



SLOVENSKI STANDARD
oSIST prEN IEC 60674-3-7:2023
01-februar-2023

**Plastične folije za električne namene - 3. del: Specifikacije za posamezne materiale
- 7. list: Fluoretilen-propilenske (FEP) folije, ki se uporabljajo za električno izolacijo**

Plastic films for electrical purposes - Part 3: Specifications for individual materials - Sheet
7: Fluoroethylene-propylene (FEP) films used for electrical insulation

iTeh STANDARD PREVIEW
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Spécification pour les films en matière plastique à usages électriques - Partie 3:
Spécifications pour matériaux particuliers - Feuille 7: Prescriptions pour les films de
fluoroéthylène-propylène (FEP) utilisés dans l'isolation électrique

Ta slovenski standard je istoveten z: prEN IEC 60674-3-7:2022

ICS:

29.035.20	Plastični in gumeni izolacijski materiali	Plastics and rubber insulating materials
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COMMITTEE DRAFT FOR VOTE (CDV)

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IEC TC 15 : SOLID ELECTRICAL INSULATING MATERIALS	
SECRETARIAT: United States of America	SECRETARY: Mr Solomon Chiang
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 112	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
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TITLE:

Plastic films for electrical purposes - Part 3: Specifications for individual materials – Sheet 7: Fluoroethylene-propylene (FEP) films used for electrical insulation

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NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PLASTIC FILMS FOR ELECTRICAL PURPOSES –**Part 3: Specifications for individual materials –
Sheet 7: Fluoroethylene-propylene (FEP) films
used for electrical insulation**

FOREWORD

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International Standard IEC 60674-3-7 has been prepared by IEC technical committee 15:
Solid electrical insulating materials

This second edition cancels and replaces the first edition published in 1992. This edition constitutes an editorial revision.

This edition includes the following significant editorial changes with respect to the previous edition:

- a) Title of the standard has been changed to unify the name within the IEC 60674 series;

This second edition

PLASTIC FILMS FOR ELECTRICAL PURPOSES –

91 Part 3: Specifications for individual materials

92 Sheet 7: Fluoroethylene-propylene (FEP) films used for electrical insulation

93 The first edition

94 SPECIFICATION FOR PLASTIC FILMS FOR ELECTRICAL PURPOSES –

95 Part 3: Specifications for individual materials

96 Sheet 7: Requirements for fluoroethylene-propylene (FEP) films used for electrical insulation

97 b) Application of the latest version of IEC Template (Version 7.1);

98 c) Update of normative references

99 The text of this International Standard is based on the following documents:

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

100

101 Full information on the voting for the approval of this International Standard can be found in
102 the report on voting indicated in the above table.

103 This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

104 The committee has decided that the contents of this document will remain unchanged until the
105 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
106 the specific document. At this date, the document will be

- 107 • reconfirmed,
- 108 • withdrawn,
- 109 • replaced by a revised edition, or
- 110 • amended.

111

INTRODUCTION

112 This standard is one of a series which deals with plastic films for electrical purposes. The
113 series will consist of three parts:

114 Part 1: Definitions and general requirements (IEC 60674-1);

115 Part 2: Methods of test (IEC 60674-2);

116 Part 3: Specifications for individual materials (IEC 60674-3).

117 This standard contains one of the sheets comprising part 3, as follows:

118 Sheet 7: Fluoroethylene-propylene (FEP) films used for electrical insulation

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PLASTIC FILMS FOR ELECTRICAL PURPOSES –

Part 3: Specifications for individual materials – Sheet 7: Fluoroethylene-propylene (FEP) films used for electrical insulation

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127 **1 Scope**

128 This sheet of IEC 60674-3 gives the requirements for fluoroethylene-propylene (FEP) films
129 used for electrical insulation.

130 Materials which conform to this specification meet established levels of performance.
131 However, the selection of a material by a user for a specific application can be based on the
132 actual requirements necessary for adequate performance in that application and not based on
133 this specification alone.

134 Safety warning: It is the responsibility of the user of the methods contained or referred to in
135 this document to ensure that they are used in a safe manner.

136 **2 Normative references**

137 The following documents are referred to in the text in such a way that some or all of their
138 content constitutes requirements of this document. For dated references, only the edition
139 cited applies. For undated references, the latest edition of the referenced document (including
140 any amendments) applies.

141 IEC 60674-1, *Specification for plastic films for electrical purposes - Part 1: Definitions and*
142 *general requirements*

143 IEC 60674-2:2016, *Specification for plastic films for electrical purposes - Part 2: Methods of*
144 *test*

145 IEC 60757:2021, *Code for designation of colours*

146 **3 Terms and definitions**

147 For the purposes of this document, the following terms and definitions apply.

148 ISO and IEC maintain terminological databases for use in standardization at the following
149 addresses:

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

152 **4 Classification**

153 The FEP film shall be of the following types:

- 154 – Type 1: General purpose
- 155 – Type 2: Surface treated to render the surface(s) heat sealable and cementable.
- 156 – Type 2A: One side treated

157 – Type 2B: Two sides treated

158 5 Designation

159 The plastic film shall be identified by the designation which follows:

IEC Publication number	Film name abbreviation	Type	Size			Colour
			Thickness [μm]	width [mm]	length [m]	
↓	↓	↓	↓	↓	↓	↓
IEC 60674-3-7	- FEP	- Type 1	- 100	- 20	- 200	- nc

160 Any colour abbreviation shall comply with IEC 60757:2021, where applicable. Non-standard
161 colours shall be written out in full.

162 Example: r = regular; nc = natural colour.

163 6 General requirement

164 The material shall be a flexible, self-supporting film made from FEP copolymer. Type 2 shall
165 be surface treated on one or both sides to give heat sealability and cementability.

166 All types shall conform to the general requirements laid down in IEC 60674-1.

167 7 Dimensions

168 7.1 Thickness

169 The film thickness of type 1 shall be measured in accordance with the requirements of 4.3.2
170 of IEC 60674-2:2016. The thickness of type 2 shall be measured using a micrometer in
171 accordance with 4.2.2 of IEC 60674-2:2016.

172 The overall thickness shall be in accordance with the nominal thickness and the permitted
173 range of thickness given in Table 1.

174 The following thickness ranges are commonly available:

175 – Type 1: 12,7 to 508 μm;

176 – Type 2: 12,7 to 127 μm

177

Table 1 – Nominal thickness and permitted range of thickness

Type	Nominal thickness µm	Overall permitted range of thickness µm	
		Min.	Max.
1 and 2	12,7	8,9	16,5
1 and 2	25	18	33
1 and 2	51	38	64
1 and 2	76	57	95
1 and 2	127	102	152
1	190	158	223
1	254	216	292
1	356	320	391
1	508	432	584

178

7.2 Width

180 The film width shall be measured in accordance with the requirements of clause 6 of IEC
181 60674 2:2016.

182 Preferred widths cannot be given on account of the great variety of applications.

183 The maximum deviation in film width from the nominal shall be $\pm 1,6$ mm.

8 Film length/roll diameter

185 There are no requirements in this document for film lengths or diameters of rolls. These
186 should be subject to purchase contract.

9 Properties**9.1 Properties not dependent on thickness**

189 See Table 2.