

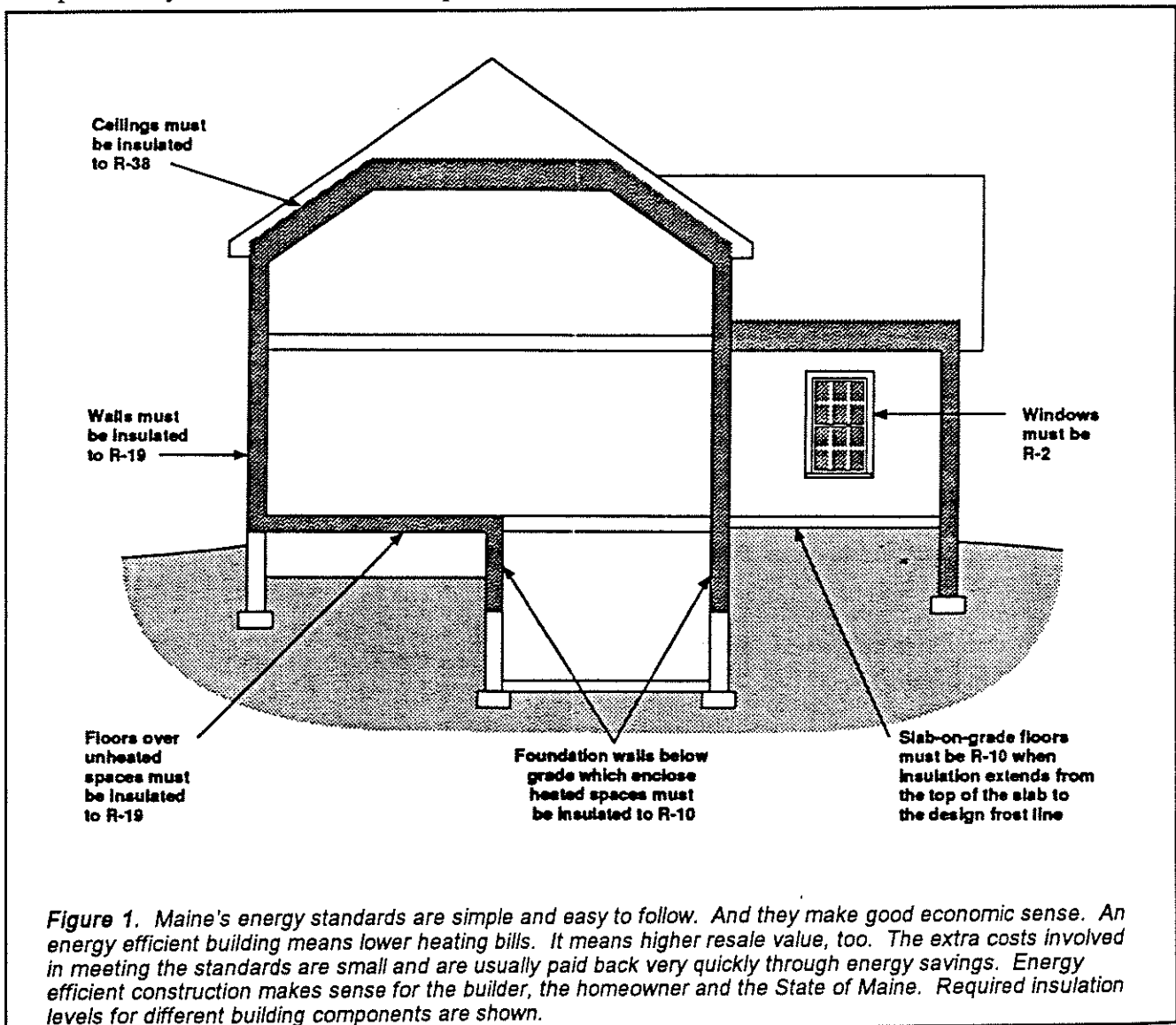
# Part 1. Summary of Maine's Residential Energy Standards

The Energy Efficiency Standards for residential buildings became effective January 1, 1989. The prescriptive method of compliance is summarized in **Figure 1** and **Table 1** below. These prescriptive standards are designed to be simple and easy to follow.

The Energy Efficiency Standards also allow compliance by means of an alternate perfor-

mance-based method. Please see **Appendix F** for details of this alternate means of compliance.

The required efficiency levels were developed to be cost effective for Maine's climate to achieve energy-use levels in accordance with national goals.



*Figure 1. Maine's energy standards are simple and easy to follow. And they make good economic sense. An energy efficient building means lower heating bills. It means higher resale value, too. The extra costs involved in meeting the standards are small and are usually paid back very quickly through energy savings. Energy efficient construction makes sense for the builder, the homeowner and the State of Maine. Required insulation levels for different building components are shown.*

TABLE 1.  
**Minimum Insulation Levels Required by Maine Energy Standards**

<i>Building Component</i>	<i>Description</i>	<i>R-Value*</i>
Ceilings	All ceilings that face outdoors or unheated spaces, including cathedral or sloped ceilings. See special definitions and conditions for ceiling insulation below ( <b>Tables 2 and 3</b> ).	R-38
Walls	All walls which face outdoors or unheated spaces, including insulated knee walls in heated attics. Band joists at wall perimeters must be insulated to the same level.	R-19
Windows	All windows, including glass patio and terrace doors. The unit R-value is an area-weighted average of the R-values of the frame material, the edge of the glass, and the center of the glass.	R-2
Floors over unheated spaces	Floors over crawl spaces, floors over unheated basements, overhanging floors, garages.	R-19
Slab-on-grade floors	There are two options for insulating slabs in slab-on-grade construction: either a) around the perimeter from the top of the slab to the design frost line; or b) around the perimeter of the slab itself and horizontally or diagonally beneath or away from the slab for a distance equivalent to the design frost line. See zone map of Maine on page 4 and the design frost depths that apply in <b>Table 4</b> .	R-10
Foundation walls that enclose below-grade heated space	The insulation must extend from the top of the foundation to the design frost line.	R-10

\* The specified R-value refers to the rated R-value of the insulation only, not taking into account reductions in the system R-value due to framing members, and not including the added system R-value for other building components (sheathing, siding, drywall, etc.) and air films.

**Performance-Based Compliance Alternative** - an alternative method of complying is available, see **Appendix F** for details.

## 1. Special Definitions and Conditions for Ceiling Insulation:

For determining compliance with the residential Maine Energy Standards, ceiling insulation shall be considered to total R-38 in the following situations:

**Sloped ceilings:** In sloped ceilings, fibrous insulation is considered to have its rated R-value when installed in a rafter space of the same

nominal depth as named in standard lumber dimensions, even when roof ventilation channels are present. In other words, 12-inch, R-38 insulation meets the standard even when compressed to fit into 2x12 rafters with an air space at the top. Extra insulation must be added for rafters with less than 12 inch nominal depth (see **Tables 2 and 3**).

**TABLE 2.  
Batt Insulation Requirements for Sloped Ceilings**

<i>Nominal rafter depth in inches</i>	<i>Batt insulation thickness permitted, plus additional required R-value to be placed at the underside face of the rafter</i>
12 inches (2x12 rafter)	12-inch batt (R-38 typical)
10 inches (2x10 rafter)	9-1/2-inch batt (R-30 typical), plus additional R-8
8 inches (2x8 rafter)	8-inch batt (R-25 typical), plus additional R-13
6 inches (2x6 rafter)	6-1/4-inch batt (R-19 typical), plus additional R-19
4 inches (2x4 rafter)	3-1/2-inch batt (R-11 typical), plus additional R-27; or 3-5/8-inch batt (R-13 typical), plus additional R-25

**TABLE 3.  
Blown Fibrous Insulation Requirements for Sloped Ceilings**

<i>Nominal rafter depth in inches</i>	<i>Rafter cavity to be filled, plus additional R-value to be placed on the underside of rafters</i>
12 inches (2x12 rafter)	Fill available space
10 inches (2x10 rafter)	Fill available space, plus additional R-8
8 inches (2x8 rafter)	Fill available space, plus additional R-13
6 inches (2x6 rafter)	Fill available space, plus additional R-19
4 inches (2x4 rafter)	Fill available space, plus additional R-27

