garbage chutes, elevator shafts, and HVAC ducting plumbing must be sealed to the floor and ceiling of each unit to stop air movement up and around the chase due to stack effect.	
07	Vertical Chases for garbage chutes, elevator shafts, and HVAC ducting plumbing, wiring etc. must be sealed to stop air movement through the chase to the surrounding spaces.	
08	Common Hallways must be sealed to stop air movement into dwelling units.	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.		



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Quality Insulation Installation (QII) –Air Infiltration Sealing - Framing Stage for Batt, Loose Fill, and SPF (Page 3 of 3)		
Project Name:	Enforcement Agency:	Permit Number:
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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:		
<ol style="list-style-type: none"> The information provided on this Certificate of Installation is true and correct. I am 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 (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer. 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 plans and specifications approved by the enforcement agency. I understand that a HERS rater will check the installation to verify compliance, and that if such checking identifies defects; I am required to take corrective action at my expense. I understand that Energy Commission and HERS Provider representatives will also perform quality assurance checking of installations, including those approved as part of a sample group but not checked by a HERS rater, and if those installations fail to meet the requirements of such quality assurance checking, the required corrective action and additional checking/testing of other installations in that HERS sample group will be performed at my expense. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met. 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):	

Registration Number:

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HERS Provider:

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CERTIFICATE OF INSTALLATION		CF2R-ENV-21-H
Quality Insulation Installation (QII) – Air Infiltration Sealing - Framing Stage for SIP and ICF		(Page 1 of 3)
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If there are any traditional stick built exterior walls use the CF2R-ENV-21. For traditional stick built roof/ceiling use the CF2R-ENV-22 and 23.

A. INSTALLATION	
01	The R-value of all SIP/ICF products is the same or better than listed on the CF1R.
02	If modeled on the CF1R the density of the installed product is the same as installed.
03	SIP/ICF products have been installed per manufacturer installation instructions.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

B. RAISED FLOOR	
01	All gaps in the raised floor are sealed.
02	All chases sealed at floor level using a hard cover and the hard covers are sealed.
03	All Plumbing and electrical wires that penetrate the floor must be sealed.
04	Subfloor sheathing is glued or sealed at all exterior panel edges, to create a continuous air tight subfloor.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

C. WALLS	
01	Exterior walls are sealed to every floor on every story.
02	All gaps around windows and doors are sealed. Proper sealant used was as specified by window manufacturer.
03	All gaps around windows and doors are filled with insulation. Batt insulation is not allowed to be stuffed into gap.
04	All plumbing and wiring penetrations through the top and bottom of panels, and electrical boxes that penetrate the wall are sealed.
05	All SIP panel joints sealed at the interior of the wall and the exterior of each panel.
06	Fan exhaust ducts that run between conditioned floors to exterior walls must include a damper at the exterior wall.
06	Header sealed to wall with continues foam or caulk per manufacturer directions.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

D. SIP CEILING	
01	For vented attics use the CF2R-ENV-22.
02	For non-vented attics ensure all penetrations through the roof deck and gable ends are sealed and air tight.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

E. CONDITIONED SPACE ABOVE OR ADJACENT TO GARAGE AIR BARRIER	
All penetration in the subfloor above the garage into conditioned space must follow the raised floor air barrier requirements above.	
01	The builder needs to ensure infiltration does not enter the house between the space above the garage and subfloor. Select the option used:
02	[Y or No] (a) Sealed all edges of garage ceiling (typical drywall) at the perimeter of the garage to create a continuous air tight surface between the garage and adjacent conditioned envelope. Seal all plumbing, electric and mechanical penetrations between the garage and the adjacent conditioned space on. For an open-web truss, airtight blocking must be added on four sides of the garage perimeter. Insulation can be placed on the garage ceiling.
03	[Y or No] (b) Seal band joist above the wall at the garage to conditioned space transition. Seal all subfloor seams and penetrations between the conditioned space and the garage. Insulation must be placed in contact of subfloor below conditioned space.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

F. CANTILEVERED FLOOR AIR BARRIER	
01	Airtight blocking shall be installed between joists where the wall rim joist would have been located in the absence of a cantilever.
02	Exterior sheathing shall be installed to the bottom of the cantilever so that there is a continuous air and weather barrier for the cantilever. The cantilevered joist must be insulated to the same R-value as for the subfloor.
03	Any gaps, cracks or penetrations in the air barrier of the cantilever shall be sealed. Recessed down lights in the cantilever is IC and AT rated and properly sealed to sheathing.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

G. MULTIFAMILY AIR BARRIER	
01	Multifamily buildings require all the above plus each unit must control air movement across envelope components separating each dwelling.
02	Floor AND Ceiling of each Dwelling Unit – All penetrations through the floor and ceiling of each unit must be sealed including, electric and gas utilities, water pipes, drain pipes, fire protection service pipes, communication wiring etc.
03	Elevator penthouse, mechanical penthouse, stairwell doors, roof access hatch, plumbing stacks etc. sealed to reduce air transfer from

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	attached spaces.
04	Common Walls – Bottom plate between units must be sealed to the subfloor. All penetration in the common walls is sealed. Interior walls that open into the common walls must be sealed.
05	Vertical Chases – All vertical chases are sealed at the floor and ceiling of each unit so air cannot transfer from first floor to second floor around chase.
06	Vertical Chases –The chases such as garbage chutes, elevator shafts, and HVAC ducting are sealed to stop air movement through the chase to surrounding spaces.
07	Common Hallways – Penetrations between dwelling unit and common hallways are sealed including doors to the dwelling unit are gasketed or made substantially airtight.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

For information and data collection only. Not valid until registered with a HERS provider



CERTIFICATE OF INSTALLATION		CF2R-ENV-21-H
Quality Insulation Installation (QII) – Air Infiltration Sealing - Framing Stage for SIP and ICF		(Page 3 of 3)
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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:		
<ol style="list-style-type: none"> The information provided on this Certificate of Installation is true and correct. I am 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 (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer. 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 plans and specifications approved by the enforcement agency. I understand that a HERS rater will check the installation to verify compliance, and that if such checking identifies defects; I am required to take corrective action at my expense. I understand that Energy Commission and HERS Provider representatives will also perform quality assurance checking of installations, including those approved as part of a sample group but not checked by a HERS rater, and if those installations fail to meet the requirements of such quality assurance checking, the required corrective action and additional checking/testing of other installations in that HERS sample group will be performed at my expense. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met. 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):	



CERTIFICATE OF INSTALLATION		CF2R-ENV-22-H
Quality Insulation Installation (QII) - Air Infiltration Sealing - Ceiling/Roof Deck		(Page 1 of 2)
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For typical vented attics where the insulation is at the roof deck ceiling air barrier must be verified after the ceiling drywall is installed and before attic insulation is installed. If SPF will be used in the attic this can be considered the air barrier. Soffit and chases must still be covered and chimneys and flues require metal flashing. Buildings with a Non vented attic all air sealing requirements appropriate for the roof must be verified.

A. CEILING INSPECTION – Vented Attics	
01	If there is a continuous air barrier at the ceiling level; All opening into walls, drops, chases, double walls are sealed. Examples are below.
02	Chimney's and Flue's require sheet metal flashing. The flashing shall be sealed to the chimney/flue with fire rated caulk. The flashing shall be sealed to the surrounding framing.
03	All penetration through the top plate of interior and exterior walls are sealed.
04	Electrical boxes, fire alarm boxes, fire sprinklers, cut into ceiling are sealed to the surrounding drywall and all gaps in the box are sealed. If not possible to seal fixture directly a secondary air barrier was created around the fixture.
05	All installed recessed light fixtures that penetrate the ceiling to unconditioned space are rated to be Insulation Contact and Air Tight (IC and AT) which allows direct contact with insulation. Housing is sealed to the drywall.
06	Exhaust fan housing is sealed to surrounding drywall and all holes and seams in the housing sealed.
07	All soffits and chases are covered with a hard cover that is sealed to the framing with caulk or foam.
08	Double walls that open to attic are covered and the cover sealed to the framing.
09	Attic Access forms airtight seal from conditioned space to unconditioned space. Vertical attic access requires mechanical compression using screws, or latches.
10	Knee walls require solid and sealed blocking at the bottom, top left side and right side of the knee wall. When the knee wall is placed on top of a subfloor the open cavity below the subfloor and the ceiling below are sealed.
11	HVAC ducts that travel down a chase the chase are sealed at the ceiling level.
12	HVAC boots that penetrate the ceiling are sealed to the surrounding drywall.
13	All top plates of interior and exterior walls sealed to drywall.
16	Attic access must be surrounded with a dam at least the same depth as the insulation to prevent loss of ceiling insulation.
17	There must be a dam placed at the exterior edge of all kneewalls and all edges of insulation to stop air movement through insulation.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

B. ROOF INSPECTION – Non vented attics	
01	There is a continuous air barrier at the roof deck and gable ends.
02	Chimney's and Flue's require sheet metal flashing at the roof deck. The flashing is sealed to the chimney/flue with fire rated caulk. The flashing is sealed to the surrounding framing.
03	All penetrations for plumbing, electrical etc in the roof deck and gable ends are sealed.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	



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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:		
<ol style="list-style-type: none"> The information provided on this Certificate of Installation is true and correct. I am 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 (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer. 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 plans and specifications approved by the enforcement agency. I understand that a HERS rater will check the installation to verify compliance, and that if such checking identifies defects; I am required to take corrective action at my expense. I understand that Energy Commission and HERS Provider representatives will also perform quality assurance checking of installations, including those approved as part of a sample group but not checked by a HERS rater, and if those installations fail to meet the requirements of such quality assurance checking, the required corrective action and additional checking/testing of other installations in that HERS sample group will be performed at my expense. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met. 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):	

INSULATION STAGE

CEC-CF2R-ENV-23-H (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF INSTALLATION		CF2R-ENV-23-H
Quality Insulation Installation (QII) - Insulation Stage		(Page 1 of 4)
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A. QUALITY INSULATION INSTALLATION (QII) INSULATION STAGE	
01	Insulation shall be installed to the requirements of Reference Residential Appendices, RA 3.5.
02	Air barrier installation and preparation for insulation was done at framing stage prior to insulation being installed
03	All structural framing areas shall be insulated in a manner that resists thermal bridging of 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 specific design drawings indicating the R-value of insulation and fastening method to be used. It is recommended that spray foam be use.
04	Medium and light density Spray Foam (SPF) manufacturers claim various R-values per inch. In California the maximum R-value that can be claimed for close cell SPF (ccSPF) is an R-value of 5.8 per inch and for open cell SPF (ocSPF) is an R-value of 3.6 per inch, unless documentation is provided showing that the product and/or manufacturer has a current ICC Evaluation Service Report (ESR) that shows compliance with <i>Acceptance Criteria for Spray-Applied Foam Plastic Insulation--AC377</i> .
05	All insulation was installed to the manufactures insulation installation instructions.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

B. QUALITY OF ALL INSTALLED INSULATION	
01	Installed insulation R-values is the same or greater than specified on the CF1R.
02	No gaps or voids between the insulation and framing.
03	Gaps between studs shall be filled with insulation.
04	Batt - ensure the ends are cut so there are no gaps.
05	Batt - Insulation is cut around obstructions like electrical boxes and no gaps exist.
06	Batt - insulation is not compressed (no stuffing of the insulation into the cavity).
07	Batt insulation is delaminated around all plumbing and electrical lines in ceilings, walls and floors.
08	An air barrier is installed at all exposed edge of insulation.
09	Loose-fill insulation installed to the minimum installed weight per square foot per the manufacturer's labeled R-value specification.
10	Rigid board insulation shall be installed according to the manufacturer's installation instructions.
11	SPF insulation shall be spray-applied to fully adhere to structural assembly framing, floor and ceiling joists, and other framing surfaces within the construction cavity.
12	SPF - with multiple layers applied, each foam lift (i.e. spray application) adheres to the substrate and foam interfaces.
13	SPF - if values other than R-5.8 per inch for ccSPF and R-3.6 per inch for ocSPF is used, then an ICC Evaluation Service Report (ESR) is attached and uploaded to the HERS provider's web site.
14	ccSPF - in areas where an air barrier is required the foam is at least two inches thick.
15	ocSPF depressions in the foam insulation surface is not greater than 1-inch of the required thickness provided these depressions do not exceed 10% of the surface area being insulated.
16	ocSPF insulation does completely fill cavities of 2x4 inch framing or less.
17	ocSPF cavities greater than 2x4 inch framing are filled to the thickness that meets the required R-value used for compliance.
18	SPF installed as an air barrier is sprayed at a minimum of 5.5 inches in thickness for open cell and 2.0 inches for closed cell.
19	A CF2R-ENV-03 is provided with this document that specifies each type of insulation material installed. Labels or specification/data sheets are attached to the CF2R-ENV-03 for each insulating material. Blown in material also includes insulation material bag labels or coverage charts.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

C. CEILING/ROOF INSULATION	
01	Insulation extends to the outside edge of the exterior top plates and is flush against any ventilation dams/baffles.
02	Insulation is in direct contact with ceiling so there are no gaps between the ceiling and the insulation.
03	Chimneys and flues (except for zero clearance) require sheet metal collar around the stack. The collar must be at least as tall as the depth of the insulation. The collar shall be 1" from the chimney/flue for double wall vent, and 6" from the chimney/flue for single wall vent" unless manufacturer requires otherwise. The collar must be sealed to the ceiling with high temperature sealant to prevent air leakage. The insulation is in contact with the sheet metal collar.
04	Required eave ventilation shall not be obstructed - the net free-ventilation area of the eave vent is maintained
05	Eave vent baffles are installed to prevent air movement under or into the ceiling insulation
06	Recessed downlights are covered with insulation. If they are not covered to the same depth as required by the CF1R for ceiling insulation then a area weighted calculation is required. Recessed downlights are AT and IC rated.
07	Recessed downlights where SPF insulation is installed shall: (Note: SPF insulation shall not be applied directly to recessed lighting fixtures) (a) be covered with a minimum of 1.5 inches of mineral fiber insulation, or

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INSULATION STAGE

CEC-CF2R-ENV-23-H (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



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	(b) be enclosed in a box fabricated from 1/4 inch plywood, 18 gauge metal, 3/8 inch hard board or gypboard. Hard board or gypboard do not cause a recessed downlights to meet the zero clearance insulation contact requirements.
08	Walkways and mechanical platforms are insulated to the same R-value as required by the CF1R for ceiling insulation. If not an area weighted calculation is completed and turned in with this form.
09	Soffits, chasses, drops have a sealed hard cover and the insulation is in direct contact with the hard cover.
10	Knee walls – an air dam the full depth of the ceiling insulation is added to the exterior edge of the knee wall so the ceiling insulation overlaps the knee wall to the full depth of the ceiling insulation.
11	Attic access doors are insulated to the same R-value required by the CF1R for roof insulation and the insulation is permanently attached using adhesive or mechanical fasteners. Preferred method is rigid insulation.
12	Attic Access forms airtight seal from conditioned space to unconditioned space. Vertical attic access requires mechanical compression using screws, or latches.
13	Attic access must have a dam around the access to at least the same depth as the insulation.
14	Insulation batts must be cut to fit around cross bracings and truss webs.
15	Attic rulers appropriate to the material are installed and evenly distributed throughout the attic to verify Depth (one ruler for every 250 square feet) The rulers are clearly readable from the attic access and scaled to read inches of insulation and the R-value installed.
16	Loose fill and SPF insulation a HERS rater shall measure the installed thickness (include low and high areas) and density of insulation in at least 6 random locations on walls, roof/ceilings and floors to ensure minimum thickness levels and the installed density meets the R-value specified on the Certificate of Compliance, and are consistent with the manufacturer's coverage chart.
17	Steel-framed kneewalls, skylight shafts, and gable ends, external surfaces of steel studs are covered with insulation
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

D. WALL INSULATION	
01	Batts, loose fill mineral fiber, mineral and natural wool, and cellulose: fills cavity and is in contact with air barrier on six sides.
02	ccSPF: completely fill cavities of 2x4 inch framing or less. Not required to fill cavities greater than 2x4 inch framing unless required to meet R-value.
03	ccSPF: insulation is not required to fill the cavities of framed assemblies unless required to meet R-value.
04	Double walls and bump-outs - insulation fills the cavity, or additional air barrier is installed so the insulation fills the cavity and is in contact with the insulation on all six sides unless SPF is used. Insulation shall be installed on the exterior of the double walls/bump-outs.
05	Low expanding foam used around windows and doors, if allowed by the manufacturer. If not allowed fill cavity with insulation. Batts are not allowed to be stuffed into space.
06	Electrical panel in exterior insulated wall the panel is air tight and insulation is installed behind the panel.
07	Skylight shafts and attic knee wall insulation must meet all the requirements for walls and is in contact with the air barrier on six sides unless SPF is used.
08	Skylight shafts and attic kneewalls insulation shall be in full contact with the drywall or other interior wall finish. Batt insulation must be cut to fit around 2x4's that are laid flat.
09	Skylight shafts and attic kneewalls shall be completely enclosed by vertical and horizontal framing, including horizontal plates at top and bottom of the insulation.
10	Band/Rim joists are insulated to the same R-value as the wall.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

E. RAISED FLOOR INSULATION QUALITY	
01	Insulation is in full contact with 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 CF1R. 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 from the exterior.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

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F. FLOOR ABOVE GARAGE INSULATION QUALITY

01	Insulation must be in full contact with subfloor if the air barrier is at the band joist at the garage house wall.
02	Insulation hangers spaced at 18 inches or less, insulation hangers must 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	If air barrier is at the perimeter of the garage below the conditioned subfloor then the insulation may be placed on the garage ceiling. Perimeter of 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.	

G. CANTILEVERED FLOOR INSULATION QUALITY

01	Insulation is in full contact with cantilevered subfloor. Insulation hangers are spaced at 18 inches or less, insulation hangers do not compress insulation. Netting or mesh can be used if the cavity under the floor is filled and in contact with the subfloor.
02	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 this block.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

H. ATTACHED PORCH ROOF INSULATION QUALITY

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

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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:		
<ol style="list-style-type: none"> The information provided on this Certificate of Installation is true and correct. I am 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 (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer. 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 plans and specifications approved by the enforcement agency. I understand that a HERS rater will check the installation to verify compliance, and that if such checking identifies defects; I am required to take corrective action at my expense. I understand that Energy Commission and HERS Provider representatives will also perform quality assurance checking of installations, including those approved as part of a sample group but not checked by a HERS rater, and if those installations fail to meet the requirements of such quality assurance checking, the required corrective action and additional checking/testing of other installations in that HERS sample group will be performed at my expense. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met. 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):	

Registration Number:

Registration Date/Time:

HERS Provider:

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