

IEEE Standard for Submersible Equipment—Enclosure Integrity

IEEE Power and Energy Society

Developed by the
Transformers Committee

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IEEE Standard for Submersible Equipment—Enclosure Integrity

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Transformers Committee
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Abstract: Design and production tests and requirements for the integrity of submersible electrical equipment intended for installation in submerged or partially submerged environments are covered in this standard. These enclosures contain energized electrical apparatus, typically not accessible to the general public including, but not limited to, the following types of equipment: submersible distribution transformers; submersible network transformers; submersible network protectors; submersible switchgear; submersible capacitors or inductors; submersible junction enclosures; submersible metering equipment; and submersible control boxes.

Keywords: capacitors, coating integrity, control boxes, enclosure integrity, IEEE C57.12.32™, network protectors, submersible equipment, switches, transformers

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Introduction

This introduction is not part of IEEE Std C57.12.32-2019, IEEE Standard for Submersible Equipment—Enclosure Integrity.

The Accredited Standards Committee on Transformers, Regulators, and Reactors, C57, originally developed and correlated standards on these products, together with the Accredited Standards Committee on Power Switchgear, C37, through the Joint ASC C57/C37 Working Group on Enclosures with Joseph Martin and then with Robert C. Olen as chairman. This group is now the Enclosure Integrity Working Group of the IEEE Transformers Committee.

The data used in this work have been gathered from many sources, including the standards of the Institute of Electrical and Electronics Engineers and the National Electrical Manufacturers Association, reports of committees of the Edison Electric Institute, and others.

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1. Overview

1.1 Scope

This standard covers conformance tests and requirements for the integrity of submersible electrical equipment intended for installation in submerged or partially submerged environments. These enclosures contain energized electrical apparatus, typically not accessible to the general public, including, but not limited to, the following types of equipment:

- a) Submersible distribution transformers
- b) Submersible network transformers
- c) Submersible network protectors
- d) Submersible switchgear
- e) Submersible capacitors or inductors
- f) Submersible junction enclosures
- g) Submersible metering equipment
- h) Submersible control box

1.2 Purpose

The purpose of this standard is to describe the requirements for a comprehensive enclosure integrity system for submersible equipment providing long field life with minimum maintenance.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

ASTM B117, Standard Practice for Operating Salt Spray (Fog) Apparatus.¹

¹ASTM publications are available from the American Society for Testing and Materials (<http://www.astm.org/>).