

SINGAPORE STANDARD

Specifications for admixtures for concrete, mortar and grout

– Part 1 : Common requirements

(This national standard is the identical implementation of EN 934-1 : 2008 and is adopted with permission of CEN, Avenue Marnix 17, 1000 Brussels)

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– Part 1 : Common requirements

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National Foreword

This Singapore Standard was prepared by the Technical Committee on Building Structure and Sub-structure under the purview of the Building and Construction Standards Committee.

This standard is a result of the review of SS 320 : 1987 – ‘Concrete admixtures’. The SS EN 934 series of standards replaces SS 320.

This standard is identical to EN 934-1:2008 – ‘Admixtures for concrete, mortar and grout – Part 1 : 2008 – Common requirements’ and adopted with permission of CEN, Rue de Stassart 36, B-1050 Brussels.

Attention is drawn to the following:

1. Where reference is made to European Standards, it has been replaced by ‘Singapore Standard’ where applicable.
2. The comma used as a decimal marker has been replaced by a full point on the baseline.
3. The National Foreword replaces the Foreword of EN 934-1.

This standard is a part of the series SS EN 934 ‘Admixtures for concrete, mortar and grout’ which comprises the following additional parts:

- Part 2 Concrete admixtures – Definitions, requirements, conformity, marking and labelling
- Part 4 Admixtures for grout for prestressing tendons – Definitions, requirements, conformity, marking and labeling
- Part 6 Sampling, conformity control and evaluation of conformity

This Singapore Standard is used with the standards of the EN 480 series which comprises test methods for admixtures (listed in Clause 2). The temperature specified in the test method is only for conformity testing requirements and may not represent the temperature when the material is used in local conditions.

At the time of publication, this standard is expected to be used as a reference in the Building and Construction Authority’s ‘Approved Document – Acceptable Solutions’.

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.*

Introduction

This Singapore Standard covers the requirements that are common to all admixtures. The general requirements replace those which were included in EN 934 parts 2 to 5. They include the requirements for the effect on corrosion behaviour when admixtures are used in concrete, mortar or grout containing embedded metal.

The requirements for corrosion behaviour in this standard include an approved list and a declared list of active substances used in some admixtures. These lists are based on experience, which shows that the use of admixtures only containing substances on the approved list do not promote the corrosion of embedded steel. Materials on the declared list are subject, in some countries, to national restrictions on their use for certain applications and should be declared on the CE mark.

The specific requirements that characterise the performance of an admixture in a cementitious mix are detailed in EN 934 parts 2 to 5.

The special requirements relate to specific uses of admixtures and/or their effect on the environment.

Specification for admixtures for concrete, mortar and grout – Part 1 : Common requirements

1 Scope

This Singapore Standard specifies the common requirements for all admixtures covered by SS EN 934-2, EN 934-3, SS EN 934-4 and EN 934-5, which contain the specific requirements for each type of admixture.

The requirements for corrosion behaviour are not applicable to chloride based admixtures.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 196-2, *Methods of testing cement – Part 2: Chemical analysis of cement*

SS EN 197-1, *Cement – Part 1: Composition, specifications and conformity criteria for common cements*

SS EN 206-1, *Concrete – Part 1: Specification, performance, production and conformity*

EN 480-6, *Admixtures for concrete, mortar and grout – Test methods – Part 6: Infrared analysis*

EN 480-8, *Admixtures for concrete, mortar and grout – Test methods – Part 8: Determination of the conventional dry material content*

EN 480-10, *Admixtures for concrete, mortar and grout – Test methods – Part 10: Determination of the water soluble chloride content*

EN 480-12, *Admixtures for concrete, mortar and grout – Test methods – Part 12: Determination of the alkali content of admixtures*

EN 480-14, *Admixtures for concrete, mortar and grout – Test methods – Part 14: Determination of the effect on corrosion susceptibility of reinforcing steel by potentiostatic electro-chemical test*

SS EN 934-2, *Admixtures for concrete, mortar and grout – Part 2: Concrete admixtures – Definitions, requirements, conformity, marking and labelling*

EN 934-3, *Admixtures for concrete, mortar and grout – Part 3: Admixtures for masonry mortar – Definitions, requirements, conformity, marking and labelling*

SS EN 934-4, *Admixtures for concrete, mortar and grout – Part 4: Admixtures for grout for prestressing tendons – Definitions, requirements, conformity, marking and labelling*

EN 934-5, *Admixtures for concrete, mortar and grout – Part 5: Admixtures for sprayed concrete – Definitions, requirements, conformity, marking and labeling*

EN ISO 1158, *Plastics – Vinyl chloride homopolymers and copolymers – Determination of chlorine content (ISO 1158:1998)*

ISO 758, *Liquid chemical products for industrial use – Determination of density at 20 degrees C*

ISO 4316, *Surface active agents – Determination of pH of aqueous solutions – Potentiometric method*