



**NSAI**  
Standards

Irish Standard  
I.S. EN 4708-104:2017

Aerospace series - Sleeving, heat-shrinkable,  
for binding, insulation and identification -  
Part 104: Semi-rigid polyvinylidene fluoride  
(PDVF) - Operating temperature - 55 °C to  
175 °C - Product Standard

**I.S. EN 4708-104:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 4708-104:2017 is the adopted Irish version of the European Document EN 4708-104:2017, Aerospace series - Sleeving, heat-shrinkable, for binding, insulation and identification - Part 104: Semi-rigid polyvinylidene fluoride (PDVF) - Operating temperature - 55 °C to 175 °C - Product Standard

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**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 4708-104**

November 2017

ICS 49.060

English Version

**Aerospace series - Sleeving, heat-shrinkable, for binding,  
insulation and identification - Part 104: Semi-rigid  
polyvinylidene fluoride (PVDF) - Operating temperature -  
55 °C to 175 °C - Product Standard**

Série aérospatiale - Manchons thermorétractables, de  
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rigide polyvinylidene fluoride (PVDF) - Température  
d'utilisation - 55 °C à 175 °C - Norme de produit

Luft- und Raumfahrt - Wärmeschrumpfender Schlauch  
zur Befestigung, Isolierung und Identifizierung - Teil  
104: Halbsteif, Polyvinylidenfluorid (PVDF) -  
Betriebstemperatur - 55 °C bis 175 °C - Produktnorm

This European Standard was approved by CEN on 18 September 2017.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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## **European foreword**

This document (EN 4708-104:2017) 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 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 May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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.

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**EN 4708-104:2017 (E)****1 Scope**

This European Standard specifies the required characteristics for a heat-shrinkable, semi-rigid polyvinylidene sleeving for use in aircraft electrical systems at operating temperatures between – 55 °C and 175 °C.

This sleeving is basically transparent, but may be tinted. It is semi-rigid, tough and abrasion resistant, and is suitable for use where strain relief and mechanical protection are required, or where their transparent properties are desirable.

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 European Standard may be available. These items shall be considered to comply with this European 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, 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 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*

EN 60684-1:2003, *Flexible insulating sleeving — Part 1: Definitions and general requirement (IEC 60684-1:2003)*

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

EN ISO 846:1997, *Plastics — Evaluation of the action of microorganisms (ISO 846:1997)*

HD 457 S1:1985, *Code for designation of colours (IEC 60757:1983)*

ISO 1817:2005, *Rubber, vulcanized — Determination of the effect of liquids*

MIL-PRF-87937, *Performance specification: cleaning compound, aerospace equipment* <sup>1)</sup>

AMS 1476B:2004, *Deodorant, Aircraft Toilet* <sup>2)</sup>

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 60684-1:2003 apply.

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

2) Published by: SAE National (US) Society of Automotive Engineers. <http://www.sae.org/>

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