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Steel slag cement for road

钢渣道路水泥

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Steel slag cement for road

1 Scope

This standard specifies the definition, composition and material, strength grade, technical requirements, test methods, inspection rules, packaging, marking, transportation and storage of steel slag cement for road.

This standard applies to steel slag cement for road.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 176 Methods for chemical analysis of cement

GB/T 203 Granulated blast furnace slag used for cement production

GB/T 750 Method for soundness of Portland cement

GB/T 1346 Test methods for water requirement of normal consistency, setting time and soundness of the Portland cement (GB/T 1346-2001, eqv ISO 9597:1989)

GB/T 5483 Natural gypsum

GB/T 8074 Testing method for specific surface of cement - Blaine method

GB 9774 Sacks for packing cement

GB/T 12573 Sampling method for cement

GB/T 12960 Quantitative determination of constituents of cement

GB 13693 Portland cement for road

GB/T 17671 Method of testing cements - Determination of strength (ISO method) (GB/T 17671-1999, idt ISO 679:1989)

4.4 Granulated blast furnace slag

Granulated blast furnace slag meeting the requirements of GB/T 203.

4.5 Granulated blast furnace slag powder

Granulated blast furnace slag powder that meets the requirements of GB/T 18046.

4.6 Road Portland cement clinker

Road Portland cement clinker that meets the requirements of GB 13693.

4.7 Plaster

4.7.1 Natural gypsum: Gypsum or mixed gypsum that shall conform to category G or category M grade 2 (inclusive) or higher as specified in GB/T 5483.

4.7.2 Industrial by-product gypsum: It shall meet the industrial by-product gypsum specified in GB/T 21371.

4.8 Grinding aid

Grinding aids are allowed to be added during cement grinding; the addition amount shall not exceed 0.5% of the cement mass. The grinding aids shall meet the requirements of JC/T 667.

5 Strength grade

The strength grade of steel slag cement for road is divided into grades 32.5 and 42.5.

6 Technical requirements

6.1 Sulfur trioxide

The sulfur trioxide content (mass fraction) shall not exceed 4.0%.

6.2 Setting time

The initial setting time is not less than 90 min; the final setting time is not more than 600 min.

6.3 Stability

The stability test adopts the autoclave method; the autoclave expansion rate shall not be greater than 0.50%.

producer shall check the cement components at least monthly, the annual average shall meet the requirements of 4.1, the single inspection value shall not exceed 2% of the maximum limit specified in this standard.

In order to ensure the accuracy of the component determination results, the manufacturer shall adopt appropriate production procedures and appropriate methods to verify the reliability of the selected method; document the verified method.

7.2 Sulfur trioxide (SO₃), chloride ion, sodium oxide (Na₂O), potassium oxide (K₂O) content

Test according to GB/T 176.

7.3 Specific surface area

Test according to GB/T 8074.

7.4 Water consumption and setting time for standard consistency

Test according to GB/T 1346.

7.5 Steaming stability

Test according to GB/T 750.

7.6 Dry shrinkage rate

Test according to JC/T 603.

7.7 Abrasion resistance

Test according to JC/T 421.

7.8 Strength

Test according to GB/T17671.

8 Inspection rules

8.1 Numbering and sampling

Cement is numbered and sampled according to the same type and grade before leaving the factory. Bagged cement and bulk cement shall be numbered and sampled separately. Each number is a sampling unit; the cement's exit-factory number is based on the annual output of steel slag cement for road:

Above 100000 t but not more than 400 t is a number; less than 100000 t but not

shall be agreed upon by the buyer and the seller and shall be indicated in the contract or agreement. The seller has the responsibility to inform the buyer of the acceptance method. When there is no written contract or agreement, or the method of acceptance is not indicated in the contract or agreement, the seller shall indicate the words "use the cement inspection report of the same number as the basis for acceptance" on the invoice.

8.6.2 When taking the inspection result of the physical specimen as the basis for acceptance, the buyer and the seller shall jointly take the sample and sign & seal it before shipment or the place of delivery. The sampling method is carried out according to GB 12573, the sampling quantity is 28 kg, which is reduced into two equal parts. One part shall be kept by the seller for 40 days, the other part shall be inspected by the buyer according to the items and methods specified in this standard.

Within 40 days, if the buyer considers that the quality of the product does not meet the requirements of this standard, whilst the seller has objections, both parties shall send another specimen kept by the seller to a national cement quality supervision and inspection agency as recognized by the province or above for arbitration inspection. The arbitration inspection of cement stability shall be completed within 10 days from the date of sampling.

8.6.3 When the manufacturer's inspection report of the cement with the same number is used as the basis for acceptance, the buyer will sample the cement with the same number before shipment or at the time of delivery. The both parties shall sign-seal it and the seller retains it for 90 days; or otherwise it recognizes the seller's sampling, or the retained sample from the cement of same number which was sign-sealed and kept for 90 d.

Within 90 days, when the buyer has doubts about the quality of cement, the buyer and the seller will send the jointly approved samples to a national cement quality supervision and inspection agency recognized by the province or above for arbitration inspection.

9 Packaging, marking, transportation and storage

9.1 Packaging

Cement can be packed in bags or in bulk. The net content of each bag of bagged cement is 50 kg, which shall not be less than 99% of the marked mass; the total mass (including packaging bags) of 20 bags randomly selected shall not be less than 1000 kg. Other packaging forms are determined through negotiation between the supplier and the buyer, but the relevant bag mass requirements must comply with the above principles. The cement packaging bag shall meet the requirements of GB 9774.

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