

**PBD 6 :**  
**Part 2 : 1993**



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

# **Concrete**

**Part 2. Methods for specifying concrete mixes**

**MINISTRY OF DEVELOPMENT**  
**NEGARA BRUNEI DARUSSALAM**

**Copyright Reserved**

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

# **Concrete**

## **Part 2. Methods for specifying concrete mixes**

**PIAWAI BRUNEI DARUSSALAM**

**PBD 6 :  
Part 2 : 1993**

Attention is drawn to the fact that this Brunei Darussalam Standard 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

## CONTENTS

	Page
Foreword .....	4
Committees representation.....	6
<b>Method</b>	
<b>Section 1. General</b>	
0 Introduction .....	7
1 Scope .....	7
2 Definitions .....	7
<b>Section 2. Designed mixes</b>	
3 Designed mix .....	8
4 Selection of grade and materials .....	8
5 Mix specification .....	8
<b>Section 3. Prescribed mixes</b>	
6 Prescribed mix .....	11
7 Selection of materials and mix proportions.....	11
8 Mix specification .....	11
<b>Section 4. Standard mixes</b>	
9 Standard mix .....	13
10 Selection of mix and materials .....	13
11 Constituent materials .....	13
12 Mix specification .....	14
<b>Appendix</b>	
A Forms for specifying or scheduling concrete mixes in accordance with BS 5328 .....	17
<b>Tables</b>	
1 Compressive strength grades .....	9
2 Flexural strength grades .....	10
3 Standard mixes and related strengths .....	14
4 Materials for use in standard mixes .....	15
5 Mix proportions for standard mixes .....	16

## 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 specifications contain the specification of the concrete. Many of the requirements of the standard, e.g. the use of materials 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 2 : 1990 : "Methods for specifying concrete mixes" 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. Awang Michael Ng	Ministry of Development
2. Awang Haji Yusop Haji Ibrahim	Ministry of Development
3. Dayang Masni Haji Mohsin	Ministry of Industry & Primary Resources
4. Dr. A. Q. Malik	University of Brunei Darussalam
5. Awang Haji Noordin Md Yussof	Pertubuhan Ukur Jurutera Arkitek (PUJA)
6. Awang Chiong Siong Khai	TECA Sdn Bhd
7. Awang Anthony Wong	Ove Arup
8. Awang Mohd Shahminan Haji Abd Hamid	Ministry of Defence
9. Awang Moo Kwang Yin	Ministry of Defence
10. Awang Nicholas Leong	Brunei Shell Petroleum
11. Awang Abd Latif Ali	Maktab Teknik Sultan Saiful Rijal
12. Awang Abd Hakim Haji Hanafiah	Housing Development Department
13. Awang Amer Hamzah Haji Abd Karim	Public Works Department
14. Dayang Suzana Haji Awang Adenan	Public Works Department
15. Awangku Shariful PSI Pg. Haji Ismail	Petroleum Unit, Prime Minister's Department

## Section 1. General

### 0 Introduction

This Part of PBD 6 gives the methods to be used by the purchaser for specifying concrete. The standard is in four sections:

section 1	General
section 2	Designed mixes
section 3	Prescribed mixes
section 4	Standard mixes

A fifth section is in preparation for the specification of designated mixes. Designated mixes are selected designed mixes suitable for designated end uses. The use of the mix title (i.e. designated mix) is an instruction to the producer to comply with the specification given in section five.

The methods, involving the use of the relevant information from PBD 6 : Part 1, enable the purchaser to specify clearly to the producer the requisite properties of the concrete. Ordinary prescribed mixes are now described as standard mixes using the prefix ST to avoid confusion with the grade designation of designed mixes. Standard mixes of 14 mm maximum size aggregate have been omitted as they are rarely used.

Appendix A contains forms which may be used to specify either designed, prescribed or standard mixes. The use of these forms should ensure that the purchaser specifies all necessary requirements and that the producer is in possession of all the relevant technical data.

Methods of assessing compliance with specifications for concrete mixes drawn up in accordance with this Part of PBD 6 are given in PBD 6 : Part 4.

Purchasers ordering in accordance with this standard are advised to specify quality assurance requirements for materials or for concrete in their purchasing contracts to assure themselves that products specified in accordance with PBD 6 consistently achieve the required level of quality.

### 1 Scope

This Part of PBD 6 gives methods for specifying concrete. It does not apply when the concrete is specified using any other Brunei Darussalam Standard.

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.