

CCS Q 23



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

GB/T 41498-2022

**Fibre-reinforced plastic composites - Shear test method using a
shear frame for the determination of the in-plane shear
stress/shear strain response and shear modulus**

Issued on: April 15, 2022

Implemented on: November 1, 2022

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

Table of Contents

foreword

1 Scope

2 Normative references

3 Terms and Definitions

foreword

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

drafted.

This document is identical to ISO 20337.2018 "Determination of in-plane shear stress/shear stress with shear frames for fiber-reinforced plastic composites"

Test Methods for Varied Response and Shear Modulus.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the determination of the in-plane shear stress of continuous fiber-reinforced plastic composites with a fiber orientation of 0° and $0^\circ/90^\circ$ using a shear frame.

Test Methods for Force/Shear Strain Response, Shear Strength, and Shear Modulus.

This document applies to unidirectional fibers, nonwovens and/or fabrics (e.g. unidirectional fabrics) reinforced thermoset and thermoplastic composite laminates,

The fiber direction is 0° and $0^\circ/90^\circ$ relative to the axial direction of the sample, and the layup is symmetrical and balanced relative to the midplane of the sample.

This document is suitable for the determination of shear properties over a range of linear and nonlinear load-deformation curves, with shear strains greater than 5%.

Short fiber reinforced plastic composite materials and long fiber reinforced plastic composite materials can be used for reference.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

Note. GB/T 2918-2018 Standard Environment for Conditioning and Testing of Plastic Specimens (ISO 291.2008, MOD)

ISO 1268 (all parts) Fiber-reinforced plastics test panels preparation methods (Fibre-reinforced plastics-Methods of

Note. GB/T 27797 (all parts) Preparation method of fiber reinforced plastics test panels [ISO 1268 (all parts)]

test results-Estimation of the mean-Confidence interval)

ISO 7500-1 Inspection and calibration of static uniaxial testing machines for metallic materials - Part 1. Tensile and/or compressive testing machines measuring system)

Note. GB/T 16825.1-2008 Inspection of Static Uniaxial Testing Machines Part 1. Inspection and Calibration of Force Measuring Systems of Tensile and (or) Compressive Testing Machines

(ISO 7500-1.2004, IDT)

ISO 12781-1 Product Geometric Specifications (GPS) Flatness Part 1. Vocabulary and Parameters (Geometrical product

Note. GB/T 24630.1-2009 Product Geometric Specifications (GPS) Flatness Part 1. Vocabulary and Parameters (ISO /T S12781-1.2003, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document.