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**Test method for impact failure of fiber reinforced polymer
matrix composites**

纤维增强复合材料冲击失效试验方法

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Table of Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

3.1 Mean failure height mean-failureheight

3.2 Mean failure energy

4 Principle

5 Samples

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 for standardization documents" Drafting.

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Test method for impact failure of fiber reinforced composite materials

1 Scope

This document specifies the principles, specimens, test apparatus, test procedures, calculations and test reporting for impact failure of fiber reinforced composite materials.

This document is applicable to the determination of the average failure energy of fiber reinforced composite thin-walled laminates.

2 Normative references

GB/T 1446

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Mean failure height mean-failureheight

The height at which the impact of the impact rod causes 50% failure of the test points of the test specimen.

3.2 Mean failure energy

The energy of the impact rod that causes 50% failure of the test points of the test specimen.

4 Principle

The rectangular specimen installed between the impact fixture fixing plate and the wooden frame is subjected to a certain energy impact at the specified test point along the thickness direction.

Use a flat-head probe to gently probe the impact area. If the needle tip penetrates the sample, the sample fails; otherwise, the sample does not fail.

5 Samples

5.1 The specimen is square with a side length of (460 ± 3) mm and a thickness of $(0.25 \sim 2.00)$ mm.

5.2 Select 4 test points for each sample. The test point locations are shown in Figure 1. The tolerances not marked in Figure 1 are ± 0.25 mm.