

**Aerospace series - Test methods -
Titanium alloy wrought products -
Determination of primary α content -
Point count method and line intercept
method**

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wrought products - Determination of primary α
content - Point count method and line intercept
method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 3683:2007 sisaldab Euroopa standardi EN 3683:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 31.05.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 3683:2007 consists of the English text of the European standard EN 3683:2007.</p> <p>This document is endorsed on 31.05.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard specifies two methods, the point count method and the line intercept method, for optical microscope determination of primary α content of titanium alloy wrought products, for aerospace applications.</p>	<p>Scope:</p> <p>This standard specifies two methods, the point count method and the line intercept method, for optical microscope determination of primary α content of titanium alloy wrought products, for aerospace applications.</p>
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Võtmesõnad:

ICS 49.025.30

English Version

**Aerospace series - Test methods - Titanium alloy wrought
products - Determination of primary α content - Point count
method and line intercept method**

Série aérospatiale - Méthodes d'essais - Demi-produits
corroyés en alliages de titane - Détermination de la teneur
en α primaire - Méthode par comptage de points et
méthode par interception de lignes

Luft- und Raumfahrt - Prüfverfahren - Kneterzeugnisse aus
Titanlegierungen - Bestimmung von Primär- α -Anteilen -
Punktzählverfahren und Linienschnittverfahren

This European Standard was approved by CEN on 5 October 2006.

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This European Standard exists 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 CEN Management Centre has the same status as the official versions.

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Foreword

This document (EN 3683:2007) 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 September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

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1 Scope

This standard specifies two methods, the point count method and the line intercept method, for optical microscope determination of primary α content of titanium alloy wrought products, for aerospace applications.

2 Normative references

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

EN 3114-001, *Aerospace series — Test method — Microstructure of ($\alpha + \beta$) titanium alloy wrought products — Part 001: General requirements.*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 3114-001 apply.

4 Principle

Micrographic examination for determination of the primary α content by:

- Counting the number of points of a specified point grid, enclosed in α particles, point count method (Method A);
- Determining the lengths of lines of a specified line grid intercepted by α particles, line intercept method (Method B).

5 Sampling and sample preparation

The test sample shall have a size such that the section to be examined shall not be less than 10 mm in diameter or square.

The surface of the section shall be prepared according to EN 3114-001.

6 Test methods

6.1 Point count method (Method A)

Superimpose the specified point grid (see example in Figure 1) on the section to be examined.

Adjust magnification so that each primary α particle does not coincide with more than one point of the grid:

Assessment is carried out as follows:

- all those points on the grid which are enclosed by a primary α particle are counted;
- a point lying exactly on a phase boundary is counted as 0,5 point;
- the sum $N(\alpha)$ of these points divided by the total number N of the grid points equals the amount of primary α , N_p ;