

Aerospace series - Technical drawings - Representation of parts made of composite materials - Part 6: Preforms

Aerospace series - Technical drawings -
Representation of parts made of composite
materials - Part 6: Preforms

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 4408-006:2005 sisaldab Euroopa standardi EN 4408-006:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 15.07.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 4408-006:2005 consists of the English text of the European standard EN 4408-006:2005.</p> <p>This document is endorsed on 15.07.2005 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>
--	---

<p>Käsitlusala: This standard specifies the rules for the representation of preforms of composite materials as well as the information to be indicated in the technical drawings.</p>	<p>Scope: This standard specifies the rules for the representation of preforms of composite materials as well as the information to be indicated in the technical drawings.</p>
--	--

ICS 01.100.99, 49.020

Võtmesõnad:

ICS 01.100.99; 49.020

English version

**Aerospace series - Technical drawings - Representation of parts
made of composite materials - Part 6: Preforms**

Série aéronautique - Dessins techniques - Représentation
des articles en matériaux composites - Partie 6 : Préformes

Luft- und Raumfahrt - Technische Zeichnungen -
Darstellung von Teilen aus Verbundwerkstoffen - Teil 6:
Vorformen

This European Standard was approved by CEN on 15 July 2004.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Representation of preforms on drawings	5
4.1 Representation of 2,5 D multilayers	5
4.2 Representation of rosettes	6
4.3 Representation of nDs	7
4.4 Representation of braids	7
4.5 Representation of woven and cowoven parts	9
Annex A (informative) Example of the representation of 2,5 D weaving	10
Bibliography	12

Foreword

This document (EN 4408-006:2005) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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 November 2005, and conflicting national standards shall be withdrawn at the latest by November 2005.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the rules for the representation of preforms of composite materials as well as the information to be indicated in the technical drawings.

It is applicable to aerospace structures using preforms.

It shall be used together with EN 4408-001.

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 4408-001, *Aerospace series – Technical drawings – Representation of parts made of composite materials – Part 1: General rules.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 4408-001 and the following apply.

3.1

braided

tubular or plane shape obtained by a balance intertwining of continuous threads

3.2

braided into shape

braided with a mandrel

3.3

cowoven (hybrid fabric)

fabric made of different types of threads (e.g. carbon/aramid hybrid fabric)

3.4

cowoven into shape

woven into shape and made of different types of threads

3.5

level

elementary structure of one layer in the weft or warp direction

3.6

multilayer (2,5 D)

fabric the weft threads of which cross several levels of warp but not all of them

3.7

nD

oriented multidirectional reinforcement (industrial copyright)

3.8

preform

name given to different stage of all part of the item prior to obtaining the required composite material