

ICS 77.040.10

CCS H 22



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

GB/T 46774-2025

**Metallic materials - Test method for dynamic fracture toughness
at high strain rates**

金属材料 高应变速率动态断裂韧性试验方法

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Foreword

This document was issued on 2 December 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 July 2026.

It is the first edition of this standard.

The document is under the responsibility of the China Iron and Steel Association.

Classification: ICS 77.040.10, CCS H 22.

1 Scope

GB/T 46774-2025 is the Chinese national standard covering measuring fracture toughness when the load arrives in microseconds - the instrumented impact or Hopkinson bar loading, the inertial oscillations that corrupt the early signal, and the validity criteria that decide whether the number means anything. Crashworthiness and blast design need dynamic toughness, and quasi-static values are not conservative for it. First edition, under the China Iron and Steel Association. It was issued on 2 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the China Iron and Steel Association. 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.

2 Edition and transition

GB/T 46774-2025 is the first edition of this standard. It was issued on 2 December 2025 and has been in force since 1 July 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 46774-2025 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.

3 Classification and status

GB/T 46774-2025 is classified under ICS 77.040.10, in the field of metallurgy. 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 H 22. 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 China Iron and Steel Association, which is the body that maintains it and that will answer a formal question about its interpretation.

4 Structure of the document

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 46774-2025 runs to 30 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.

5 The English edition

The English edition of GB/T 46774-2025 is a full translation of the official Chinese text, not a summary, an abstract or a machine rendering left unchecked. Clause and subclause numbers, table and figure numbers and annex letters are those of the original, because they are what a specification, a purchase order or a test report cites.

Technical terms are translated against the vocabulary standards of the same field, so that a term used in GB/T 46774-2025 reads the same way as in the other Chinese standards it is used beside. Where a term has an established English form in an ISO or IEC document on the same subject, that form is used; where China's term has no foreign counterpart, it is translated literally and the Chinese is kept alongside it rather than replaced by an approximation.

Quantities, units and symbols are carried over unchanged. Chinese standards use SI, so a value in the translation is the value in the original document, not a conversion, and a limit read from the English text is the limit that will be applied by a Chinese inspection body reading the Chinese one.

This page is compiled from the official publication record: the standard number and both titles, the issuing bodies, the dates of issue and effect, the edition it replaces, and the ICS and CCS classification. The requirements, limits, tables and test conditions are in the document itself.