

Topic Number	Topic	Comment	EPA Response
1	2015 effective date	<p>Several stakeholders claim that March 1, 2015 is insufficient time to age and retest products, and recommend an effective date 3 years plus 6-9 months from date of specification finalization.</p> <p>These stakeholders request additional time for:</p> <ol style="list-style-type: none"> 1. initial testing 2. placement on a weathering farm 3. aged testing 4. shipments from weathering farm to laboratory 5. certification processing 	EPA recognizes the unique testing scenario for roofing products and therefore has chosen an effective date that provides more than a full 3 years for weathering.
2	3 year grace period	Stakeholder suggests requiring manufacturers to provide proof that all existing qualified products have been placed on a weathering farm to maintain qualification leading up to the V3.0 effective date, removing the possibility that manufacturers will take advantage of the 3 year grace period. This system is currently being implemented by CRRRC (Cool Roof Rating Council) and CEC (California Energy Commission) under Title 24.	Consistent with other ENERGY STAR product specifications, ENERGY STAR qualification is tied to date of manufacturing. Once a new specification is finalized, manufacturers are provided a transition period to sell product through distribution channels and update marketing and product literature for products that no longer meet the new requirements. The roof product specification is unique in that a minimum 3-year period is required to allow manufacturers time to conduct aged reflectance testing. EPA has found that date of manufacture is a streamlined and consistent way to track product qualification across different industries. If EPA decides to adopt an accelerated test method for measuring aged reflectance, products could be more quickly tested and certified within a shorter timeframe. Several months prior to the new specification effective date, EPA will cease accepting new product submissions to reduce the amount of time older inventory, qualified to the previous specification, remains in the marketplace.
3	Accelerated weathering test method	Stakeholder recommends consideration of an accelerated aging method being developed by Lawrence Berkley Laboratory with the cooperation of Oak Ridge National Laboratory and the Department of Energy which provides a greater than 95 percent correlation to aged results.	EPA continues to be interested in an accelerated aged reflectance test method and will continue to monitor efforts by DOE and LBNL. Once final, EPA will review the test method and discuss with stakeholders whether to adopt within the ENERGY STAR program. If the test method is industry accepted and test results are compatible with that of existing ENERGY STAR test methods then EPA will consider adding it as an allowable option within the specification.
4	Changes to product formulation	Stakeholder recommends modifying the changes to product formulation requirements to allow non-fundamental elements of product formulation changes to only require initial solar reflectance be retested and not require maintenance of solar reflectance aging and retesting.	EPA will work with certification bodies to review and allow minor changes, such as base material supplier changes, to ENERGY STAR qualified products without retesting as long as the change will not impact solar reflectance or thermal emittance properties.
5	Color families	Stakeholder recommends color family reported values should use the Color Family table of default values, not as the EPA allows "no higher than the average of the initial test results of the Color Family Representative Element". Stakeholder is of the opinion that this approach aligns with the CRRRC program protocol and prevents gaming the system by using a representative element with a higher reflectance value to "represent" that color family group.	EPA will clarify in section 4.1.4 reported Color Family Additional Elements initial solar reflectance and thermal emittance "shall be no higher than the default values of the Color Family Program as defined for that color group."

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6	Program integrity: Colorimetry measurements	Stakeholder would like clarification on whether certification bodies can certify ENERGY STAR products where manufacturing partners have measured the colorimetry properties.	Manufacturers may provide colorimetry measurements directly to the test laboratory. This data is used to determine Hunter values for defining color groups and will not be submitted to EPA for purposes of qualification and therefore, will not be required to be third party certified.
7	Program integrity: Verification testing	Stakeholder is of the opinion CBs are inconsistent in verification testing implementation and what constitutes a pass or failure.	<p>EPA-recognized certification bodies shall conduct verification testing and determine verification testing failures per Directive No. 2011-06, "ENERGY STAR Verification Testing Supplement: Selecting Products, Obtaining Products, and Reporting Results" and Directive No. 2011-04, "ENERGY STAR Verification Testing for Certification Bodies - Test Sample Sizes and Determining Testing Failures (Non-Lighting Products)", both of which can be found at www.energystar.gov/3rdpartycert and clicking the link Guidance (Directives).</p> <p>If a manufacturer is of the opinion certification bodies are inconsistent with this guidance, please detail the circumstances in full to Certification@energystar.gov.</p>
8	Program integrity: Weathering farms	<p>Stakeholders would like EPA to set as stringent a criteria as the CRRC Test Farm protocol, including accreditation to ISO 17025:2005.</p> <p>Specific requirements for weathering farms would include specifying the three climate zones, averaging the results from nine samples, applying a 50 degree exposure angle (1:12) for low slope products, applying a 450 degree exposure angle (12:12) for steep slope products, and specifying placement exposure dates.</p>	EPA would like to remind stakeholders, per the ENERGY STAR Test Method for Roof Products: Maintenance of Solar Reflectance, March 2016, panels must be exposed on commercial or private weathering farms that are accredited to ISO/IEC 17025:2005.
9	Regional qualification	<p>Stakeholder supports a regional standard for qualification allowing manufacturers to test products within the climate zone(s) they intend to sell their products and not test products in regions where they have no intent to sell their products.</p> <p>Furthermore, a stakeholder indicates some products are only applicable to certain regions within the U.S. and EPA may want to cite the regions on the qualified products list.</p>	While EPA appreciates regional differences a regional qualification program is complex and difficult to enforce. Instead, EPA will consider collecting and posting information on the weathering farms where the products are tested and/or intended regional markets to better inform the end user.

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10	Specification revision changes	Stakeholder believes that manufacturers must be assured that products will meet a specification for a minimum of five years in order to justify the investment needed to obtain qualification.	EPA would like to remind stakeholders that the Agency reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. EPA is committed to reviewing and/or revising ENERGY STAR specifications every 2-3 years depending on the life of the product type to ensure continued relevance in the marketplace and if the specification is revised, manufacturers will be generally provided at least 9 months to transition to the new requirements. This ensures that most specifications will have a shelf life of several years before a manufacturer will be required to retest and requalify. All specification revisions are determined through stakeholder discussions and draft proposals, where stakeholders can provide input on levels and timing. Lastly, a specification change does not necessarily mean retesting and requalification if the product has already been certified to meet the new requirements.
11	Test method: Samples provide favorable test results	Stakeholder points out that using the specified roof surface area fails to take into consideration shade and can cause solar reflectance test results to appear more favorable than expected during normal consumer use.	EPA acknowledges that shade, among several additional variables such as geographic location and installation, may impact actual consumer energy savings. For purposes of ENERGY STAR qualification, EPA's intent is to choose a test method that provides accurate, repeatable, and consistent results such that products can be compared and evaluated by consumers under similar conditions. Consumer education will be important to helping consumers understand that results will vary based on region, location, and maintenance. EPA is interested in discussing with stakeholders how to better educate the end user regarding this point.
12	Test methods: CRRC program manual	Stakeholder requests updating specification references to the current CRRC program manual and cautions the manual is updated several times per year.	To ensure that the ENERGY STAR specification always references the most up to date CRRC Manual, EPA has removed the date reference.
13	Test methods: CRRC test method #1	Stakeholder suggests adding CRRC test method #1 to the test method document. Currently, references to CRRC test method #1 are only included within specifications.	For consistency, EPA has added reference to CRRC Test Method #1 to the ENERGY STAR Test Method document.
14	Test methods: E1918	Stakeholder requests reinstating E1918. There is a precision and bias study currently underway into improving this test method.	EPA will reinstate E1918. EPA's intention was to remove test methods exclusive to testing on existing roof tops, not to remove the only test method available for testing and qualification of certain irregular surface products.
15	Test methods: Outdated by 2015 effective date	Stakeholder is concerned when Version 3.0 goes into effect in 2015, the test methods referenced will no longer be current. Stakeholder is of the opinion test methods are continually improved upon and revised.	For purposes of ENERGY STAR qualification it is important that all qualified products are evaluated using the same test methods and conditions. This is why EPA references specific versions of test procedures in each ENERGY STAR specification. As these test methods are updated, EPA may decide to amend the specification references if assured that the new test procedure will yield comparable results. If a referenced test procedure is updated in such a way that products are tested differently, then EPA will need to evaluate performance data and possibly performance levels under a specification review process.

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16	Test methods: Sample size	<p>Stakeholder requests harmonization with CRRC sample size requirements, in particular for CRRC test method #1. EPA states a 3'x3' sample while the CRRC uses different sizes specific to the test method (C1549 = 24 sqr inches/CRRC-1 test method #1 = 360 sqr inches, E1918 = 10'x10').</p> <p>Stakeholder is also of the opinion there is a conflict in sample size requirements between the specifications and the test method documents.</p>	EPA will amend the sample size requirement for products tested using CRRC-1 Test Method #1 to 360 square inches in order to conform with the sample size requirement for this test method. In reviewing the current qualified product list, EPA understands that most manufacturers are following this approach (99% of products listed with ENERGY STAR).
17	Test methods: Slide method	Stakeholder requests the inclusion of the slide method for testing thermal emittance and is of the opinion C1371 does not accurately measure products of high thermal resistance.	EPA recognizes the importance of accuracy and as such will include the Tile Test Method, Wood Products Test Method, and Slide Test Method as options for testing products. Manufacturers have the option of testing products using any of the additional test methods but are not required to do so to maintain qualification or qualify new products.
18	Test methods: Substrate	Stakeholder recommends adding the option to test field applied coatings on a standard aluminum panel (3003 H14 uncoated aluminum alloy) in accordance with ASTM D1730.	EPA has clarified in Test Method Rev. March 2016 for factory or field applied coatings, the surface to receive solar radiation may be applied on the intended substrate or on a standard aluminum panel, 3003 H14 uncoated aluminum alloy, in accordance with ASTM D1730.
19	Test methods: Tile and wood methods	Stakeholder requests the inclusion of the Tile and Wood Test Methods which uses CRRC test method #1 but allows a standard error of 0.02 (as opposed to .005) for testing Solar Reflectance.	See Slide Method response above.
20	Variegated roof products	<p>Stakeholder would like EPA to allow for variegated roof products that have matching binder/resin technologies and consist of coatings that are already tested to be listed as a Color Family Additional Element.</p> <p>Stakeholder rational: If a roof product is printed, using between two and four coats of coil-applied paint and all of the coatings are Color Family Representative Elements or have at least been aged for 3 years and have maintained their initial solar reflectance, it would be logical for them to be able to be Color Family Additional Elements rather than to be automatically have to go through standard testing. This would be assuming they have the same binder/resin technology.</p>	EPA is interested in including variegated roof products within the Color Family product qualification system and will continue to monitor efforts by CRRC and the roof products industry. Variegated roof products are currently not allowed to qualify as part of a Color Family because it is not clear if variegated roof products could conform to existing Color Family characteristics. If variegated roof products performance data aligns with existing Color Family characteristics, EPA will consider allowing variegated roof products to qualify using the Color Family qualification system.
21	Weathering farms	<p>In general, stakeholders are in support of using weathering farms. EPA received mixed feedback on whether to require one or more than one climate zone.</p> <p>Arguments against multiple climate zones include testing burden and cost while supporters of a climate approach suggest: (1) a single climate zone requirement, either in Arizona or Florida or (2) three climate zones given that ENERGY STAR is a nation-wide program and products can be placed in many different climate zones.</p>	EPA is open to specifying allowed climate zones, but believes that restricting testing to one state may have a undue negative impact on manufacturing partners and existing testing practices. EPA is interested in receiving feedback on alternative proposals.