

**TECHNICAL BULLETIN — Roofing Systems**

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**LEED® v3 2009 Supplement**  
 Roofing Systems

Please use this bulletin as a supplement to the [LEED v3 CREDITS GUIDE FOR JM PRODUCTS NEW CONSTRUCTION AND MAJOR RENOVATION](#) brochure currently available. As a reminder, meeting the requirements below does not guarantee that a project will qualify for any of the credits mentioned. All pre-requisites must be met as identified by the LEED commissioning authority.

**SUSTAINABLE SITES (SS)**

**Heat Island Effect (Roof) – SS Credit 7.2 (NC, Schools, and CS- 1 point max.)**

LEED	Johns Manville (JM)
<p><b>Option 1:</b> A membrane with an SRI of 78 or greater, for low sloped roofs (<math>\leq 2:12</math>) must be used on 75% or more of the roof surface.</p> <p>For steep sloped roofs (<math>\geq 2:12</math>), an SRI of 29 or greater must be used for 75% or more of the roof surface.</p> <p>If your roofing materials have a lower SRI than required, use the formula below:</p> <p><i>(Area Roof Meeting Minimum SRI/Total Roof Area) X (SRI of Installed Roof/Required SRI) <math>\geq 75\%</math></i></p>	<p>JM offers reflective BUR, SBS, PVC, and TPO membranes that may qualify a project for this credit.</p>
<p><b>Option 2:</b> Install a vegetated roof that covers at least 50% of the roof.</p>	
<p><b>Option 3:</b> Install high-albedo and vegetated roof surfaces that, in combination, meet the following criteria:</p> <p><i>(Area Roof Meeting Minimum SRI/0.75) + (Area of Vegetated Roof/0.5) <math>\geq</math> Total Roof Area</i></p> <ul style="list-style-type: none"> <li>▪ Low sloped roof (<math>\leq 2:12</math>) must have SRI of at least 78 or</li> <li>▪ Steep sloped roof (<math>\geq 2:12</math>) must have SRI of at least 29.</li> </ul>	

NC = New Construction, CS = Core and Shell (Existing Building Renovations)

## ENERGY & ATMOSPHERE (EA)

### Optimize Energy Performance – EA Credit 1 (NC and Schools-19 points max., CS-21 points max.)

LEED	Johns Manville
<p><b>Option 1:</b> Whole Building Energy Simulation is performed to determine percentage improvement in the proposed building performance compared to the baseline building performance rating.</p> <ul style="list-style-type: none"> <li>▪ NC and Schools: 12% minimum improvement</li> <li>▪ CS: 8% minimum improvement</li> </ul>	<p>JM offers reflective roof membranes and a variety of insulating materials to contribute to the improvement of building performance.</p> <p>(NOTE: JM materials <b>alone</b> may not improve the building performance enough to qualify the project for these credits.)</p>
<p><b>Option 2:</b> Project scope is based on building size.</p>	
<p><b>Option 3:</b> Project must be less than 100,000 sq ft.</p>	

NC = New Construction, CS = Core and Shell (Existing Building Renovations)

### Energy Consumption Reduction Chart

<b>NC and Schools (%)</b>	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
<b>Points</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

<b>C&amp;S (%)</b>	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44
<b>Points</b>	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

### On-site Renewable Energy-EA Credit 2 (NC and Schools-7 points max., CS-4 points max.)

LEED	Johns Manville
<p>Energy produced by the renewable system is expressed as annual energy savings. Minimum to qualify for NC, Schools and CS is 1% savings.</p>	<p>JM offers roofing solutions that combine roofing membrane and photovoltaic systems into one package.</p>

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## MATERIALS & RESOURCES (MR)

### Recycled Content – MR Credit 4 (All construction-2 points max.)

LEED	Johns Manville
The sum of post-consumer recycled content and half of the pre-consumer content must constitute at least 10% or 20% of the total project material cost.	Polyiso insulation products have varying levels of recycled content according to thickness. Some membranes contain recycled content. This information is located on the product data sheets.

### Regional Materials-MR Credit 5 (All construction-2 points max.)

LEED	Johns Manville
Products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% or 20% based on cost, of the total materials value.	JM has manufacturing facilities all over the United States. Depending on the project location, our products may contribute here. Manufacturing locations is located on the product data sheets.

## INDOOR ENVIRONMENTAL AIR QUALITY (IEQ)

### Low-Emitting Materials – IEQ Credit 4.1 Adhesives and Sealants (All construction-1 point max.)

LEED	Johns Manville
<p>Adhesives and sealants used on the interior, inside of the weatherproofing and onsite must comply with stated LEED restrictions. They must also meet South Coast Air Quality Management District Rule #1168.</p> <p>Limits that may apply are as follows:</p> <ul style="list-style-type: none"> <li>▪ VCT and asphalt adhesives: VOC Limit – 60 g/L</li> <li>▪ PVC Welding: VOC Limit – 510 g/L</li> <li>▪ Single ply roof membrane: VOC Limit – 450 g/L</li> </ul>	JM offers low VOC (Volatile Organic Compounds) products. However, products without the “Low VOC” designation may still meet the VOC limit specified. The VOC content is located in Section 9 of the MSDS sheet.

### Low-Emitting Materials – IEQ Credit 4.2 Paints and Coatings (All construction-1 point max.)

LEED	Johns Manville
<p><u>For NC and CS:</u> Paints and coatings used on the interior of the building, inside of the weatherproofing system or applied on-site, must comply with stated LEED restrictions.</p> <p><u>For Schools:</u> All paints and coatings must meet the testing and product requirements of the California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda. Limits that may apply are as follows:</p> <ul style="list-style-type: none"> <li>▪ Roof primers, bituminous: VOC Limit – 350 g/L</li> </ul>	JM offers low VOC products. However, products without the “Low VOC” designation may still meet the VOC limit specified. The VOC content is located in Section 9 of the MSDS sheet.

Projects surpassing the requirements of these credits may be eligible for (an) “Exemplary Performance” credit(s).

As a reminder, recycled content and producing location information, when available, is located on the product data sheet. VOC content can be found on the MSDS in section 9.

To learn more about how Johns Manville products can qualify for LEED points on your next project, contact your local JM sales representative or call JM Technical Services at (800) 922-5922.

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