Singapore Standards Council

SS 78 : Part B7 : 1992 (2018)

(ICS 91.100.30)

SINGAPORE STANDARD

Testing concrete

– Part B7 : Recommendations for the assessment of concrete strength by the near to surface tests

Confirmed 2013

Published by

Enterprise Singapore

SS 78 : Part B7 : 1992 (2018)
(ICS 91.100.30)

SINGAPORE STANDARD

Testing concrete

– Part B7 : Recommendations for the assessment of concrete strength by the near to surface tests

ISBN 9971-67-439-4

This Singapore Standard having been approved by the Building Materials Product Standards Committee was endorsed by the Standards Council on 22 December 1992.

First published, 1992.

The Building Materials Product Standards Committee appointed by the Standards Council consists of the following members:

		Name	Organisation
Chairman	:	Mr Kenneth Chen Koon Lap	Standards Council
Deputy Chairman	:	Ms Tan Chiew Wan	Singapore Institute of Standards and Industrial Research
Secretary	:	Mrs Nah-Yeo Swee Yong	Singapore Institute of Standards and Industrial Research
Members	:	Mr Chan Fook Choy	Singapore Contractors Association Limited
		Mr Chan Kong Chin	Public Works Department
		Mr Chee Kok Weng	Housing and Development Board
		Mr Joseph Y Chiang	Singapore Manufacturers' Association
		Er Goh Soo Meng	Institution of Engineers, Singapore
		Mr John Kong Wai Meng	Singapore Manufacturers' Association
		Dr Lay Khai Seong	Nanyang Technological University
		Mr Lee Seng Kee	Mass Rapid Transit Corporation
		Mr Arthur Loh	Singapore Institute of Architects
		Mr Low Chin Min	Construction Industry Development Board
		Mdm Ng Bee Theng	Urban Redevelopment Authority
		Mr Ong Geok Soo	Jurong Town Corporation
		A/Prof Tam Chat Tim	National University of Singapore
		Mr Tan Jin Thong	Singapore Civil Defence Force

Acknowledgement is made to A/Prof Tam Chat Tim of the National University of Singapore who undertook the revision study of SS 78 Parts 1 to 6 : 1972.

SINGAPORE STANDARD

TESTING CONCRETE

PART B7 : RECOMMENDATIONS FOR THE ASSESSMENT OF CONCRETE STRENGTH BY THE NEAR-TO-SURFACE TESTS

FOREWORD

This Part of SS 78 B series standards has been prepared under the direction of the Building Materials Product Standards Committee. All aspects of testing concrete are being included as parts of SS 78 A and B series standards from sampling fresh concrete to assessing concrete in structures. SS 78 : Part B 1 gives general guidance on the choice of non-destructive test methods, including a bibliography, and should be consulted for advice in methods which complement the use of near-to-surface strength tests or are useful as alternatives.

Except for changes, where applicable, in test environment this Standard is based on BS 1881 : Part 207 : 1992 and reproduced by permission of BSI, 2 Park Street, London, W1A 2BS, England.

In recent years, several tests and devices have been developed which give a measure of the in-situ strength of concrete near to the surface. Carrying out near-to-surface tests requires only one face of the concrete to be available and this face need not be as smooth as that required for some alternative tests. Although most of these tests measure a property of concrete related to its strength, correlation with compressive strength has to be established experimentally. The results obtained may be used to estimate the strength of the body of the concrete. However, placing, compacting and curing may make the concrete in the surface zone unrepresentative of the concrete at deeper levels. For some methods the same correlation can be used over a wide range of concrete types but this is not universally true. Care should be taken to ensure that the correlations adopted are relevant to the circumstances of use.

Guidance on planning and interpreting tests to assess the strength of concrete in structures is given in BS 6089, which refers to the use of near-to-surface methods. The tests described in this part of SS 78 B series standard are those for which there is most experience at present. Other near-to-surface techniques may be proposed, usually to meet some particular need, and their use is not precluded by this Part. The recommendations of Clauses 3, 4, 5 and 11 to 13 may usefully be applied to such methods.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*

2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*

3. *Compliance with a SS or TR does not exempt users from any legal obligations*

1. SCOPE

This Part of SS 78 B-series standards gives recommendations on tests that are designed to assess the strength of concrete by causing localized failure in a small zone, typically up to 75 mm from the surface, according to the method. The recommendations cover the following test methods:

(a) internal fracture;

(b) pull-out;

(c) pull-off;

(d) penetration resistance;

(e) break-off.

NOTE. The titles of publications referred to in this standard are listed at the end of the standard.