

Comparison – 2012 IECC v. Energy Star Version 3 Revision 5

Note: Comparison between the 2012 IECC (Residential) and the EStar Version 3 vary according to climate zone. This comparison is based on CZ2, for (4) categories: thermal envelope, HVAC, lighting, and non-code regulated features.

Thermal Envelope – Opaque elements

	Walls	Ceilings	Floors	Window U-value	Window SHGC	Infiltration
2012 IECC	R13	R38	R13	.40	.25	5ACH50
EStarV3	R13	R30	R13	.60	.27	6ACH50

Summary – Energy Star references the 2009 IECC for thermal envelope R-values. Skylight U-factor is more stringent in EStar (.70) than in 2012 IECC (.75), and skylight SHGC is more stringent in EStar (.30) than in 2012 IECC (.25). Opaque door U-factor is more stringent in EStar (.21) than in 2012 IECC (.40). Provisions for attic insulation reductions are equivalent in both EStar and 2012 IECC.

Thermal Envelope – Infiltration

As above, allowable infiltration in EStar is 6ACH50, and in 2012 IECC is 5ACH50.

Summary: Both references require inspection and testing. The EStar Thermal Bypass Inspection Checklist is essentially equivalent to 2012 IECC Table R402.4.1.1. The 2012 IECC contains additional requirements for fireplace gasketing, and EStar contains requirements for insulation between dwelling units.

HVAC

Ducts – EStar and 2012 IECC require equivalent insulation at all ducting. The 2012 IECC (4cfm25 per 100sf) is more stringent than EStar (6cfm25 per 100sf) for duct leakage.

Ventilation – EStar includes ventilation requirements based on ASHRAE 62.2. The 2012 IECC refers to IRC Chapter 15 for ventilation. EStar requires return side intake ducting for FA systems, with motorized dampers.

HVAC sizing – Both references require Manual J&S calculations for load calculation and equipment sizing.

Summary: The IECC's more stringent duct leakage requirements are significant. EStar's requirement for increased ventilation will in some cases result in increased energy consumption.

Lighting

The IECC requires 75% high-efficacy luminaires. EStar requires 80% EStar-rated fixtures.

Beyond-code Requirements

EStar includes requirements for features that are not code-regulated, such as appliances, equipment efficiencies, water conservation, et al, and that are not recognized in the Simulated Performance Alternative. It is arguable whether such attributes should be considered in a comparison of the two references. (The EStar requirement for radiant roof barriers or low albedo roofing in some conditions would result in significant energy savings in CZ2.)

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