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**BUILDING MATERIALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JC/T 740-2006

**Portland Phosphorous Slag Cement
(English Translation)**

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Foreword

This Standard is a revised edition of JC/T 740-1988 (1996) Portland Phosphorous Slag Cement.

Since the date of implementation, this Standard shall serve as a replacement of JC/T 740-1988 (1996) Portland Phosphorous Slag Cement.

In comparison with JC/T 740-1988 (1996), there are several main changes as follows:

---The mixing amount of granulated electric furnace phosphorous slag in cement is modified from "20% ~ 40%" to "20% ~ 50%" (Chapter 3 in Version 1988; 4.1 in this Version);

---Chapter "Composition and Materials" is added (Chapter 4 in this Version);

---In strength grade, early-strength Portland phosphorous slag cement is added (Chapter 4 in Version 1988; Chapter 5 in this Version);

---The requirement of cement fineness is modified from 0.080 mm square-hole sieve residue "not more than 12%" to "not more than 6.0%" (5.4 in Version 1988;

6.2.1 in this Version);

---The time requirement for the final condensation of Portland phosphorous slag cement is shortened, namely, time requirement is modified from "shall not exceed 12 h" to "shall not exceed 10 h" (5.5 in Version 1988; 6.2.2 in this Version);

---The limitation of ignition loss of Portland phosphorous slag cement is deleted (5.2 in Version 1988; Chapter 6 in this Version);

---Cement strength index is consistent with GB 1344-1999 Portland Blast Furnace - Slag Cement, Portland Pozzolana Cement and Portland Fly-ash Cement (5.7 in Version 1988; 6.3.4 in this Version);

---Cement strength test method adopts GB/T 17671-1999 Method of Testing Cements - Determination of Strength (6.5 in Version 1988; 7.7 in this Version);

---The requirement of chloride ion content and alkali content in cement is added (6.7 and 6.8 in this Version);

---The stipulation of granulated electric furnace phosphorous slag in cement is added (Appendix A in this Version);

---The radioactivity detection of granulated electric furnace phosphorous slag is added (Appendix A.3.4 in this Version);

Portland Phosphorous Slag Cement

1 Scope

This Standard specifies the terms and definitions, material requirements, strength grade, technical requirements, test methods, inspection rules, packaging, marking, transportation and storage of Portland phosphorous slag cement.

This Standard is applicable to Portland phosphorous slag cement, which takes granulated electric furnace phosphorous slag as the primary mixed material.

2 Normative References

Through the reference in this Standard, clauses in the following documents become clauses of this Standard. In terms of references with a specific date, all the subsequent modification lists (excluding corrected content) or revised editions are not applicable to this Standard. However, all parties that reach an agreement in accordance with this Standard are encouraged to explore the possibility of adopting the latest version of these documents. In terms of references without a specific date, the latest version is applicable to this Standard.

GB 175 Portland Cement and Ordinary Portland Cement

GB/T 176 Methods for Chemical Analysis of Cement (GB/T 176-1996, eqv ISO 680: 1990)

GB/T 203 Granulated Blast-furnace Slag Used for Cement Production

GB/T 750 Autoclave Method for Soundness of Portland Cement

GB/T 1345 The Test Sieving Method for Fineness of 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 1596 Fly Ash Used for Cement and Concrete

GB/T 2847 Pozzolan Materials Used for Cement Production (GB/T 2847-1996, neq ISO 863: 1990)

GB/T 5483 Gypsum and Anhydrite (GB/T 5483-1996, neq ISO 1587: 1975)

GB/T 1871.1 Phosphate Rock and Concentrate - Determination of Phosphorous Pentoxide Content - Quinoline Phosphomolybdate Gravimetric and Volumetric
8% of the total mass of cement. After the replacement, the mixing amount of granulated electric furnace phosphorous slag in cement shall not be less than 20%.

4.2.1 Plaster

Natural plaster shall comply with Type-G or Type-A Level-2 (or above) plaster or anhydrite stipulated in GB/T 5483.

When by-product plaster, whose main ingredient is calcium sulfate in industrial production, is adopted, the performance of cement shall be proved by tests to be harmless.

4.2.2 Granulated electric furnace phosphorous slag

Granulated electric furnace phosphorous slag shall comply with relevant stipulations in Appendix A and Appendix B in this Standard.

4.2.3 Granulated blast-furnace slag

Granulated blast-furnace slag shall comply with relevant stipulations in GB/T 203.

4.2.4 Pozzolanic material

Pozzolanic material shall comply with relevant stipulations in GB/T 2847.

4.2.5 Fly ash

Fly ash shall comply with relevant stipulations in GB/T 1596.

4.2.6 Limestone

In limestone, the content of aluminum oxide shall not exceed 2.5%.

4.2.7 Kiln dust

Kiln dust shall comply with relevant stipulations in JC/T 742.

4.2.8 Grinding aid

Grinding aid may be added in the grinding of phosphorous slag cement; the adding amount shall not exceed 0.5% of the mass of cement. Grinding aid shall comply with relevant stipulations in JC/T 667.

5 Strength Grade

Strength grade of phosphorous slag cement is divided into 32.5, 32.5R, 42.5, 42.5R,

6.1.1 Magnesium oxide

In clinker, the content of magnesium oxide shall not exceed 5.0%. If cement is qualified in soundness test conducted through the autoclave method, the content of magnesium