

JUST THE FAQs

questions we made up about
... MASONRY

Changing Masonry Standards

Part 1: Special Inspections

Answer provided by John Chrysler who is Executive Director of the Masonry Institute of America (www.masonryinstitute.org) and President of The Masonry Society.

As for all materials, masonry standards are constantly changing. The Masonry Society (TMS) (www.masonrysociety.org) is the professional organization that oversees the development of the *Building Code Requirements for Masonry Structures* (TMS 402/ACI 530/ASCE 5) and the *Specification for Masonry Structures* (TMS 602/ACI 530.1/ASCE 6). This standard and specification are developed jointly with the American Concrete Institute (ACI) and the American Society of Civil Engineers (ASCE) and is referenced by the International Building Code. All structural engineers designing new masonry structures must be familiar with both standards; they are included in the SE exams as well.

The Masonry Society is more than a standards development group. Members are involved with all things masonry including guidelines, existing structures, special inspections, seminars, and research. Membership is open through the TMS

web site to all individuals with an interest in masonry.

The Masonry Society regularly receives inquiries from members and users of the standards. The following are several questions on topical issues that were received and answered by various experts in the masonry industry. Future issues of STRUCTURE magazine will include additional questions and responses.

Question

Special Inspections are required for masonry construction by Section 1704 of the 2009 International Building Code (IBC). Tables 1704.5.1 and 1704.5.3 deal with Level 1 and Level 2 inspections, however, the reference standard, Specification for Masonry Structures (TMS 602-08/ACI 530.1-08/ASCE 6-08), also has Quality Assurance criteria in Tables A, B and C. How are the Code and Standards used together? Are we to develop an inspection program that covers the most stringent case of both the IBC and the reference standard? Is it acceptable for a Construction Manager to retain the special inspector?

Answer

Employment of Special Inspector

The important question posed is who should employ the special inspector. IBC 2009,



Inspection of reinforcement location and cleanliness of cells prior to grouting. Courtesy of Masonry Institute of America.

Section 1704.1, requires that the Owner or the Registered Design Professional (RDP) acting as the owner's agent employ an approved agency to perform inspection for the defined task. In previous editions of the IBC, the owner's agent was undefined and it could be assumed that the Construction Manager (CM) could retain the special inspector as the owner's agent. That has changed.

In IBC 2009, there is a caveat, in section 1704.1, that the RDP may also act as the approved agency and personnel of the RDP may perform special inspection provided the building official has determined that the individuals designated to perform the inspection tasks are qualified.

Although this is somewhat broader than the historic Uniform Building Code requirement that the owner or owner's agent employ special inspectors, it is abundantly clear that the Code does not provide for special inspectors to be employed by the CM.

Special Inspection Tables

The masonry industry, under the banner of the Masonry Standards Joint Committee (MSJC), develops, and maintains, the IBC reference documents for masonry, *Building Code Requirements and Specification for Masonry Structures* (TMS 402-08/ACI 530-08/ASCE 5-08 and TMS 602-08/ACI 530.1-08/ASCE 6-08 respectively). These documents are also known as the MSJC Code and MSJC Specification. The MSJC is a balanced committee of producers, users and general interest members providing a range of interests in the consensus process.

The concept of inspection tables for masonry was first introduced in the 1999 edition of the MSJC Specification, but quickly found its way into the 2000 IBC. Since then, the tables have been clarified and expanded to the requirements set forth in the current codes. Whenever there is a conflict between the two documents, the IBC will always prevail over the reference standard.

In order to correlate the two levels of inspection contained in the IBC and the three levels contained in the MSJC, type of masonry design and the building use must be established. *Table 1* provides the path to determine both IBC and MSJC level of inspection requirements.

To use *Table 1*, first determine the Type of Masonry, then the Occupancy Category to establish the applicable level of inspection. For example, a large retail center designed by Strength Design (Engineered Masonry) with a defined Occupancy Category III would require IBC Level 1 inspection. This is equivalent to the MSJC Level B Quality Assurance (inspection) requirements.

The requirements of the IBC and MSJC inspection tables are nearly identical; however, when there is a conflict, the IBC requirements prevail. MSJC Table 5 (Quality Assurance Level C) provides for continuous inspection of placement of reinforcement, connectors, and prestressing tendons and anchorages, whereas IBC Inspection Level 2 requires that this task be performed on a periodic basis. For projects designed and constructed using the IBC with reference to the MSJC Specification, periodic inspection requirements for this task would apply.

Other than a couple of subtle differences between periodic and continuous inspection requirements, the major difference between the two sets of tables is that the IBC also contains references to the IBC or MSJC section triggering the inspection requirement for the particular task. The 2011 edition of the MSJC Specification will also contain the references, which will then make the tables nearly identical.

Including the references in the MSJC Quality Assurance Tables in the MSJC in 2011 paves the way to remove the transcription, or duplicate tables, from Chapter 17 of the IBC, thereby providing a single reference for designers, contractors and inspectors. ■

Table 1: Masonry Inspection Requirements.

Type of Masonry	Occupancy Category	IBC Inspection Level	MSJC Quality Assurance Level
Empirical, Veneer and Glass Block	I, II, III	None	Level A (MSJC Table 3)
	IV	Level 1 (Table 1704.5.1)	Level B (MSJC Table 4)
Engineered (Designed) Masonry	I, II, III		
	IV	Level 2 (Table 1704.5.3)	Level C (MSJC Table 5)

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