

E DIN EN 9300-110:2026-02 (E)

Erscheinungsdatum: 2026-01-09

Aerospace series - LOTAR - Long Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data - Part 110: CAD mechanical 3D Explicit geometry information; English version prEN 9300-110:2025

Contents

Page

European foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Applicability	7
5 Business specifications for the long term archiving and retrieval of CAD mechanical 3D explicit geometry information	7
5.1 Introduction	7
5.2 Description of use cases for retrieval of CAD mechanical 3D explicit geometry	7
5.3 Description of file content	8
6 Essential information of explicit geometry	8
7 Definition of core model for an explicit geometry	8
8 Verification rules of explicit geometry	9
8.1 Introduction	9
8.2 Level of verification	9
8.3 Geometrical verification rules and appropriate thresholds	10
8.3.1 Verification rules	10
8.3.2 Evaluation of the values of thresholds	11
8.4 Results of the verification	14
8.4.1 General	14
8.4.2 Status information	14
8.4.3 Verification reports	14
9 Validation rules of an explicit geometry	15
9.1 Introduction	15
9.2 Level of validation	15
9.3 Comparison of the Geometric Validation Properties (GVP)	16
9.4 Results of the validation	17
9.4.1 At the ingest process (qualify)	17
9.4.2 At the retrieval process (comparison)	17
9.4.3 Validation reports	18
Annex A (informative) Description of use cases for long term archiving and retrieval of CAD 3D explicit geometry	19
A.1 General	19
A.2 Documentation of aerospace & defence product design for regulatory and contractual compliance	19
A.3 Aerospace & defence industry incident investigation	21

A.4	Design re-use – product modification	22
A.5	Product lifecycle & supply chain support and disposal	23
Annex B (informative)	Definition of explicit 3D shape as advanced boundary representation in accordance with ISO 10303 series.....	25
B.1	Introduction	25
B.2	Geometric constructs	25
B.3	Topological constructs.....	26
Annex C (informative)	Definition of tessellated 3D shape in accordance with ISO 10303-42.....	28
Annex D (informative)	Recommended verification rules level 1 and level 2	31
D.1	Method used to define verification rules level 1 and level 2 for exact geometry.....	31
D.2	Verification rules level 1 and level 2 for exact geometry.....	33
D.3	Verification rules level 1 and level 2 for tessellated geometry	34
Annex E (informative)	Illustration of qualification reports.....	35
E.1	Example of the verification report	35
E.2	Example of a validation report	35
Annex F (informative)	Illustration of CAD 3D geometry validation properties.....	37
F.1	Validation properties for exact solid.....	37
F.2	Validation properties for tessellated solid.....	39
F.3	Validation properties for exact independent surface/open shell	40
F.4	Validation properties for tessellated independent surface/open shell	41
F.5	Validation properties for an exact independent curve.....	42
F.6	Validation properties for an tessellated independent curve.....	42
	Bibliography	44