



SLOVENSKI STANDARD

SIST EN 2557:2001

01-junij-2001

Aerospace series - Carbon fibre preimpregnates - Determination of mass per unit area

Aerospace series - Carbon fibre preimpregnates - Determination of mass per unit area

Luft- und Raumfahrt - Kohlenstoffaser-Prepregs - Bestimmung der flächenbezogenen Masse

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Série aérospatiale - Préimprégnés de fibres de carbone - Détermination de la masse surfacique

[SIST EN 2557:2001](https://standards.iteh.ai/catalog/standards/sist/18df8e02-ea50-4227-9e0c-57e0164413c7/sist-en-2557-2001)

Ta slovenski standard je istoveten z: EN 2557:1997

ICS:

49.025.40 Guma in polimerni materiali Rubber and plastics

SIST EN 2557:2001

en

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(standards.iteh.ai)

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EUROPEAN STANDARD

EN 2557

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1997

ICS 49.025.40

Descriptors: aircraft industry, preimpregnated product, carbon fibre, determination, specific area

English version

**Aerospace series - Carbon fibre preimpregnates -
Determination of mass per unit area**Série aéronautique - Préimprégnés de fibres de
carbone - Détermination de la masse surfaciqueLuft- und Raumfahrt - Kohlenstofffaser-Prepregs
- Bestimmung der flächenbezogenen Masse**(standards.iteh.ai)**

SIST EN 2557:2001

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This European Standard was approved by CEN on 1996-08-04. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENEuropean Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 1997, and conflicting national standards shall be withdrawn at the latest by September 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This standard specifies a method for determining the mass per unit area of carbon fibre preimpregnates for aerospace use.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 2743 Aerospace series - Reinforced plastics - Standard procedures for conditioning prior to testing ¹⁾

3 Principle

Weighing of specimens of known area after conditioning in a specified atmosphere.

4 Apparatus iTeh STANDARD PREVIEW

4.1 Balance with an accuracy of 0,1 mg (standards.iteh.ai)

4.2 Template of standard specimen SIST EN 2557:2001

4.3 Ancillary items such as a sharp knife and tweezers https://standards.iteh.ai/catalog/standards/sist/18df8e02-ea50-4227-9e0c-57c016415c7/sist-en-2557-2001

5 Specimens

5.1 Shape and dimensions

The specimen shall be square and have sides of (100 ± 1) mm.

Other specimens may be used, subject to agreement between the user and manufacturer on condition that they have an area of 100 cm² with a tolerance of ± 2 % .

5.2 Number and distribution

A minimum of three specimens shall be used.

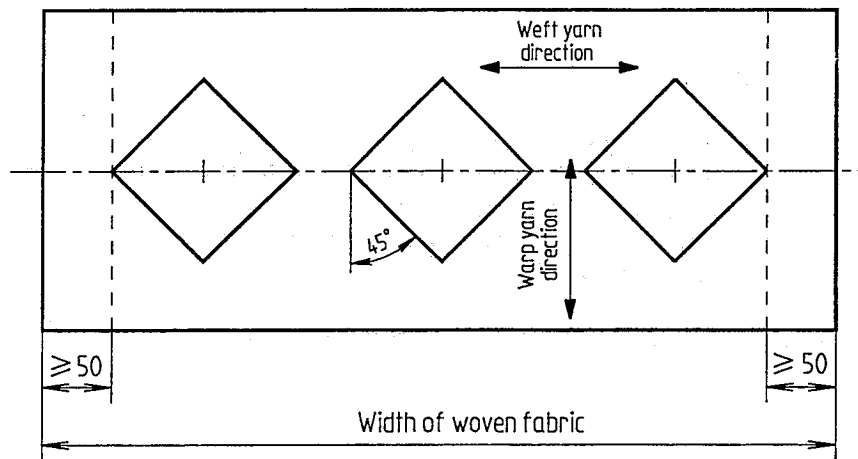
They shall :

- be evenly distributed across the width of the sample ;
- have their centres positioned along a straight line.

See figure 1 for wide woven fabrics, figure 2 for narrow woven fabrics and figure 3 for unidirectional sheet or tape.

1) Published as AECMA Prestandard at the date of publication of this standard

Dimensions in millimetres

**Figure 1**

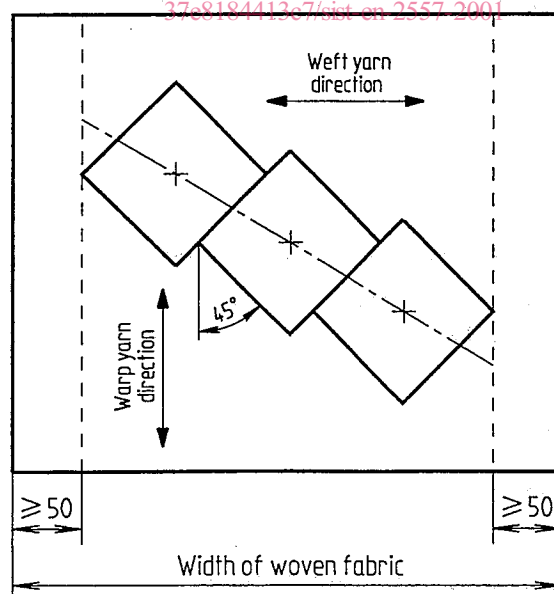
Example of positioning of specimens on woven carbon fibre fabrics sample across the width

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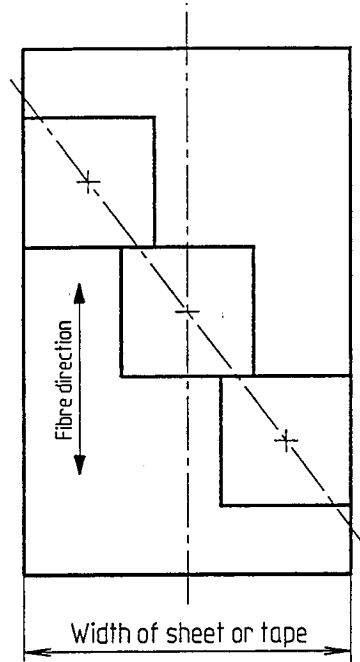
Dimensions in millimetres

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**Figure 2**

Example of positioning of specimens on woven carbon fibre fabric sample along an axis inclined at an angle as close as possible to the weft direction



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Figure 3

Example of positioning of specimens on carbon fibre unidirectional sheet or tape sample

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6 Procedure

6.1 Conditioning

6.1.1 Preimpregnates stored at ambient temperature

The amount of preimpregnate required for testing shall be sampled and then conditioned in the test atmosphere (see 6.2) for a minimum of 2 h, unless otherwise specified.

6.1.2 Preimpregnates stored below ambient temperature

The preimpregnate, suitably packed in an airtight and solvent resistant bag to prevent moisture pick-up, shall be allowed to reach ambient temperature over a period of time depending on its mass. This time shall not be less than 8 h.

When the material has reached ambient temperature, the amount required for testing shall be sampled and then conditioned in the test atmosphere (see 6.2) for a minimum of 2 h, unless otherwise specified.

6.2 Atmosphere for testing

EN 2743, condition class B.

6.3 Time interval between conditioning and testing

After conditioning, the sample shall be maintained in the test atmosphere. Unless otherwise specified, tests shall be carried out within 6 h. (standards.iteh.ai)

6.4 Tests

[SIST EN 2557:2001
https://standards.iteh.ai/catalog/standards/sist/18df8e02-ea50-4227-9e0c-37e8184413c7/sist-en-2557-2001](https://standards.iteh.ai/catalog/standards/sist/18df8e02-ea50-4227-9e0c-37e8184413c7/sist-en-2557-2001)

Cut the specimens.

Weigh each specimen with its protective films to the nearest milligram (m_1).

Remove the protective films and reweigh these to the nearest milligram (m_2).

7 Expression of results

$$M = (m_1 - m_2) K$$

where :

M is the mass per unit area, in grams per square meter ;

m_1 is the mass of the specimen plus protective films, in grams ;

m_2 is the mass of the protective films, in grams ;

$K = 100 \text{ m}^{-2}$.