

**PBD 6 :**  
**Part 4 : 1994**



**PIAWAI BRUNEI DARUSSALAM**  
**BRUNEI DARUSSALAM STANDARD**

# **Concrete**

**Part 4. Specification for the procedures to be used  
in sampling, testing and assessing compliance of  
concrete**

MINISTRY OF DEVELOPMENT  
NEGARA BRUNEI DARUSSALAM

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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**

Amd No.	Date of issue	Text affected

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## FOREWORD

This Brunei Darussalam Standard was prepared by 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.

This standard covers the methods for specifying and producing concrete as a construction material up to the point of delivery into the construction. The standard is in four Parts:

Part 1. Guide to specifying concrete

Part 2. Methods for specifying concrete mixes

Part 3. Specification for the procedures to be used in producing and transporting concrete

Part 4. Specification for the procedures to be used in sampling, testing and assessing compliance of concrete

Part 1 provides guidance to the specifier and purchaser of concrete on the selection of requirements for materials and concrete mixes. Part 2 provides a choice of methods by which the purchaser can convey the selected requirements to the producer. Part 3 specifies for the producer the procedures to be used in producing and transporting the concrete. Part 4 specifies the procedures to be used by the purchaser in sampling, testing and assessing concrete for compliance.

This standard provides methods for specifying concrete mixed on site or in a precast concrete factory and for the purchase and supply of ready-mixed concrete. It takes account of the distinct and different responsibilities of the purchaser and the producer. There are a number of instances in which the purchaser has to select from the various options given in this standard in order to specify the concrete required. The purchaser is responsible for passing on to the producer the requirements of the specifying body, e.g. the engineer's or architect's specification, together with any additional requirements. Throughout this standard the terms 'specify' and 'specification' are used in relation to both sets of requirements.

There may be occasions where it is advantageous for economic or technical reasons to propose changes to the specification. In such cases the producer and purchaser should agree on the proposed amendments for approval and sanction by the specifying body.

Precautions need to be taken when working with cement and wet concrete and attention is drawn to these in PBD 6 : Parts 3 and 4.

This standard covers concrete produced by normal methods, but it does not apply to precast concrete products where Brunei Darussalam Standard specification contain the specification of the concrete. Many of the requirements of the standard, e.g. the use of and the control of production, apply equally to precast concrete and to in situ concrete. However, some of its requirements concerning the responsibilities of the purchaser and producer may not apply in the case of precast concrete.

Acknowledgement is made for the use of the British Standard BS 5328 : Part 4 : 1990 "Specification for the procedures to be used in sampling, testing and assessing compliance of concrete" on which this standard is based.

## 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:-

- |                                       |   |
|---------------------------------------|---|
| 1. Pg Hj Matusin Pg Hj Matasan        | Ministry of Development                     |
| 2. Awg Hj Yusop Hj Ibrahim            | Ministry of Development                     |
| 3. Dyg Masni Hj Mohsin                | Ministry of Industry & Primary Resources    |
| 4. Dr. A. Q. Malik                    | University of Brunei Darussalam             |
| 5. Awg Karunatne                      | Pertubuhan Ukur Jurutera Arkitek (PUJA)     |
| 6. Awg Chiong Siong Khai              | TECA Sdn Bhd                                |
| 7. Awg Anthony Wong                   | Ove Arup                                    |
| 8. Awg Moo Kwang Yin                  | Ministry of Defence                         |
| 9. Awg Nicholas Leong                 | Brunei Shell Petroleum                      |
| 10. Awg Abd Latif Ali                 | Maktab Teknik Sultan Saiful Rijal           |
| 11. Awg Abd Hakim Hj Hanafiah         | Housing Development Department              |
| 12. Awg Amer Hamzah Hj Abd Karim      | Public Works Department                     |
| 13. Dyg Suzana Adenan                 | Public Works Department                     |
| 14. Awangku Shariful PSI Pg Hj Ismail | Petroleum Unit, Prime Minister's Department |

# Specification

## 0 Introduction

This Part of PBD 6 describes methods of sampling and testing of concrete, which have been specified in accordance with PBD 6 : Part 2, and defines, for both purchaser and producer, the compliance limits for the various tests that may be specified.

As an alternative to assessing compliance with cement content or water/cement ratio requirements by analysis, or observation of the batching, 'equivalent strength' grades are now given for which the strength compliance is deemed to satisfy a given minimum cement content and/or maximum free water/cement ratio.

Modifications have been made to the strength compliance requirements. The validity of the testing is now checked by applying a limit to the range of the two strength determinations, the mean of which constitutes the test result. For compressive strengths, requirements are given for the first two results and the first three results. The use of superplasticizers to produce flowing concrete is accommodated by the inclusion of flow table compliance values. Sampling and testing of concrete for compliance should be specified to be carried out by organizations accredited by the Ministry of Development for the relevant test.

## 1 Scope

This Part of PBD 6 specifies the procedures to be followed when assessing the quality of concrete for compliance with a specification prepared in accordance with PBD 6 : Part 2.

NOTE. The titles of the publications referred to in this standard are listed on page 21

## 2 Definitions

For the purposes of this Part of PBD 6 the definitions given in PBD 6 : Part 1 and BS 6100 apply.