

## INSULATION

## [SMARTER BUILDINGS®] BUILDING ENVELOPE

# The Importance of Codes in Improving Energy Efficiency

[By Jared Blum]

Every building owner understands the value of building codes in creating minimally accepted performance standards for the nation's building stock.

For the first time in more than 18 years, the Atlanta-based American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed increases to the minimum required roof- and wall-insulation levels in *Standard 90.1* (the national model energy code for commercial buildings). The above-deck roof insulation requirements currently at R-15 would go to R-20 – a 33-percent increase in roof-insulation levels. Similar increases are proposed for walls.

Of greatest significance is the *Standard 90.1* committee approval of these proposed changes for the next version of the code. Acceptance by the ASHRAE Board of Directors is expected this month. It is anticipated that the ASHRAE board will adopt these new values because the board charged the *90.1* committee with delivering a new commercial-building energy standard by 2010 that is 30-percent more efficient than the 2004 version.

The actual changes are climate-zone and building-type specific. The ASHRAE standard has various performance-compliance mechanisms, from prescriptive requirements to computer simula-

tions and trade-offs. But, regardless of the code-compliance approach used, these new insulation values establish a new benchmark for commercial-building energy efficiency.

In all climate zones, insulation can dramatically help reduce cooling loads and lower energy costs. This is predicated on existing ASHRAE requirements and independent analysis that concludes that additional roof insulation is cost effective, saves energy, and reduces pollution and carbon emissions.

In many ways, these new insulation levels are long overdue. Building owners and architects across the country are

already installing insulation at levels that exceed these values. Those professionals seeking "beyond-code" recognitions (such as LEED, Green Globes, ENERGY STAR®, Building America, etc.) will now go even further to deliver advanced building envelopes.

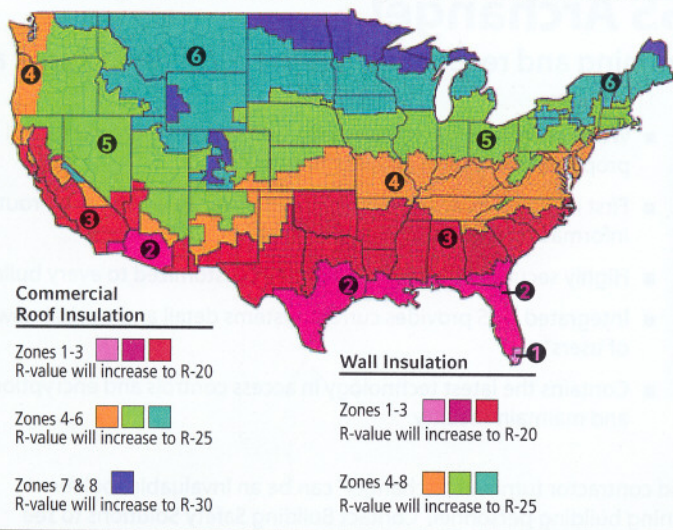
Once approved by the ASHRAE board, these new values will represent a new national standard against which all codes will be compared. Architects, specifiers, and other certifying professionals will have a new standard of care to meet regarding commercial-building energy efficiency.

This ASHRAE standard addresses building envelope and system requirements for commercial buildings, residential buildings higher than 3 stories, and semi-conditioned buildings (warehouses, etc.). It is the nation's model standard for establishing the energy-performance requirements of these building types.

For building owners who are not content with minimum energy performance, this newly enhanced standard is good news. ■

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## Recommended R-Values for ASHRAE Climate Zones



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## Insulation: The Invisible Hero for Climate Change

The Intergovernmental Panel on Climate Change (IPCC) released its final report on the latest science on climate change, which says that there is clear evidence that at least part of the problem is caused by humans.

An article in *McKinsey Quarterly* – "A Cost Curve for Greenhouse-Gas Reduction" – says that almost a quarter of possible emission reductions would result from measures that carry no net life-cycle cost (such as better insulation in buildings); in effect,

they come free of charge.

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