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**Fiber-reinforced plastics composites - The generals for
determination of properties**

纤维增强塑料性能试验方法总则

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Fiber-reinforced plastics composites - The generals for determination of properties

1 Scope

This standard specifies the laboratory environmental conditions, specimens, test equipment, test results, test reports for the property test of fiber-reinforced plastics composites.

This standard applies to the determination of the mechanical and physical properties of fiber-reinforced plastics composites.

2 Normative references

The clauses in the following documents become the clauses of this standard by reference in this standard. All subsequent revisions (excluding errata) or revisions of dated references are not applicable to this standard, however, parties to an agreement under this standard are encouraged to study the possibility of using the latest versions of these documents. The most recent version of an undated reference applies to this standard.

ISO 2602:1980 Statistical interpretation of test results - Estimation of the mean - Confidence interval

3 Laboratory environmental conditions

3.1 Laboratory standard environmental conditions

Temperature: $(23 \pm 2) ^\circ\text{C}$; Relative humidity: $(50 \pm 10)\%$

3.2 Laboratory non-standard environmental conditions

If the laboratory standard environmental conditions are not available, the laboratory environmental conditions close to the laboratory standard environmental conditions are selected.

4 Specimen

4.1 Specimen preparation

4.1.1 Mechanical processing method

4.1.1.1 The location area of the specimen should generally be more than 30 mm away from the edge of the plate (the burr of the process has been removed); the minimum shall not be less than 20 mm. If there are defects such as blisters, delamination, resin siltation, wrinkles, warping, wrong layup in the location area, it shall be avoided.

4.1.1.2 If there are special requirements for the location area or when it is necessary to sample from the product, it shall be determined according to the relevant technical requirements and indicated in the test report.

4.1.1.3 Fiber reinforced plastics are generally anisotropic; the specimen shall be cut according to the two main directions of the anisotropic material or the pre-specified direction (such as the longitudinal and transverse direction of the plate); it shall strictly ensure that the fiber direction and the layup direction are consistent with the test requirements.

4.1.1.4 Fiber-reinforced plastic specimens shall be processed with cemented carbide cutting tools or grinding wheels. During processing, it is necessary to prevent mechanical damage such as delamination, scoring, local extrusion of the specimen.

4.1.1.5 When processing specimens, water cooling can be used (oil is prohibited). After processing, the specimen shall be dried in a timely manner under appropriate conditions.

4.1.1.6 The forming surface of the specimen should not be processed. When machining is required, it is generally single-sided processing and indicated in the test report.

4.1.2 Molding method

Molded specimens are prepared according to the provisions of product standards or technical specifications. In the test report, indicate the process conditions for the preparation of the specimens and the direction of pressure during molding.

4.2 Specimen visual inspection

Before the test, the specimens need to be visually inspected; if there are defects and do not meet the size and preparation requirements, it shall be discarded.

4.3 Number of specimens

There are no less than 5 mechanical property specimens in each group; 5 valid specimens in the same batch are guaranteed. Physical properties of the specimens are according to the provisions of the corresponding standard.

4.4 Specimen conditioning

4.4.1 Before the test, the specimen shall be placed under the standard environmental conditions of the laboratory for at least 24 hours.

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