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Aerospace series - Sleeving, heat-shrinkable, for binding, insulation and identification - Part 203: polyvinylidene fluoride (PVDF) Identification sleeves - Operating Temperature range -55°C to 225°C - Product Standard

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 4708-203:2022 sisaldab Euroopa standardi EN 4708-203:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 4708-203:2022 consists of the English text of the European standard EN 4708-203:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.12.2022.	Date of Availability of the European standard is 21.12.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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ICS 49.035, 49.060

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ICS 49.035; 49.060

English Version

Aerospace series - Sleeving, heat-shrinkable, for binding, insulation and identification - Part 203: polyvinylidene fluoride (PVDF) Identification sleeves - Operating Temperature range -55°C to 225°C - Product Standard

Série aéronautique - Manchons thermorétractables, de jonction, isolement et identification - Partie 203 : Manchons d'identification en polyfluorure de vinylidène (PVDF) - Températures d'utilisation -55 °C à 225 °C - Norme de produit

Luft- und Raumfahrt - Wärmeschrumpfender Schlauch zur Befestigung, Isolierung und Identifizierung - Teil 203: Kennzeichnungsschlauch aus Polyvinylidenfluorid (PVDF), Betriebstemperaturbereich -55 °C bis 225 °C - Produktnorm

This European Standard was approved by CEN on 24 July 2022.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European Foreword

This document (EN 4708-203:2022) 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 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 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 June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

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.

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1 Scope

This document specifies the required characteristics for heat-shrinkable semi rigid polyvinylidene identification sleeves for use in aircraft electrical systems at operating temperatures between -55 °C and 225 °C.

This specification is for the characterisation of Identification sleeves only.

This sleeving is a semi rigid tough product and is suitable for use where high temperatures and extreme fluid resistance properties are required.

It is available with a shrink ratio of 2 : 1.

The product is normally supplied with internal diameters up to 38 mm.

The standard colours are white, black or yellow.

For use at temperatures above 200 °C black with white or silver ink is recommended.

Sizes or colours other than those specifically listed in this standard may be available. These items are considered to comply with this document if they comply with the property requirements listed in tables 2 and 3 except for dimensions and mass.

As the sleeving to be tested is a printed article the complete system is to be recorded as part of the evaluation. The sleeve will only be considered as meeting the requirements of this document if printed with the printer, ribbon/inks and settings referenced within the test report.

Mark adherence and print permanence are determined in this document using method EN 6059-407.

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 3909:2016, *Aerospace series — Test fluids and test methods for electrical and optical components and sub-assemblies*

EN 4708-001:2019, *Aerospace series — Sleeving, heat-shrinkable, for binding, insulation and identification — Part 001: Technical specification*

IEC 60684-1, *Specification for flexible insulating sleeving — Part 1: Definitions and general requirements*

IEC 60684-2:2011, *Flexible insulating sleeving — Part 2: Methods of test*

IEC 60757, *Code for designation of colours*

ISO 846:2019, *Plastics — Evaluation of the action of microorganisms*

ISO 1817:2022, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 11075, *Aircraft — De-icing/anti-icing fluids — ISO type I*

ISO 11078, *Aircraft — De-icing/anti-icing fluids — ISO types II, III and IV*

AMS1428, *Fluid, Aircraft Deicing/Anti-Icing, Non-Newtonian (Pseudoplastic), SAE Types II, III, and IV¹*

¹ Published by SAE International (US) Society of Automotive Engineers (www.sae.org).

ASTM D740-11, *Standard Specification for Methyl Ethyl Ketone*²

MIL-PRF-87937, *CLEANING COMPOUND, AEROSPACE EQUIPMENT*³

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60684-1 apply.

ISO and IEC maintain terminological 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 Required characteristics

4.1 Dimensions and mass

Table 1 — Dimensional and mass requirements

Size code	Internal diameter		Recovered wall thickness	Mass per unit length
	Expanded min.	Recovered max.		
2,4/0,8 ^a	2,4	0,8	0,38 ± 0,08	3,6
3,2/1,6	3,2	1,6	0,38 ± 0,08	5,9
4,8/2,4	4,8	2,4	0,38 ± 0,08	8,2
6,4/3,2	6,4	3,2	0,38 ± 0,08	10,5
9,5/4,8	9,5	4,8	0,38 ± 0,08	15,1
12,7/6,4	12,7	6,4	0,38 ± 0,08	19,7
19,0/9,5	19,0	9,5	0,38 ± 0,08	28,8
24,4/12,7	25,4	12,7	0,43 ± 0,08	42,2
38,1/19,0	38,1	19,0	0,43 ± 0,08	62,0

^a 2,4/0,8 3 : 1 recovery ratio to allow printing on supplied product.

4.2 Conditions of test

Unless otherwise specified, the sleeving shall be shrunk in a forced air circulation oven for (5 ± 1) min at 200 °C ± 5 °C prior to testing.

² Published by ASTM International American Society for Testing and Materials (www.astm.org).

³ Published by DoD National (US) Mil. Department of Defense (<http://www.defenselink.mil/>).