



# CITY OF PORTAGE

## BUILDING DEPARTMENT

CITY HALL

6070 CENTRAL AVENUE

PORTAGE, INDIANA 46368

TELEPHONE 762-4204 / FAX 764-5749

## 2005 Indiana Residential Code

### Chapter 11; Energy Efficiency

Effective April 5, 2012

Work affected:

1. New construction
2. Additions, renovations, remodels
3. Conversion of non-conditioned space into conditioned space

When applying for a permit requiring energy code compliance, the applicant must check one of the two available Prescriptive Paths or the Simulated Performance Path on the form to show how compliance will be achieved:

1. Prescriptive Path – Chapter 11 of the 2005 IRC
  - a. R-values and/or U-values from the applicable tables in Section N1102; or
  - b. Total UA alternative
    - i. UA calculation is required using RES-check software (or approved equal)
2. Simulated Performance Path – Chapter 4 of the 2009 IECC
  - a. US Department of Energy approved software required; examples:
    - i. REM/Design
    - ii. REM/Rate
    - iii. Energy Gauge
  - b. Permit applicant must submit the following software produced documents:
    - i. Preliminary energy code compliance certificate
    - ii. Building file report of library inputs
    - iii. Energy code inspection checklist
    - iv. Preliminary annual cost compliance certificate

All compliance paths require the builder to submit proof of meeting air leakage requirements in one of two methods:

1. Air Leakage Test (Blower door test)
2. 3rd party verification of N1102.4.2 Air Barrier and Insulation Inspection

All compliance paths require the builder to submit proof of meeting duct tightness requirements in one of two methods if the air handler or any ducts are located outside of the conditioned space:

1. Rough-in test
2. Post construction test

To receive a Certificate of Occupancy, builder must submit the following documents:

1. Confirmed energy code compliance certificate (Simulated Performance Path)
2. Confirmed annual energy code cost compliance certificate (Simulated Performance Path)
3. Proof of meeting air leakage requirements
4. Proof of meeting duct tightness requirements (if required)

## 2005 Indiana Residential Energy Code Compliance by Prescriptive Path

Table N1102.1

Insulation And Fenestration Requirements By Component (a)

Fenestration U-Value	Skylight U-Value (b)	Ceiling R-Value	Wood Frame R-Value	Mass Wall R-Value (g)	Floor R-Value	Basement Wall R-Value (c)	Slab R-Value and Depth (d)	Crawl Space R-Value (g)
0.35	0.60	38	20 or 13+5 (f)	13/17	30 (e)	10/13	10; 2 ft.	10/13

- a) R-values are minimums. U-factors are maximums. R-19 batts compressed into a nominal 2 x 6 framing cavity such that the R-value is reduced by R-1 or more shall be marked with the compressed batt R-value in addition to the full thickness R-value.
- b) The fenestration U-factor column excludes skylights.
- c) The first R-value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.
- d) R-5 shall be added to the required slab edge R-values for heated slabs.
- e) Or insulation sufficient to fill the framing cavity, R-19 minimum.
- f) "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
- (g) The second R-value applies when more than half the insulation is on the interior.

Table N1102.1.2

Equivalent U-Factors (a)

Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor	Mass Wall U-Factor (b)	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor
0.35	0.60	0.030	0.057	0.082	0.033	0.059	0.065

- (a) Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.

**Total UA alternative:** If the total building thermal envelope UA (sum of U-factor times assembly area) is less than or equal to the total UA resulting from using the U-factors in Table N1102.1.2 (multiplied by the same assembly area as in the proposed building), the building shall be considered in compliance with Table N1102.1. The UA calculation shall be done using a method in accordance with the Indiana Energy Conservation Code, [675 IAC 19-4](#), and shall include the thermal bridging effects of framing materials. Calculation procedures used to comply with this section shall be by use of approved computer software tools capable of calculating the total building thermal envelope UA that differs between "standard reference design" and the proposed design. REScheck, from the US Department of Energy is an example of an approved software tool.

**This notice highlights certain Code sections. All installations must comply fully with the current Indiana Residential Code.**