Construction Plus

A Guide to CSA Construction Standards (Plus 4000)

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Contents

Preface

Purpose

This is the third edition of *Construction Plus*. It supersedes the previous editions, which were published in 1988 and 1990.

Construction Plus provides summaries of all CSA construction Standards and many construction-related Standards. Users of CSA's construction and construction-related Standards need to identify the basic content of each Standard quickly and accurately. Titles and simple subject indices alone do not reveal the products covered or the requirements stated by the Standard. These summaries, key words, and comprehensive indices will thus make CSA's construction and construction-related Standards much more accessible to the user.

Users of this Plus publication may also be interested in the CSA electrical Standards, which are summarized in *Electrical Plus* (CSA, Toronto, 1993).

Content of Summaries

Each page summarizes the purpose of the Standard, the products or services covered, the requirements, and the test methodology, together with a set of key words and a full bibliographic citation. The first paragraph comprises a summary of the Standard scope, preface, and content, as well as a listing of the products and services covered. Other paragraphs summarize the requirements and test methodology; where appropriate, the packaging, documentation, and marking requirements are mentioned. Where there are SI (metric) and yard-pound editions of Standards, the summary and its bibliography cover the SI edition.

Note: *These summaries do not replace the Standards themselves, which remain the only source for specific information on the scope and requirements. Use the Order Form on the last page to obtain CSA publications cited in this edition.*

Key Words and Index Terms

The key words have been selected from the controlled vocabulary of the Root Thesaurus (British Standards Institution, 3rd edition, 1988). This Thesaurus was chosen because it includes the range of subject matter covered by the Canadian Standards Association and because it is available in French as well as English. There is no equivalent North American technical and scientific thesaurus.

The Root Thesaurus, however, occasionally favours terms not used in Canada. For example, it gives "roads" rather than "highways". In such cases both the *Root* terms and the other key words are listed with the summary.

Key words and principal concepts have been used to prepare a set of index terms for each Standard and to assemble the Product Index for this publication. The CSA designation and summary may be identified under the appropriate index term headings; this makes it easier to determine what subject is common to the various Standards. The Standard Designation Index provides the page number for each summary.

New editions and new listings are noted in the Standard Designation Index.

Symbols

Where ⓒ appears next to the Standard number, it signifies that the Standard is used as the basis for a CSA certification program.

CPC signifies that the Standard is referenced in the Canadian Plumbing Code.

NBCC signifies that the Standard is referenced in the National Building Code of Canada.

NFC signifies that the Standard is referenced in the National Fire Code.

NMS signifies that the Standard is referenced in the National Master Specification.

Date of Standards Referenced

The summaries in this publication cover the most recent editions of those Standards published by CSA as of October 31, 1993. New editions and new Standards are regularly published for the construction program; also, some Standards may be withdrawn or amendments and errata published. The CSA Sales Group will be able to tell the user whether the editions summarized here are the current ones and whether all amendments and errata have been taken into account.

New Editions of Construction Plus

Since this publication is updated regularly, no amendments or revisions will be issued before the next edition is published.

October 1993

Notes:

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(3) Enquiries regarding the CPC, NFC, and NBCC may be addressed to
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Document identifier	*CAN/CSA-A5-93*
Date of issue	*1993-05-03*
Issuing body	*CSA*
Edition identifier	*4*
Title	Portland Cement
Collation	*8-1/2 x 11, 80 pages, 11 tables, 12 figures. Published with CAN/CSA-A8-93 and CAN/CSA-A362-93, under one cover, 113 pages.*

NMS NBCC

This Standard applies to Portland cement and covers definitions, references, and requirements for chemical and physical characteristics, tests, inspection and sampling, units of measurement for bulk cement, and packaging, marking of bagged and bulk cement, and storage. The Standard is written in SI (metric).

Requirements are given for inspection, test and sampling frequency, sampling procedures for bagged and bulk cement, and provision of test data and reports. Methods and formulae are given for calculating sample uniformity and total alkali content of the cement.

Chemical analysis methods cover equipment and materials and tests for the content of insoluble residues and the loss of original mass on ignition. Other tests are given for the content of sulphur trioxide, tricalcium aluminate, ferric oxide, the combined oxides of NH_4OH group, alumina, and magnesia. Physical test requirements cover determination of cement powder fineness, sand graduation, and the mixing, normal consistency, and setting time (Vicat method) of cement pastes. Other requirements cover determination of soundness by the autoclave expansion test, and of the heat of hydration. Mortar tests are based on mortar mixing, determining mortar flow, compressive strength, and sulphate resistance and sulphate expansion.

Requirements for test equipment and materials specify laboratory and ambient conditions. These requirements include the autoclave and component parts, compression test equipment, cube moulds, glassware, and flow table construction, use, and calibration. Further requirements are given for mixers and accessories, sampling tubes, sieves, Vicat and Gillmore equipment, testing for water retention, and wet-sieving. Materials for use in testing are specified and include chemicals such as reactants and indicators, gypsum, graded and standard sand, and water. A method for uniformity of calculation is given.

Nonmandatory appendices cover the early stiffening of cement paste and comment on the precision of test methods and give optional chemical methods.

Key words	*cements; Portland cement; chemical properties; physical testing; fineness; strength; compressive mortars.*

Document identifier	*CAN/CSA-A8-93*
Date of issue	*1993-05-03*
Issuing body	*CSA*
Edition identifier	*4*
Title	Masonry Cement
Collation	*8-1/2 x 11, 24 pages, 1 table, 2 figures. Published with CAN/CSA-A5-93 and CAN/CSA-A362-93, under one cover, 113 pages.*

NMS NBCC

This Standard gives the requirements for masonry cement prepared specifically for general use in masonry mortars. The Standard covers packaging, marking, and storage of cement, inspection and sampling methods for testing, and the test requirements and methods for testing physical properties. It shall be used with CSA Standard A5 to form a complete Standard for these products. The Standard is written in SI (metric).

Requirements are given for inspection, test and sampling frequency, sampling procedures for bagged and bulk cement, and treatment of samples.

General requirements for physical testing cover test room ambient conditions, mixing water temperature, and the accuracy of scales, weights, and glass graduates. Methods for physical testing cover the preparation of cement pastes, determination of normal consistency (Vicat method), soundness by atmospheric steam expansion and by autoclave expansion, and determination of setting time (Gillmore and Vicat method). Preparation methods and procedures test are given for mortar flow, entrained air content, compressive strength, density, and water retention.

A nonmandatory appendix covers sampling and inspection.

Key words	*masonry cement; cements; mortars; Portland cement; fineness; chemical properties; compressive strength; physical testing.*

Document identifier	*A14-M1979*
Date of issue	*1979-09-30*
Issuing body	*CSA*
Edition identifier	*6*
Title	Concrete Poles
Collation	*6 x 9, 32 pages, 2 tables.*

NMS

This Standard provides requirements for concrete poles intended for such uses as transmission, traction, and distribution line supports; telegraph, telephone line, and telecommunication cable supports; and flood and street lighting poles. It applies to both spun and cast poles and also to reinforced and prestressed poles. The Standard gives definitions, and covers the requirements for the design, quality control of materials, manufacture, and classification tests. It is written in SI (metric).

Design specifications define poles by classes, and include design methods, minimum dimensions, helical reinforcement, attachments, apertures, marking, and mounting and grounding requirements. Material requirements include general characteristics, and cover aggregates, restrictions on admixtures, non-prestressed and prestressed longitudinal reinforcing steel, and helical reinforcement.

Manufacturing requirements include record-keeping and quality control, marking, purchaser instructions, and the requirements for reinforcement, concrete, and curing, stripping, and stockpiling.

Classification test procedures give general test requirements, and cover the classification certificate, the frequency of classification testing, and the methods of testing poles in transverse bending and in torsion for the classification test.

Nonmandatory appendices give methods of calculating the vertical strength of poles, discuss the comparing of poles of different materials, and list the items to be checked during plant certification inspections.

Key words	*concrete poles; poles; concretes; prestressed concrete; transverse bend testing; torsion testing; reinforcing steels; aggregates; curing (concrete).*