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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14684-2022

Replacing GB/T 14684-2011

Sand for construction

建设用砂

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part

1.Rules for the structure and drafting of standardizing documents". This document replaces GB/T 14684-2011 "Sand for construction". Compared with GB/T 14684-2011, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) CHANGE the definition of natural sand (see 3.1;

3.1 of the 2011 edition);

b) CHANGE the definition of manufactured sand (see 3.2;

3.2 of the 2011 edition);

c) ADD the terms and definitions for mixed sand (see 3.3);

d) ADD the terms and definitions for flake particles in manufactured sand (see 3.9);

e) CHANGE the definition of methylene blue value (see 3.12;

3.10 of the 2011 edition);

f) CHANGE the category of sand (see 4.1;

4.2 of the 2011 edition);

g) CHANGE the technical requirements for particle gradation of category I sand (see 6.1;

6.1 of the 2011 edition);

1 Scope

GB/T 14684-2022 is the Chinese national standard on sand for construction, in the field of construction materials and building. 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 15 April 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2022. Classification: ICS 91.100.15, CCS Q13. 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 stipulates the classification and categories, general requirements, technical requirements, test methods, inspection rules, marking, storage, transportation of sand for construction. This document applies to cement concrete and its products, as well as sand used in ordinary mortar, in construction projects.

2 Normative references

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

GB 175 Common Portland cement

GB/T 601 Chemical reagent - Preparations of standard volumetric solutions

GB/T 2419 Test method for fluidity of cement mortar

GB/T 6003.1 Test sieves - Technical requirements and testing - Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Natural sand Under natural conditions, rocks undergo crushing, weathering, sorting, migration, stacking/deposition, forming rock particles, which have a particle size less than

Note. Natural sand includes river sand, lake sand, mountain sand, purified sea sand; but does not include soft and weathered particles.

3.2 Manufactured sand The sand which is made from rocks, pebbles, mining waste rocks, tailings as raw materials AND manufactured by soil removal, mechanical crushing, shaping, screening, powder control and other processes, whose gradation, particle shape, fine content meet the requirements, which has a particle size of less than

Note. Manufactured sand does not include soft, weathered particles.

3.3 Mixed sand Sand, which is made by mixing manufactured sand and natural sand, in a certain proportion.

3.4 Clay content The content of particles in natural sand, which has a particle size less than 75 μm.

3.5 Fine content The content of particles in manufactured sand, which has a particle size less than 75 μm.

3.6 Clay lumps and friable particles content The content of particles in sand, whose original particle size is greater than

1.18 mm, but less than

0.60 mm after water soaking, elutriation, etc.

3.7 Fineness modulus An indicator to measure of the thickness of sand.

3.8 Soundness The ability of sand to resist fracture under the action of external physical and chemical factors.

4.1 Classification

4.1.1 According to the source, it is divided into natural sand, manufactured sand, mixed sand.

4.1.2 According to the fineness modulus, it is divided into coarse sand, medium sand, fine sand, extra fine sand. The fineness modulus are as follows: - Coarse sand. 3.7 ~ 3.1; - Medium sand. 3.0 ~ 2.3; - Fine sand. 2.2 ~ 1.6; - Extra fine sand. 1.5 ~ 0.7.

4.2 Category Construction sand is divided into category I, category II, category III, based

on particle gradation, clay content (fine content), methylene blue (MB) value, clay lumps and friable particles content, hazardous substances, soundness, crushing index, flake particle content technical requirements.

5 General requirements

5.1 In addition to complying with the provisions of 6.4, hazardous substances in manufactured sand, which are produced from mining waste rock and tailings, shall also comply with the requirements of the environmental protection and safety-related standards and specifications in China.

5.2 The technical requirements, test methods, inspection rules, marking, storage and transportation of mixed sand shall be implemented as for manufactured sand.

6.1 Particle gradation

6.1.1 Except for extra-fine sand, the cumulative screening residue of category I sand shall comply with the requirements of Zone 2 in Table 1; the sub-calculated screening residue shall comply with the requirements of Table

2.The cumulative screening residue of category II and category III sand shall comply with the requirements of Table

7.1 Specimen

7.1.1 Number of specimens The minimum sampling mass for a single test shall comply with the requirements in Table

9.If several tests are performed, the same specimen can be used for several different tests, if it can be ensured that the specimen will not affect the results of another test.

7.1.2 Sampling method

7.1.2.1 Take samples according to the quantity specified in 7.1.1.

7.1.2.2 When sampling on the material pile, the sampling parts shall be evenly distributed. Before sampling, remove the surface layer of the sampling location; then randomly select 8 roughly equal sets of sand from different locations, to form a set of samples.

7.1.2.3 When sampling from the belt conveyor, it shall randomly take 4 roughly equal sets of sand from the full-section, to form a set of samples.

7.1.2.4 When sampling from trains, trucks, cargo ships, randomly select 8 roughly equal sets of sand from different locations and depths, to form a set of samples.

7.1.3 Specimen treatment