

ICS 19.100

CCS J 04



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

GB/T 42870-2023

**Non-destructive testing - Specific methodology and general
evaluation criteria for acoustic emission testing of
fibre-reinforced polymers**

Issued on: August 6, 2023

Implemented on: August 6, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 equivalent to ISO 18249.2015 "Non-destructive testing of acoustic emission testing of fiber-reinforced polymers - Testing methods and evaluation

Guidelines".

This document has made the following minimal editorial changes.

---In order to coordinate with existing standards, the name of the standard is changed to "Acoustic Emission Testing Methods and Evaluation of Nondestructive Testing of Fiber Reinforced Polymers"

Guidelines";

--- Added "Note 2.Hsu-Nielsen source refers to the acoustic emission source generated by pencil lead breakage" (see 5.2).

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document describes the general principles for acoustic emission testing of fiber reinforced polymer (FRP) components and structures. Materials used in FRP

Performance characterization and verification tests, manufacturing quality control of components and structures, online testing of service performance, and health monitoring, etc.

This document describes the use of acoustic emission techniques to assess the integrity of fiber-reinforced polymer components or structures or to identify severe

Specific methods of accumulating damage or aggravating damage to major areas.

This document describes the general FRP acoustic emission detection and evaluation criteria and gives the procedures for establishing the evaluation criteria.

This document provides a qualitative evaluation criterion format for acoustic emission test data in online inspection and post-analysis, for different test locations.

Simplified comparison with the acoustic emission test results obtained by the testing agency brings convenience.

Note. Structural integrity evaluation based on acoustic emission cannot be evaluated solely based on the evaluation criteria given in this article. In many cases, further testing and testing are required.

Evaluation (e.g. using other non-destructive testing methods or fracture mechanics calculations, etc.).

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

tion of NDT personnel)

Note. GB/T 9445-2015 Qualification and certification of non-destructive testing personnel (ISO 9712:2012, IDT)

ISO 12716:2001 Non-destructive testing acoustic emission testing vocabulary (Non-destructive testing-Acoustic emission in-

Note. GB/T 12604.4-2005 Non-destructive testing terminology acoustic emission testing (ISO 12716:2001, IDT)

EN13477-1 Characteristics of acoustic emission equipment for non-destructive testing Part
1.Equipment description (Non-destructive testing-

EN13477-2 Characteristics of acoustic emission equipment for non-destructive testing Part
2.Verification of operating characteristics (Non-destructive testing-

EN14584 Plane positioning of acoustic emission sources for non-destructive testing of
acoustic emission metal pressure equipment verification tests (Non-

EN15495 Non-destructive testing of acoustic emission metal pressure-bearing equipment
verification test regional positioning of acoustic emission sources (Non-

3 Terms and definitions

The terms and definitions defined in ISO 12716.2001 and the following apply to this document.