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AMENDMENT 1
2022-09

**Composites and reinforcements
fibres — Carbon fibre reinforced
plastics (CFRPs) and metal assemblies
— Determination of the tensile lap-
shear strength**

AMENDMENT 1: Precision data

*Composites et fibres de renfort — Assemblages de plastiques renforcés
de fibres de carbone (CFRP) et de métal — Détermination de la
résistance au cisaillement en traction*

AMENDEMENT 1: Données de fidélité

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 13, *Composites and reinforcement fibres*.

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Composites and reinforcements fibres — Carbon fibre reinforced plastics(CFRPs) and metal assemblies — Determination of the tensile lap-shear strength

AMENDMENT 1: Precision data

Clause 11

Replace the paragraph with: “See Annex A.”.

Clause 13

Add, at the end of the clause, the following new Annex A:

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Annex A (informative)

Precision statement — Interlaboratory test

A.1 Test conditions (Tensile lap-shear strength)

A.1.1 Test specimens

Specimen shape (See Figure 1)

All specimens were prepared in a processing company in Japan and were delivered to each of the participant.

A.1.2 Test speed

2,5 mm/min.

A.2 Participants to the interlaboratory test

Table A.1 is based on a round-robin test for “Tensile lap-shear strength” involving five laboratories (Japan, China, India, Germany, Union Kingdom) and one material. All of the test samples were prepared and distributed by one source.

A.3 Statistical results

Table A.2 contains statistical results output from ISO 5725-2.

CAUTION — Due to the limited number of laboratories, the following explanations of r and R are only intended to present a meaningful way of considering the approximate precision of this test method, as those data are specific to the interlaboratory test and may not be representative of other lots, conditions, materials, or laboratories.

A.3.1 Repeatability (r) – the closeness of the agreement between the results of successive measurements of the same measure, when carried out under the same conditions of measurement. In other words, the measurements are taken by a single person or instrument on the same item, under the same conditions, and in a short period of time

A.3.2 Reproducibility (R) – When the same property is expressed by the same method, it is the closeness of agreement of the results. In other words, if the experimental conditions are the same, there is high reproducibility when the same phenomenon or the same experiment gives the same result.

A.4 Precision data

Table A.1 — Data for five laboratories, tensile lap-shear strength

Lab. <i>i</i>	y_i (MPa)	s_i (MPa)	s_i/y_i (%)
1	19,5	0,62	3,2
2	21,3	0,84	3,9
3	18,3	1,96	10,7
4	23,3	1,44	6,2
5	20,6	5,32	25,8

Test speed: 2,5 mm/min
 y_i = average in Lab *i*
 s_i = standard deviation in Lab *i*
 s_i / y_i = coefficient of variation

Table A.2 — Precision data, tensile lap-shear strength

n_{Lab}	Average (MPa)	s_r	s_R
5	20,8	2,77	3,12

s_r = repeatability standard deviation
 s_R = reproducibility standard deviation
 n_{Lab} = number of laboratories reporting results

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