

## STANDARD INFORMATION

**Standard Number:** ASTM E8/E8M

**Standard Name:** Standard Test Methods for Tension Testing of Metallic Materials

**Standard Edition and Issue Date:** 2016 Edition Dated August 1, 2016

**Date of Revision:** 2015 edition dated May 1, 2015 and 2016a edition dated September 1, 2016

**Date of Previous Revision of Standard:** 2013a Edition dated August 1, 2013

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **December 31, 2019**

## 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requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.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:

- Additional requirements for elongation
- Additional requirements for speed of testing

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 Required:

**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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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.***



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CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are underlined and deletions are shown lined out below.</i>
		<b>The following clauses reflect the changes between 2013a edition and 2015 edition</b>
7	Info	<b>Procedures</b>
7.11	Info	<b>Elongation:</b>
		<b><i>New clause added;</i></b>
7.11.1		Elongation may be calculated from elongation-after-fracture measurements or directly from elongation-at-fracture measurements. Either value may be reported, but the method used shall be reported. When disagreements arise over the elongation results, the parties shall agree on which method to use to obtain the results.
7.11.2	Info	<b>Measurement of elongation after fracture:</b>
		<b><i>New clause added;</i></b>
7.11.2.1		Follow the gauge length marking procedures and requirements of 7.3 and the gauge length tolerance requirements shown in Fig. 1, Fig. 7, Fig. 8, Fig. 13, Fig. 15, Fig. 17, Fig. 18, Fig. 19, or Fig. 20 as appropriate. Pay particular attention to requirements for low-elongation materials.
		<b><i>New clause added;</i></b>
7.11.2.2		Measure the elongation after fracture by fitting the two halves of the test specimen together and measuring the distance between gauge marks that were applied before the test.
7.11.2.4		When the specified elongation is 3 % or less, remove partly torn fragments that will interfere with fitting together the ends of the fractured specimen or with making the final measurement. Fit the fractured ends together with matched surfaces and apply a force along the axis of the specimen sufficient to close the fractured ends together. This force may then be removed carefully, provided the specimen remains intact. <u>Measure the final gauge length to the nearest 0.05 mm [0.002 in.], and report the elongation to the nearest 0.2 %.</u> <u>The procedure given in 7.11.2.3 may be used instead when the measured elongation is greater than 3 %.</u>
7.11.3	Info	<b>Measurement of elongation at fracture:</b>



CLAUSE	VERDICT	COMMENT
		<b><i>New clause added;</i></b>
7.11.3.4		For materials that do not exhibit a sudden decrease in force, the elongation at fracture shall be taken as the strain measured just prior to when the force falls below 10 % of the maximum force encountered during the test.
		<b><i>New section added;</i></b>
7.11.4		<b>Replacement of specimens:</b>
7.11.4.1		Elongation at or after fracture may be affected by location of the fracture, relative to the marked or extensometer-defined gauge length. If any part of the fracture occurs outside this gauge length (7.14.5) or is located less than 25 % of the elongated gauge length (7.14.6) from either gauge mark or extensometer-contact point, the elongation value may be abnormally low and unrepresentative of the material. If such an elongation measure is obtained in acceptance testing involving only a minimum requirement and the value meets the requirement, no further testing need be done. Otherwise, discard the test and test a replacement specimen.
		<b><i>New section added;</i></b>
7.11.5		<b>Reporting:</b>
7.11.5.1		Report both the original gauge length, G, and the percentage increase.
7.11.5.2		If any device other than an extensometer is placed in contact with the specimen's reduced section during the test, report this also.
<b>The following clauses reflect the changes between 2016 edition and 2016a edition</b>		
5	Info	<b>Apparatus</b>
5.1		Testing Machines—Machines used for tension testing shall conform to the requirements of Practices E4. The forces used in determining tensile strength and yield strength shall be within the verified force application range of the testing machine as defined in Practices E4. <u>Where verification of the testing machine speed is required, Practices E2658 shall be used unless otherwise specified.</u>
7	Info	<b>Procedures</b>
7.6	Info	<b>Speed of Testing:</b>
		<b><i>New clause added;</i></b>
7.6.2		Other applicable specifications may require verification of the speed of the testing machine. In such cases, unless otherwise specified, the verification shall be done in accordance with Practices E2658, with the machine meeting the Class E or better requirements.



CLAUSE	VERDICT	COMMENT
		Note 15: Some materials/applications are fairly sensitive to test speed, whereas others are not. In general-purpose tensile testing, significant variation in the test speed can often be tolerated.
	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.	