CSA Group

SPE-1000-13

Model Code for the field evaluation of electrical equipment

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Preface

This is the fourth edition of SPE-1000, *Model Code for the field evaluation of electrical equipment*. It supersedes previous editions published in 2009, 1999, and 1994.

Significant changes in this edition include new requirements for the field evaluation of energy usage metering devices, high-voltage equipment, photovoltaic modules, wind turbines, inverters, and industrial control equipment.

This Model Code is based upon guidelines for special inspections. These guidelines have been in effect for many years with a good safety record. The Canadian Advisory Council on Electrical Safety strongly supports the continuation of special inspections of electrical equipment, with the stipulation that the requirements be formally published.

Field evaluation of electrical equipment in accordance with the requirements of this Model Code is intended to be conducted by an inspection body accredited by Standards Council of Canada (SCC). Inspection body accreditation is the process of assessing and publicly recognizing the integrity, reliability, and technical competence of an organization's inspection services. Accreditation of an organization's inspection services by the SCC is a means of demonstrating that those services (within the scope of their formal accreditation) conform to an accepted set of requirements.

Field evaluation provides a means for evaluating electrical equipment and, if found to conform to the requirements of this Model Code, such electrical equipment may be marked with a field evaluation label.

It is always within the purview of the authority having jurisdiction (AHJ), in whose jurisdiction the Model Code is applied, to add technical or administrative requirements, stipulations, or deviations to this Model Code.

Typically, AHJs base their official acceptance of electrical equipment and products upon certification by an SCC-accredited certification body that the equipment conforms to the applicable standards. The certification body bases its certification upon testing and evaluation of a representative sample of equipment as manufactured to the relevant equipment standard (known as type or prototype testing). Certification is granted if the sample is found to be in conformance and a follow-up inspection program is put in place to ensure continued conformance.

This Model Code does not deal with type (or prototype) testing of equipment as practised in a regular certification program. It addresses minimum construction, marking, and test requirements that are consistent with maintaining a level of safety for electrical equipment and products so as not to present an undue hazard (as defined in this Model Code) to persons or property. This Model Code does not address the efficacy, performance, or quality of electrical equipment and products.

This Model Code was developed by a working group of the Canadian Advisory Council on Electrical Safety (CACES) Subcommittee on SPE-1000, and was approved by CACES.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

2) *Although the intended primary application of this Model Code is stated in its Scope, it is important to note that it remains the responsibility of the users of the Model Code to judge its suitability for their particular purpose.*

3) *This Model Code is subject to periodic review, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to* ***inquiries@csagroup.org*** *and include "Proposal for change" in the subject line:*

a) *Model Code designation (number);*

b) *relevant clause, table, and/or figure number;*
c) *wording of the proposed change; and*
d) *rationale for the change.*

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0 Introduction

0.1

Field evaluation of equipment in accordance with this Model Code should be undertaken only by fully qualified and competent persons. These persons should be experienced in conducting field evaluation and field testing of electrical and electronic equipment to Canadian safety requirements or other requirements acceptable to the authority having jurisdiction (AHJ).

Because field evaluation of electrical equipment and products is conducted to the requirements of this Model Code, it is not equivalent to an evaluation in support of certification, which is conducted to the requirements of the applicable standard. Consequently, equipment and products that are field evaluated and labelled cannot be considered as certified.

When used in conjunction with the requirements of the *Canadian Electrical Code, Part I*, this Model Code addresses the minimum requirements for equipment as they pertain to electrical safety. Where other authorities have jurisdiction, they must be consulted by the equipment owner or the owner's agent as to conformance to legislation. This legislation may be either federal, provincial, or municipal.

This Model Code addresses the essential construction, marking, and test requirements that equipment must meet before it can be labelled. It allows for the evaluation of electrical equipment and products, with the objective of minimizing the risk of degrading the safety of the equipment through the procedures used in the field evaluation. Where the required tests involve procedures deemed to present a risk to the safety of the particular equipment, such tests may be carried out on a separate representative sample supplied for the sole purpose of testing. Alternatively, other means may be taken to determine conformance, such as the evaluation of relevant test data presented in support of an application for field evaluation.

The requirements of this Model Code have been accepted by the AHJs.

1 Scope

1.1

1.1.1

This Model Code provides marking and test/construction requirements for the field evaluation of electrical equipment by an inspection body, where certification of that equipment is impracticable or otherwise unavailable.