

Rotating electrical machines - Part 27-3: Dielectric dissipation factor measurement on stator winding insulation of rotating electrical machines

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN 60034-27-3:2016 sisaldab Euroopa standardi EN 60034-27-3:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 60034-27-3:2016 consists of the English text of the European standard EN 60034-27-3:2016.
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English Version

Rotating electrical machines - Part 27-3: Dielectric dissipation  
factor measurement on stator winding insulation of rotating  
electrical machines  
(IEC 60034-27-3:2015)

Machines électriques tournantes - Partie 27-3: Mesure du  
facteur de dissipation diélectrique sur le système d'isolation  
des enroulements statoriques des machines électriques  
tournantes  
(IEC 60034-27-3:2015)

Drehende elektrische Maschinen - Teil 27-3: Messung des  
dielektrischen Verlustfaktors an der  
Ständerwicklungsisolierung drehender elektrischer  
Maschinen  
(IEC 60034-27-3:2015)

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## European foreword

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-06-24

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In the official version, for Bibliography, the following note has to be added for the standard indicated :

IEC TS 60034-27      NOTE      Harmonized as CLC/TS 60034-27.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060-1	-	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	-
IEC 60060-2	-	High-voltage test techniques - Part 2: Measuring systems	EN 60060-2	-

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## INTRODUCTION

This International Standard provides guidelines for dielectric dissipation factor measurements on form-wound stator bars or coils as well as for complete windings.

The dielectric dissipation factor is a measure of the dielectric losses in the stator winding insulation. Measurement of dielectric dissipation factor is an appropriate means of assessing the quality of new and also aged stator winding insulation of rotating electrical machines. Especially, the method is useful for assessing the uniform quality of manufacturing and the dielectric behaviour of the insulation as a whole. For aged stator windings, the dielectric dissipation factor provides information about insulation condition.

The dielectric dissipation factor measurements give no indication of the distribution of loss within the insulation and – in contrast to off-line partial discharge measurements – do not permit localization of weak points of the insulation system.

The main principle is to measure the dielectric dissipation factor over a range of voltages and to derive different characteristic dielectric loss parameters as basis for the evaluation.

Empirical limits verified in practice can be used as a basis for evaluating the quality of stator winding insulation systems in manufacturing. Furthermore, trend evaluation, e.g. diagnostic tests as part of the functional evaluation of insulation systems or in connection with servicing and overhaul of rotating machines, can also provide information on ageing processes, necessary further measures and intervals between overhauls. However, such trend evaluations cannot be used to predict the time to failure of a stator winding insulation.