	CO-ORDINATION OF NOTIFIED BODIES **PPE Regulation 2016/425** **RECOMMENDATION FOR USE**	PPE-R/08.058 Version 01

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Question related to ☐ PPE Regulation ☐ PPE Guidelines ☒ EN/prEN: EN ISO 12402-7:2020 ☐ Other:

Article: Annex: Clause: 4.11.12

Key words:

EN ISO 12402-7; Window Material; Table 21

Question:

The requirement for Window Material elongation was updated in the latest standard edition of EN ISO 12402-7:2020.

In the previous standard EN ISO 12402-7:2007+A1:2011, the elongation requirement following the Accelerated Weathering exposure (exposure 2) was that the material shall have an elongation of no more than 70%, and no less than 30% of the as received elongation at break load. See below extract:

Elongation	See material thickness	ASTM D 412-98, method A, dumbbell die A	10	Following exposure 2, the material shall not increase more than 70 % or decrease more than 30 % of the as-received elongation at break load in both the machine and cross-machine directions. Following exposures 3 through 4, the material shall not increase more than 60 % or decrease more than 50 % of the as-received elongation at break load in both the machine and cross-machine directions.

In the latest EN ISO 12402-7:2020 edition, the elongation at break strength shall be no more than 10% of the original length after standard conditioning and after Accelerated Weathering (exposure 2) no more than 30%. See below extract:

Tensile breaking strength and elongation	1) Standard conditioning 2) Accelerated weathering according to 4.1.6.4	ISO 13934-2:2014	5 for each exposure ASTM D 412-16, Method A, Dumbbell	Following exposure 1, the tensile strength shall be no less than 60 N. Following exposure 2, the tensile strength shall be no less than 50 N. Following exposure 1, the elongation shall not increase by more than 10 % of the original length. Following exposure 2, the material shall not increase by more than 30 % of the exposure 1 elongation at break.

This is a dramatic reduction in the elongation requirement for this type of window material.

Data from testing of previous window materials shows that there are no components which can meet the new requirements for elongation given in the 2020 edition of the standard.

VG8 are of the opinion that the latest 10% requirement has been taken from the existing UL1191 Edition 5 standard, but the requirement has been input incorrectly and instead of having a minimum elongation of 10% after standard conditioning, it is incorrectly stated as a maximum elongation of 10%.

Table 31.2
Window material

Test	Exposure	Test method	Number of samples	Compliance criteria
Tensile breaking strength and elongation	1. Standard Conditioning. 2. Xe_{500}	ASTM D412, Method A, Die A.	20 (5 samples in each direction for each exposure)	Following exposure 1, the minimum average strength shall be 62 N (14 pounds force) and the minimum elongation shall be 10% for each sample. Following exposure 2 the minimum strength shall be 53 N (12 pounds force).

How is Elongation of Window Material to be assessed under EN ISO 12402-7:2020 Table 21?

Solution:

Until the EN ISO 12402-7:2020 edition of the standard can be amended to requirements which can be met by the currently approved material the following requirements shall be adopted for window material:

The minimum tensile strength requirements for window material shall be applied as per EN ISO 12402-7:2020, Table 21:

Following exposure 1, the tensile strength shall be no less than 60 N.

Following exposure 2, the tensile strength shall be no less than 50 N.

The elongation requirements of EN ISO 12402-7:2007+A1:2011, Table 21 shall be applied:

Following exposure 2, the material shall not increase more than 70 % or decrease more than 30 % of the as-received elongation at break load in both the machine and cross-machine directions.