



ANSI/ICEA T-24-380-2013 (R2019)
Standard for Partial Discharge
Test Procedure



Approved as an American National Standard

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FOREWORD

The Insulated Cable Engineers Association Inc. (ICEA) developed this Standards Publication for Partial Discharge Test Procedure (ICEA T-24-380).

ICEA standards are adopted in the public interest and are designed to eliminate misunderstandings between the manufacturer and the user and to assist the user in selecting and obtaining the proper product for his particular need. Existence of an ICEA standard does not in any respect preclude the manufacture or use of products not conforming to the standard. The user of this Standards Publication is cautioned to observe any health or safety regulations and rules relative to the manufacture and use of cable made in conformity with this Standard.

Requests for interpretation of this Standard must be submitted in writing to the Insulated Cable Engineering Association, Inc., Contact information at www.icea.net. An official written interpretation will be provided. The Association will welcome suggestions for improvements gained in the use of this Standard.

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1.0 SCOPE

This Factory Test Procedure applies to the detection and measurement of partial discharges occurring in the following types of solid dielectric cables:

1.1 Single Conductor Cables

Single conductor shielded cables and assemblies thereof.

1.2 Multiple Conductor Cables

Multiple conductor cables with individually shielded conductors within an outer covering.

2.0 DEFINITIONS

Apparent Charge Magnitude:	Apparent charge q of a PD pulse is that charge, which, if injected within a very short time between the terminals of the test object in a specified test circuit, would give the same reading on the measuring instrument as the PD current pulse itself. The apparent charge is usually expressed in picocoulombs (pC).
Partial Discharge Level:	The largest repeatedly occurring partial discharge magnitude, measured in picocoulombs, at the specified partial discharge test voltage.
Partial Discharge Extinction Level:	The voltage at which the apparent charge magnitude falls to five pC or less when, measured in the manner described herein, as the applied voltage is decreased from the prescribed initial value.
Superposition:	The summation response of the partial discharge measuring device to either concurrent or time-spaced multiple discharges. The magnitude of superposition is expressed by the percent it differs from the response to known individual discharges.
Negative Superposition:	A summation response less than the response to the individual discharges.
pC:	picocoulombs.
Positive Superposition:	A summation response greater than the response to individual discharges.
Pulse Resolution Time:	The minimum pulse separation in microseconds which produces ten percent positive superposition.
Primary Display:	The indicating or metering device which is used for the primary calibration of the test equipment and display of discharges during a partial discharge test. The primary