



Designation: ~~E1799-02~~ Designation: E 1799 – 08

Standard Practice for Visual Inspections of Photovoltaic Modules¹

This standard is issued under the fixed designation E 1799; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers procedures and criteria for visual inspections of photovoltaic modules.

~~1.2 Visual inspections of photovoltaic modules are normally performed before and after modules have been subjected to environmental stress testing, such as Test Methods E1038, E1171, E1596 or E1830.~~

1.2 Visual inspections of photovoltaic modules are normally performed before and after modules have been subjected to environmental, electrical, or mechanical stress testing, such as thermal cycling, humidity-freeze cycling, damp heat exposure, ultraviolet exposure, mechanical loading, hail impact testing, outdoor exposure, or other stress testing that may be part of photovoltaic module testing sequence.

1.3 This practice does not establish pass or fail levels. The determination of acceptable or unacceptable results is beyond the scope of this practice.

1.4 There is no similar or equivalent ISO standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

E 772 Terminology Relating to Solar Energy Conversion E1038 Test Method for Determining Resistance of Photovoltaic Modules to Hail by Impact With Propelled Ice Balls²

E1171 Test Method for Photovoltaic Modules in Cyclic Temperature and Humidity Environments²

E 1328 Terminology Relating to Photovoltaic Solar Energy Conversion²

E1596 Test Methods for Solar Radiation Weathering of Photovoltaic Modules²

E1830 Test Methods for Determining Mechanical Integrity of Photovoltaic Modules² Terminology Relating to Photovoltaic Solar Energy Conversion

3. Terminology

3.1 *Definitions*— Definitions of terms used in this practice may be found in Terminology E 772 and Terminology E 1328.

4. Significance and Use

~~4.1 Environmental stress tests, such as Test Methods E1038, E1171, or E1596~~

4.1 Environmental stress tests, such as those listed in 1.2, are normally used to evaluate module designs prior to production or purchase. These test methods rely on performing electrical tests and visual inspections of modules before and after stress testing to determine the effects of the exposures.

4.2 Effects of environmental stress testing may vary from no effects to significant changes. Some physical changes in the module may be visible when there are no measurable electrical changes. Similarly, electrical changes in the module may occur with no visible changes.

4.3 It is the intent of this practice to provide a recognized procedure for performing visual inspections and to specify effects that should be reported.

4.4 Many of these effects are subjective. In order to determine if a module has passed a visual inspection, the user of this practice

¹ This practice is under the jurisdiction of ASTM Committee E44 on Solar, Geothermal; and Other Alternative Energy Sources and is the direct responsibility of Subcommittee E44.09 on Photovoltaic Electric Power Conversion.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* Volume information, refer to the standard's Document Summary page on the ASTM website.