



Shedding Some Light On Energy Codes

<p>Why Roofing, Why NOW, Why So Many Different Requirements?</p>	<p>Conserving Energy Isn't News... For over 30 years the need to conserve energy has impacted the way we live.</p> <ul style="list-style-type: none"> • The gas crisis in the 70's changed the way we made cars. • Brownouts and blackouts forced change in the way air conditioners, refrigerators, dishwashers and light bulbs are made • <i>Why Roofing...</i> It's our turn. Driven by local power authorities, the need to stretch capacity, to reduce urban heat islands (why cities are usually hotter than rural areas) and the growing acceptance of innately reflective single ply technologies, we have the ability to begin to really participate in energy conservation. 																																								
<p>Reflectivity, Emissivity and SRI?</p>	<p>Technical definitions for those who require it and bare bones reference to help the rest of us "get it"...</p> <p>Reflectance... <i>ASTM Definition...</i> the percentage of incident light reflected back from an image area where zero percent reflectance is black. <i>Laymen's Terms...</i>Light energy reflected back into the atmosphere.</p> <p>Emissivity... <i>ASTM Definition...</i> The ratio of the radiation given off by the surface of a body to the radiation given off by a perfect black body at the same temperature. <i>Laymen's Terms...</i> The higher the emissivity, the less heat energy a material will retain.</p> <p><i>SRI (Solar Reflectivity Index)</i> <i>Laymen's Terms...</i> Solar Reflectance Index, SRI, - is a relative number for a specific material that quantifies what the temperature of that material will be when exposed to sunlight, relative to a black surface which has an SRI of 0 and a white surface which has an SRI of 1.0 SRI is measured according to ASTM Standard E1980, using both the solar reflectance of the material and its emittance. SRI values closer to 1.0 are cooler roofing materials.</p>																																								
<p>Who's Who...</p>	<p>They Sound More Like Grammy Nominees Than Code Requirements... CRRC, ENERGY STAR, Title 24, Chicago Energy Efficient Rating System, LEED Credits. Who's who and what do they require.</p> <table border="1" data-bbox="256 888 1528 1780"> <thead> <tr> <th data-bbox="256 888 451 961">Code Body/ Required Compliance Date</th> <th colspan="4" data-bbox="456 888 878 961">Minimum Reflectivity/Emissivity Initial and Aged</th> <th data-bbox="883 888 1068 961">Test Method</th> <th data-bbox="1073 888 1284 961">Specific Packaging Requirements</th> <th data-bbox="1289 888 1528 961">Do We Meet Requirements?</th> </tr> </thead> <tbody> <tr> <td data-bbox="256 968 451 1094">Cool Roof Ratings Council (CRRC) Conformance optional</td> <td colspan="4" data-bbox="456 968 878 1094">CRRC records and reports information; they do not have performance requirements for emissivity or reflectivity. The formal test results they report are a requirement of other local codes such as Title 24.</td> <td data-bbox="883 968 1068 1094">ASTM C1549, C1371 Approved Outside lab only</td> <td data-bbox="1073 968 1284 1094">Yes Specific information must appear. See reverse side for specific products.</td> <td data-bbox="1289 968 1528 1094">Yes See reverse side for specific products.</td> </tr> <tr> <td data-bbox="256 1100 451 1352">Title 24 October 2005</td> <td data-bbox="456 1100 581 1184">Min. Initial Ref. 0.70</td> <td data-bbox="586 1100 711 1184">Min. Initial Emi. 0.75</td> <td colspan="2" data-bbox="716 1100 878 1184"></td> <td data-bbox="883 1100 1068 1352">ASTM C1549, C1371</td> <td data-bbox="1073 1100 1284 1352">Yes CRRC Identification ONLY. The phrase <i>Title 24 Compliant</i> is being added to qualifying membrane packaging for customer clarity.</td> <td data-bbox="1289 1100 1528 1352">Yes See Tech. Bulletin for requirement.</td> </tr> <tr> <td data-bbox="256 1358 451 1463">ENERGY STAR Conformance Optional</td> <td data-bbox="456 1358 581 1463">Min. Initial Ref. 0.65</td> <td data-bbox="586 1358 711 1463">Min. Initial Emi. N/A</td> <td data-bbox="716 1358 824 1463">Min. Aged Ref. 0.50</td> <td data-bbox="829 1358 878 1463">Min. Aged Emi. N/A</td> <td data-bbox="883 1358 1068 1463">Internal Testing only to ASTM E903 or E1918</td> <td data-bbox="1073 1358 1284 1463">Optional Official logo use.</td> <td data-bbox="1289 1358 1528 1463">Yes See chart for listed products.</td> </tr> <tr> <td data-bbox="256 1470 451 1780">LEED (Leadership in Energy & Environmental Design) Conformance Optional</td> <td data-bbox="456 1470 581 1780">Option 1 75% of the roof surface has a min. SRI of 78 on roof slopes 2/12 or less</td> <td data-bbox="586 1470 711 1780">Option 2 Install a vegetated roof system on at least 50% of the roof area</td> <td colspan="2" data-bbox="716 1470 878 1780">Option 3 Install a combination high albedo and vegetative roof meeting the requirements of options 1 and 2</td> <td data-bbox="883 1470 1068 1780">ASTM E408, E903, C1549, E1980</td> <td data-bbox="1073 1470 1284 1780">No</td> <td data-bbox="1289 1470 1528 1780">Yes See reverse side for SRI values</td> </tr> </tbody> </table>	Code Body/ Required Compliance Date	Minimum Reflectivity/Emissivity Initial and Aged				Test Method	Specific Packaging Requirements	Do We Meet Requirements?	Cool Roof Ratings Council (CRRC) Conformance optional	CRRC records and reports information; they do not have performance requirements for emissivity or reflectivity. The formal test results they report are a requirement of other local codes such as Title 24.				ASTM C1549, C1371 Approved Outside lab only	Yes Specific information must appear. See reverse side for specific products.	Yes See reverse side for specific products.	Title 24 October 2005	Min. Initial Ref. 0.70	Min. Initial Emi. 0.75			ASTM C1549, C1371	Yes CRRC Identification ONLY. The phrase <i>Title 24 Compliant</i> is being added to qualifying membrane packaging for customer clarity.	Yes See Tech. Bulletin for requirement.	ENERGY STAR Conformance Optional	Min. Initial Ref. 0.65	Min. Initial Emi. N/A	Min. Aged Ref. 0.50	Min. Aged Emi. N/A	Internal Testing only to ASTM E903 or E1918	Optional Official logo use.	Yes See chart for listed products.	LEED (Leadership in Energy & Environmental Design) Conformance Optional	Option 1 75% of the roof surface has a min. SRI of 78 on roof slopes 2/12 or less	Option 2 Install a vegetated roof system on at least 50% of the roof area	Option 3 Install a combination high albedo and vegetative roof meeting the requirements of options 1 and 2		ASTM E408, E903, C1549, E1980	No	Yes See reverse side for SRI values
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<p>Clarity and Uniformity Come With Time...</p>	<p>For more information on energy code requirements call, 1- 800-Roof- 411.</p>																																								