2015 NEW CASTLE COUNTY **P-043 RESIDENTIAL INSULATION** CHECKLIST

Chapter 4 of the International Energy Conservation Code **includes** R-2, R-3, and R-4 Occupancies
(2012 IECC)(2015 IRC)(2015 IPC)(Chapter 6)

Rev 5/25/15

	Pass	Corr	N/A		
1.	☐	☐	☐	**GENERAL**	
				☐ Permit displayed at worksite	Ch 6 6.03.012(Q)
				☐ Access provided to all areas to be inspected	Ch 6 6.03.018(A, D)
				☐ NCC Approved stamped building plans available at inspection site, including UA tradeoff or performance software calculations (REScheck or Resnet, etc.)	Ch 6 6.03.013
2.	☐	☐	☐	**E&S CONTROLS**	
				☐ Silt fence per approved plan & functioning	E&S Handbook 3.1.2-1, Ch 6 6.03.013
				☐ Construction entrance installed & functioning	E&S Handbook 3.4.7-1, Ch 6 6.03.013
3.	☐	☐	☐	**INSTALLATION REQUIREMENTS**	
				☐ Remind contractor permanent certificate must be posted on, or in, the electrical panel for final inspection	IECC 401.3
				☐ When used, vapor barrier must face towards warm-in-winter side of the building thermal envelope	IRC 702.7
				☐ Each piece of thermal insulation wider than 12" is factory marked with R-value	IECC 303.1.1
				☐ U-factors of all fenestration products (doors and windows) are individually labeled or default U-factors from Table 303.1.3(1)(2) shall determine compliance	IECC 303.1.3
				☐ All manufactured equipment and materials installed per provided manufacturers specifications	
4.	☐	☐	☐	**FIREBLOCKING**	
				☐ All required fire-blocking correctly installed	IRC 302.11
				☐ Insulation facing not meeting 25 flame spread and 450 smoke developed rating must be in contact with unexposed side of floor, wall, or ceiling surfaces unless otherwise fire protected	IRC 302.10.1
5.	☐	☐	☐	**AIR LEAKAGE(MANDATORY)**	IECC 402.4.1
				☐ Building thermal envelope shall be properly sealed to limit infiltration	
				• All joints, seams and penetrations	
				• Site-built windows, doors and skylights	
				• Behind tubs and showers on exterior walls	
				• Common walls between dwelling units	
				• Utility penetrations	
				• Knee walls	
				• Attic access openings	
				• Other sources of infiltration	
				• Openings between window and door assemblies and their respective jambs and framing	
				• Dropped ceilings or chases adjacent to the thermal envelope	
				• Walls and ceilings separating a garage from conditioned spaces	
				☐ New wood-burning fireplaces have tight-fitting flue dampers and utilize outdoor combustion air	IECC 402.4.2
				☐ Recessed lighting enclosures sealed against infiltration or located inside airtight box	IECC 402.4.4
6.	☐	☐	☐	**IECC TABLE 402.4.1.1 AIR BARRIER VISUAL INSPECTIONS COMPONENTS (MANDATORY)**	
				☐ Framed wall thermal insulation is aligned and in contact with exterior air barrier	
				☐ Air-permeable insulation is installed inside the air barrier and is not used as a sealing material	
				☐ Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any air gaps are sealed	
				☐ Corner and header voids are insulated	
				☐ Rim joists in concealed areas are insulated and include an air barrier	
				☐ Air barrier is installed at any exposed edge of insulation	
				☐ Duct shafts, utility penetrations, knee walls & flue shafts opening to exterior or unconditioned space are sealed	
				☐ Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation	
				☐ Air sealing is provided between the garage and conditioned spaces	
				☐ Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall	
				☐ Air barrier is installed at any exposed edge of insulation	
				☐ 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	
7.	☐	☐	☐	**SYSTEMS (MANDATORY)**	
				☐ All ducts, air handlers, filter boxes, and building cavities used as return ducts properly sealed	IECC 403.2.2
				☐ Mechanical system piping insulated to R-3 & manifold hot water piping insulated to R-3, exterior insulation protected from UV and physical damage	IECC 403.3, 403.4
				☐ Plumbing pipes installed outside the building thermal envelope protected from freezing	IPC 305.4
				☐ Forced-air furnaces require a programmable thermostat when used as the primary heat source	IECC 403.1.1
				☐ Rough-in leakage test for HVAC elements outside the building thermal envelope approved (contractor may opt for post-construction test)	IECC 403.2.2

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THERMAL ENVELOPE MUST FULLY COMPLY WITH ONE OF THE TWO FOLLOWING SECTIONS (A OR B)

8. ☐ ☐ ☐ **(A) PRESCRIPTIVE REQUIREMENTS (TABLE R402.1.1 OR UA TRADE-OFF SOFTWARE)**

☐ Building Envelope Requirements — IECC Sec. 402

From Table 402.1.1 (minimum R-values; maximum U-values)

FENESTRATION *U*-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING *R*-VALUE (a)	WOOD FRAME WALL *R*-VALUE	MASS WALL *R*-VALUE (b)	FLOOR *R*-VALUE	BASEMENT WALL *R*-VALUE (c)	SLAB *R*-VALUE & DEPTH (d)	CRAWL SPACE WALL *R*-VALUE (c,d)
0.35	0.55	0.40	49	20 or 13+5	8/13	19	10 / 13	10, 2 ft	10 / 13

a. R-30 is acceptable in attics where the insulation is not compressed at the eaves. In ceilings without attics, R-30 is acceptable when limited to the lesser of 500 sq. ft. or 20% of total insulated ceiling area. (IECC 402.2.1, 402.2.2)

b. The second R-value applies when more than half of the insulation is installed on the interior of the wall. Mass walls are above grade only.

c. The first value is for continuous insulation, the second is for cavity insulation – either insulation is compliant.

d. Depth below grade can be a combination of vertical and horizontal if conditions merit. (IECC 402.2.8, 402.2.9)

☐ Supply ducts in attics must be insulated to R-8 (all other duct R-6) — IECC 403.2.1

☐ Basement walls insulated to the lesser of ten feet below grade or to basement floor unless the floor above and all basement duct is insulated to code — IECC 402.2.8

☐ Thermally isolated sunroom ceiling insulated to min. R-19 with a 0.50 max. U-factor — IECC 402.2.12, 402.3.5

☐ Unvented, conditioned crawl space walls insulated per table in lieu of floor insulation — IECC 402.2.10, IRC 408.3

☐ Maximum U-factor of vertical fenestration using area weighted averages is 0.48, skylight maximum is 0.75 — IECC 402.5

9. ☐ ☐ ☐ **(B) PERFORMANCE BASED COMPLIANCE (RES-CHECK PERFORMANCE OPTION, ENERGYSTAR, ETC.)**

☐ Compliance report on site — Ch 6 6.03.013

☐ Compliance report correctly lists type and value of all components of building — IECC 405.4.2

☐ All listed components match or exceed values listed on report — IECC 405.4.2

☐ Supply duct outside the thermal envelope insulated to R-6 — IECC 405.2

10. ☐ ☐ ☐ **COMPLIANCE REPORT REQUIREMENTS** — IECC 405.4.2

☐ Report is address specific

☐ Orientation is correct or report complies in all four cardinal orientations (north, south, east, west)

☐ Inspection checklist included showing both standard reference and proposed design

☐ Name and version of the compliance software is indicated and correct version has been used

☐ Compliance report completely and correctly lists all components

☐ Max U-factor of vertical fenestration when using area weighted averages is .48, skylight is .75 — IECC 402.5

Comments: _____

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Inspector: _____ **Permit Number:** _____

Date: _____ **Inspection Results: Pass** ☐ **Partial** ☐ **Corrections Required** ☐