# IEEE Recommended Practice for Thermal Evaluation of Unsealed or Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Pre-Insulated Stator Coils for Machines Rated 15 000 V and Below

1776™

## IEEE Power & Energy Society

Sponsored by the
Electric Machinery Committee

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**IEEE-SA Standards Board**

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**Abstract:** A test procedure (Combination of IEEE Std 275™-1992 and IEEE Std 429™-1994) for comparing two or more insulation systems in accordance with their expected life at rated temperature is outlined. The procedure is limited to insulation systems for alternating-current (ac) electrical machines using form-wound pre-insulated stator coils rated 15 000 V and below.
**Keywords:** ac electric machinery, insulation system, stator coils, thermal evaluation

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This introduction is not part of IEEE Std 1776-2008, IEEE Recommended Practice for Thermal Evaluation of Unsealed or Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Pre-Insulated Stator Coils for Machines Rated 15 000 V and Below.

This recommended practice is intended to provide an evaluation of the thermal capability of an unsealed or sealed insulation system. Other aging factors; electrical, mechanical, and environmental are also known to be important. Test procedures for evaluating those factors, both individually and in combination with each other, will be pursued by other working groups.

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# IEEE Recommended Practice for Thermal Evaluation of Unsealed or Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Pre-Insulated Stator Coils for Machines Rated 15 000 V and Below



## 1. Overview

### 1.1 Scope

This recommended practice outlines test procedures for comparing two or more unsealed or sealed insulation systems in accordance with their expected life at rated temperature. The procedure is limited to insulation systems for AC electrical machines using form-wound pre-insulated stator coils rated 15 000 V and below.

The intent of this test procedure is to evaluate unsealed insulation systems for use with air cooling under usual (normal) service conditions, or sealed insulation systems for use under severe environmental conditions (where the insulation is exposed to conducting contaminants). This procedure does not cover special requirements, such as those for machines enclosed in gas atmospheres or machines subjected to strong chemicals, metal dust or submersion in liquid, etc.

The procedure includes instructions for testing candidate systems in comparison with known reference systems, of the same type, having a proven record of service experience and interpreting the results of these tests.