

ICS 29.035

CCS K 15



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

GB/T 46180-2025

**Test method on electrical insulation performance of
superconducting magnet made from CICC**

管内电缆导体（CICC）型超导磁体电气绝缘性能测试方法

Issued on: August 29, 2025

Implemented on: March 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Foreword

1 Scope

About this edition

Classification and status

How a Chinese national standard is set out

Foreword

This document was issued on 29 August 2025 by the State Administration for Market Regulation and the Standardization Administration of the People's Republic of China, and has been in force since 1 March 2026.

It is the first edition of this standard.

The document is under the responsibility of the Chinese Academy of Sciences.

Classification: ICS 29.035, CCS K 15.

1 Scope

GB/T 46180-2025 is the Chinese national standard covering the insulation of a cable-in-conduit superconducting magnet - the withstand and the partial discharge measured at liquid helium temperature where the insulation behaves nothing like it does warm, the irradiation and the thermal cycling, and the Paschen conditions in a cryostat. This is the conductor of ITER and of every large fusion magnet. First edition, under the Chinese Academy of Sciences. In force from 1 March 2026. It was issued on 29 August 2025 and has been in force since 1 March 2026, as a first edition. The document is under the responsibility of the Chinese Academy of Sciences. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

About this edition

GB/T 46180-2025 is the first edition of this standard. It was issued on 29 August 2025 and has been in force since 1 March 2026.

There is no earlier edition to compare it with, so a specification that has to refer to this subject can only cite GB/T 46180-2025 itself.

The interval between issue and effect is the transition period. It exists so that producers, laboratories and buyers can requalify products, revise procedures and use up documentation before the new text becomes the one that applies. The date on this page is the official one from the record of the Standardization Administration.

Classification and status

GB/T 46180-2025 is classified under ICS 29.035, in the field of electrical engineering. ICS is the International Classification for Standards, the same scheme used by ISO and by the national bodies of most countries, which is what allows a Chinese standard to be placed beside its foreign counterparts on subject rather than on number.

Its Chinese Standard Classification code is CCS K 15. CCS is the domestic scheme, a letter for the sector and two digits for the subject within it, and it is the code by which the standard is filed and searched in China.

The GB/T prefix marks a recommended national standard. It is not, in itself, law: it becomes binding when a contract names it, when a regulation or a mandatory standard refers to it, or when a producer declares conformity with it. In practice that covers most of the cases in which it will be read - a purchase specification, an inspection agreement or a certification scheme.

The document is under the responsibility of the Chinese Academy of Sciences, which is the body that maintains it and that will answer a formal question about its interpretation.

How a Chinese national standard is set out

Chinese national standards are drafted to the rules of GB/T 1.1, which fixes the order in which a standard is set out. The document opens with a foreword recording the issuing bodies, the relationship to any previous edition and the technical committee responsible for it. Clause 1 is the scope. Clause 2 lists the normative references - the other standards that have to be applied together with this one, and without which its requirements cannot be met. Clause 3 gives the terms and definitions. The technical clauses follow: the requirements themselves, the test or measurement methods by which conformity is established, the inspection rules that say how a lot is sampled and judged, and, for a product standard, the provisions on marking, packaging, transport and storage. Annexes, normative or informative, come last.

GB/T 46180-2025 runs to 24 pages in the English translation. What is delivered is the complete document in that order: every clause, every table, every figure and every annex of the Chinese original, with the same numbering, so that a reference to a clause number in a contract or a test report points to the same place in both languages.