

## STANDARD INFORMATION - UL 1446:2016 ED.7+R:04FEB2019

**Standard Number:** UL 1446

**Standard Name:** Systems of Insulating Materials – General

**Standard Edition and Issue Date:** 7<sup>th</sup> Edition Dated November 11, 2016

**Date of Revision:** February 4, 2019

**Date of Previous Revision of Standard:** July 18, 2017

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **August 4, 2020**

## IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

**Overview of Changes:** Revised requirements for varnish in a varnish required system. Specific details of new/revised requirements are found in table below.

**If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).**

### Client Action:

**Information** – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised requirements do not apply to your product (s).

***Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.***



## STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
<p><i>Additions to existing requirements are <u>underlined</u> and deletions are shown <del>lined out</del> below.</i></p>		
Supplement SA	Info	<b>Substitutions or Modification to an Electrical Insulation System</b>
SA5	Info	<b>Varnish</b>
SA5.3		<b><i>New section added;</i></b> <b>Modifying an EIS thermally aged with a varnish to an EIS thermally aged without a varnish</b>
SA5.3.1		For EIS evaluated in accordance with Section 6, Electrical Insulation Systems - Full Thermal Aging that included a varnish as an EIM component shall be evaluated with Section SA7, Insulation Systems - One Temperature Thermal Aging test to change the EIM component varnish to a NIM component thereby establishing the EIS as thermally aged without a varnish.
SA5.3.2		An EIS that complies with SA5.3.1, shall be considered an EIS originally aged without a varnish and further varnish substitution shall use criteria in SA5.2 - Addition of varnishes to systems originally evaluated without a varnish.
SA7	Info	<b>Insulation Systems - One Temperature Thermal Aging</b>
SA7.1	Info	<b>General</b>
SA7.1.1		<p>A one temperature thermal aging program is able to be used instead of full thermal aging in order to evaluate certain system modifications, such as the following:</p> <p>a) As an alternative to a chemical compatibility test when adding NIM components.</p> <p>b) <del>Reduction of thickness for a ground, interwinding, or encapsulating insulation material.</del> <u>Reduction of thickness of any EIM in the EIS, including reduction down to a zero level.</u></p> <p><u>(c) Modifying EIS thermally aged with a varnish (EIM) to an EIS thermally aged without a varnish (NIM).</u></p> <p>d) Qualification of an alternate varnish/magnet wire combination whose thermal indices are no more than one temperature class lower than those of the varnish used in the originally evaluated system, and whose twisted pair thermal indices are less than that of the unvarnished magnet wire. See Section SA5.</p> <p>e) Evaluation of a lead wire which is rated more than 5°C (9°F) below the system temperature class rating whereby one or both of the following conditions are met:</p> <ol style="list-style-type: none"> <li>1) The lead wire is in direct contact with the windings or enters the outer wrap.</li> <li>2) The rated temperature of the lead wire is below that referenced in Table 5.1.</li> </ol>



CLAUSE	VERDICT	COMMENT
SA7.3	Info	<b>Analysis and evaluation</b>
SA7.3.6		In order for the candidate (modified) insulation system evaluated for the purpose of evaluating EIM component insulation thickness reductions <u>or modifying an EIS varnish EIM to NIM component</u> to be assigned the same insulation system temperature class rating as the reference (unmodified) system, the apparent thermal index determined for the modified insulation system shall be either within $\pm 5^{\circ}\text{C}$ ( $\pm 9^{\circ}\text{F}$ ) of the apparent thermal index determined for the original insulation system or be the same insulation system temperature class of the original insulation system. When the results do not fall within $\pm 5^{\circ}\text{C}$ ( $\pm 9^{\circ}\text{F}$ ) or within the same insulation temperature class an aging as specified in Section SA8, Insulation Systems – Two Temperature Thermal Aging or an aging as specified in Section 6, Electrical Insulation Systems – Full Thermal Aging shall be conducted to confirm the temperature class.
CUSTOMERS PLEASE NOTE: This Table and column “Verdict” can be used in determining how your current or future production is or will be in compliance with new/revised requirements.		