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Building Envelope Sealing		**(Page 1 of 4)**
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BUILDING ENVELOPE SEALING

Two methods are available to the installer for demonstrating compliance with the building envelope sealing requirement: 1) Rough Frame Inspection Checklist and Final Inspection Checklist, or 2) Building Envelope Leakage Diagnostic Test utilizing a blower door diagnostic test instrument. Note: HERS verification of the actual envelope leakage is required to be performed using the Building Envelope Leakage Test. In order to receive credit for the Building Envelope Sealing measure, the dwelling must comply with the HERS verification requirements. Completion of the Rough Frame Inspection Checklist and Final Inspection Checklist does not insure that the envelope will meet the requirements of the HERS verification procedure.

1a. Rough Frame Inspection Checklist

Sole Plate

- ☐ Entire sole plate of the home is either Rope caulk, foam gasket, or with caulking bead sealed.

Top Plate

- ☐ All electrical penetrations between conditioned and unconditioned spaces sealed with foam
- ☐ All piping penetrations between conditioned and unconditioned spaces sealed with foam

Ceiling

- ☐ Ceiling forms a continues air barrier and any gaps or openings are filled with foam
- ☐ All recessed light fixtures in unconditioned space are IC (Insulation Contact) and AT (Air tight) rated and a gasket or sealing material is installed.
- ☐ All duct chases, fireplace chases, and double walls sealed air tight at the ceiling level. All gaps into shafts must be filled with foam or caulk.
- ☐ Openings around flue shafts fully sealed with solid blocking or flashing and any remaining gaps sealed with fire-rated caulk or sealant.
- ☐ Penetrations from wiring sealed with caulk or sealant

Floor Air Barrier

- ☐ All gaps in the raised floor between conditioned and unconditioned space (or to outside) filled with foam or caulk.
- ☐ All openings under a tub where the drain penetrates the floor sealed
- ☐ Garage band joist must be air tight at bays adjoining conditioned space

Walls

- ☐ All gaps around the windows caulked
- ☐ All gaps in exterior wall sheathing between conditioned and unconditioned space (or to outside) filled with foam or caulk
- ☐ All gaps in sheathing between conditioned space and the garage, attic, or covered patio filled with foam or caulk
- ☐ All other penetrations or cracks between conditioned and unconditioned space (the exterior of the home) sealed with foam or caulk

HVAC

Ensure that the following are sealed with an approved UL 181 mastic or tape:

Duct Work

- ☐ All register boot seams
- ☐ Return seams
- ☐ Return and supply collars
- ☐ Duct collars
- ☐ Duct board, T and Y seams

Furnace

- ☐ FAU seams
- ☐ FAU door
- ☐ Coil box is air tight including seams, condensate line, knockouts, and lineset.
- ☐ Supply and return plenums

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1b. Final Inspection Checklist

All gaps and penetrations in the drywall must be caulked or gasketed. All gaps and penetrations in the exterior sheathing must be caulked or gasketed. Some examples are:

Ceiling Penetrations

- ☐ All HVAC register boots are sealed to the drywall with caulking or tape
- ☐ All returns are sealed to the drywall
- ☐ All lighting fixtures are sealed to the drywall with a gasket, caulking or tape
- ☐ Any other penetrations to the drywall (for example fire sprinklers, whole house fans, surround sound speakers, ceiling outlet box etc.) are sealed with caulk or tape
- ☐ Attic access door is installed with weather stripping

Wall Penetrations

- ☐ All electrical outlets and switches are installed and sealed
- ☐ Any other penetrations to the drywall or exterior walls are sealed

General Inspections

- ☐ Flooring is installed
- ☐ Weather stripping is installed on doors and windows
- ☐ Exhaust fan dampers for kitchen and bath fans installed and working

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2. Building Envelope Leakage Test

Diagnostic Testing Results			
$CFM50_H$ = the measured airflow in cubic feet per minute (cfm) at 50 pascals for the dwelling with air distribution registers unsealed. SLA = 3.819 x ($CFM50_H$ / Conditioned Floor Area in ft^2) per Residential ACM Manual Equation R3-16			
	Building Envelope Leakage $CFM50_H$ as measured using a blower door diagnostic device	✓	✓
1.	Enter the blower door leakage **target $CFM50_H$ value for compliance** from the CF-1R (cfm).		
2.	Enter the blower door leakage **minimum $CFM50_H$ value corresponding to 1.5 SLA** from the CF-1R (cfm).		
3.	Enter the **measured $CFM50_H$** value from the blower door test (cfm)		
4.	The leakage test passes if the measured envelope leakage $CFM50_H$ value from row is 3 less than or equal to the value required for compliance from row 1, otherwise the test fails. check/enter Pass or Fail	☐ Pass	☐ Fail
5.	If measured $CFM50_H$ from row 3 is less than the minimum $CFM50_H$ value corresponding to 1.5 SLA from row 2: check/enter < 1.5 SLA, otherwise check/enter ≥1.5 SLA	☐ < 1.5 SLA*	☐ ≥1.5 SLA
*Advisory note to builder and enforcement agency: If row 5 indicates "< 1.5 SLA", it is critical to ensure that combustion and solid-fuel burning appliances in the dwelling are provided with adequate combustion and ventilation air and vented in accordance with manufacturers' installation instructions and all applicable codes as specified by ASHRAE Standard 62.2 Section 6.4. Additional information about compliance with this requirement is given in Section 4.6.5 of the Residential Compliance Manual under the topic of Combustion and Solid-Fuel Burning Appliances.			

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 eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
- I understand that a HERS rater will check the installation to verify compliance, and that 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 (CF-1R) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-1R that apply to the installation have been met.
- **I will ensure that a completed, signed copy of this Installation Certificate 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 signed copy of this Installation Certificate is required to be included with the documentation the builder provides to the building owner at occupancy.** I will ensure that all Installation Certificates will come from a HERS provider data registry for multiple orientation alternatives, and beginning October 1, 2010, for all low-rise residential buildings.

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	
Responsible Person's Name:	Responsible Person's Signature:

HERS Provider: _____ Registration Number: _____ Registration Date: _____

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CSLB License:	Date Signed:	Position With Company (Title):