

Aerospace series - Fibre reinforced plastics - Test method - Determination of the glass transition temperatures

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 6032:2015 sisaldab Euroopa standardi EN 6032:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 6032:2015 consists of the English text of the European standard EN 6032:2015.
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English Version

**Aerospace series - Fibre reinforced plastics - Test method -
Determination of the glass transition temperatures**

Série aéronautique - Matières plastiques renforcées de
fibres - Méthode d'essai - Détermination de la
température de transition vitreuse

Luft- und Raumfahrt - Faserverstärkte Kunststoffe -
Prüfverfahren - Bestimmung der
Glasübergangstemperatur

This European Standard was approved by CEN on 10 August 2013.

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European foreword

This document (EN 6032:2015) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries 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 ASD, 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of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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1 Scope

This standard specifies a method to determine the apparent glass transition temperatures of non-metallic materials.

This standard is applicable to unidirectional tape and woven fabric reinforced plastic or plastic materials like adhesive or neat resin for comparison of the influence on the glass transition temperature resulting from processing-parameters of non-metallic parts, for compatibility tests for checking co-curing effects of different prepreg types or with adhesive.

This standard does not give any directions necessary to meet health and safety requirements. It is the responsibility of the user of this standard to consult and establish appropriate health and safety precautions.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies..

EN 2374, *Aerospace series — Glass fibre reinforced mouldings and sandwich composites — Production of test panels*

EN 2565, *Aerospace series — Preparation of carbon fibre reinforced resin panels for test purposes* ¹⁾

EN 2743, *Aerospace series — Fibre reinforced plastics — Standard procedures for conditioning prior to testing unaged materials*

EN 2823, *Aerospace series — Fibre reinforced plastics — Test method for the determination of the effect of exposure to humid atmosphere on physical and mechanical characteristics* ¹⁾

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

glass transition temperature (T_g)

the glass transition temperature is defined for this standard as the temperature where the sample exhibits a dramatic change in mechanical and damping behaviour with increasing temperature when subjected to an oscillating displacement

Note 1 to entry: The T_g values are determined by measuring sample stiffness (storage modulus and damping (loss modulus/ $\tan \delta$) with increasing temperature using a recommended Dynamic Mechanical Analysis (DMA) instrument and evaluating the plots against temperature (see Figure 1).

3.1.1

T_g -onset

the T_g -onset is defined as the temperature intersection of extrapolated tangents drawn from points on the storage modulus curve before and after the onset of the glass transition event

1) Published as ASD-STAN Prestandard at the date of publication of this standard. <http://www.asd-stan.org/>