



IEEE Standard for Pad-Mounted Equipment—Enclosure Integrity for Coastal Environments

IEEE Power Engineering Society

Sponsored by the
Transformers Committee

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IEEE Standard for Pad-Mounted Equipment—Enclosure Integrity for Coastal Environments

Sponsor

Transformers Committee
of the
IEEE Power Engineering Society

Approved 10 May 2005

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Abstract: Covered in this standard are conformance tests and requirements for the integrity of above-grade pad-mounted enclosures for application in coastal environments that contain apparatus energized in excess of 600 V and that may be exposed to the public including, but not limited to, the following types of equipment enclosures: pad-mounted capacitors or inductors, pad-mounted distribution transformers, pad-mounted junction enclosures, pad-mounted metering equipment, pad-mounted switch gear.

Keywords: enclosure integrity, pad-mounted equipment, switches, transformers

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Introduction

This introduction is not part of IEEE Std C57.12.29-2005, IEEE Standard for Pad-Mounted Equipment—Enclosure Integrity for Coastal Environments.

The Accredited Standards Committee on Transformers, Regulators, and Reactors, C57, has for a number of years been developing and correlating standards on these products. 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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This standard was originally prepared by the Joint C57/C37 Working Group on Enclosures with J. Martin and then R. C. Olen as chairman. This group is now the Enclosure Integrity Working Group of the IEEE Transformers Committee.

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1. Overview

1.1 Scope

This standard covers conformance tests and requirements for the integrity of above-grade pad-mounted enclosures intended for installation in coastal environments containing apparatus energized in excess of 600 V that may be exposed to the public including, but not limited to, the following types of equipment enclosures:

- a) Pad-mounted capacitors or inductors
- b) Pad-mounted distribution transformers
- c) Pad-mounted junction enclosures
- d) Pad-mounted metering equipment
- e) Pad-mounted switchgear

This standard does not cover installations that are under the exclusive control of electric utilities and that are located in such a manner that access to the equipment is controlled exclusively by the utility.

1.2 Purpose

The purpose of this standard is to describe the requirements for a comprehensive integrity system for pad-mounted enclosures providing long field life with minimum maintenance and positive safety features.

2. Normative references

The following referenced documents are indispensable for the application of this document. 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 D523, Standard Test Method for Specular Gloss.¹

ASTM D1654-2005, Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.

ASTM D3170, Standard Test Method for Chipping Resistance of Coatings.

ASTM D3359, Standard Test Methods for Measuring Adhesion by Tape Test.

ASTM D3363, Standard Test Method for Film Hardness by Pencil Test.

ASTM D4060, Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.

ASTM D4585, Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation.

ASTM D4587, Standard Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings.

SAE J400, Test for Chip Resistance of Surface Coatings.²

3. Definitions

For the purposes of this standard, the following terms and definitions apply. *The Authoritative Dictionary of IEEE Standards* [B10]³ should be referenced for terms not defined in this clause.

3.1 above grade: A term referring to an equipment use location above the high water line not intended for partial or total submersion.

3.2 axial force: A force applied along the axis of the pry bar from its handle to its pry tip.

3.3 coastal environment: The land area within 760 m (2500 ft) of the mean high water line.

3.4 conformance tests: Certain performance tests are conducted to demonstrate compliance with the applicable standards. The test specimen is normally subjected to all planned routine tests prior to initiation of the conformance test program.

NOTE—The conformance tests may, or may not, be similar to certain design tests. Demonstration of margins (capabilities) beyond the standard requirements is unnecessary.⁴

3.5 design tests: Tests made by the manufacturer to determine the adequacy of the design of a particular type or model of equipment or its component parts to meet its assigned ratings and to operate satisfactorily under normal conditions and under special conditions if specified. These tests may be used to demonstrate compliance with applicable standards of the industry.

¹ ASTM publications are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA (<http://www.astm.org/>).

² SAE publications are available from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, USA (<http://www.sae.org/>).

³ The numbers in brackets correspond to those of the bibliography in Annex C.

⁴ Notes in text, tables, and figures of a standard are given for information only, and do not contain requirements needed to implement the standard.