

GG 272-14

901.1, 903

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Revise as follows:

901.1 Scope.

The provisions of this chapter are intended to facilitate the pre- and post-occupancy special inspection, commissioning, operation and maintenance of buildings constructed in accordance with this code in a manner that is consistent with the intent of other provisions of this code, and to further that goal through the education of building owners and maintenance personnel with regard to related best operating and management practices.

SECTION 903 **SPECIAL INSPECTION AND COMMISSIONING**

903.1 General. Where application is made for construction as described in this section, the registered design professional in responsible charge or approved agency shall perform special inspection and commissioning during construction and after occupancy as required by Tables 903.1 and 903.2. Where a Table 903-4 specifies that special inspection or commissioning is to be done on a periodic basis, the registered design professional in responsible charge shall provide a schedule of periodic commissioning with the submittal documents that shall be reviewed and approved by the code *official*.

The approved agency shall be qualified and shall demonstrate competence, to the satisfaction of the *code official*, for the special inspection or commissioning of the particular type of construction or operation. The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the approved agency provided those personnel meet the qualification requirements of this section to the satisfaction of the *code official*. The approved agency shall provide written documentation to the *code official* demonstrating competence and relevant experience or training. Experience or training shall be considered relevant where the documented experience or training is related in complexity to the same type of commissioning activities for projects of similar complexity and material qualities.

TABLE 903.1
COMMISSIONING PLAN

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PREOCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
Chapter 4: Site Development and Land Use						
Natural resources and base-line conditions of building site	X	None	Report	With permit submittal	None	401.2
Landscape irrigation systems	X	None	Field inspection	Installation	None	404.1, 405.1.1
Topsoil and vegetation protection measures; setbacks from protected areas	X	None	Field inspection and report	Installation of measures, prior to other site disturbance	None	405.1.1
Imported soils	X	None	Field inspection and report	With permit submittal; after all-fill operations complete	None	405.1.3
Soil restoration and reuse	X	None	Field inspection and report	Preparation and replacement of	None	405.1.4

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PREOCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
				soils		
Stormwater management system operation	None	X	Field inspection	—	24 months	403.1
Erosion and sediment control	X	X	Field inspection	During construction activities	Periodic for 24 months	405.1.1
Hardscape and shading provided by structures and vegetation	X	X	Field inspection and report	During construction and installation	24 months	408.2
Vegetative roofs	X	X	Field inspection and report	Installation of protective membranes, base materials, soils and vegetation	24 months	408.3.2
Site lighting	X	None	Testing and report	Installation	None	409
Chapter 5: Material Resource Conservation and Efficiency						
Moisture control (Section 507.1)						
1. Foundation sub-soil drainage system.	X	None	Field inspection and verification	Periodic inspection for entire sub-soil drainage system	None	507.1 and IBC Ch 18
2. Foundation waterproofing	X	None	Field inspection and verification	Periodic inspection for the entire foundation	None	507.1 and IBC Ch 18
3. Foundation dampproofing	X	None	Field inspection and verification	Periodic inspection for the entire foundation	None	507.1 and IBC Ch 18
4. Under slab water vapor protection	X	None	Field inspection and verification	Periodic inspection for entire slab footprint	None	507.1, IBC Ch 19 and ASTM E 1643
5. Flashing at exterior windows, doors, skylights, wall flashing and drainage systems	X	None	Field inspection and verification	Periodic inspection for not less than 25 percent of all flashing locations.	None	507.1 and IBC Ch 14
6. Exterior wall coverings	X	None	Field inspection and verification	Periodic inspection for not less than 25 percent of exterior wall cladding systems.	None	507.1 and IBC Ch 14
7. Roof coverings, roof drainage, and flashings	X	None	Field inspection and verification	Periodic inspection for not less than 25 percent of roof covering, roof drainage, and flashings.	None	507.1 and IBC Ch 15
Chapter 6: Energy						
Energy consumption, monitoring, targeting and reporting						
a. Monitoring system	X	None	Inspection and verification	During construction and prior to occupancy	None	603, 610.5
b. Calibration	X	X	Testing and review	During	Annually	603, 610.5

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PREOCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
			and evaluation or test reports	commissioning		
Mechanical systems completion – all buildings						
a. Air system balancing – provide the means for system balancing	X	None	Inspection and verification	During construction and prior to occupancy	None	611.1.2.1 and through reference to IECC
b. Hydronic system balancing – provide means for system balancing	X	None	Inspection and verification	During construction and prior to occupancy	None	611.1.2.2 and through reference to IECC
c. Mechanical system manuals – construction documents to require O&M manual	X	None	Verification of construction documents	Plan review	None	611.1.5.2
Mechanical systems – buildings over 5,000 square feet total building floor area						
a. Commissioning required and noted in plans and specifications	X	None	Verification of construction documents	Plan review	None	611.1
b. Documentation of required commissioning outcomes	X	None	Verification with the building owner	Subsequent to completion of all commissioning activities	None	611.1
c. Preparation and availability of a commissioning plan	X	None	Verification with the RDP or commissioning agent	Between plan review and commissioning initiation	None	611.1.1
d. Balance HVAC systems (both air and hydronic)	X	X	HVAC system installer/contractor or commissioning agent	After installation of HVAC systems and prior to occupancy	TBD	611.1.2
e. Functional performance testing of HVAC equipment	X	X	HVAC system installer/contractor or commissioning agent	After installation of HVAC systems and prior to occupancy	TBD	611.1.3
f. Functional performance testing of HVAC controls and control systems	X	X	HVAC system installer/contractor or commissioning agent	After installation of HVAC systems and prior to occupancy	TBD	611.1.3.2
g. Preparation of preliminary commissioning report	None	X	HVAC system installer/contractor or commissioning agent	None	Subsequent to commissioning	611.1.4
h. Acceptance of HVAC systems and equipment/system verification report	None	X	Building owner	None	Letter verifying receipt of the commissioning report	611.1.4.1
i. Preparation and distribution of final HVAC system completion— Documentation that construction documents require drawings, manuals, balancing reports and commissioning	None	X	RDP, contractor or commissioning authority	None	90 days after final certificate of occupancy	611.1.5

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PREOCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
report be provided to the owner and that they have been provided						
Chapter 6: Lighting						
Auto demand reduction control system functionality	X	X	Functional testing	Final inspection	18-24 months	604.4
Plug load controls	X	None	Functional testing	Final inspection	None	608.6
Connection of appliances to switched receptacles	—	X	Field inspection	None	18-24 months	608.6
Specified transformer nameplate efficiency rating	X	None	Field inspection	Final inspection	None	608.8.1.1
Verification of lamp	X	X	Field inspection	Final inspection	18-24 months	608.10
Verification of ballast	X	None	Field inspection	Final inspection	None	608.10
Lighting controls						
a. Installation	X	None	Field inspection	Post-installation	None	608.11
b. Calibration	X	X	System installer/contractor or commissioning agent	Post-installation	18-24 months	611.3.3
Chapter 7: Water Resource Conservation, Quality and Efficiency						
Appliances	X	None	—	—	—	702.6
Hot water distribution	X	None	—	—	—	702.8
Cooling tower performance	—	X	—	—	—	703.7.7
Metering	X	None	—	—	—	705.1.1
Rainwater system water quality	None	X	Field testing and verification	None	707.15.1	707.15.1
Gray water system water quality	None	X	Field testing and verification	None	708.13.8	708.13.8
Soil percolation test	X	None	Field inspection and report	Prior to installation of gray water irrigation system	None	708.14.2
Chapter 8: Indoor Environmental Quality and Comfort						
Building construction, features, operations and maintenance facilitation						
Air-handling system access	X	X	Field inspection and verification	During construction and prior to occupancy	18 - 24 months	802.2
Air-handling system filters	X	X	Field inspection and verification	During construction and prior to occupancy	18 - 24 months	802.3
HVAC systems						
Temperature and humidity in occupied spaces	—	X	Field inspection and verification	—	18 - 24 months	803.2
Specific indoor air quality & pollutant control measures						
Listing, installation and venting of fireplaces and	X	—	Field inspection and verification	During construction and prior to	—	804.1

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PREOCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
combustion-appliances				occupancy		
Sound transmission						
Mechanical and emergency generator equipment located outside buildings or located where exposed to exterior environment.	X	None	Field testing and verification	See Section 807.5.1	None	807.5.1
HVAC background sound	X	None	Field testing and verification	See Section 807.5.2	None	807.5.2

For SI: 1 square foot = 0.0929 m².

Add new table as follows:

**TABLE 903.2
REQUIRED SPECIAL INSPECTIONS**

<u>CONSTRUCTION OR SYSTEM REQUIRING SPECIAL INSPECTION</u>	<u>METHOD AND FREQUENCY</u>	<u>SECTION</u>
<u>1. Landscape irrigation systems</u>	<u>Periodic inspection during Installation</u>	<u>404.1, 405.1.1</u>
<u>2. Foundation sub-soil drainage system.</u>	<u>Periodic inspection for entire sub-soil drainage system</u>	<u>507.1 and IBC Ch 18</u>
<u>3. Foundation waterproofing</u>	<u>Periodic inspection for the entire foundation</u>	<u>507.1 and IBC Ch 18</u>
<u>4. Foundation dampproofing</u>	<u>Periodic inspection for the entire foundation</u>	<u>507.1 and IBC Ch 18</u>
<u>5. Under slab water vapor protection</u>	<u>Periodic inspection for entire slab footprint</u>	<u>507.1, IBC Ch 19 and ASTM E 1643</u>
<u>6. Flashing at: exterior windows, doors, skylights, wall flashing and drainage systems</u>	<u>Periodic inspection for not less than 25 percent of all flashing locations.</u>	<u>507.1 and IBC Ch 14</u>
<u>7. Exterior wall coverings</u>	<u>Periodic inspection for not less than 25 percent of exterior wall cladding systems.</u>	<u>507.1 and IBC Ch 14</u>

<u>CONSTRUCTION OR SYSTEM REQUIRING SPECIAL INSPECTION</u>	<u>METHOD AND FREQUENCY</u>	<u>SECTION</u>
8. <u>Roof coverings, roof drainage, and flashings</u>	<u>Periodic inspection for not less than 25 percent of roof covering, roof drainage and flashings.</u>	<u>507.1 and IBC Ch 15</u>

Revise as follows:

**903.1.1
Preoccupancy report requirement.**

The approved agency shall keep records of the special inspection and commissioning required by Tables 903.1 and 903.2. The approved agency shall furnish ~~commissioning~~ reports to the owner and the registered design professional in responsible charge and, upon request, to the code official. Reports shall indicate that work was or was not completed in conformance to *approved* construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. Where discrepancies are not corrected, they shall be brought to the attention of the owner, *code official and* to the registered design professional in responsible charge prior to the completion of that phase of the work. Prior to the issuance of a Certificate of Occupancy, a final ~~commissioning~~ report shall be submitted to and accepted by the code official.

Reason: This proposal clarifies Table 903 by removing items that are not part of commissioning. Table 903 contains three separate types of items—some are part of a commissioning plan, some are special inspections not related to building commissioning, and some fall within the scope of the code official's responsibility. In this proposal, some of those items are moved to a new table for special inspections, and some are simply deleted.

The items that remain either test the actual performance of equipment or systems, or are actions taken after the Certificate of Occupancy has been issued. For example, inspection of storm water management and erosion control systems (Chapter 4 in the table) continues for 24 months after occupancy. In most cases, the code official's authority ceases after a building is approved for occupancy, so those items are appropriately done by another agency. Testing and verification of rainwater system water quality (Chapter 7) is left in Table 903.1 because it is outside the expertise of code officials. Similarly, testing and verifying sound transmission (Chapter 8) is also outside the code official's expertise. The Chapter 6 portion of the table remains in the table because it lists items that are part of commissioning done for compliance with Section 611.

The new Table 903.2 includes inspection items that are beyond the scope of usual building inspections. The IBC defines special inspection, in part, as "requiring the expertise of an approved special inspector." Inspection of landscape irrigation systems fits that description. The other items in Table 903.2 are inspections required by Section 507 which adds inspection requirements to existing IBC provisions. These inspections are performed during construction of the building elements in order to add assurance that the building envelope will be dry and healthy. Even though the construction requirements of Section 507 are IBC provisions, the extra inspections should be done by an approved agency to provide the extra attention intended by Section 507.

The deleted items are within the scope of tasks routinely done by code officials. For example, the first item in the table is submittal of a report on baseline site conditions. The report is neither commissioning nor special inspection; it's simply one of the construction documents for the project. It isn't necessary to require an approved agency to check for the report. Similarly, inspecting soil isn't commissioning and it doesn't require a special inspector. In the chapter 7 section of Table 903.1, code officials routinely check the ratings of equipment; water quality testing will be done by a specialized organization that will provide a report to the owner and the code official.

Cost Impact: Will not increase the cost of construction

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