
Aeronavtika - LOTAR - Dolgotrajno arhiviranje in iskanje digitalne tehnične dokumentacije o izdelkih, kot so podatki o 3D, CAD in PDM - 300. del: Splošni koncepti za dolgoročno arhiviranje in iskanje sestavljenih struktur

Aerospace series - LOTAR - LOng Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data - Part 300: Common concepts for Long term archiving and retrieval of Composite Structure

Luft- und Raumfahrt - LOTAR - Langzeitarchivierung und -bereitstellung digitaler technischer Produktdokumentationen, wie zum Beispiel von 3D-, CAD- und PDM-Daten - Teil 300: Allgemeine Konzepte für die Langzeitarchivierung und -bereitstellung von Verbundstrukturen

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ICS:

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
35.240.30	Uporabniške rešitve IT v informatiki, dokumentiranju in založništvu	IT applications in information, documentation and publishing
49.020	Letala in vesoljska vozila na splošno	Aircraft and space vehicles in general

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ICS

English Version

Aerospace series - LOTAR - Long Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data - Part 300: Common concepts for Long term archiving and retrieval of Composite Structure

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prEN 9300-300:2026 (E)**European foreword**

This document (prEN 9300-300:2026) has been prepared by ASD-STAN.

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

This document is currently submitted to the CEN Enquiry.

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Introduction

This document was prepared jointly by AIA, ASD-STAN, PDES, Inc. and the PROSTEP iViP Association.

The PROSTEP iViP Association is an international non-profit association in Europe. For establishing leadership in IT-based engineering it offers a moderated platform to its nearly 200 members from leading industries, system vendors and research institutions. Its product and process data standardization activities at European and worldwide levels are well known and accepted. The PROSTEP iViP Association sees this standard and the related parts as a milestone of product data technology.

PDES, Inc. is an international non-profit association in USA. The mission of PDES, Inc. is to accelerate the development and implementation of ISO 10303, enabling enterprise integration and PLM interoperability for member companies. PDES, Inc. gathers members from leading manufacturers, national government agencies, PLM vendors and research organizations. PDES, Inc. supports this standard as an industry resource to sustain the interoperability of digital product information, ensuring and maintaining authentic longevity throughout their product lifecycle.

Readers of this standard should note that all standards undergo periodic revisions and that any reference made herein to any other standard implies its latest edition, unless otherwise stated.

The LOTAR Standards will be published under two different standards organizations using different prefixes. ASD-STAN will publish the standard under the number EN 9300-xxx. AIA will publish the standard under the number NAS9300-xxx. The content in the EN 9300 and NAS9300 documents will be the same. The differences will be noted in the reference documentation (i.e. for EN 9300 Geometric Dimensioning and Tolerancing will be referenced in ISO 1101 and ISO 16792, and for EN 9300 the same information will be referenced in ASME Y14.5 and ASME Y14.41). The document formatting, etc., will follow that of the respective editorial rules of ASD-Stan and AIA.

This document specifies common fundamental concepts for long term archiving and retrieval of composite structure. It details the “fundamentals and concepts” of EN 9300-003 in the specific context of long-term archiving of CAD mechanical models representing composite items.

Composites CAD information is divided into assembly structure and geometrical information, both including explicit and implicit geometrical representation, multiple material specifications, Limited Length or Area Indicators (LLAI – ASME), individual orientation attributes and referential orientation elements (rosettes).

The EN 9300-3XX family is organized as a series, each building on the previous in a consistent way, each adding a level of complexity in the data model. This includes the detailing of relationships between the essential information for the different types of CAD composite information covered by the EN 9300-3XX family.

As technology matures, additional segments will be released in order to support new requirements within the composite design and manufacturing communities. Advanced composite structure use case discussion is given in Annex A.

prEN 9300-300:2026 (E)**1 Scope****1.1 In scope**

This document describes:

- the fundamentals and concepts for Long Term Archiving and Retrieval of CAD 3D mechanical composite information and associated composite specific PMI;
- the document structure of the EN 9300-3XX family, and the links between all these parts;
- the qualification methods for long term preservation of archived composite information; more specially, principles for the validation properties and for verification of the quality of the composite information archived;
- specifications for the preservation planning of archived composite information;
- specific functions for administration and monitoring of CAD composite archived models;
- the definition of Archive Information Packages for composite CAD data.

This document establishes long term archiving requirements applicable to, but not limited to, most laminated type composite items made with composite manufacturing processes such as:

- hand lay-up;
- tape laying;
- fibre placement;
- stitched resin film infusion (SRFI);
- resin transfer moulding (RTM);
- vacuum-assisted resin transfer moulding (VARTM);
- controlled Atmospheric Pressure Resin Infusion (CAPRI);
- co-cured or co-bonded composite items;
- sandwich panel composite construction;
- braided layers.

1.2 Out of scope

The following is outside the scope of this part of EN 9300:

- multi-function advanced composite structure;
- composite items made with composite manufacturing processes such as filament winding, 3D braiding, or 3D weaving;

NOTE Braided parts that can be represented as layered braided sleeve material can be in scope.

- injection moulded fibre reinforced thermoplastics;

- other Additive Manufacturing processes such as those covered by ISO/ASTM 52900;
- PMI described in EN 9300-1xx series.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 9300-007:2025, *Aerospace series — LOTAR — Long Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data — Part 007: Terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 9300-007 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

3D annotation

text, notes, flag notes, dimensions, tolerances, or GD&T that is modelled in 3D space with leaders pointing to the solid model features

[SOURCE: EN 9300-007:2025]

3.2

adhesive

substance used to bind two or more other components together via surface contact

Note 1 to entry: The adhesive can be a film, paste or liquid.

[SOURCE: EN 9300-007:2025]

3.3

advanced composite structure

hybrid structure in which composite laminates of materials with high strength and stiffness with a resin matrix [thermoset or thermoplastic] are used in combination with other components (like core, fibre optics, active electronics, passive electronics, metal, ...) in order to create a multi-functional design

[SOURCE: EN 9300-007:2025]

3.4

allowable

material strength, strain or load which can be used as a basis for generating a margin of safety

[SOURCE: EN 9300-007:2025]

prEN 9300-300:2026 (E)**3.5****anisotropic**

exhibiting different properties along axes in different directions

[SOURCE: EN 9300-007:2025]

3.6**as fabricated**

representation of a part as it is made by the prime or a supplier

[SOURCE: EN 9300-007:2025]

3.7**as installed**

representation of a part which shows how the part is deformed from its “as fabricated” configuration when it is installed in an assembly

[SOURCE: EN 9300-007:2025]

3.8**autoclave**

sealed containment vessel used to induce a chemical reaction under heat and pressure

[SOURCE: EN 9300-007:2025]

3.9**automated fibre placement****AFP**

process by which a machine lays multiple courses of narrow tows on a form

[SOURCE: EN 9300-007:2025]

3.10**automated tape laying or lamination****ATL**

process by which a machine lays a series of single, wide tapes on a form

[SOURCE: EN 9300-007:2025]

3.11**bag side**

side of a composite part next to the vacuum bag during the cure cycle

Note 1 to entry: Thickness variation is pushed to this side of the laminate and away from the tool-side.

[SOURCE: EN 9300-007:2025]

3.12**band**

grouping of tows that a fibre placement machine puts down on a lay-up surface at any one time

Note 1 to entry: The width of a band can be made wider or narrower during a single pass by adding or eliminating tows.

Note 2 to entry: See “course”.

[SOURCE: EN 9300-007:2025]

3.13**bond assembly**

part made up of composites and other components like core, fibre optics, active and passive electronics, other systems and procured details that are bonded together to generate a detailed part

[SOURCE: EN 9300-007:2025]

3.14**bridging**

condition where plies span a chamfer or radius without generating full contact

Note 1 to entry: Bridging can be reduced with male tooling, larger radius tooling and pressure intensifiers.

[SOURCE: EN 9300-007:2025]

3.15**broad goods**

typically wide prepreg material (fabric or unidirectional) in roll format

[SOURCE: EN 9300-007:2025]

3.16**carbon fibre**

high-strength fibre used in advanced composite designs

[SOURCE: EN 9300-007:2025]

3.17**caul plate**

secondary tooling on the bag side used to provide a smooth and controlled surface

[SOURCE: EN 9300-007:2025]

3.18**co-bond**

joining together cured composites and other non-composite components (metal, systems, etc.) to an uncured composite lay-up

[SOURCE: EN 9300-007:2025]

prEN 9300-300:2026 (E)**3.19****co-cured**

simultaneously bonded and curing assemblies of uncured composite details to one another

[SOURCE: EN 9300-007:2025]

3.20**composite**

material created from a fibre (or reinforcement) and a matrix material in order to maximize specific properties

Note 1 to entry: The constituents do not merge – but retain their identities as they act in concert.

[SOURCE: EN 9300-007:2025]

3.21**composite inseparable assembly**

design that contains the geometric definition of all of the composite plies along with the relative location and stacking of any additional components

Note 1 to entry: At a minimum the plies will be defined by geometry, material and an orientation with a related rosette.

Note 2 to entry: There can be core, pre- and co-cured definitions, stitching, pinning, systems, impact strips and other embedded components.

[SOURCE: EN 9300-007:2025]

3.22**composite materials**

two or more materials that are combined to form a useful engineering material that has properties not found in the constituents which retain their identities in the composite process

[SOURCE: EN 9300-007:2025]

3.23**composite part**

inseparable assembly of composite material(s) that may include non-composite material(s) or items

[SOURCE: EN 9300-007:2025]

Note 1 to entry: It uses the typical dimensioning practices with GD&T and PMI and is specified with a non-homogenous material property.

Note 2 to entry: A best practice would be to create it as a separate data set with a “make from” note referencing the related composite inseparable assembly but not containing any information about the plies, components or materials that make it up.