



**SLOVENSKI STANDARD**  
**kSIST FprEN 4056-003:2015**

**01-november-2015**

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**Aeronavtika - Kabelske spojke za vezalno pasovje - 003. del: Plastične vezice - Delovne temperature med  $-65\text{ }^{\circ}\text{C}$  do  $105\text{ }^{\circ}\text{C}$  in  $-65\text{ }^{\circ}\text{C}$  do  $150\text{ }^{\circ}\text{C}$  - Standard za proizvod**

Aerospace series - Cable ties for harnesses - Part 003: Plastic cable ties - Operating temperatures  $-65\text{ }^{\circ}\text{C}$  to  $105\text{ }^{\circ}\text{C}$  and  $-65\text{ }^{\circ}\text{C}$  to  $150\text{ }^{\circ}\text{C}$  - Product standard

Luft- und Raumfahrt - Befestigungsbänder für Leitungsbündel - Teil 003: Befestigungsbänder aus Kunststoff - Betriebstemperatur  $-65\text{ }^{\circ}\text{C}$  bis  $105\text{ }^{\circ}\text{C}$  und  $-65\text{ }^{\circ}\text{C}$  bis  $150\text{ }^{\circ}\text{C}$  - Produktnorm

Série aérospatiale - Frettes de câblage pour harnais - Partie 003: Frettes en plastique - Températures d'utilisation  $-65\text{ }^{\circ}\text{C}$  à  $105\text{ }^{\circ}\text{C}$  et  $-65\text{ }^{\circ}\text{C}$  à  $150\text{ }^{\circ}\text{C}$  - Norme de produit

**Ta slovenski standard je istoveten z: FprEN 4056-003**

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**ICS:**

49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems
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**kSIST FprEN 4056-003:2015**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**FINAL DRAFT**  
**FprEN 4056-003**

October 2015

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ICS

English Version

**Aerospace series - Cable ties for harnesses - Part 003:  
Plastic cable ties - Operating temperatures -65 °C to 105 °C  
and -65 °C to 150 °C - Product standard**

Série aérospatiale - Frettes de câblage pour harnais -  
Partie 003: Frettes en plastique - Températures  
d'utilisation -65 °C à 105 °C et -65 °C à 150 °C - Norme  
de produit

Luft- und Raumfahrt - Befestigungsbänder für  
Leitungsbündel - Teil 003: Befestigungsbänder aus  
Kunststoff - Betriebstemperatur -65 °C bis 105 °C und  
-65 °C bis 150 °C - Produktnorm

This draft European Standard is submitted to CEN members for formal vote. 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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## **European foreword**

This document (FprEN 4056-003:2015) 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 European 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 document is currently submitted to the Formal Vote.

**FprEN 4056-003:2015 (E)****1 Scope**

This European standard defines the required characteristics of cable ties with either internal or external serrations manufactured entirely from plastics material, for installation under controlled tension on aircraft cable harnesses.

It shall be used together with EN 4056-001.

**2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2825, *Aerospace series — Burning behaviour of non metallic materials under the influence of radiating heat and flames — Determination of smoke density*

EN 2826, *Aerospace series — Burning behaviour of non metallic materials under the influence of radiating heat and flames — Determination of gas components in the smoke*

EN 4056-001, *Aerospace series — Cable ties for harnesses — Part 001: Technical specification*

EN 4057 (all parts), *Aerospace series — Cable ties for harnesses — Test methods*

MS 90387, *Tool, hand, adjustable for plastic and metal tie down straps*<sup>1)</sup>

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 4056-001 apply.

**4 Required characteristics****4.1 Dimensions**

See Figure 1 and Table 1.

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1) Published by: DoD National (US) Mil. Department of Defense. <http://www.defenselink.mil/>

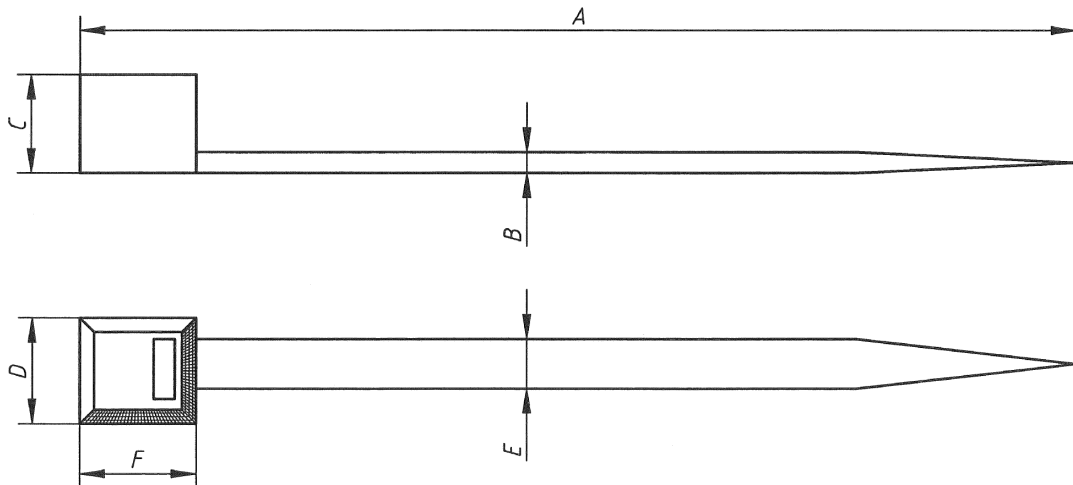


Figure 1 — Cable tie

Table 1 — Dimensions and mass

Size code	Recommended bundle diameter		Length of tie <i>A</i>	Thickness of strap <i>B</i>	Width of strap <i>E</i>		Head dimensions			Loop tensile strength	Mass of 10 ties related to minimum length
							<i>F</i>	<i>D</i>	<i>C</i>		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	N	g
P	1,6	20	92	1,1	2,3	2,5	4,3	5,0	4,0	80	3,0
R	1,6	50	190	1,3	3,3	3,8	6,3	6,6	5,0	120	9,5
S	1,6	80	280	1,3	3,3	3,8	6,3	6,6	5,0	120	17,0
T	1,6	80	280	1,3	4,4	4,8	6,7	8,6	6,0	220	21,0
U	5,0	100	335	1,9	6,6	7,1	9,4	13,5	8,3	530	65,0
V	1,6	110	360	1,3	4,4	4,8	6,7	8,5	6,0	220	24,5
W <sup>a</sup>	5,0	230	700	1,9	7,6	8,9	9,4	13,5	8,3	400	94
X <sup>a</sup>	5,0	130	456	1,9	7,4	7,8	9,4	13,5	8,3	530	86

<sup>a</sup> Based on NSA 835401.

## 4.2 Material

### 4.2.1 Temperature rating (type)

The ties shall be capable of use within the following temperature ranges:

- Type 1: – 65 °C to 105 °C, 135 °C;
- Type 2: – 65 °C to 150 °C.

### 4.2.2 Flammability class

Available as class 1 and class 2.

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See Table 3 for requirements.

**4.2.3 Colour**

See Table 2 of EN 4056-001.

**4.2.4 Burning behaviour**

Materials for cable tie shall satisfy the following requirements when tested to EN 2825 and EN 2826.

**4.2.4.1 Smoke density**

The maximum specific optical smoke density (average) shall not exceed:

- $D_m = 200$  (flaming mode);
- $D_m = 150$  (non flaming mode).

**4.2.4.2 Toxicity**

The average concentration in parts per million (ppm) of the following gas components shall not exceed the following limits after a test duration of 4 min.

Gas component	Limit of concentration ppm
Hydrogen Fluoride HF	100
Hydrogen Chloride HCl	150
Hydrogen Cyanide HCN	150
Sulphur Dioxide SO <sub>2</sub>	100
Hydrogen Sulphide H <sub>2</sub> S	100
Nitrous Gases NO/NO <sub>2</sub>	100
Carbon Monoxide CO	1 000

**4.3 U.V. resistance**

U.V. resistant cable ties shall meet the requirements of EN 4057-307, given in Table 3.

**4.4 Application tool**

Cable ties shall be applied using a tensioning tool as specified in MS 90387, verified in accordance with EN 4057-407 ensuring that the application force does not exceed the values shown in Table 2.

**Table 2 — Maximum recommended application force**

Size code	N
P	60
R	100
S	150
T	300
U	150
V	300
W	320
X	300