MARKETING BULLETIN

To: **Firestone Licensed Red Shield Contractors**
Firestone Sales Representatives
Firestone Distributors

Date: **March 17, 2008**

Attention: Design professionals, specifiers and individuals responsible for code compliance.

ASHRAE Stipulates an Increased R Value for Commercial Buildings

For the first time in 19 years ASHRAE (The American Society of Heating, Refrigerating and Air-Conditioning Engineers) has increased the *minimum* thermal insulating value for all commercial and high-rise residential buildings by 33% from R-15 to R-20. The new minimum thermal insulation value is for above deck insulation in all areas of the US and Canada except Miami and the North slope of Alaska.

This is an opportunity for building owners to save heating and cooling costs for the life of the building, reduce our dependence on foreign oil, reduce energy usage and preserve the environment by decreasing the carbon footprint.

Many northern areas of the US already require a minimum R of 30. The ASHRAE standard (90.1-2007) will be accepted by the International Codes Council and added to the national ***model energy code***. Since the MEC is accepted by individual states either verbatim or with state approved amendments, states are responsible to accept, amend, and enforce the requirements of the MEC.

At this time there is no clear picture of how reflective coatings will impact energy requirements for commercial buildings but it is self-evident that the change in thermal insulation requirements will ultimately affect LEED qualification. Environmentally, the changes will decrease the carbon footprint of compliant structures.

Observations:

- Design professionals should be aware of these changes to the insulation minimum requirements, regardless of the version referenced in their state.
- Projects where LEED qualification is being sought should be reevaluated against the new, increased thermal insulation minimums to ensure that they meet the code efficiency objectives
- Green building programs should be proactive by incorporating the new thermal insulation values.
- It is important to note that this is an increase in the minimum "R" value. In those projects where reducing energy costs and preserving the environment by reducing the carbon footprint are important goals, higher than minimum "R" values are recommended.
- Building energy simulation programs should be updated to incorporate the new ICC minimum thermal insulation requirements.
- The changes are climate zone and building type specific. The map (from the code) will aid in understanding the scope of the changes for the 2007 version of the standard.

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The map of climate zones was taken from the ASHRAE standard.

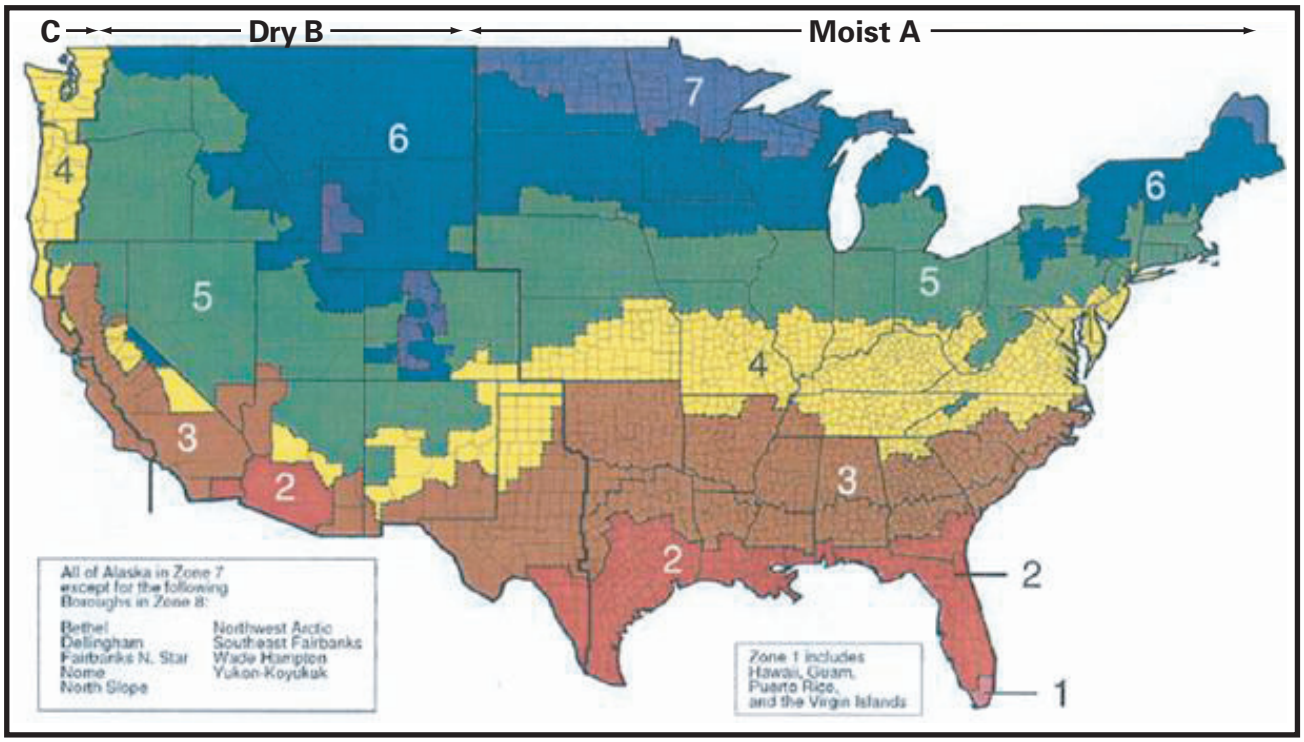
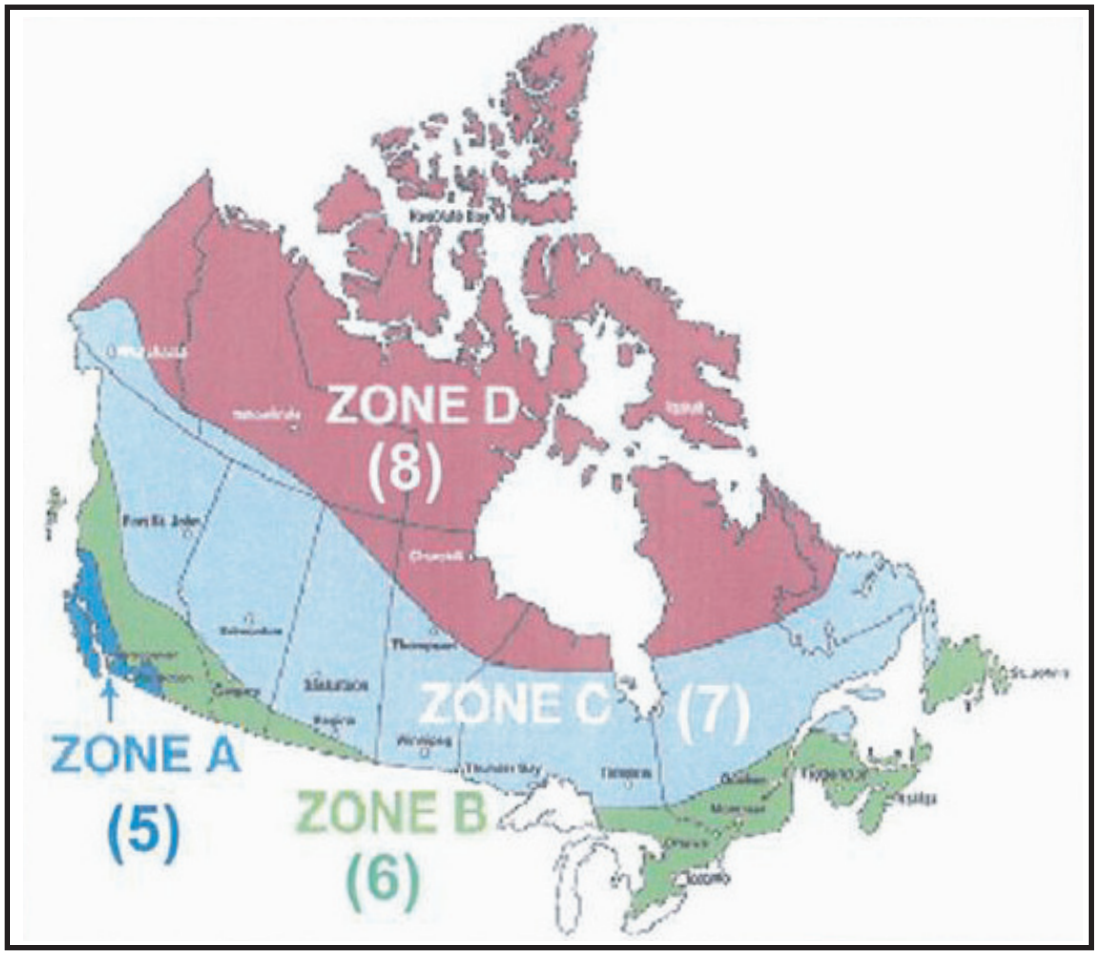


Figure 1 – ASHRAE Climate Zones – U.S.



The following tables show the new prescriptive insulation minimums, in Standard 90.1, for Commercial Buildings

- The table is an abbreviated version of the ASHRAE Table 5.5-1.
- The values listed are minimum values for required "R."
- The following notation was used: ci = continuous insulation required.
- Metal building roofs are currently under consideration by ASHRAE.

Table of Approved changes for Zone 1, essentially Miami Florida.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	No Change
Metal Buildings	R-19	No Change
Attic & Other	R-30	No Change

Table of Approved changes for Zone 2, essentially the Gulf Coast.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	R-20 ci
Metal Buildings	R-19	No Change
Attic & Other	R-30	R-38

Table of Approved changes for Zone 3, essentially the Southeast US, and Southern California.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	R-20 ci
Metal Buildings	R-19	No Change
Attic & Other	R-30	R-38

Table of Approved changes for Zone 4, Kansas, Missouri, Kentucky & Virginia.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	R-20 ci
Metal Buildings	R-19	No Change
Attic & Other	R-30	R-38

Table of Approved changes for Zone 5, Pennsylvania to Nevada and Idaho.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	R-20 ci
Metal Buildings	R-19	R-13 + R-13
Attic & Other	R-30	R-38

Table of Approved changes for Zone 6, Michigan to Northern Washington State.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	R-20 ci
Metal Buildings	R-19	R-13 + R-19
Attic & Other	R-38	No Change

Table of Approved changes for Zone 7, Northern Michigan, Wisconsin, Minnesota and Canada.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-15 ci	R-20 ci
Metal Buildings	R-19	R-13 + R-19
Attic & Other	R-38	No Change

Table of Approved changes for Zone 8, Northern Canada.

Opaque Elements	Commercial Building Roofs	
	Old	2007
Above Deck Insulation	R-20 ci	No Change
Metal Buildings	R-13 + R-19	R-16 + R-19
Attic & Other	R-38	R-49

These changes present an opportunity to be proactive with respect to energy savings and to support and strengthen both the US and Firestone's commitment to protecting the environment.

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For additional information please refer to the following websites:

ASHRAE: http://www.ashrae.org/technology/
International Code Council: http://www.iccsafe.org/government/
PIMA: http://www.polyiso.org/