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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 16400-2023

Replacing GB/T 16400-2015

Aluminosilicate wool and its products for thermal insulation

绝热用硅酸铝棉及其制品

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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 16400-2015 "Aluminum silicate wool and its products for thermal insulation". Compared with GB/T 16400-2015, except for the structure In addition to adjustments and editorial changes, the main technical changes are as follows:

a) Added terms and definitions for aluminum silicate wool shells and aluminum silicate wool special-shaped products (see

b) Delete the chromium-containing types and Appendix A (normative) in the classification (see 4.1.1, 4.1.2, Appendix A of the.2015 version);

c) Added classification of products according to manufacturing process (see 4.1.3);

d) Changed product marking (see 4.2,.2015 version of 4.2);

e) The chemical composition requirements are deleted as informative Appendix A (see Chapter 5 of the.2015 edition);

f) Changed the heating permanent line change index (see 5.1.2, 3.7, 5.2.4, 5.3.4,

5.4.3 of the.2015 version);

g) The thermal conductivity index has been changed (see 5.1.3,

5.2.5 of the.2015 version);

h) The thickness allowance has been changed (see 5.2.2,

5.2.1 of the.2015 version);

i) The tensile strength index of felt has been deleted (see

1 Scope

China's national product standard for aluminosilicate wool and the products made from it -

the high-temperature insulation used to line industrial furnaces, kilns and hot piping. It specifies the classification and marking, the technical requirements, the test methods, the inspection rules, and the marking, packaging, transport and storage, and it applies to aluminosilicate wool and its products used for the high-temperature insulation of industrial thermal equipment, kilns and pipelines, in the forms of board, felt, blanket, paper, pipe section and shell, shaped products and assemblies. Aluminosilicate wool - refractory ceramic fibre - is the material that made light furnace linings possible. A brick lining stores heat and has to be heated with the furnace every cycle; a fibre lining has almost no thermal mass, so a batch furnace lined with it reaches temperature far faster and wastes far less fuel. The properties that decide whether a given wool is fit for a given lining are the classification temperature, the shrinkage on prolonged heating at that temperature, the density, the thermal conductivity at temperature, the fibre diameter and the shot content - the unfiberised droplets that add weight and conduct heat without insulating. The standard sets those for each grade and the test methods by which they are shown. Shrinkage matters most: a lining that shrinks a few per cent in service opens gaps at the joints, and hot gas then reaches the casing. The document also carries the marking and handling requirements, which for a fibre product are not a formality, since these materials are handled with respiratory precautions and are classified for their fibre chemistry. Issued on 7 September 2023 and in force since 1 April 2024, it replaces GB/T 16400-2015 and incorporates amendment XG1 of 2026.

2 Normative reference documents

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

GB/T 191 Packaging, storage and transportation pictorial mark

GB/T 2059 Copper and copper alloy strips

GB/T 3880.1 Aluminum and aluminum alloy plates and strips for general industrial use Part

GB/T 4132 Thermal insulation terminology

GB/T 5480 Test methods for mineral wool and its products

GB/T 8170-2008 Numerical rounding rules and representation and determination of limit values

GB 8624-2012 Combustion performance classification of building materials and products

GB/T 10294 Determination of steady-state thermal resistance and related characteristics of thermal insulation materials - Protected hot plate method

GB/T 13480 Determination of compression properties of thermal insulation products for buildings

GB/T 17393 Specification for thermal insulation materials covering austenitic stainless steel

GB/T 17911 Test methods for refractory fiber products

GB/T 20313 Determination of hygrothermal properties and moisture content of building materials and products. Drying method JC/T 618 Chemical analysis method for soluble chlorides, fluorides, silicates and sodium ions in thermal insulation materials YB/T 5059 low carbon steel cold rolled steel strip

3 Terms and definitions

The terms and definitions defined in GB/T 4132 and GB/T 5480 and the following apply to this document.

3.1 A plate-shaped product made of aluminum silicate wool with a binder.

3.2 Felt-like products made of aluminum silicate wool with a binder.

3.3 Blanket-like products made of aluminum silicate cotton without binder by needle punching method.