



# ILLINOIS BUILDING ENERGY CODE

# SUMMARY OF KEY RESIDENTIAL ENERGY CODE REQUIREMENTS

The 2021 IECC was adopted with amendments in Illinois and will be mandatory as of **January 1, 2024**. This document summarizes the changes to the building envelope-related requirements in the updated code for Illinois.



## CODE CHANGE HIGHLIGHTS

- R401.2.6 requires additional energy efficiency.
- Phius is a compliance option but it also must meet R409.
- Prescriptive wall insulation levels are more stringent in all climate zones and basement wall insulation is more stringent in climate zone 5.
- The allowable prescriptive air leakage rate was lowered.

## BUILDING ENVELOPE AND DUCT REQUIREMENTS

CODE PATH	2021 IECC CODE SECTION	CHANGE SUMMARY	
		CLIMATE ZONE 4	CLIMATE ZONE 5
Prescriptive	R402.1.2 – Wood Frame Wall	R-30 or R-20+5ci or R-13+10ci or R-0+20ci / U-0.045	R-30 or R-20+5ci or R-13+10ci or R-0+20ci / U-0.045
	R402.1.2 – Ceilings	R-49 / U-0.026	R-49 / U-0.026
	R402.1.2 – Basement Walls	R-13 or R-10 ci / U-0.059	R-19 or R-15ci or R-13+5ci / U-0.050
	R402.1.2 – Crawl Space Walls	R-13 or R-10 ci / U-0.065	R-19 or R-15 ci / U-0.055
	R402.1.2 – Fenestration	U-0.30 / SHGC-0.40	U-0.30 / SHGC-0.40

DUCT LEAKAGE		DUCT R-VALUE	AIR LEAKAGE	
MEASUREMENT	CFM25 / 100 SQ. FT.	R-VALUE	CLIMATE ZONE	MEASUREMENT
Rough-in	4	R-8 <sup>a</sup>	4	4 ACH50
Post-construction	4		5	4 ACH50

TABLE R406.4 MAXIMUM ENERGY RATING INDEX (ERI)

CLIMATE ZONE	MAXIMUM ERI
4	54
5	55

a. R-6 is allowed for ducts <3 inches.

ACCESS MORE INFORMATION ON THE ILLINOIS BUILDING ENERGY CODE HERE:

<https://cdb.illinois.gov/business/codes/illinois-energy-codes.html>



This summary is offered for informational purposes only. It does not purport to be an exhaustive analysis of code changes or provide advice that will ensure guaranteed compliance with any energy code provision. Please consult with local authorities before finalizing your installation plans.



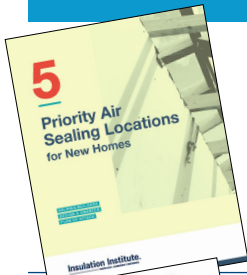
# ENERGY-EFFICIENT, COST-EFFECTIVE CONSTRUCTION WITH FIBERGLASS AND MINERAL WOOL INSULATION



As code levels advance, **keep informed about innovative practices** to meet or exceed code requirements using cost-effective fiberglass and mineral wool insulation.

The following resources in the table below are just a subset of the many guides available from the **Insulation Institute** to help you achieve new performance requirements with proven approaches.

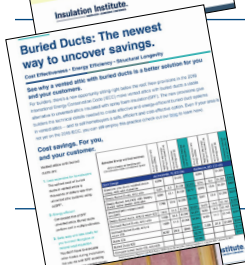
## INSULATION INSTITUTE RESOURCES



### Air Leakage

As states adopt more stringent energy codes, some builders may experience challenges meeting new mandatory air leakage requirements. Fiberglass and mineral wool insulation is the low-cost solution for homebuilders to meet or surpass code air leakage rate requirements of 3 or 5 air changes per hour depending on climate zone. For homeowners, an airtight building envelope results in energy savings and increased thermal comfort.

<https://insulationinstitute.org/wp-content/uploads/2018/05/N090-5-Air-Sealing-Locations-for-New-Homes.pdf>



### Ducts Buried Within Ceiling Insulation

Deeply buried ducts in attics is an easy way to lower energy code compliance costs for builders using the simulated energy performance path. Homeowners can benefit from energy savings realized from lower-capacity, lower-cost HVAC systems.

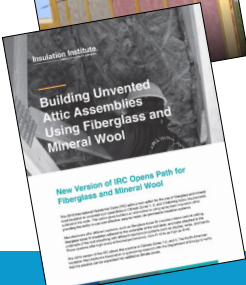
<https://insulationinstitute.org/wp-content/uploads/2019/03/N087-Buried-Ducts-The-newest-way-to-uncover-savings.pdf>



### Proper Installation of Insulation

Grade I installation delivers superior energy efficiency and is increasingly required by state energy codes. Insulation installation jobs that fail to meet Grade I criteria can mean construction delays due to callbacks, HERS rating penalties, and failed code inspections. Grade I installation is readily achievable by following basic guidelines as recommended by manufacturers. NAIMA offers free online training for installers.

[www.grade1insulation.org](http://www.grade1insulation.org)



### Unvented Attics Using Fiberglass and Mineral Wool Insulation

Unvented attics can be constructed by installing fiberglass or mineral wool insulation below the roof deck instead of using more costly materials like spray foam. In addition, fiberglass and mineral wool insulation products are green certified and do not carry recommended occupancy restrictions due to product off-gassing after installation. Starting with the 2018 IRC, this practice is outlined in detail within the code. Homeowners benefit from lower construction costs and the use of a safe product.

<https://insulationinstitute.org/wp-content/uploads/2018/05/BuildingUnventedAtticAssemblies-N089.pdf>

## LEARN MORE ABOUT THE ERI COMPLIANCE PATH HERE:

<https://www.energycodes.gov/technical-assistance/training/courses/2015-iecc-energy-rating-index-eri-compliance-alternative>

## Get the Facts for a Stronger Business

Learn more about fiberglass and mineral wool insulation at [InsulationInstitute.org](http://InsulationInstitute.org)



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