Specification for Masonry Structures (ACI 530.1-05/ASCE 6-05/TMS 602-05)

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SYNOPSIS

This Specification for Masonry Structures (ACI 530.1-05/ASCE 6-05/TMS 602-05) is written as a master specification and is required by Building Code Requirements for Masonry Structures (ACI 530/ASCE 5/TMS 402) to control materials, design, and construction. Thus, this Specification covers minimum construction requirements for masonry in structures. Included are quality assurance requirements for materials; the placing, bonding, and anchoring of masonry; and the placement of grout and of reinforcement. This Specification is meant to be referenced in the Project Manual. Individual project requirements may supplement the provisions of this Specification.

Keywords: AAC masonry, anchors; autoclaved aerated concrete (AAC) masonry, clay brick; clay tile; concrete block; concrete brick; construction; construction materials; curing; grout; grouting; inspection; joints; masonry; materials handling; mortars (material and placement); quality assurance and quality control; reinforcing steel; specifications; ties; tests; tolerances.

[1] Main Committee Members participate in Subcommittee and Main Committee activities, including correspondence and voting.
[2] Subcommittee Members participate in Committee activities, vote on Subcommittee Ballots, and can comment on Main Committee ballots.
[3] Associate and Consulting Members participate in Committee activities.
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Adopted as a standard of the American Concrete Institute (October 27, 2004), the Structural Engineering Institute of the American Society of Civil Engineers December 15, 2004, and The Masonry Society (December 20, 2004) to supersede the 2002 edition in accordance with each organization's standardization procedures. The standard was originally adopted by the American Concrete Institute in November, 1988, the American Society of Civil Engineers in August, 1989, and The Masonry Society in July, 1992.

SI equivalents shown in this document are calculated conversions. Equations are based on U.S. Customary (inch-pound) Units; SI equivalents for equations are listed at the end of the Code.

PREFACE

P1. This Preface is included for explanatory purposes only; it does not form a part of Specification ACI 530.1-05/ASCE 6-05/TMS 602-05.

P2. Specification ACI 530.1-05/ASCE 6-05/TMS 602-05 is a reference standard which the Architect/ Engineer may cite in the contract documents for any project, together with supplementary requirements for the specific project.

P3. Specification ACI 530.1-05/ASCE 6-05/TMS 602-05 is written in the three-part section format of the Construction Specifications Institute, as adapted by ACI. The language is generally imperative and terse.

P4. Specification ACI 530.1-05/ASCE 6-05/TMS 602-05 is intended to be used in its entirety by reference in the project specifications. Individual sections, articles, or paragraphs should not be copied into the project specifications since taking them out of context may change their meaning.

P5. These mandatory requirements should designate the specific qualities, procedures, materials, and performance criteria for which alternatives are permitted or for which provisions were not made in this Specification. Exceptions to this Specification should be made in the project specifications, if required.

P6. A statement such as the following will serve to make Specification ACI 530.1-05/ASCE 6-05/TMS 602-05 an official part of the project specifications:

Masonry construction and materials shall conform to the requirements of "Specification for Masonry Structures (ACI 530.1-05/ASCE 6-05/TMS 602-05)," published by The Masonry Society, Boulder, Colorado; the American Concrete Institute, Farmington Hills, Michigan; and the American Society of Civil Engineers, Reston, Virginia, except as modified by the requirements of these contract documents.

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PART 1 — GENERAL

1.1 — Summary

1.1 A. This Specification covers requirements for materials and construction of masonry structures. SI values shown in parentheses are provided for information only and are not part of this Specification.

1.1 B. The Specification supplements the legally adopted building code and governs the construction of masonry elements designed in accordance with the Code, except where this Specification is in conflict with requirements in the legally adopted building code. In areas without a legally adopted building code, this Specification defines the minimum acceptable standards of construction practice.

1.1 C. This article covers the furnishing and construction of masonry including the following:

1. Furnishing and placing masonry units, grout, mortar, masonry lintels, sills, copings, through-wall flashing, and connectors.
2. Furnishing, erecting and maintaining of bracing, forming, scaffolding, rigging, and shoring.
3. Furnishing and installing other equipment for constructing masonry.
4. Cleaning masonry and removing surplus material and waste.
5. Installing lintels, nailing blocks, inserts, window and door frames, connectors, and construction items to be built into the masonry, and building in vent pipes, conduits and other items furnished and located by other trades.

1.2 — Definitions

A. *AAC masonry* – masonry made of autoclaved aerated concrete (AAC) units, manufactured without internal reinforcement, and bonded together using thin- or thick-bed mortar.

B. *Acceptable, accepted* — Acceptable to or accepted by the Architect/Engineer.

C. *Architect/Engineer* — The architect, engineer, architectural firm, engineering firm, or architectural and engineering firm, issuing Drawings and Specifications, or administering the Work under Contract Specifications and Project Drawings, or both.

D. *Area, gross cross-sectional* — The area delineated by the out-to-out dimensions of masonry in the plane under consideration.

E. *Area, net cross-sectional* — The area of masonry units, grout, and mortar crossed by the plane under consideration based on out-to-out dimensions.

F. *Autoclaved aerated concrete* -- low-density cementitious product of calcium silicate hydrates.

G. *Bonded prestressing tendon* — Prestressing tendon that is encapsulated by prestressing grout in a corrugated duct that is bonded to the surrounding masonry through grouting.

H. *Cleanouts* — Openings that are sized and spaced to allow removal of debris from the bottom of the grout space.

I. *Collar joint* — Vertical longitudinal space between wythes of masonry or between masonry and back up construction, which is permitted to be filled with mortar or grout.

J. *Compressive strength of masonry* — Maximum compressive force resisted per unit of net cross-sectional area of masonry, determined by testing masonry prisms; or a function of individual masonry units, mortar and grout in accordance with the provisions of this Specification.

K. *Contract Documents* — Documents establishing the required Work, and including in particular, the Project Drawings and Project Specifications.

L. *Contractor* — The person, firm, or corporation with whom the Owner enters into an agreement for construction of the Work.

M. *Dimension, nominal* — The specified dimension plus an allowance for the joints with which the units are to be laid. Nominal dimensions are usually stated in whole numbers. Thickness is given first, followed by height and then length.

N. *Dimensions, specified* — Dimensions specified for the manufacture or construction of a unit, joint, or element.

O. *Glass unit masonry* — Nonload-bearing masonry composed of glass units bonded by mortar.

P. *Grout lift* — An increment of grout height within a total grout pour. A grout pour consists of one or more grout lifts.

Q. *Grout pour* — The total height of masonry to be grouted prior to erection of additional masonry. A grout pour consists of one or more grout lifts.

R. *Mean daily temperature* — The average daily temperature of temperature extremes predicted by a local weather bureau for the next 24 hours.

S. *Minimum daily temperature* — The low temperature forecast by a local weather bureau to occur within the next 24 hours.

T. *Minimum/maximum (not less than . . . not more than)* — Minimum or maximum values given in this Specification are absolute. Do not construe that tolerances allow lowering a minimum or increasing a maximum.

U. *Otherwise required* — Specified differently in requirements supplemental to this Specification.

V. *Owner* — The public body or authority, corporation, association, partnership, or individual for whom the Work is provided.