



# SLOVENSKI STANDARD SIST EN 3545-001:2008

01-september-2008

5 YfcbUj h\_ U! ?cbY hcf 1žYY hf] b]ždfUj c\_cfb]žg'hYgb]bc'\_Udc'U]'VfYn'b^Yž  
d`Ugh] bc`c\ ]y^žnUdcfb]'a Y Ub]nYa žXYcj bUHYa dYfUhi fUa YX'È) `š7`]b`%a) `š7`!  
\$\$%`XY.`HY b] bUgdYWZ\_ UYU

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

**ITeH STANDARD PREVIEW**  
**(standards.iteh.ai)**

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

<https://standards.iteh.ai/en/standard/EN-3545-001-2008>  
9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-en-3545-001-2008

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

**Ta slovenski standard je istoveten z: EN 3545-001:2008**

### ICS:

49.060 Š^ca^ \ aš Ā^ [ |b \ æ Aerospace electric  
^|\ dā } aš ] |^ { aš Ā ã c^ { ã equipment and systems

**SIST EN 3545-001:2008**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 3545-001:2008

<https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-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 European Standard was approved by CEN on 14 March 2008.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

<https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470->

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, 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 .....	5
4 Description .....	5
5 Design .....	6
6 Definition drawing and masses.....	7
7 Contact arrangements.....	9
8 Tests.....	17
9 Quality assurance .....	23
10 Designation and marking.....	28
11 Delivery conditions.....	28
12 Packaging .....	28
13 Storage.....	28

[SIST EN 3545-001:2008](https://standards.itech.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-en-3545-001-2008)  
<https://standards.itech.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-en-3545-001-2008>

## Foreword

This document (EN 3545-001:2008) 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 November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

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.

This document supersedes EN 3545-001:2005.

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

[SIST EN 3545-001:2008](https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-en-3545-001-2008)

<https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-en-3545-001-2008>

## 1 Scope

This standard 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 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 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 3155-001, *Aerospace series — Electrical contacts used in elements of connection — Part 001: Technical specification.* <sup>1)</sup>

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, *Aerospace series — Installation of aircraft electrical and optical interconnection systems.* <sup>1)</sup>

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 3545-008, *Aerospace series — Connectors, electrical, rectangular, with sealed and non-sealed rear, plastic housing, locking device, operating temperatures – 55 °C to 175 °C — Part 008: Tools for assembly/removal of coding and attachment systems — Product standard.*

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 parts.*

---

\* And all parts quoted in this standard.

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

AS 1241C, *Fire resistant phosphate ester hydraulic fluid for aircraft.* <sup>2)</sup>

AMS 1424G, *Deicing/anti-icing fluid, aircraft, SAE type I.* <sup>2)</sup>

MIL-PRF-7870C, *Lubricating oil, general purpose, low temperature.* <sup>3)</sup>

MIL-PRF-23699F, *Lubricating oil, aircraft turbine engine, synthetic base — NATO code number O-156.* <sup>3)</sup>

MIL-PRF-87937D, *Cleaning compounds, aerospace equipment.* <sup>3)</sup>

FED-STD-H28A, *Screw-thread standards for federal services.* <sup>3)</sup>

### 3 Terms and definitions

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

## 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.

See also Figures 2 to 13.

2) Published by: Society of Automotive Engineers, Inc. (SAE), 400 Commonwealth Drive, Warrendale, PA 15096-0001, USA.

3) Published by: Department of Defense (DOD), the Pentagon, Washington, D.C. 20301 USA.

Table 1

Arrangement number	Number of contacts						
	Size 22 <sup>a</sup>	Size 22 <sup>b</sup>	Size 20	Size 16	Size 12	Size 10	Size 8
01	0	0	50	0	0	0	0
02	78	0	0	0	0	0	0
03	39	0	0	10	0	0	0
04	0	0	0	21	0	0	0
05	0	0	0	0	13	0	0
06	0	0	0	0	0	7	0
07	0	0	0	0	0	0	5
08	0	0	18	0	0	0	3
09	0	0	25	12	0	0	0
12	78	78	0	0	0	0	0
13	39	39	0	10	0	0	0
16	0	0	0	0	0	7	0

<sup>a</sup> Contacts size 22 according to EN 3155-003 and EN 3155-008.  
<sup>b</sup> Contacts size 22 according to EN 3155-003 and EN 3155-008 or EN 3155-070 and EN 3155-071.

iTeh STANDARD PREVIEW

(standards.iteh.ai)

**4.3 Materials**

[SIST EN 3545-001:2008](#)

**4.3.1 General**

<https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-5ee86b3b6ef2/sist-en-3545-001-2008>

The materials which are not specified or are not specially described, shall be as light as possible for the required application.

Materials are chosen according to safety criteria as defined by the authority of certification.

When dissimilar metals are in close contact, adequate protection against corrosion shall be provided such that the electromotive force of the galvanic couple shall not exceed 0,25 V.

**4.3.2 Housings**

These are made of rigid material with high dielectric qualities which will not deteriorate under normal conditions of operation and ageing.

**4.3.3 Contacts**

Contacts shall comply with the requirements of EN 3155-001.

**5 Design**

**5.1 Housings**

In the sealed and non-sealed types, the grommet shall be attached to the housing.



Identification of the various positions used for coding by the position indicator which appears on the attachments is given in EN 3545-002.

Identification of the contact cavities shall be consistent with Figures 3 to 14 in EN 3545-002.

## 5.2 Contacts

Removable contacts shall be inserted and extracted via the rear of the connector.

The insertion and extraction tools shall be introduced via the rear of the connector. For connectors which are not sealed at the rear, it shall be possible to insert the contact without a tool, unless the mechanical strength of the wires prevents this.

## 5.3 Attachments, polarizing features

They are constituted by two integral elements, which are removable from each housing with the aid of metal tools defined by EN 3545-008 and provide:

- rapid attachment of housings to boards;
- attachment of male housings to female housings;
- necessary polarization between male and female housings.

The threads shall comply with FED-STD-H28A.

It shall be impossible to mate housings when these are polarized differently.

## 5.4 Cable clamp

[SIST EN 3545-001:2008](https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-9a80956065/sist-en-3545-001-2008)

[https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-](https://standards.iteh.ai/catalog/standards/sist/9f2036a5-019e-48cd-8470-9a80956065/sist-en-3545-001-2008)

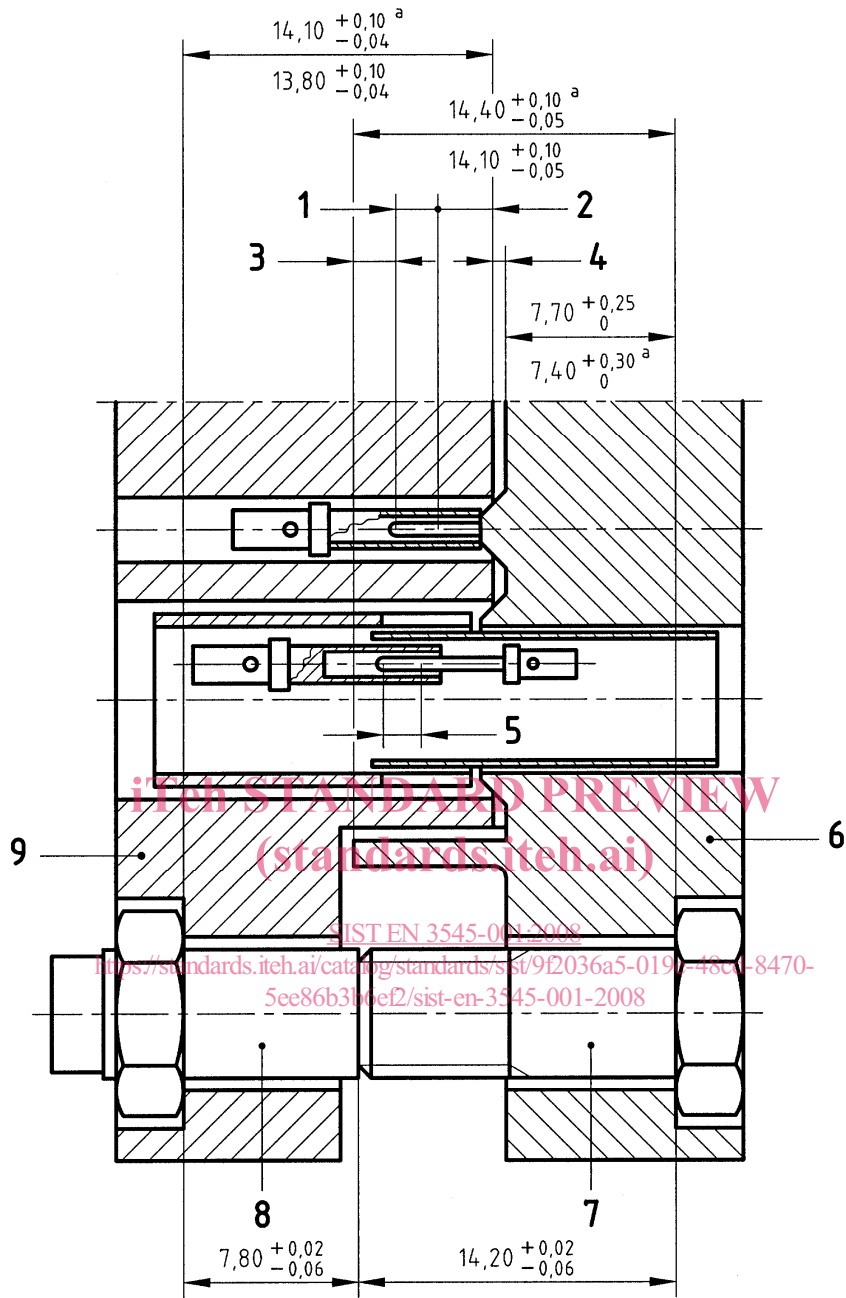
The cable clamp, made of insulating material, shall be easy to fit and remove, shall be independent of the housing attachment system and shall not require any special fastener.

The wires are held by means of a cable tie or lacing cord.

## 6 Definition drawing and masses

The general dimensions and the mass of the various elements which make up a pair of connectors are given in product standards.

Dimensions and tolerances are in millimetres.



**Key**

- |   |   |   |   |
|---|---|---|---|
| 1 | 0,9 min. (see NOTE 1)   | 5 | 1,27 min. for quadrax contacts (see NOTE 1) |
| 2 | 2,4 max. for contact size 20<br>2,3 max. for other sizes (see NOTE 2)             | 6 | Connector with male contacts                |
| 3 | 1 to 1,9 (see NOTE 3)   | 7 | Male coding and attachment system           |
| 4 | 0,03 to 0,58 for arrangements 01 to 06<br>0,05 to 0,60 for arrangements 07 and 08 | 8 | Female coding and attachment system         |
|   |   | 9 | Connector with female contacts              |

<sup>a</sup> Applicable dimensions for contact arrangement 07 and 08

NOTE 1 Electrical engagement of contacts.

NOTE 2 Extreme limit position of electrical point of female contact.

NOTE 3 Extreme limit position of male contact, maximum axial clearance: 0,5

**Figure 1**

## 7 Contact arrangements

### 7.1 General

The theoretical positions in the various contact arrangements are defined in Figures 2 to 13, which show the front face (mating) of female housings (male contacts).

Identification of the contact cavities consists of:

- identification of the end cavities in each row;
- identification of the 10th cavity and its multiples using the following symbols (except for arrangements 04, 05, 06, 07 and 09);
  - oblique line joining together size 22 contact cavities,
  - opposite chevrons for size 20 contact cavities.

### 7.2 Arrangement 01

50 contacts, size 20

See Figure 2.

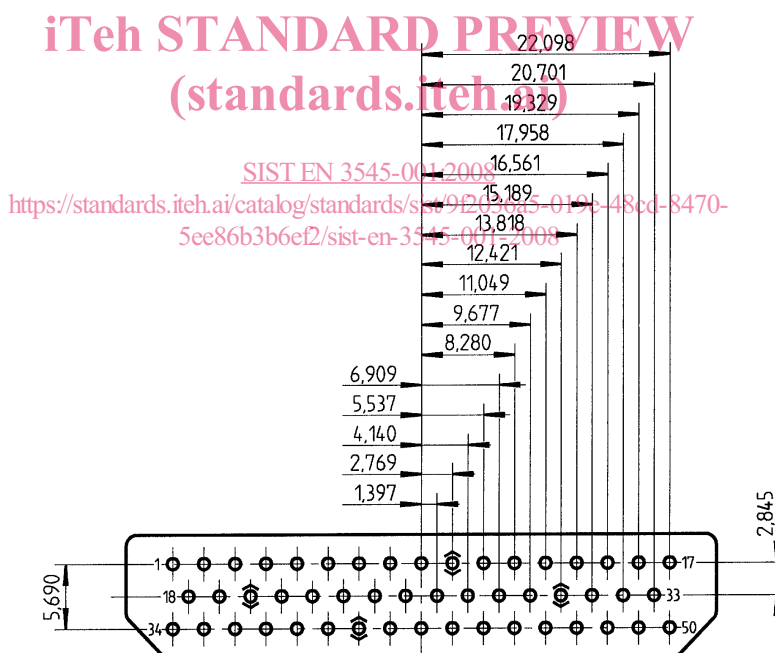


Figure 2

7.3 Arrangement 02

78 contacts, size 22 according to EN 3155-003 and EN 3155-008.

See Figure 3.

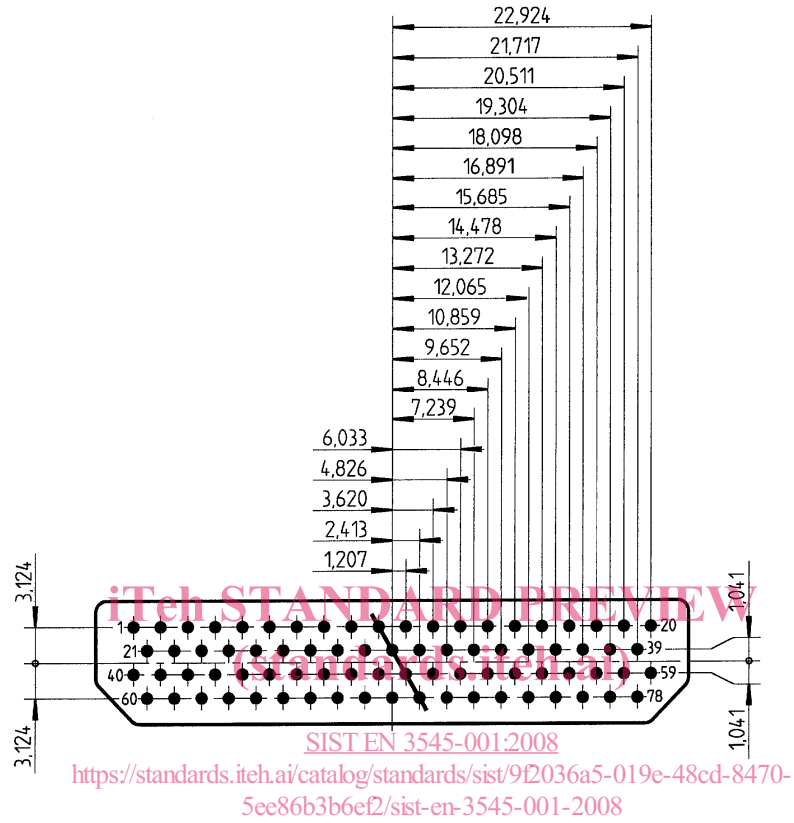


Figure 3