

Proponent:
Technical Committee

Applies to:
2006 Mortgage Industry National Home Energy Rating Systems Standards
Appendix A, On-Site Inspection Protocol

Amendment: Revision of Insulation Inspection requirements

Proposed Amendment

[page A-7]:

Building Element: Floor of conditioned basement or crawl space		
Rated Feature	Task	On-Site Inspection Protocol
Insulation	Determine amount of floor insulation	... Floor insulation over unconditioned basements <u>or enclosed (vented or unvented) crawlspaces</u> need not be enclosed to attain a “Grade II” or “Grade I” assessment; floor insulation over vented or ambient conditions does.

[page A-11]:

Building Element: Walls (continued)		
Rated Feature	Task	On-Site Inspection Protocol
Insulation Installation	Determine cavity insulation installation characteristics	... To attain a rating of "Grade I", wall insulation shall be enclosed on all six sides, and shall be in substantial contact with the sheathing material on at least one side (interior or exterior) of the cavity. <u>Exception: the interior sheathing/enclosure material is optional in climate zones 1-3, provided insulation is adequately supported and meets all other requirements.</u> For rim or band joist insulation, use the inspection guidelines under “Walls—Insulation value” to assess “Grade I”, “Grade II”, or “Grade III” installation. <u>Exception: the interior sheathing/enclosure material is optional in all climate zones, provided insulation is adequately supported and meets all other requirements.</u> ...

Building Element: Ceiling (continued)		
Insulation value	Determine R-value of insulation in attic	<p>Use the inspection guidelines under “Walls—Insulation value” to assess “Grade I”, “Grade II”, or “Grade III” installation. Note: in addition to the inspection guidelines under “Walls”, “Grade I” installation for ceiling insulation also requires that the insulation be installed in complete contact with the drywall or <u>sheathing plywood</u> surfaces it is intended to insulate. For loose fill applications, be sure to get four readings which accurately reflect the insulation level (do not just measure the low or high spots; the depth should be representative of the entire attic area being examined). Multiply the <u>average minimum</u> depth of insulation by its R-value per inch to obtain the total R-value.</p> <p>Insulation <u>in ceilings with attic above</u> need not be enclosed to attain a “Grade II” or “Grade I” assessment. <u>For sealed, unvented attic/roof assemblies, the interior sheathing/enclosure material is optional in climate zones 1-3, provided insulation is adequately supported and meets all other requirements, including full contact with the exterior (roof) sheathing.</u> For ceiling insulation, eave baffles or equivalent construction is required to prevent wind washing to be considered “Grade I”.</p> <p>Note whether the cavity insulation leaves the framing <u>elements</u> exposed, or covers them; if covered, note the thickness that covers the framing.</p>

Background/Rationale:

There are three main parts to this amendment. First, an exception to the necessity for interior enclosure for rim joists to achieve Grade I status had been brought up in public presentations before adoption of the 2005 enhancements to the Standards. Although intended, that exception was omitted from the final adopted standard. Second, the requirement to treat the floor insulation in vented, enclosed crawl spaces identically to floors over outdoor air is difficult to justify; although vented crawlspaces tend to be leaky, wind washing of insulation is unlikely to have nearly the effect as for an exposed floor. The final proposed changes apply to ceiling assemblies. In addition to editorial changes, these consider the differences in driving forces in very warm climates, where internal

sheathing of insulation in unoccupied spaces (such as “cathedralized” attics or doubled, “blind cavity” walls) is not as critical to ensure adequate performance or to reduce wind-washing. Interior-side sheathing is necessary in mixed and cold climates to reduce vapor transmission in wintertime conditions, while exterior-side sheathing or enclosure is also needed to reduce wind-washing.