

Solar Reflectance Index Calculation Worksheet Instructions

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Use: The purpose of this calculator is to assist contractors and homeowners with calculating the Solar Reflectance Index (SRI) of their roof. The 2013 Energy Efficiency Standards allows compliance with the cool roof requirements by meeting a specific SRI value as an alternative to meeting the prescriptive requirements for the aged solar reflectance and thermal emittance. This calculation is most helpful when a particular product does not meet the Energy Efficiency Standards requirement for either solar reflectance or thermal emittance but is efficient enough as a whole to comply with the SRI requirements. The SRI calculation is determined by using a product's 3-year aged solar reflectance and initial thermal emittance.

Requirements:

- Adobe Acrobat XI or later

Instructions:

1. Input all pertinent data about the construction in the appropriate boxes (date, climate zone, building type, the project name and address). Note: for the date box, you may either type in the date or use the drop-down calendar. For climate zone, you must select one of the 16 in the drop-down list. For building type, click one of the radio buttons, either Residential or Nonresidential. All required fields are shaded in blue.
2. The row of boxes beneath the sample label and cool roof information (beginning with "CRRC Product ID Number") should be populated based on the product information from the Cool Roof Rating Council's website. The product directory is located at <http://www.coolroofs.org/products/search.php> and may be browsed either by viewing all products, or by using the search function to find a specific product. Keep in mind that inclusion in the directory does not guarantee that a product will meet the energy requirements.
3. Use the radio buttons to designate the roof slope as either "less than or equal to 2:12" ($\leq 2:12$) or "greater than 2:12" ($> 2:12$). A ratio of 2:12 is approximately 9.5 degree slope. The SRI requirement is based partly on the roof slope.
4. Use the second set of radio buttons to designate the product type as either a "field-applied coating" or "other". The SRI requirement is based partly on the product type.
5. The section of boxes under "SRI Calculations" is the actual calculator. Begin by indicating whether or not your product's 3-year aged solar reflectance is listed on the CRRC website by selecting either "yes" or "no" from the drop-down list. Depending on your selection, the boxes that you don't need will be blacked out.
6. If you selected "yes", input the CRRC listed 3-year aged solar reflectance. If you selected "no", input the CRRC listed initial solar reflectance. The calculator will calculate the aged reflectance using the initial reflectance once you hit enter or click outside the box. Note: the solar reflectance value will be a decimal between 0 and 1.
7. Finally, input the value for thermal emittance obtained from the CRRC. This value can be either the initial thermal emittance or the 3-year aged value. Note: the thermal emittance must also be a decimal between 0 and 1.
8. If you have entered values for both solar reflectance and thermal emittance, once you press enter or click outside the box, the calculator will calculate the final SRI value. It may take a few moments to calculate a value for the SRI depending on the values you entered for reflectance and emittance.