



**NSAI**  
Standards

Irish Standard  
I.S. EN 4708-105:2019

Aerospace series - Sleeving, heat-shrinkable, for binding, insulation and identification - Part 105: Semi-flexible polyvinylidene fluoride (PVDF) - Temperature range - 55 °C to 150 °C - Product standard

**I.S. EN 4708-105:2019**

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*This document is based on:*

EN 4708-105:2019

*Published:*

2019-09-11

*This document was published under the authority of the NSAI and comes into effect on:*

2019-09-29

ICS number:

49.060

NOTE: If blank see CEN/CENELEC cover page

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## National Foreword

I.S. EN 4708-105:2019 is the adopted Irish version of the European Document EN 4708-105:2019, Aerospace series - Sleeving, heat-shrinkable, for binding, insulation and identification - Part 105: Semi-flexible polyvinylidene fluoride (PVDF) - Temperature range - 55 °C to 150 °C - Product standard

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EUROPEAN STANDARD

EN 4708-105

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2019

ICS 49.060

English Version

**Aerospace series - Sleeving, heat-shrinkable, for binding,  
insulation and identification - Part 105: Semi-flexible  
polyvinylidene fluoride (PVDF) - Temperature range - 55  
°C to 150 °C - Product standard**

Série aérospatiale - Manchons thermorétractables, de  
jonction, isolement et identification - Partie 105 : Semi-  
flexible polyfluorure de vinyldène (PVDF) -  
Températures d'utilisation - 55 °C à 150 °C - Norme de  
produit

Luft- und Raumfahrt - Wärmeschrumpfender Schlauch  
zur Befestigung, Isolierung und Identifizierung - Teil  
105: Halbsteif, Polyvinylidenfluorid (PVDF) -  
Temperaturbereich -55° C bis 150°C - Produktnorm

This European Standard was approved by CEN on 14 January 2019.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## **European foreword**

This document (EN 4708-105:2019) 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 March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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

## EN 4708-105:2019 (E)

### 1 Scope

This document specifies the required characteristics for a heat-shrinkable, semi-flexible polyvinylidene sleeving for use in aircraft electrical systems at operating temperatures between – 55 °C and 150 °C. This sleeving is basically transparent, but may be tinted. It is semi-flexible tough and abrasion resistant, and is suitable for use where strain relief and mechanical protection are required, or where their transparent properties are desirable.

It is not suitable for use where contamination from phosphate ester based hydraulic fluid is possible.

These sleeveings are normally supplied with internal diameters up to 25,4 mm for shrink ratios of 2:1.

Sizes other than those specifically listed in this standard may be available. These items shall be considered to comply with this standard if they comply with the property requirements listed in Tables 2, 3 and 4 except for dimensions and mass.

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

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

IEC 60684-1, *Flexible insulating sleeving — Part 1: Definitions and general requirements* <sup>1)</sup>

IEC 60684-2, *Flexible insulating sleeving — Part 2: Methods of test* <sup>1)</sup>

IEC 60757, *Code for designation of colours* <sup>1)</sup>

ISO 846, *Plastics — Evaluation of the action of micro-organisms* <sup>2)</sup>

ISO 1817, *Rubber, vulcanized — Determination of the effect of liquids* <sup>2)</sup>

### 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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

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1) Published by : International Electrotechnical Commission (IEC), <http://www.iec.ch/>

2) Published by : International Organization for Standardization (ISO), <http://www.iso.ch/>



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