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

GB/T 10671-2023

Replacing GB/T 10671-2008

**Test method for specific optical density of smoke generated by
solid materials**

固体材料产烟的比光密度试验方法

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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 replaces GB/T 10671-2008 "Test method for specific optical density of smoke produced by solid materials" and is consistent with GB/T 10671-2008. In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Added types of applicable materials (see Chapter 1);
- b) Added the term and definition of "smoke darkening index" (see 3.7);
- c) Added the test requirement that the irradiance is 50kW/m², and changed the lower limit of the total number of samples from 6 to 9 (see 7.2.2);
- d) The order of preparation before the test was adjusted, the radiation furnace was changed to a radiation cone, the content related to the light transmittance meter was deleted, and the air tightness was increased Inspection steps (see 8.1, 2008 version of 8.1);
- e) The comparison of light transmittance and specific optical density has been deleted (see Appendix B of the 2008 version). Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed and coordinated by the National Ocean Ship Standardization Technical Committee (SAC/TC12). This document was drafted by: China Shipbuilding Industry Corporation No. 725 Research Institute, Qingdao Shuangrui Marine Environmental Engineering Co., Ltd. The main drafters of this document. Fan Ningbo, Luo Wen, Wang Wenlong, Wang Fengling, Qiao Dongping, Ren Weiwei, Wang Yudong, Wang Tingyong, and Wang Xiaohua. This document was first published in 1989, revised for the first time in 2008, and this is the second revision. Test method for specific optical density of smoke produced by solid materials

1 Scope

GB/T 10671-2023 is the Chinese national standard on test method for specific optical

density of smoke generated by solid materials, in the field of shipbuilding and marine structures. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 6 August 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 March 2024. Classification: ICS 47.020.05, CCS U07. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the principles, test equipment, specimens, test procedures, evaluation and calculation of test results for the specific optical density of smoke produced by solid materials. and test reports. This document is applicable to composite materials, rubber, foam, coatings, adhesives, thin materials, insulation under flameless mode or flame mode conditions. Test of the specific optical density of smoke produced by solid materials such as wires.

2 Normative reference documents

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 light transmittance lighttransmittance The percentage of the ratio of transmitted light flux (F) to incident light flux (F₀).

3.2 In a test chamber of a certain volume, during the process of burning the sample to produce smoke, the degree of light attenuation after passing through the smoke layer is measured, and the derivation is derived corresponding optical density.

Note. A measure of smoke produced by burning materials, also known as smoke density.

3.3 The specific optical density when the light transmittance is minimum during the test.

Note. It can also be called the maximum smoke density.

3.4 Specific optical density when the light transmittance is 75%.

3.5 Flameless modenoflamingexposure Use a radiation cone to heat the vertically mounted specimen surface with an average irradiance of 25kW/m² or 50kW/m².

3.6 flame mode flamingexposure Based on the flameless mode, a burner is installed in front of the sample so that the flame directly burns the sample.

3.7 The comprehensive index of the total amount of smoke and the smoke production rate when the critical specific optical density is reached.

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