# STANDARDS UPDATE NOTICE (SUN)
# ISSUED: January 2, 2019

## STANDARD INFORMATION

**Standard Number:** ASTM E1354
**Standard Name:** Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter
**Standard Edition and Issue Date:** 2015 Edition Dated June 1, 2015
**Date of Revision:** June 1, 2015
**Date of Previous Revision of Standard:** ASTM 1354-14e1 Dated June 1, 2014

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **September 30, 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requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.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:** Added requirements for determination of critical heat flux for flaming ignition using a spark igniter. 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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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.***

## STANDARD INFORMATION

| CLAUSE | VERDICT | COMMENT |
|---|---|---|
| Annex A3 | | ***New annex added;***<br><br>**Determination of critical heat flux for flaming ignition using a spark ignitor** |
| A3.1 | | Introduction—Whether ignition occurs is a function of both the exposure time and the applied heat flux. This procedure assesses whether or not ignition occurs within a specific exposure time. The critical flux for ignition is a heat flux below which ignition of a specimen is not expected to occur within a chosen test period (see 3.2). The chosen test period is a function of the application. In the absence of additional information, the default exposure time is 20 min. |
| A3.2 | | The estimation of the critical heat flux for ignition is conducted by using an iterative procedure with the test method, as shown in the following steps.<br><br>Note A3.1: In summary, this procedure starts by attempting to cause ignition of a specimen at a high initial test heat flux and follows that with an iterative procedure to converge on a range, as narrow as possible, of heat fluxes in which the critical heat flux for ignition lies. At every step, if ignition occurs at a certain heat flux the next step is to try a lower initial test heat flux. On the other hand, if ignition does not occur, the next step is to try at a higher heat flux. The first iteration is done in steps of 10 $kW/m^2$, until the range is found. This is then followed, optionally, by iterations in steps for 5 $kW/m^2$ and then 2 $kW/m^2$, as appropriate for the material being assessed. |
| A3.2.1 | | The exhaust fan and spark igniter shall be used for all tests. Measurements of heat release, mass loss or smoke obscuration (including extinction coefficients) are not necessary. Thus, continuous data collection is also not necessary. |
| A3.2.2 | | Follow the test preparation procedure in 11.1 and set the equipment to use a high initial test heat flux, typically at 50 $kW/m^2$. |
| A3.2.3 | | Perform a heat flux calibration in accordance with 11.1.4, for the initial test heat flux, prior to conducting a determination. |
| A3.2.4 | | Follow the test procedure in 11.2 for each determination. |
| A3.2.5 | | Record the time to ignition (to ±1 s) as the time to sustained flaming (see 11.2.7.1) during a 20 min exposure. |
| A3.2.5.1 | | Exposure periods different from 20 min are acceptable for specific applications. The exposure period shall be reported (see A3.2.15). |
| A3.2.6 | | If ignition occurs during the 20 min exposure period, stop the determination after recording the time to ignition and continue to test in accordance with A3.2.7. If ignition did not occur during the 20 min exposure period, stop the determination after 20 min and continue to test in accordance with A3.2.8. |

| CLAUSE | VERDICT | COMMENT |
|---|---|---|
| A3.2.7 | | Conduct the next determination at an initial test heat flux that is 10 kW/m$^2$ lower than the initial test heat flux that caused ignition to occur. Repeat the steps in A3.2.3 through A3.2.6. |
| A3.2.8 | | Conduct the next determination at an initial test heat flux that is 10 kW/m$^2$ higher than the initial test heat flux that did not cause ignition to occur. Repeat the steps in A3.2.3 through A3.2.6. |
| A3.2.9 | | If a specimen ignites at an initial test heat flux, but does not ignite at an initial test heat flux that is 10 kW/m$^2$ lower, the critical heat flux for ignition has been bracketed within 10 kW/m$^2$. When that has occurred, repeat the steps in A3.2.3 through A3.2.6, but at increments of 5 kW/m$^2$. If the sequence of steps leads to a determination that has already been made, the critical flux for ignition with that interval has been found. |
| A3.2.10 | | If a specimen ignites at an initial test heat flux, but does not ignite at an initial test heat flux that is 5 kW/m$^2$ lower, the critical heat flux for ignition has been bracketed within 5 kW/m$^2$. When that has occurred, repeat the steps in A3.2.3 through A3.2.6, but at increments of 2 kW/m$^2$. |
| A3.2.11 | | This procedure will bracket the critical heat flux to within 2 kW/m$^2$. |
| A3.2.12 | | Not all specimens ignite in a manner that will allow the determination of the critical flux for ignition within a 2 kW/m$^2$ range. For some materials it will be necessary to report the results within a broader range, consistent with the intended use of the test result and of the material or product being tested. It is also acceptable to use alternate bracketing intervals, such as, 3, 7, or 12 kW/m$^2$, to minimize the critical heat flux range to be reported. |
| A3.2.13 | | Report the critical flux for ignition, the exposure time period used and the bracketed range. |
| A3.2.14 | | It is possible to continue this iterative procedure to obtain a critical heat flux for ignition that is bracketed to within 1 kW/m$^2$, but this is likely to lead to results that are not useful as they fall within the precision of the test method itself. |
| A3.2.15 | | Report the value of the critical heat flux for ignition as the mid-point of the range determined using the previous procedure and the range used, together with the time period used for the exposures and the bracketed range of heat fluxes.<br><br>Note A3.2: An example report would state that the critical heat flux for ignition is 31 kW/m$^2$ and is within the 30-32 kW/m$^2$ range for an exposure time of xx minutes. |
| | | 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. |