

PBD 14 : 1994



PIAWAI BRUNEI DARUSSALAM
BRUNEI DARUSSALAM STANDARD

Specification for

**Ordinary and rapid-
hardening Portland cements**

MINISTRY OF DEVELOPMENT
NEGARA BRUNEI DARUSSALAM

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**Construction Planning and Research Unit
Ministry of Development
Old Airport, Jalan Berakas
Bandar Seri Begawan 1190
Negara Brunei Darussalam**

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Ordinary and rapid- hardening Portland cements

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First Edition

Attention is drawn to the fact that this Brunei Darussalam Standards does not confer any immunity from legal obligations in any contract for compliance to the Standard.

The Brunei Darussalam Standards are subject to periodical review according to the current needs of the local industries to keep abreast of progress in the industries concerned. Suggestions of amendments will be recorded and in due course brought to the notice of the committees concerned.

Amendments issued since publication

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FOREWORD

This Brunei Darussalam Standard having been drafted, and prepared under the direction of the Technical Committee on Concrete under the authority of the Standards Committee, Ministry of Development.

This standard was published with all specifications reviewed in accordance to the current needs of the local building industry, and in preparing this standard, references were made to the following:-

- | | | |
|----|----------------|--|
| 1. | BS 12 : 1989 | Specification for Portland cements. |
| 2. | BS 4027 : 1980 | Specification for sulphate-resisting Portland cement. |
| 3. | PBD 13 : 1994 | Methods of test for water for making concrete. |
| 4. | BS 146 | Specification for Portland-blastfurnace cement. |
| 5. | BS 1014 | Specification for pigments for Portland cement and Portland cement products. |
| 6. | BS 1370 | Low heat Portland cement. |
| 7. | BS 6100 | Glossary of building and civil engineering terms
Part 6 : Concrete and plaster
Section 6.1 : Binders |
| 8. | BS 4246 | Specification for low heat Portland-blast furnace cement. |
| 9. | BS 6588 | Specification for Portland pulverized-fuel ash cement. |

10. MS 522 : Part 1 : 1989 Specification for Portland cement
(Ordinary and rapid-hardening)
Part 1 : Standard specification
(First Revision)
11. BS 6610 : 1985 Specification for pozzolanic cement with
pulverised-fuel ash as pozzolana
12. BS 8110 : Part 1 : 1985 Structural use of concrete
Code of practice for design and construction.
13. BS 4550 Method of testing cement
Part 1 : Sampling
Part 2 : Chemical tests
Part 3 : Physical tests
Section 3.3 : Fineness tests
Section 3.4 : Strength tests
Section 3.5 : Determination of standard
 consistence
Section 3.6 : Test for setting times
Section 3.7 : Soundness test
14. SS 26 : 1984 Specification for Portland Cement
(Ordinary and Rapid-Hardening)

COMMITTEE REPRESENTATION

The Technical Committee on Concrete was entrusted by the Ministry of Development for the preparation of this Brunei Darussalam Standard. The members of the Technical Committee are as follows:-

- | | |
|---------------------------------------|---|
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| 14. Awangku Shariful PSI Pg Hj Ismail | Petroleum Unit, Prime Minister's Department |

Specification

1. SCOPE

This Brunei Darussalam Standard specifies the requirements for the composition, the manufacture, chemical and physical properties, storage, sampling and marking of the following types of Portland cement:

- (a) Ordinary Portland cement;
- (b) Rapid-hardening Portland cement

2. COMPOSITION AND MANUFACTURE OF PORTLAND CEMENT

2.1 To obtain cement

The cement, whether ordinary or rapid-hardening, shall be obtained by pulverizing clinker, consisting mostly of calcium silicates obtained by heating to partial fusion a predetermined and homogeneous mixture of materials containing principally lime (CaO) and silica (SiO₂) with a smaller proportion of alumina (Al₂ O₃) and iron oxide (Fe₂ O₃). (See item no. 610 2101 of BS 6100 : Section 6.1)

2.2 Cement content

The cement shall contain no other added materials except as follows:

- (a) Water or gypsum or anhydrite, or other derivatives for calcium sulphate, or any combination of these substances; the amount of addition to be such that the limits shown for sulphuric anhydride and loss on ignition shall not be exceeded;
- (b) Metallic iron from the grinding process which shall not be regarded as an addition; and
- (c) Propylene glycol in a proportion by mass that shall not exceed 0.10% as determined by the method in Appendix A;

2.3 Coloured Portland cement

Coloured Portland cements shall be deemed to comply with the requirements of this Brunei Darussalam Standard provided that: