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Sintered permeable paving bricks with red mud

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Table of Contents

Foreword	III
1. Scope	
2. Normative References	
3. Terms and Definitions	
4. Classification and Designation	
5. Technical Requirements	
6. Test Methods	
7. Inspection Rules	
8. Certificate of Conformity, Operation Instructions, Packaging, Transportation and Storage	

Foreword

This document is drafted in accordance with the provisions of GB/T 1.1-2020 Directives for standardization — Part 1: Structure and drafting rules of standardization documents.

Attention is drawn to the possibility that some contents of this document may involve patents. The issuing body of this document shall not be responsible for identifying patents.

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Sintered permeable paving bricks with red mud

1 Scope

This document specifies the classification and designation, technical requirements, test methods, inspection rules, certificate of conformity, operation instructions, packaging, transportation and storage of sintered permeable paving bricks made from red mud (hereinafter referred to as red mud permeable bricks).

This document applies to the design, production, inspection and application of sintered permeable paving bricks made from red mud with water permeability and seepage performance for ground surfaces such as sidewalks, squares and parks.

2 Normative References

The contents of the following documents constitute indispensable provisions of this document through normative reference in the text. For dated references, only the edition corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 2542 Test methods for wall bricks

GB 6566 Limits of radionuclides in building materials

GB/T 12988 Test method for abrasion resistance of inorganic floor materials

GB/T 25993 Permeable paving bricks and permeable paving slabs

GB/T 39804 Test method for leachable harmful substances in wall materials

GB 50176 Code for thermal design of civil buildings

3 Terms and Definitions

The terms and definitions defined in GB/T 25993 and the following apply to this document.

3.1 red mud

General industrial solid waste generated during the production of alumina from bauxite in the aluminum smelting industry.

3.2 sintered permeable paving bricks with red mud

Paving bricks with water permeability and seepage performance, manufactured with red mud as the main raw material through forming, firing and other processes, used for ground surfaces such as sidewalks, squares and parks.

4 Classification and Designation

4.1 Variety and Category

Classified by the shape of paving bricks:

rectangular paving bricks (code P), interlocking paving bricks (code L).

4.2 Water Permeability Grade

Classified into Grade A and Grade B according to the water permeability coefficient.

4.3 Specification

The commonly used specification dimensions of the product are shown in Table 1. Other shapes and specification dimensions shall be determined through negotiation between the supplier and the purchaser.

Table 1 Specification Dimensions

Unit: millimeters (mm)

Item	Specification Dimensions
Length	100, 150, 200, 250, 300, 400, 500
Width	100, 150, 200, 300, 400, 500
Thickness	25, 30, 35, 40, 50

4.4 Strength Grade

4.4.1 Three grades are classified according to compressive strength: C40, C50, C60.

4.4.2 Four grades are classified according to flexural strength: R₁4.0, R₁4.5, R₁5.5, R₁6.5.

4.5 Marking

Marking shall be done in the sequence of product code, water permeability grade, specification dimensions, strength grade and the number of this document.

Example:

Red mud permeable brick of rectangular paving brick, Grade A water permeability, specification 200 mm × 100 mm × 40 mm, strength grade C40:

P A 200 mm × 100 mm × 40 mm C40 JC/T xxxx-2024

5 Technical Requirements

5.1 Appearance Quality

The appearance quality of the product shall comply with the provisions of Table 2.

Table 2 Appearance Quality

Item		Top Surface	Other Surfaces	
Cracks	Through cracks	Not permitted	Not permitted	
	Non-through cracks	Maximum projected dimension length / mm	10	15
		Total number (excluding those with maximum projected dimension length ≤ 2 mm) / pcs	1	2
Broken edges and corners	Maximum projected dimension perpendicular to the edge / mm	3	10	
	Maximum projected dimension parallel to the edge / mm	10	20	
	Total number (excluding those with maximum projected dimension in 3 directions ≤ 2 mm) / pcs	1	2	
Peeling and defects	Maximum projected dimension with depth ≥ 1 mm / mm	8	10	
	Total number (excluding those with projected dimension length ≤ 2 mm) / pcs	Depth: 1 mm – 2.5 mm	1	2
		Depth > 2.5 mm	Not permitted	Not permitted

1. Specimens with secondary processing or special decorative requirements are not subject to these provisions.
2. Chamfering to designed dimensions during production shall not be deemed as broken edges and corners.
3. Ribs on the side faces of red mud permeable bricks shall not be classified as “peeling”.