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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13542.6-2026

Replacing GB/T 13542.6-2006

**Plastic films for electrical insulation - Part 6: Polyimide films
used for electrical insulation**

电气绝缘用薄膜 第6部分：电气绝缘用聚酰亚胺薄膜

(English Translation)

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Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Classification and Naming
 - 4.1 Classification

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 6 of GB/T 13542 "Films for Electrical Insulation". GB/T 13542 has already published the following parts.

- Part 1: Definitions and General Requirements;
- Part 2: Test Methods;
- Part 3: Biaxially Oriented Polypropylene Film for Capacitors;
- Part 4: Polyester Film;
- Part 5: Biaxially Oriented Polynaphthalene Films;
- Part 6: Polyimide films for electrical insulation.

Compared with GB/T 13542.6-2006, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- The content of "scope" has been changed, and "coating" has been changed to "composite" (see Chapter 1, Chapter 1 of the 2006 edition);
- The classification method for polyimide films has been changed (see 4.1, 3.1 in the 2006 edition);
- The naming convention has been changed, "groups" have been added, and "flame retardant" has been removed (see 4.2, 3.2 in the 2006 version);
- The general requirements for Type 2 films have been revised, and general requirements

for Type 5 corona-resistant films have been added (see Chapter 5, 2006 edition).

Chapter 4);

---The thickness measurement method has been changed, a preferred nominal thickness has been added, and the thickness requirements and tolerance range have been modified (see 6.1).

(5.1 of the 2006 edition)

---The requirements and tolerance range for "width" have been changed (see 6.2, 5.2 in the 2006 edition);

---The test method for "thickness-independent properties" has been changed, the test conditions for "surface resistivity" have been changed, and the test conditions for "density" have been changed.

Performance requirements for "dielectric loss factor at 50Hz and 1kHz", "volume resistivity", "surface resistivity", and "shrinkage at 200°C" (see)

Table 2 (Table 4 in the 2006 edition)

---Added performance requirements for "relative permittivity and dielectric loss factor at 1MHz" and "linear expansion coefficient" (see Table 2);

---The performance requirements for "shrinkage rate" at 150°C and 400°C have been removed (see Table 4 in the 2006 edition);

---The nominal thickness specifications, applicable scope, and performance requirements for "tensile strength," "elongation," and "AC electrical strength" have been changed (see Table 3).

Table 5 (2006 edition)

---The performance requirement for "Type 2 AC electrical strength" has been removed (see Table 6 in the 2006 edition);

---The temperature index requirements and recommended thermal aging temperatures for "heat resistance" have been revised (see Table 4, 6.3.1 of the 2006 edition);

---The performance requirement of "corona resistance" has been added (see 7.3.3);

---The requirements for coilability/sag have been changed (see Table 6);

---The nominal thickness specifications and requirements for "maximum permissible number of joints per roll of film" have been changed (see Table 7, Table 9A of the 2006 edition), and the following has been deleted.

The requirement for "maximum number of splices allowed per roll of Type 2 film" (see Table 10A, 2006 edition);

---The nominal thickness specifications and requirements for "minimum permissible distance between joints or between a joint and the end of the membrane roll" have been changed (see Table 8, 2006 edition).

Table 9B) has removed the "minimum allowable distance between each overlap of type 2 film and between any overlap and the end of the film roll".

Requirements (see Table 10B, 2006 edition).

This document is modified to adopt IEC 60674-3-4:2022 "Plastic films for electrical applications - Part 3: Specifications for individual materials - Part 4: Electrical applications".

Insulating polyimide film.

This document has undergone the following structural adjustments compared to IEC 60674-3-4:2022.

---Chapter 4 corresponds to Chapters 4 and 5 of IEC 60674-3-4:2022, where 4.1 corresponds to IEC 60674-3-4:2022.

Chapter 4, section 4.2 corresponds to Chapter 5 of IEC 60674-3-4:2022;

---7.3 corresponds to Chapter 9 of IEC 60674-3-4:2022; 7.3.1 corresponds to 9.1 of IEC 60674-3-4:2022; 7.3.2 corresponds to...

IEC 60674-3-4:2022, section 9.2, added section 7.3.3;

---Chapter 8 corresponds to Chapter 10 of IEC 60674-3-4:2022;

---Table 5 has been added, and the table numbers are updated accordingly.

The technical differences between this document and IEC 60674-3-4:2022, and the reasons therefor, are as follows.

---The scope has been changed (see Chapter 1) to meet the needs of technical content;

---Integrate the two types of single-sided and double-sided composite FEP into a composite FEP type (see 4.1) to adapt to my country's technological needs.

condition;

---IEC 60674-1:1980 (see Chapter 5, 8.3) has been replaced with the normatively referenced GB/T 13542.1 to adapt to my country's technical requirements.

Add components to increase operability;

---The general requirements for Group A-2 type films have been revised (see Chapter 5) to adapt to my country's technical conditions and increase operability;

---The measurement method for "thickness" and the requirements for thickness deviation have been changed (see 6.1) to adapt to my country's technical conditions and increase

operability;

---IEC 60674-2:2016 (see Chapter 6, 7.3.1, 7.3.2, 8.4) has been replaced by the normatively referenced GB/T 13542.2-2021.

Tables 2, 3, 4, and 6 are provided to adapt to my country's technological conditions and increase operability.

---The performance requirements for "density", "relative permittivity (1kHz, 1MHz)" and "hygroscopicity" of Group A films have been changed, and Group A Type 5 has been removed.

The performance requirements for film "density" have been expanded to include performance requirements for "shrinkage rate" and "linear expansion coefficient" for Group A Type 5 films (see...).

Table 2), to adapt to my country's technological conditions and increase operability;

---Performance requirements for "relative permittivity" and "dielectric loss factor" at 50Hz have been added (see Table 2) to adapt to my country's technical conditions.

Increase operability;

---The normative reference GB/T 36800.2 (see Table 2) has been added to adapt to my country's technical conditions and increase operability;

---The minimum elongation performance requirement for Group A Type 1 films has been changed, and the requirements for tensile strength, elongation, and other parameters for Group A Type 5 films have been added.

The performance requirements for "AC electrical strength" have been revised, including the addition of test conditions and value determination methods for "AC electrical strength" (see Table 3) to better suit the requirements.

Given my country's technological capabilities, this increases operability;

---The recommended heat aging temperature for "heat resistance" has been changed (see Table 4) to adapt to my country's technical conditions and increase operability;

---ISO 9773 (see 7.3.2) has been replaced with the normatively referenced GB/T 40302 to adapt to my country's technical conditions and increase operability.

Actual nature;

---Added "Corona Resistance" (see 7.3.3), and added normative references to GB/T 4074.21-2018 and GB/T 11026.4 (see the following editorial changes have been made to this document.

---To harmonize with existing standards, the standard title has been changed to "Films for Electrical Insulation - Part 6: Polyimide for Electrical Insulation".