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Responsible committee: ACE/6 Aerospace avionic electrical and fibre optic technology

Interested committees:

Title: Draft BS EN 3545-001 BS Aerospace series - Connectors, electrical, rectangular, with sealed and non-sealed rear, plastic housing, locking device, operating temperatures -55 °C to 175 °C. Part 001: Technical specification.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

April 2025

ICS 49.060

Will supersede EN 3545-001:2008

English Version

Aerospace series - Connectors, electrical, rectangular, with
sealed and non-sealed rear, plastic housing, locking device,
operating temperatures -55 °C to 175 °C - Part 001:
Technical specification

Série aérospatiale - Connecteurs électriques,
rectangulaires, étanches et non étanches à l'arrière, à
boîtier en plastique, à verrouillage, températures
d'utilisation -55 °C à 175 °C - Partie 001 : Spécification
technique

Luft- und Raumfahrt - Elektrische
Rechtecksteckverbinder mit und ohne hintere
Abdichtung, Plastikgehäuse, Verriegelungssystem,
Betriebstemperaturen von -55 °C bis 175 °C - Teil 001:
Technische Lieferbedingungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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Contents

Page

European foreword	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	10
4 Description.....	10
4.1 General.....	10
4.2 Male and female housings.....	10
4.3 Materials	11
4.3.1 General.....	11
4.3.2 Housings.....	11
4.3.3 Contacts	11
5 Design.....	11
5.1 Housings.....	11
5.2 Contacts	12
5.3 Attachments, polarizing features.....	12
5.4 Cable clamp	12
6 Dimensions and masses	12
7 Contact arrangements.....	14
7.1 General.....	14
7.2 Arrangement 02	14
7.3 Arrangement 03	15
7.4 Arrangement 04	16
7.5 Arrangement 05	16
7.6 Arrangement 06	17
7.7 Arrangement 07	17
7.8 Arrangement 08	18
7.9 Arrangement 09	18
7.10 Arrangement 12	19
7.11 Arrangement 13	19
7.12 Arrangement 16	20
8 Tests.....	20
8.1 Tests according to EN 2591-100	20
8.2 Special test – Retention of coding and attachment system in insert	28
9 Quality assurance	28
9.1 General.....	28
9.2 Conditions for initial qualification	28
9.2.1 General.....	28
9.2.2 Sampling and specification of specimens.....	28
9.2.3 Preparation of specimens	29
9.2.4 Programme of qualification tests.....	29
9.3 Conditions for acceptance testing and inspection	32
9.4 Quality control	32
9.5 Periodic checks for maintenance of qualification.....	32

10	Designation and marking	34
10.1	Designation	34
10.2	Marking	34
11	Delivery conditions.....	34
12	Packaging.....	34
13	Storage.....	34
	Bibliography	35

European foreword

This document (prEN 3545-001:2025) 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.

This document will supersede EN 3545-001:2008.

prEN 3545-001:2025 includes the following significant technical changes with respect to EN 3545-001:2008:

- Test 2591-406 Mechanical endurance details added;
- Qualification tests (Table 6): Group 7 compatibility test for zinc-nickel components added.

1 Scope

This document specifies the technical requirements of rectangular connectors with sealed and non-sealed rear, plastic housing, locking device, for operating temperatures from -55 °C to 175 °C.

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 2266-002, *Aerospace series — Cables, electrical, for general purpose — Operating temperatures between - 55 °C and 200 °C — Part 002: General*

EN 2591-100, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: General*

EN 2591-101, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 101: Visual examination*

EN 2591-102, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 102: Examination of dimensions and mass*

EN 2591-201, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 201: Contact resistance — Low level*

EN 2591-202, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 202: Contact resistance at rated current*

EN 2591-203, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 203: Electrical continuity at microvolt level*

EN 2591-204, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 204: Discontinuity of contacts in the microsecond range*

EN 2591-205, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 205: Housing (shell) electrical continuity*

EN 2591-206, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 206: Measurement of insulation resistance*

EN 2591-207, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 207: Voltage proof test*

EN 2591-208, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 208: Temperature rise due to rated current*

EN 2591-209, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 209: Current temperature derating*

EN 2591-210, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 210: Electrical overload*

EN 2591-213, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 213: Shielding effectiveness from 100 MHz to 1 GHz*

EN 2591-216, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 216: Engagement depth of contacts*

EN 2591-301, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 301: Endurance at temperature*

EN 2591-302, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 302: Climatic sequence*

EN 2591-304, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 304: Damp heat steady state*

EN 2591-305, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 305: Rapid change of temperature*

EN 2591-306, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 306: Mould growth*

EN 2591-307, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 307: Salt mist*

EN 2591-308, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 308: Sand and dust*

EN 2591-309, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 309: Dry heat*

EN 2591-310, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 310: Cold*

EN 2591-311, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 311: Low air pressure*

EN 2591-312, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 312: Air leakage*

EN 2591-313, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 313: Artificial rain*

EN 2591-314, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 314: Immersion at low air pressure*

EN 2591-315, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 315: Fluid resistance*

EN 2591-316, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 316: Ozone resistance*

EN 2591-317, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 317: Flammability*

EN 2591-318, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 318: Fire-resistance*

EN 2591-319, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 319: Gastightness of solderless wrapped connections*

EN 2591-320, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 320: Simulated solar radiation at ground level*

EN 2591-321, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 321: Damp heat, cyclic test*

EN 2591-322, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 322: Hermeticity*

EN 2591-323, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 323: Thermal shock*

EN 2591-324, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 324: Interfacial sealing*

EN 2591-401, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 401: Acceleration, steady state*

EN 2591-402, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 402: Shock*

EN 2591-403, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 403: Sinusoidal and random vibration*

EN 2591-404, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 404: Transverse load*

EN 2591-405, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 405: Axial load*

EN 2591-406, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 406: Mechanical endurance*

EN 2591-407, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 407: Durability of contact retention system and seals*

EN 2591-408, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 408: Mating and unmating forces*

EN 2591-409, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 409: Contact retention in insert*

EN 2591-410, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 410: Insert retention in housing (axial)*

EN 2591-411, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 411: Insert retention in housing (torsional)*

EN 2591-412, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 412: Contact insertion and extraction forces*

EN 2591-413, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 413: Holding force of grounding spring system*

EN 2591-414, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 414: Unmating of lanyard release connectors*

EN 2591-415, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 415: Test probe damage (female contacts)*

EN 2591-416, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 416: Contact bending strength*

EN 2591-417, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 417: Tensile strength (crimped connection)*

EN 2591-418, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 418: Gauge insertion/extraction forces (female contacts)*

EN 2591-419, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 419: Stability of male contacts in insert*

EN 2591-420, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 420: Mechanical strength of rear accessories*

EN 2591-421, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 421: Free fall*

EN 2591-424, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 424: Stripping force, solderless wrapped connections*

EN 2591-425, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 425: Unwrapping capability, solderless wrapped connections*

EN 2591-426, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 426: Contact retention system effectiveness*

EN 2591-427, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 427: Robustness of protective cover attachment*

EN 2591-502, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 502: Restricted entry*

EN 2591-503, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 503: Contact deformation after crimping*

EN 2591-505, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 505: Contact protection effectiveness (scoop-proof)*

EN 2591-506, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 506: Use of tools*

EN 2591-513, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 513: Magnetic permeability*

EN 3155-001,¹ *Aerospace series — Electrical contacts used in elements of connection — Part 001: Technical specification*

EN 3155-003, *Aerospace series — Electrical contacts used in elements of connection — Part 003: Contacts, electrical, female, type A, crimp, class S — Product standard*

EN 3155-008, *Aerospace series — Electrical contacts used in elements of connection — Part 008: Contacts, electrical, male, type A, crimp, class S — Product standard*

EN 3155-070, *Aerospace series — Electrical contacts used in elements of connection — Part 070: Contacts, electrical, male, type A, crimp, class S — Product standard*

EN 3155-071, *Aerospace series — Electrical contacts used in elements of connection — Part 071: Contacts, electrical, female, type A, crimp, class S — Product standard*

EN 3197,¹ *Aerospace series — Design and installation of aircraft electrical and optical interconnection systems*

EN 3545-002, *Aerospace series — Connectors, electrical, rectangular, with sealed and non-sealed rear, plastic housing, locking device, operating temperatures - 55 °C to 175 °C — Part 002: Specification of performance and contact arrangements*

EN 4529-002, *Aerospace series — Elements of electrical and optical connection — Sealing plugs — Part 002: Index of product standards*

EN 9133, *Aerospace series — Quality Management Systems — Qualification Procedure for Aerospace Standard Products*

AS 1241C,² *Fire resistant phosphate ester hydraulic fluid for aircraft*

SAE AMS 1424G,² *Deicing/anti-icing fluid, aircraft, SAE type I*

MIL-PRF-7870C,³ *Lubricating oil, general purpose, low temperature*

MIL-PRF-23699F,³ *Lubricating oil, aircraft turbine engine, synthetic base — NATO code number O-156*

MIL-PRF-87937D,³ *Cleaning compounds, aerospace equipment*

FED-STD-H28A,³ *Screw-thread standards for federal services*

¹ Published as ASD-STAN prEN at the date of publication of this document, available at: <https://www.asd-stan.org/>.

² Published by Society of Automotive Engineers (SAE), available at: <https://www.sae.org/>.

³ Published by Department of Defense (DOD), available at: <https://assist.dla.mil/online/start/>.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 2591-100 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/>

4 Description

4.1 General

A pair of connectors comprises:

- a male housing fitted with female crimp contacts (code F);
- a female housing fitted with male crimp contacts and having an interfacial seal which provides sealing at each contact when the connectors are mated (code M).

These housings are fitted with polarizing systems permitting 36 combinations.

They are able to take a cable clamp and comprise a locking device at each end.

There are two types of connectors:

- sealed, grommet provided for sealing of cables at the rear (code E);
- non-sealed, grommet provided for non abrasion of cables at the rear (code D).

4.2 Male and female housings

There is one size of housing and twelve contact arrangements as shown in Table 1.

According to also Figures 2 to Figure 13.