



Insulation and Fenestration Criteria for Residential Construction

100 West End St.
Chester, SC. 803-581-2123

General Info	General Info		Permit Number:		
	Owner/Builder		Signature		
	Nature of Work: <input type="checkbox"/> New Installation <input type="checkbox"/> Addition <input type="checkbox"/> Repair-Renovation			Date:	
	Project Address/Location: <i>Include Building or Suite No.</i>				
	Legal Description: <i>(Lot, Block, Subdivision Name & Map Number)</i>		Square Ft. under Roof _____ Square Ft. Heated _____		
	Compliance Approach: <input type="checkbox"/> Prescriptive <input type="checkbox"/> Trade-Off <input type="checkbox"/> Performance				
	Compliance Software Used if Performance based:				
	Prescriptive method - code based evaluation and installation. Trade-Off method - code based with allowed adjustments Performance method - Computer software compliance alternative with mandatory code requirements included				
Guide lines	General Guide lines & Additional Information				
	<p>Please provide complete information on all forms. If any area does not apply please mark as Not Applicable. All information provided shall be for as installed products & equipment - <u>Not proposed!</u> Air sealing & Thermal insulation shall be verified by <u>one</u> of the following methods: 1. Blower door test or 2. Visual inspection <u>If</u> the Visual inspection method is chosen then the checklist for air sealing and insulation shall be completed and submitted with this packet.</p>				
Important Information	** Information provided is <u>Not</u> conclusive of all code requirements! Individuals should evaluate the 2009 IECC for all obligations **				
	** A permanent energy compliance certificate shall be posted on or in the main electrical distribution panel **				
	** Access shall be provided to all equipment that prevents damaging or compressing the insulation (walkways to HVAC units, etc.)**				
	Attic walls & knee walls shall be insulated & have an air barrier provided This area must also be sealed to prevent air infiltration				
	Programmable thermostat shall be provided for a HVAC system set at no more than 70°F for heating no less than 78°F for cooling				
	Permanently installed light fixtures installed shall have a minimum of 50% high-efficacy lamps				
	** All sources of air infiltration (air leakage) are required to be caulked, gasketed, weatherstripped or sealed - Examples: **				
	All attic Access doors shall be weather-stripped		Sill plate and concrete slab	Utility Penetrations	
	Openings between windows and door assemblies and framing		Behind tubs and showers on exterior walls	Duct shaft or mechanical / utility chases	
	Areas below bay windows and cantilever floors		Areas below tubs and showers used for plumbing connections	Supply and return duct boots sealed/caulked to sheetrock and/or subfloor	
	** Thermal Insulation installation - Examples: **				
	All attic access doors shall be insulated to a equal level of surrounding surfaces		Insulation baffles shall be installed around access openings when loose fill insulation is used	Insulation baffles shall be installed between insulation and roof sheathing for ventlation requirements	
Insulation should not be compressed within any area		No gaps or voids should be between framing and insulation	Floor insulation shall be installed with full subfloor contact and support		
Insulation needed below bay windows and cantilever floors		Any tray ceiling or interior soffit area must have equal insulation as attic requirements	Insulation shall not be compressed around any piping or wiring installed within an exterior wall cavity, ceiling or floor		

Building Component Insulation R-Values Insulation (IECC Section 402.2)				
Building Component	Prescriptive Value	Installed Value	Complies?	Comments
Insulation Labeled			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	All installed insulation labeled or installed R-value provided
Crawl Space Wall	Continuous: R-5		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Unvented only!
Floors	Wood: R-19		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Floor insulation shall be installed per manufactures's instructions and in contact with subfloor
Walls	Wood: R-13		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Shall be installed per manufacture's instructions
Ceiling	Wood: R-30		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Shall be installed per manufacture's instructions
Ceiling - Blown insulation	Wood: R-30		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Blown or sprayed insulation shall have depth markers every 300 ft ² and installer shall provide and post a certification of installed insulation
Vaulted Ceiling	Wood: R-30		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Ceiling framing shall provide room for full depth insulation and required ventilation
Attic Access & Doors	R-30		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	All Access doors shall be weather-stripped and insulated to equal the insulation of the surrounding surface & baffles for loose fill insulation, <u>See Tips!</u>
Basement Walls	Cavity: R-13		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
Sunroom Walls	R-13		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Walls, doors & windows between a sunroom and conditioned space shall be insulated equal to an exterior wall
Sunroom Ceiling	R-19		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Sunrooms shall have separate HVAC systems
Circulating Hot-Water Piping	R-2		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Systems shall have automatic or accessible manual controls
Addition over existing floating concrete porch	R-19		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Insulation will need to be added to the floor system of existing construction
Wood burning fireplaces			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Shall have gasketed doors and outdoor combustion air!
Spray foam insulation			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Installer shall provided all manufactures information on material. ES reports and instructions shall be followed for installation Product must be installed to correct R-value depth Ignition & Thermal barriers as required (attic storage!)

Building Component Insulation R-Values Insulation (IECC Section 402.2)

Building Component Fenestration Ratings Provided by the NFRC

Building Component	Prescriptive Value	Installed Value	Complies?	Comments
Windows U-Factor	U - 0.5 Impact Rated: U-0.65	U - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	U-Factor - (Thermal Transmittance) Up to 15 ft ² of glazed fenestration per dwelling unit permitted to be exempt from U-factor requirements
Non-Typical Windows U-Factor	U - 0.5 Impact Rated: U-0.65	U - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	List:
Doors U-Factor	U - 0.5 Impact Rated: U-0.65	U - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	One side-hinged door up to 24 sqft can be exempted
Non-Typical Doors U-Factor	U - 0.5 Impact Rated: U-0.65	U - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	List:
Windows SHGC	SHGC - 0.30	SHGC - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	SHGC - (Solar Heat Gain Coefficient) Up to 15 ft ² of glazed fenestration per dwelling unit permitted to be exempt from SHGC requirements
Door SHGC	SHGC - 0.30	SHGC - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	SHGC - (Solar Heat Gain Coefficient) Up to 15 ft ² of glazed fenestration per dwelling unit permitted to be exempt from SHGC requirements
U-Factor & SHGC values			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	NFRC - (National Fenestration Rating Council) Values per NFRC test procedure or from IECC default tables
Replacement windows & doors	U - 0.5 SHGC - 0.30	U - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Where <u>some</u> or <u>all</u> of windows & doors are replaced the replacement unit shall meet new window requirements!
Skylight	U - 0.65 SHGC - 0.30	U - _____ SHGC - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
Sunroom	U - 0.5 SHGC - 0.30		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Windows & doors installed in Sunroom walls shall meet the requirements for all new windows and doors. Additionally, walls, doors & windows between a sunroom and conditioned space shall be insulated equal to an exterior wall
			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
Site-built fenestration or those that lack a label			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Default Tables 303.1.3(1) & 303.1.3(2) & 303.1.3(3) Please note numbers are higher than basic requirements!
All fenestration that is not site built is listed and labled			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Shall be listed & labled as meeting AAMA/WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits

HVAC, Electrical & Plumbing System/Equipment Requirements

Building Component	Prescriptive Value	Installed Value		Comments
Heating & Cooling System		U - _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Heating & Cooling equipment is sized per ACCA Manual S based on loads per ACCA Manual J or other approved methods. Manual J required at Rough-In
Duct sealing		_____ cfm	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Heating & Cooling equipment is sized per ACCA Manual S based on loads per ACCA Manual J or other approved methods. Manual J required at Rough-In
Duct insulation	R - 8 Attic Supply R - 6 All Others		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
Mechanical System Piping	R - 3		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Refrigerant lines, etc.
One thermostat installed for each separate system			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	At least one thermostat shall be provided for each separate heating & cooling system
Programmable thermostat installed			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Programmable thermostats installed on forced air furnaces. Thermostat initially programmed at no more than 70°F for heating & no less than 78°F for cooling
Heat pump supplementary heat			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Heat pump shall be provided with a thermostat designed for the correct heat pump
Conditioned Sunroom			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Conditioned Sunrooms systems shall be controlled by a separate zone or have separate conditioning equipment.
Outdoor intakes & exhaust dampers			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Automatic or gravity dampers shall be installed on all outdoor air intakes and exhausts
Manufacture manuals for all equipment			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Equipment manufactures manuals shall be provided
Water Heater	EF	EF- _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Hot water supplied to bathtubs whirlpool bathtubs shall be limited to a temperture of not greater than 120°F
Recessed Lighting	IC Rated		<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Label <= 2.0 cfm leakage at 75 Pa All recessed luminaries shall be sealed with a gasket or caulk between the housing and interior wall or ceiling covering
High efficacy lamps			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	50% of lamps in permanent fixtures shall be high efficacy

HVAC System/Equipment

Heating System HSPF/AFUE _____ Additional equipment _____
 Cooling System SEER _____ Additional equipment _____

HVAC equipment shall be sized per ACCA Manual S based on loads per ACCA Manual J or other approved methods.
 Load calculation shall be provide at rough-in inspection in order to proceed with construction.
 Duct work sealing test shall be required for all ductwork installed outside of conditioned space.
 Duct blower/blaster test shall be verified at rough-in or final phase of construction.
 Include completed duct blower/blaster test(s) form(s) when submitting this packet.

Air barrier & Insulation inspection component criteria / checklist		
Building Component	Criteria	Complies?
Air barrier & thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact & continuous alignment with building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air-permeable insulation is not used as a sealing material. <i>permeable insulation is inside of an air barrier</i>	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Ceiling/attic	Air-barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Windows and doors	Space between window/door jambs and framing is sealed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Rim joists	Rim joists are insulated and include an air barrier	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Floors	(including above garage and cantilevered floors) Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl space is covered with a Class I vapor retarder with overlapping joints taped.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blower insulation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Garage separation	Air sealing is provided between the garage and conditioned spaces.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Recessed lighting	Recessed light fixtures are air tight, IC rated and sealed to drywall. Exception - fixtures in conditioned space.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Shower/tub on exterior wall	Showers and tubs on exterior walls have insulation and air barrier separating them from the exterior walls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Electrical/phone box on exterior wall	Air barrier extends behind boxes or air sealed-type boxes are installed	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
Common wall	Air barrier is installed in common wall between dwelling units.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable
HVAC register boots	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable

Air barrier & Insulation inspection component criteria / checklist

Air barrier & Insulation inspection component criteria / checklist continued	
Fireplace	Fireplace walls include air barrier. This includes but not limited to false fireplaces for ventless gas logs. <div style="float: right; text-align: right;"> <input type="checkbox"/> Complies <input type="checkbox"/> Does Not Comply <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable </div>
Name of Evaluator(s): _____	
Name of Evaluator(s): _____	
Check and date the inspections that apply below.	
<input type="checkbox"/> Foundation Inspection <input type="checkbox"/> N/A Date: _____ Date: _____ Date: _____	
<input type="checkbox"/> Rough / In Inspection <input type="checkbox"/> N/A Date: _____ Date: _____ Date: _____	
<input type="checkbox"/> Final Inspection <input type="checkbox"/> N/A Date: _____ Date: _____ Date: _____	
<input type="checkbox"/> Duct Test - Rough / In <input type="checkbox"/> N/A Date: _____ Date: _____ Date: _____	
<input type="checkbox"/> Duct Test - Final <input type="checkbox"/> N/A Date: _____ Date: _____ Date: _____	
<input type="checkbox"/> Final Energy Compliance Code Certificate placed in or on Electrical Panel Date: _____	
Certification	
Air Sealing and Insulation verification method (Check one) <input type="checkbox"/> Blower door test method <input type="checkbox"/> Visual inspection method	
Blower door test provider:	Certified by:
Visual Inspection provider:	Certified by:
Thermal Insulation installer:	License #:
I certify the information I have provided is true and understand that this materail does not replace or supersede the requirements of the 2009 International Energy Conservation Code.	
Print Name: _____	
Signature: _____	Date: _____

Air barrier & Insulation inspection component criteria / checklist

Certification