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Photovoltaic cells -
Part 6: Hot water soaking test for crystalline silicon photovoltaic cells

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IEC TS 63202-6 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems. It is a Technical Specification.

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Draft	Report on voting
82/2639/DTS	82/2689/RVDTS

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Specification is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63202 series, published under the general title *Photovoltaic cells*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

1 Scope

This part of IEC 63202 defines a hot water soaking test to determine whether crystalline silicon photovoltaic (PV) cells have metallization that is durable enough to be used in PV modules.

It is applied to crystalline silicon PV cells whose metallization is made with conductive metal pastes.

Hot water soaking test is an accelerated aging test carried out using conditions of high temperature and humidity. This test can be used to identify cells with poor metal adhesion. Such cells shed some of their metal during delivery and storage, causing visual defects and potential risk of module reliability issues.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of the document. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60454-2:2007, *Pressure-sensitive adhesive tapes for electrical purposes - Part 2: Methods of test*

IEC 60454-3 (all parts), *Pressure-sensitive adhesive tapes for electrical purposes - Part 3: Specifications for individual materials*

ISO 3696, *Water for analytical laboratory use - Specification and test methods*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/
– ISO Online browsing platform: available at https://www.iso.org/obp

4 Apparatus

4.1 Electric-heated water bath

An electric-heated water bath is equipped with a bilayer and a hollow holder inside with two or more temperature sensors. The water bath shall be capable of maintaining the water at (85 ± 2) °C throughout the testing period. Furthermore, the spatial temperature uniformity within its working zone shall be within 5 °C. The measurement system shall be capable of measuring the water temperature with an accuracy of ± 2 °C. An example is shown in Figure 1.