

INSULATION STAGE CHECKLIST

CEC-CF-4R-ENV-22 (Revised 05/12)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF FIELD VERIFICATION AND DIAGNOSTIC TESTING		CF-4R-ENV-22
Quality Insulation Installation (QII) - Insulation Stage Checklist		(Page 1 of 3)
Site Address:	Enforcement Agency:	Permit Number:

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.

SPF insulation can be considered an air barrier when the bottom and top plates of vertical framing and both ends of horizontal framing, including band and rim joists, are sprayed to completely fill the cavity adjacent to and in contact with the framing to a distance of 5.5 inches away from the framing for open cell SPF (ocSPF) or 2.0 inches away from the framing for closed cell SPF (ccSPF). SPF can be considered as an air barrier with less than the above thickness when a product data or specification sheet is provided that shows the product meets an air permeance no greater than 0.02 L/s-m² at 75 Pa pressure differential when tested in accordance to ASTM E2178 or ASTM E283.

Closed cell and open cell manufacturers claim various R-values per inch. In California the maximum R-value that can be claimed for ccSPF is an R-value of 5.8 per inch and for ocSPF is an R-value of 3.6 per inch. Higher R-values per inch cannot be claimed even with manufacturer data.

Insulation Stage Checklist**✓ FLOOR INSULATION**

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All floor joist cavity insulation installed to uniformly fill the cavity side-to-side and end-to-end, NO gaps. (NA if slab on grade)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation in full contact with the subfloor, NO gaps. (NA if slab on grade)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: cut to fit around wiring and plumbing, or split (delaminated). (NA if loose fill, SPF, or slab on grade)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: shall be properly supported to avoid gaps, voids, and compression. (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation R-value same or greater than listed on CF-1R. (NA for slab on grade)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gaps between studs larger than 1/8" the cavity must be filled with insulation or foam. (NA for slab on grade)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: list the required floor cavity R-value from CF-1R, R-____. Determine required thickness for ccSPF (required R-value ____ / 5.8R) = ____ inches), or required thickness for ocSPF (required R-value ____ / 3.6 = inches). (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: measure thickness of floor insulation in 6 random areas. Minimum thickness for ccSPF shall be no more than 1/2 inch less than the required thickness listed above. Minimum thickness for ocSPF shall be no more than 1 inch less than the required thickness listed above. (NA for other forms of insulation)
Yes	No	NA	

✓ WALL INSULATION

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts, loose fill mineral fiber, mineral wool, and cellulose: fills cavity and is in contact with air barrier. ocSPF: shall completely fill cavities of 2x4 inch framing or less. Cavities greater than 2x4 inch framing dimensions must be filled to the thickness calculated above. ccSPF: insulation is not required to fill the cavities of framed assemblies provided the installed thickness of insulation conforms to the thickness calculated above.
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Double walls and bump-outs - insulation fills the cavity or additional air barrier installed in the cavity so that the insulation fills the cavity and in contact with the air barrier. (NA if SPF meets conditions above and meets the required R-value)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation installed in exterior walls adjacent to tub/shower, walls under stairs, and fireplace. Insulation required to fill wall cavity. Cavity required to be air tight. (NA if none of the above)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All gaps around windows and doors filled with insulation or filled with low expanding foam.
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: no voids/depressions greater than 3/4" in ANY stud bay. (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: voids/depressions less than 3/4" allowed as long as the area is not greater than 10% of the surface area for each stud bay. (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loose Fill: no gaps or voids. Insulation completely fills the cavity. (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gaps between studs larger than 1/8" the cavity must be filled with insulation or foam.
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All Rim-joists to the outside insulated. (NA if no Rim-joists)
Yes	No	NA	

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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation installed at corner channels, wall intersections, and adjacent to tub/shower enclosures insulated to proper R-Value.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All skylight shafts and attic kneewalls insulated with minimum R-19. (NA if no skylights, kneewalls or in conditioned attic)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation in full contact with air barrier or wall finish for skylight shafts and attic kneewalls. (NA if no skylight or kneewalls)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Installed wall insulation R-value equal to or greater than what is listed on the CF-1R.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: insulation installed without gaps and to provide an air seal when specified as an air barrier. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: list the required wall cavity R-value from CF-1R, R-____. Determine required thickness for ccSPF (required R-value ____ / 5.8R) = ____ inches), or required thickness for ocSPF (required R-value ____ / 3.6 = inches). (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: measure thickness of wall insulation in 6 random areas. Minimum thickness for ccSPF shall be no more than ½ inch less than the required thickness listed above. Minimum thickness for ocSPF shall be no more than 1 inch less than the required thickness listed above. (NA for other forms of insulation)
✓ CEILING / ROOF INSULATION			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gaps between studs larger than 1/8" the cavity must be filled with insulation or foam.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: no gaps/voids/depressions greater than 3/4". (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: voids/depressions less than 3/4" allowed as long as the area is not greater than 10% of the surface area for each stud bay. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loose Fill: NO gaps or voids allowed. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All ceiling/roof insulation installed to uniformly fit the cavity side-to-side and end-to-end.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation in full contact with the ceiling/roof, NO gaps.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation in contact with air barrier.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts: cut to fit around wiring and plumbing, or split (delaminated). (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts taller than bottom chord must expand over the bottom chord or additional insulation installed so bottom chord not visible. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Batts cut to fit around ALL webbing. No gaps allowed between webbing and batts. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: list the required ceiling R-value from CF-1R, R-____. Required depth of insulation for ccSPF (required R-value ____ / 5.8R = ____ inches), or required depth of ocSPF (required R-value ____ / 3.6 = ____ inches). (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SPF: measure thickness of ceiling insulation in 6 random areas. Minimum thickness for ccSPF shall be no more than ½ inch less than the required thickness listed above. Minimum thickness for ocSPF shall be no more than 1 inch less than the required thickness listed above. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HVAC Platform and Catwalks – insulated to R-value equal to ceiling R-value listed on CF-1R. If less insulation installed then called out on CF-1R. (NA if no platform or catwalks)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Attic access gasketed. (NA if no attic access)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Attic access insulated with rigid foam or batt insulation using adhesive or mechanical fastener. Attic access door R-value equal to ceiling R-value listed on CF-1R. If less insulation installed then called out on CF-1R. (NA if no attic access)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recessed light fixtures covered full depth with insulation. If SPF used then other forms of insulation used to cover or enclose fixture in a box fabricated from ½-inch plywood, 18 ga. sheet metal, 1/4-inch hard board or drywall. SPF or other insulation then covers light fixture to full depth. (NA if no recessed light fixtures)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All recessed light fixtures in non conditioned space are IC rated and air tight (AT). (NA if no recessed light fixtures)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All recessed light fixtures are sealed with a gasket or caulk between the housing and the ceiling. (NA if no recessed light fixtures)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ceiling insulation equal to or greater than what is listed on the CF-1R.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loose Fill: Minimum thickness required to meet the stated R-value listed on CF-1R. Insulation rulers visible for

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Yes	No	NA	verifying the installed R-value for blown in insulation. (NA for other forms of insulation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loose Fill: insulation uniformly covers the entire ceiling (or roof) area from outside of all exterior walls. (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weight of Mineral-Fiber Loose-fill (Fiberglass, Rock wool) - Target R-value (from CF-1R) _____. Minimum weight from insulation bag label to meet target R-value _____. (lb./ft ²) . Weight of insulation from coring tool _____. (lb). Area of coring tool (ft ²). Sample weight = _____. (lb./ft ²). Is sample weight (lb./ft ²) the same as or greater than required weight (lb./ft ²) (NA for other forms of insulation)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Thickness - ALL Loose-Fill Insulation - Target R-value (from CF-1R) _____. Required thickness from insulation bag label to meet Target R-value for (Installed Thickness _____. (in)), and (Settled Thickness _____. (in)). Average Installed thickness (in). Is Installed Thickness the same as or greater than Required Thickness? (NA for other forms of insulation)
Yes	No	NA	
✓ GARAGE ROOF/CEILING INSULATION FOR TWO STORIES(no conditioned space over garage)			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation installed at rim joists against the air barrier in the garage to house transition (between floors). (NA if conditioned space over garage or single story).
Yes	No	NA	
✓ GARAGE ROOF/CEILING INSULATION FOR TWO STORIES(conditioned space over garage)			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If insulation is installed at subfloor above garage - then insulation must also be installed at joists against the air barrier in the garage to house transition (between floors) and to R-value as specified on CF-1R. (NA if no conditioned space over garage or single story)
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If insulation is installed on ceiling of garage - then the joists to the outside (front, and both sides) must be insulated to the R-value specified on CF-1R. (NA if no conditioned space over garage or single story)
Yes	No	NA	

DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am the certified HERS rater who performed the verification services identified and reported on this certificate (responsible rater).
- The installed feature, material, component, or manufactured device requiring HERS verification that is identified on this certificate (the installation) complies with the applicable requirements in Reference Residential Appendices RA2 and RA3 and the requirements specified on the Certificate(s) of Compliance (CF-1R) approved by the local enforcement agency.
- The information reported on applicable sections of the Installation Certificate(s) (CF-6R), signed and submitted by the person(s) responsible for the installation conforms to the requirements specified on the Certificate(s) of Compliance (CF-1R) approved by the enforcement agency.

Builder or Installer information as shown on the Installation Certificate (CF-6R)		
Company Name and Phone Number: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	CSLB License:	
HERS Provider Data Registry Information		
Sample Group # (if applicable):	<input type="checkbox"/> tested/verified dwelling	<input type="checkbox"/> not-tested/verified dwelling in a HERS sample group
HERS Rater Information		
HERS Rater Company Name and Phone Number:		
Responsible Rater's Name	Responsible Rater's Signature	
Responsible Rater's Certification Number w/ this HERS Provider:	Date Signed:	

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