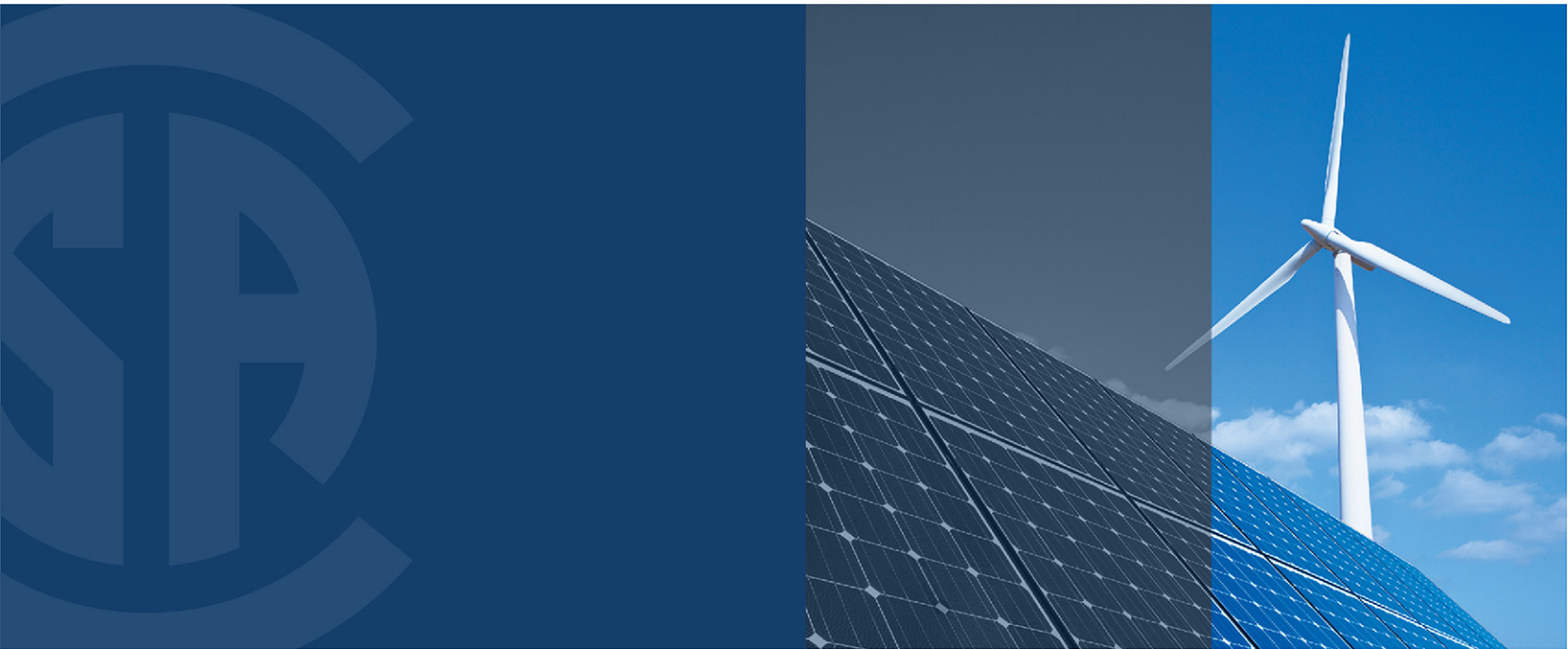




**CSA F382:M89**  
National Standard of Canada  
*(reaffirmed 2019)*



# Characterization of Storage Batteries for Photovoltaic Systems



Standards Council of Canada  
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## *CSA F382:M89* **Characterization of Storage Batteries for Photovoltaic Systems**



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## Preface

This is the first edition of CSA Standard CAN/CSA-F382, *Characterization of Storage Batteries for Photovoltaic Systems*. It is written in SI (metric) units.

The first drafts were assembled by a working group with support from Energy, Mines and Resources Canada during 1986 and 1987. In preparing this Standard, the principal objective has been to establish a format for the presentation of information on storage batteries consistent with the needs of photovoltaic systems designers, including their need to be aware of the limitations inherent in storage batteries. This Standard is written in such a way as to not preclude the use of any specific type of battery.

It is to be noted that the reliability and longevity of any system is of major concern to designers. While the performance of the storage battery is critical, nevertheless designers must satisfy themselves that all of the elements of their system will survive for the time required at the level of performance required by the application.

This Standard was prepared by the Technical Committee on Photovoltaic Storage under the jurisdiction of the Steering Committee on Solar and Wind Energy and was formally approved by these Committees. It has been approved as a National Standard of Canada by the Standards Council of Canada.

April 1989

### Notes:

- (1) *Use of the masculine gender in this Standard is not meant to exclude the feminine gender when applied to persons. Similarly, use of the singular does not exclude the plural (and vice versa) when the sense allows.*
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- (a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
- (b) *provide an explanation of circumstances surrounding the actual field condition; and*
- (c) *be phrased where possible to permit a specific "yes" or "no" answer.*

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## Characterization of Storage Batteries for Photovoltaic Systems

### 1. Scope

#### 1.1

This Standard provides a method of presenting technical information relating to the selection of storage batteries for photovoltaic systems and to the precision of that information.

*Note: A distinguishing feature of photovoltaic (PV) power systems is the unpredictability and limitation on the amount of charging power available and hence on the charge-discharge cycles imposed on the storage battery.*

#### 1.2

This Standard includes procedures designed to verify the capacity, efficiency, and longevity of storage batteries.

*Note: It is not practicable to test all battery models and types. For this reason a method of characterizing the quality and source of the data is given.*

#### 1.3

This Standard does not consider the implication of storage battery systems with a nominal terminal voltage in excess of 150 V.

#### 1.4

This Standard does not cover installation or maintenance, nor does it deal with detailed sizing procedures or mechanisms for interfacing with other PV system components.

#### 1.5

This Standard incorporates only those tests that are unique to photovoltaic applications. This Standard does not include reference to mechanical or environmental test procedures that now exist in other recognized standards. The users of this Standard should judge the appropriateness of these other standards for their application.

### 2. Reference Publication

This Standard refers to the following publication and where such reference is made it shall be to the edition listed below, including all revisions published thereto:

#### **NEMA\* Standard**

IB-3-1983,

*Cycle Life Testing of Lead Acid Industrial Storage Batteries for Motive Power Service.*

\*National Electrical Manufacturers Association (USA).