

## STANDARD INFORMATION

**Standard:** UL 746C

**Standard ID:** Polymeric Materials - Used In Electrical Equipment Evaluations [UL 746C:2018 Ed.7+R20Apr2020]

**Previous Standard ID:** Polymeric Materials - Used In Electrical Equipment Evaluations [UL 746C:2018 Ed.7]

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **April 20, 2022**

## IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard.

**Overview of Changes:** Weathering Test Program for Non- Enclosure/Elastomeric/Film Materials. Specific details of new/updated requirements are found in table below.

***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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown <del>lined-out</del> below.</i>

25	Info	<b>Ultraviolet Light Exposure</b>  <i><b>New clause added;</b></i>
25.3		When the material is not suitable for impact testing options (mentioned in Table 25.1) due to thickness less than 0.25 mm (0.01 inch) or it is a vulcanized rubber or thermoplastic elastomer (used as non-enclosure or part of the enclosure), alternatively, testing has to be performed for deformation resistance.

**Minimum property retention limitations after ultraviolet light and water immersion conditioning**

	Property	Ultra-violet light <sup>a</sup>	Water immersion <sup>b</sup>
Table 25.1	Flammability Classification	Unchanged	Unchanged
	Tensile or Flexural Strength <sup>c</sup>	70 Percent	50 Percent
	Tensile, Izod or Charpy Impact <sup>c</sup>	70 Percent	50 Percent
	<u>Tensile Strength and Elongation<sup>d</sup></u>	<u>70 Percent</u>	<u>50 Percent</u>
	<sup>a</sup> 1000 hours xenon-arc exposure. See 57.1.1 – 57.2.11. <sup>b</sup> 7 days at 70°C. See 58.1. <sup>c</sup> For functional support, the test methods are tensile strength and flexural strength. For Impact Resistance the test methods are Tensile, Izod, or Charpy impact. See Table 57.1. <sup>d</sup> <u>Alternate testing per 25.3 and 26.1.3 for deformation resistance, the test method is tensile strength and elongation.</u>		

26	Info	<b>Water Exposure and Immersion</b>
26.1	Info	<b>General</b>  <i><b>New clause added;</b></i>
26.1.3		When the material is not suitable for impact testing options (mentioned in Table 25.1) due to thickness less than 0.25 mm (0.01 inch) or it is a vulcanized rubber or thermoplastic elastomer (used as non-enclosure or part of the enclosure), alternatively, testing has to be performed for deformation resistance.



CLAUSE	VERDICT	COMMENT
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57	Info	<b>Ultraviolet Light Exposure Test</b>
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57.2	Info	<b>Method</b>
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*New clause added;*

57.2.3		Tensile or flexural strength and flammability tests are to be conducted on specimens no thicker than the corresponding application. The results of Tensile, Izod or Charpy Impact testing of standard specimens in the nominal 3 mm/4 mm (0.12 inch/0.16 inch) thickness can be considered representative of the testing of a reduced thickness provided the non-impact testing of the reduced thickness complies with the requirements of Table 25.1.
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**Physical-property test methods**

Table 57.1	Physical-property consideration	Material test method
	Functional support Impact resistance <u>Deformation resistance</u>	Tensile strength or Flexural strength <sup>a</sup> Tensile impact, Izod impact, or Charpy impact <u>Tensile strength and Elongation</u>
<sup>a</sup> The ultraviolet-exposed side is to be in contact with the two loading points when using the three-point loading method.		

58	Info	<b>Water Exposure and Immersion Test</b>
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The following properties shall be included in the evaluation (See Table 57.1):

a) For Functional Support, either  
 1) Tensile Strength, or  
 2) Flexural Strength

58.2		b) For Impact Resistance, either 1) Tensile Impact, or 2) Izod Impact, or 3) Charpy Impact.
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c) For Deformation Resistance (Alternative to Impact Resistance Test).i  
 1) Tensile Strength and Elongation.

d) Flammability, as described in the Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94. See 57.2.4.1.