

Aerospace series — Non-metallic materials — Textiles — Wide woven fabrics — Technical specification

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National foreword

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Luft- und Raumfahrt - Nichtmetallische Werkstoffe -
Textilien - Gewebe - Technische Lieferbedingungen

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

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

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Foreword

This European Standard (EN 4416:2006) 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

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Introduction

This standard is part of the series of EN non-metallic material standards for aerospace applications. The general organization of this series is described in EN 4385. This standard is a level 2 document as defined in EN 4385.

1 Scope

This standard defines the requirements for manufacture, inspection and testing of wide woven fabrics 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.

ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

ISO 105-E01, *Textiles — Tests for colour fastness — Part E01: Colour fastness to water.*

ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing.*

ISO 2060, *Textiles — Yarn from packages — Determination of linear density (mass per unit length) by the skein method.*

ISO 2061, *Textiles — Determination of twist in yarns — Direct counting method.*

ISO 2062, *Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break.*

ISO 5084, *Textiles — Determination of thickness of textiles and textile products.*

ISO 8498, *Woven fabrics — Description of defects — Vocabulary.*

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method.*

ISO 13935-1, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 1: Determination of maximum force to seam rupture using the strip method.*

ISO 13937-4, *Textiles — Tear properties of fabrics — Part 4: Determination of tear force of tongue-shaped test specimens (Double tear test).*

ISO/IEC 17050 (all parts), *Conformity assessment — Supplier's declaration of conformity.*

EN 1049-2, *Textiles — Woven fabrics — Construction — Methods of analysis — Part 2: Determination of number of threads per unit length (ISO 7211-2:1984 modified).*

EN 1773, *Textiles — Fabrics — Determination of width and length.*

EN 4385, *Aerospace series — Non-metallic materials — General organisation of standardisation — Links between types of standards.* ¹⁾

EN 4426, *Aerospace series — Non-metallic materials — Textiles — Test method — Determination of conductivity and pH of aqueous extracts.* ¹⁾

EN 4427, *Aerospace series — Non-metallic materials — Test Method — Determination air permeability of parachute canopy fabrics.* ²⁾

EN 4430, *Aerospace series — Non-metallic materials — Test Method — Determination of lengthways distortion.* ²⁾

EN 4503, *Aerospace series — Non-metallic materials — Textiles — Test method — Determination of water soluble chloride and sulfate of aqueous extracts.* ¹⁾

EN 4507, *Aerospace series — Non-metallic materials — Textiles — Test method — Determination of water extractable matter.* ¹⁾

EN 9100, *Aerospace series — Quality management systems — Requirements (based on ISO 9001:2000) and Quality systems — Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994).*

EN 9133, *Aerospace series — Quality management systems — Qualification Procedure for aerospace standard parts.*

EN 12127, *Textiles — Fabrics — Determination of mass per unit area using small samples.*

EN 12562, *Textiles — Para-aramid multifilament yarns — Test methods.*

EN 20139, *Textiles — Standard atmospheres for conditioning and testing.*

EN 26330, *Textiles — Domestic washing and drying procedures for textile testing.*

TR 7000-1, *Aerospace series — Non-metallic materials — Rules for the drafting and presentation of material standards — Part 1: General rules.* ³⁾

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 9100, EN 9133 and the following apply.

3.1 Batch

3.1.1

loomstate fabric

for loomstate fabric, both a Production Batch and an Inspection Batch are the quantity of fabric produced from one weaver's beam or one continuously woven length not exceeding 5 000 metres, provided that weft yarn of consistent and proven quality has been used

NOTE If a fresh delivery of weft yarn of unproven quality is introduced during weaving the warp, a fresh batch has been created.

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

2) In preparation at the date of publication of this standard.

3) Published as AECMA Technical Report at the date of publication of this standard.

3.1.2

piece treated fabric

for piece treated fabric, both a Finisher's Batch and an Inspection Batch are the quantity of fabric subject to finishing processes in one continuous length not exceeding 5 000 metres

NOTE If several small batches are brought together during the finishing process to form one large Finisher's Batch, due note should be taken of the need to maintain identification of each individual batch.

3.2

defect

fault that would reduce the expected performance of the fabric or, if it appeared in a prominent position in an article made from the fabric, would readily be seen and rejected by a prospective purchaser

For definitions of specific defects refer to ISO 8498.

3.3

fabric

manufactured assembly of fibres and/or yarns that has substantial surface area in relation to its thickness and sufficient mechanical strength to give the assembly inherent cohesion

3.4

manufacturer

firm making the material into the form (yarn, loomstate fabric, finished fabric, etc.) in which it is consigned to the purchaser

3.5

product

in this document the word product refers to all forms of wide woven fabric

3.6

purchaser

body which purchases the product from a manufacturer or a stockist in accordance with the requirements of the user

NOTE The purchaser may also be the user.

3.7

supplier

firm consigning the material to the purchaser

NOTE The supplier may be either the manufacturer or the stockist.

3.8

textile

any fabric (however constructed), sewing thread or cordage made from natural or man made fibres and/or yarns, and blends of these

3.9

wide woven fabric

any fabric woven at more than 450 mm width between selvages