



Retesting Guideline

Modifications Requiring Limited CBTL Retesting to Maintain Certification

This document sets forth a uniform approach to maintain the certification of products that have, or will, undergo modification from the stand-alone systems originally certified. It should not be used as a guideline to certify new system submittals.

Changes in material selection, components and manufacturing process can impact the performance of the modified system. The recommended test sequences given below have been selected to identify adverse changes to the modified system.

Those systems meeting the requirements of the relevant standard after retesting are considered to be compliant and will be issued an amended CB Conformity Assessment Certificate and an Amended Technical Report Form.

Two samples are to be included in the retesting program.

The document is organized by component modification headings. Following this is the recommended retesting requirements with parenthetical reference to the specific clauses of the relevant IEC standard.

For the modifications listed below the National Certification Body (NCB) and Certification Body Testing Laboratory (CBTL) shall use the tests in IEC 62124 as a guideline.

1 References

IEC62124 Ed.1: *Photovoltaic (PV) stand-alone systems - Design verification*



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2 Modification of Solar Module

2.1 Modifications that require retesting

For modifications such as:

- Module of same family (make and construction) but with a rated power that is more than 10% lower.
- Same module (make and construction) but different cell types (mono/multi/amorphous silicon) or materials (Si, CdTe, CIS etc.).

Repeat:

The tests described in Clause 13, 14, 15 and/or 16 of IEC62124.

2.2 Modifications that do not require retesting:

- Module of same family (make and construction) but higher rated power (provided that the charge controller is rated for the higher power).
- Module of proven higher energy rating and same operating voltage window (provided that the charge controller is rated for use at these conditions).
- Same module (make and type) but different details that do not affect the electrical characteristics of the module, such as:
 - cable,
 - connector,
 - frame material, and/or
 - colour of backsheet.

3 Modification of Battery

3.1 Modifications that require retesting

For modifications such as:

- Batteries of different construction (flat plate, tubular plate, flooded etc.), except use of a tubular plate battery of similar rated capacity and Ah-efficiency instead of a flat-plate battery with the same state of liquidity (flooded, gel, or matrix).
- Batteries that require different charge controller settings.

Repeat:

The tests described in Clause 13, 14, 15 and/or 16 of IEC62124.



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3.2 Modifications that do not require retesting:

- Battery of same make with identical internal construction but different enclosure or terminals.
- Identical battery with regard to make and type but modified rated capacity by less than 10%.
- Battery of different make but same construction (flat plate, tubular plate, flooded etc.) and rated capacity/Ah-efficiency with less than 10% deviation from the certified model.
- Use of a tubular plate battery of similar rated capacity and Ah-efficiency instead of a flat-plate battery.

4 Modification of Charge Controller

4.1 Modifications that require retesting

For modifications such as any:

- Change of charge/ discharge algorithm (including hardware, software or firmware).
- Decrease in efficiency.

Repeat:

The tests described in Clause 13, 14, 15 and/or 16 of IEC62124.

4.2 Modifications that do not require retesting:

Minor cosmetic changes such as changes to:

- Enclosure (shape),
- Electrical terminals, provided the rating stays the same and the electrical cross section is not reduced,
- Display, and/or
- Switch(es).

5 Modification of Loads

5.1 Modifications that require retesting

For modifications such as the:

- Replacement of a pure ohmic load by lights using high frequency electronic ballasts.
- Increase of nominal power of the load by more than 10% if the Daily Run Time (DRT) is not adapted accordingly.

Repeat:

The tests described in Clause 13, 14, 15 and/or 16 of IEC62124

Note: the charge controller and the cables need to be sized/rated for the modifications



5.2 Modifications that do not require retesting:

- If the nominal power of the load and its characteristics are not altered, provided that the new loads are also type tested (provided a type test is available) and the operation frequency of the loads electronics controller (if any) do not vary more than 50 % from the new one to the one tested and being replaced.
- A load is replaced by a similar load of lower rated capacity (at similar DRT).

6 Modification of other BOS components

6.1 Modifications that require retesting

For modifications such as:

- Cables of different size and length that cause an increased energy loss per wire of more than 5% compared to the certified system.

Repeat:

The tests described in Clause 13, 14, 15 and/or 16 of IEC62124.

6.2 Modifications that do not require retesting

Retesting is not necessary, if the energy consumption of any current carrying BOS component does not increase by more than 5%.