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

GB/T 20236-2025

Replacing GB/T 20236-2015

**Accelerated outdoor weathering test methods for nonmetallic
materials using concentrated natural sunlight**

非金属材料的聚光加速户外暴露试验方法

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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.

This document replaces GB/T 20236-2015 "Non-metallic materials accelerated outdoor exposure test method" and GB/T 20236- Compared with 2015, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Deleted the content of "Significance and Application" (see Chapter 4 of the 2015 edition);
- b) Added "General description of the test" (see Chapter 4);
- c) The content of "Test Equipment" has been changed (see Chapter 5, Chapter 5 of the 2015 edition);
- d) The content of "Sample" has been changed (see Chapter 6, Chapter 8 of the 2015 edition);
- e) Deleted the contents of "reagents and materials", "safety precautions" and "test evaluation" (see Chapter 6, Chapter 7, Chapter 12);
- f) Added "initial testing", "pretreatment", "intermediate testing" and "final testing" (see Chapter 7, Chapter 8, Chapter 11 and Chapter 12);
- g) The content of "Sample Installation" has been changed (see Chapter 9, Chapter 9 of the 2015 edition);
- h) The content of "Test Procedure" has been changed (see Chapter 10, Chapter 10 of the 2015 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Technical Committee for Standardization of Environmental Conditions and Environmental Testing for Electrical and Electronic Products (SAC/TC8).

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This document was first published in 2006, revised for the first time in 2015, and this is the second revision.

Introduction

Outdoor exposure test refers to placing the sample under natural atmospheric conditions and subjecting it to solar radiation, temperature, humidity, rainfall, salt spray and At the same time, this method can also be used to strengthen one or some of the main factors that affect the degradation of material performance.

Environmental factors act to accelerate failure.

The concentrated light accelerated test method is to achieve rapid weathering of materials by enhancing the solar radiation received by the material surface in an outdoor natural environment. Rapid evaluation test method.

1 Scope

This document describes the accelerated outdoor exposure test of non-metallic materials using an accelerated outdoor exposure test apparatus consisting of a Fresnel reflection system.

The test method is given, and the equipment used and its use guidelines are given.

This document is applicable to the evaluation of the durability of non-metallic materials used in outdoor environments under the influence of solar radiation, temperature and humidity.

This document does not give the most suitable test conditions for specific materials, but is limited to measurement methods and process controls.

2 Normative references

GB/T 2422-2012

GB/T 14890

GB/T 19565-2017

GB/T 33868

GB/T 34048-2017

GB/T 37426

GB/T 37468-2019

3 Terms and definitions

The terms and definitions defined in GB/T 2422-2012 apply to this document.

4 General description of the test

The test results in this document can be used to compare the relative durability of materials tested for a specific period of time.

When a large number of outdoor exposure test results are sufficiently mathematically correlated, they can be considered to be representative of the results of natural or field exposure tests.

Due to the differences in solar radiation, temperature, pollutants, wetting time and other factors at different exposure sites, The relative durability of materials subjected to natural or field exposure tests can vary significantly, so even if the results of accelerated tests under a particular condition can be It is not a good way to compare the relative durability of materials exposed in a particular location, nor is it an indication of whether the same durability will be achieved at other locations. result.

The types and formulations of materials are diverse, and it is not appropriate to use a single acceleration factor in outdoor exposure tests.

The level of radiation intensification affects each material type and its formulation differently. The acceleration factor for one material may not be applicable to another.

In addition, by using different reflector types and configurations, different acceleration factors can be obtained.

There are differences in the test results, so it is advisable to obtain a sufficient number of test results to determine the acceleration factor of the material.

Aging results will vary due to seasonal and annual variations in some important climatic factors, so the acceleration factor applies only to one exposure. Open field.