

**Lennunduse ja kosmonautika seeria.
Läbipaistvate lennukiklaasimise materjalide
katsemeetodid. Osa 8: Optilise moonutuse
määramine**

Aerospace series - Test methods for transparent
materials for aircraft glazing - Part 8: Determination
of optical distortion

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 2155-8:2000 sisaldab Euroopa standardi EN 2155-8:1989 ingliskeelset teksti.

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English version

Aerospace series

**Test methods for transparent materials
for aircraft glazing**

**Part 8 : Determination
of optical distortion**

**Série aéronautique
Méthodes d'essais pour matériaux
transparents pour vitrages aéronautiques
Partie 8 : Détermination
de la distorsion optique**

**Luft- und Raumfahrt
Prüfverfahren für transparente Werkstoffe
zur Verglasung von Luftfahrzeugen
Teil 8 : Bestimmung
der optischen Verzerrung**

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CEN

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

Central Secretariat : Rue Bréderode 2, B-1000 Bruxelles

Brief history

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

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

According to the Common CEN/CENELEC Rules, following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Contents

	Page
1 Scope and field of application	4
2 References	4
3 Definitions	4
4 Apparatus	4
5 Specimens	4
6 Procedure	4
7 Expression of results	5
8 Test report	5

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1 Scope and field of application

This standard specifies the method of measurement of optical distortion of sheets in transparent materials, which consists of determining the change of deviation over the entire area of the sheet.

The method allows sheets to be viewed at differing angles which are specified according to the quality of the sheet under test.

2 References

EN 2155-6 Aerospace series - Test methods for transparent materials for aircraft glazing - Part 6 - Determination of optical defects.

3 Definitions

Optical distortion is defined as local variation of optical deviation which results in distortion of the image perceived on viewing through the panel. Thus known straight lines become crooked or curved.

4 Apparatus

A grid board having line spacing of 25 mm is mounted vertically. A graticule having a system of equally spaced lines in two directions at 90° to each other is designed to be used with a suitable lantern projector so that at a distance of 4,5 m the projected image can be made coincident with the grid board. To avoid distortion of the image, measurement shall be restricted to a square about 1 m x 1 m at the grid board. An iris diaphragm may be useful to reduce the aperture of the lens. The specimen shall be mounted so that the area being examined is 1,2 m from the grid board. The mounting arrangement shall allow the specimen to be placed at varying inclination to the horizontal plane.

5 Specimens

For the purpose of this standard, the specimens are entire sheets. The entire surface of each specimen shall be carefully cleaned avoiding scratching or crazing.

6 Procedure

6.1 Maximum gradient

With the specimen mounted at the specified viewing angle, the maximum gradient of the projected image with respect to the grid board lines in both directions shall be assessed.

The specimen shall be rotated 90° in its own plane and the same assessment repeated. In cases of doubt the image of the defect shall be brought to the optical axis of the apparatus and projector adjustments made to overcome line shift due to displacement.