

GG276-14

903.1, 903.1.2, Appendix E (New), E101.1 (New)

Proponent: Brenda Thompson, Clark County Development Services, Las Vegas, NV, representing Chair, Sustainability, Energy & High Performance Building Code Action Committee (SEHPCAC) (SEHPCAC@iccsafe.org)

Revise as follows:

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 commissioning during construction and after occupancy as required by Table 903.1. Where Table 903.1 specifies that 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 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	PRE OCCUPANCY	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 soils	None	405.1.4
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

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PRE OCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
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 and evaluation or test reports	During commissioning	Annually	603, 610.5
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	X	None	Verification of	Plan review	None	611.1.5.2

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PRE OCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
system manuals – construction documents to require O&M manual			construction documents			
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 report be provided to the owner and that they have been provided	None	X	RDP, contractor or commissioning authority	None	90 days after final certificate of occupancy	611.1.5
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	—	X	Field inspection	None	18-24 months	608.6

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PRE OCCUPANCY	POST-OCCUPANCY	METHOD	OCCURRENCE		SECTION/ REFERENCED STANDARD
				Preoccupancy	Post-occupancy	
appliances to switched receptacles						
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 combustion appliances	X	—	Field inspection and verification	During construction and prior to occupancy	—	804.1
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

Delete and substitute as follows:

903.1.2 Post-occupancy report requirement. ~~Post-occupancy commissioning shall occur as specified in the applicable sections of this code. A post-occupancy commissioning report shall be provided to the owner within 30 months after the Certificate of Occupancy is issued for the project and shall be made available to the code official upon request.~~

**APPENDIX E
POST-OCCUPANCY COMMISSIONING REPORTING**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

E101.1 Post-occupancy report requirement. ~~Post-occupancy commissioning reporting shall be provided in accordance with Table E101.1 The post-occupancy commissioning reports shall be provided to the owner and shall be made available to the code official upon request. Any actions taken to address deficiencies cited in the post-occupancy commissioning reporting shall be solely at the discretion of the owner or the owner's authorized agent, except where other more restrictive requirements exist in the jurisdiction.~~

**TABLE E101.1 (1)
POST-OCCUPANCY COMMISSIONING REPORTING**

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	METHOD	OCCURRENCE	GOVERNING SECTION
Chapter 4: Site Development and Land Use			
<u>Stormwater management system operation</u>	<u>Field inspection</u>	<u>24 months</u>	<u>403.1</u>
<u>Erosion and sediment control</u>	<u>Field inspection</u>	<u>Periodic for 24 months</u>	<u>405.1.1</u>
<u>Hardscape and shading provided by structures and vegetation</u>	<u>Field inspection and report</u>	<u>24 months</u>	<u>408.2</u>
<u>Vegetative roofs</u>	<u>Field inspection and report</u>	<u>24 months</u>	<u>408.3.2</u>
Chapter 6: Energy			
<u>Energy consumption, monitoring, targeting and reporting</u>			
<u>Calibration</u>	<u>Testing and review and evaluation or test reports</u>	<u>Annually</u>	<u>603, 610.5</u>
<u>Mechanical systems – buildings over 5,000 square feet total building floor area</u>			
<u>a. Balance HVAC systems (both air and hydronic)</u>	<u>HVAC system installer/contractor or commissioning agent</u>	<u>TBD</u>	<u>611.1.2</u>
<u>b. Functional performance testing of HVAC equipment</u>	<u>HVAC system installer/contractor or commissioning agent</u>	<u>TBD</u>	<u>611.1.3</u>
<u>c. Functional performance testing of HVAC controls and control systems</u>	<u>HVAC system installer/contractor or commissioning agent</u>	<u>TBD</u>	<u>611.1.3.2</u>
<u>d. Preparation of preliminary commissioning report</u>	<u>HVAC system installer/contractor or commissioning agent</u>	<u>Subsequent to commissioning</u>	<u>611.1.4</u>
<u>e. Acceptance of HVAC systems and equipment/system verification report</u>	<u>Building owner</u>	<u>Letter verifying receipt of the</u>	<u>611.1.4.1</u>

		<u>commissioning report</u>	
<u>f. Preparation and distribution of final HVAC system completion— Documentation that construction documents require drawings, manuals, balancing reports and commissioning report be provided to the owner and that they have been provided</u>	<u>RDP, contractor or commissioning authority</u>	<u>90 days after final certificate of occupancy</u>	<u>611.1.5</u>
Chapter 6: Lighting			
<u>Auto demand reduction control system functionality</u>	<u>Functional testing</u>	<u>18-24 months</u>	<u>604.4</u>
<u>Connection of appliances to switched receptacles</u>	<u>Field inspection</u>	<u>18-24 months</u>	<u>608.6</u>
<u>Verification of lamp</u>	<u>Field inspection</u>	<u>18-24 months</u>	<u>608.10</u>
<u>Calibration</u>	<u>System installer/contractor or commissioning agent</u>	<u>18-24 months</u>	<u>611.3.3</u>
Chapter 7: Water Resource Conservation, Quality and Efficiency			
<u>Rainwater system water quality</u>	<u>Field testing and verification</u>	<u>707.15.1</u>	<u>707.15.1</u>
<u>Gray water system water quality</u>	<u>Field testing and verification</u>	<u>708.13.8</u>	<u>708.13.8</u>
Chapter 8: Indoor Environmental Quality and Comfort			
<u>Building construction, features, operations and maintenance facilitation</u>			
<u>Air-handling system access</u>	<u>Field inspection and verification</u>	<u>18 - 24 months</u>	<u>802.2</u>
<u>Air-handling system filters</u>	<u>Field inspection and verification</u>	<u>18 - 24 months</u>	<u>802.3</u>
<u>HVAC systems</u>			
<u>Temperature and humidity in occupied spaces</u>	<u>Field inspection and verification</u>	<u>18 - 24 months</u>	<u>803.2</u>

Reason: This proposal was submitted by the ICC Sustainability Energy and High Performance Code Action Committee (SEHPCAC). The SEHPCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance International Codes with regard to sustainability, energy and high performance as it relates to the built environment included, but not limited to, how these criteria relate to the International Green Construction Code (IgCC) and the International Energy Conservation Code (IECC). This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. In 2012 and 2013, the SEHPCAC has held six two-day open meetings and 50 workgroup calls, which included members of the SEHPCAC as well as any interested parties, to discuss and debate proposed changes and public comments. Related documentation and reports are posted on the SEHPCAC website at: <http://www.iccsafe.org/cs/SEHPCAC/Pages/default.aspx>.

This proposal removes all of the post-certificate of occupancy commissioning requirements from Table 903.1 and places them in a separate new appendix. That leaves only the commissioning that occurs at or prior to certificate of occupancy in Chapter 9.

Many jurisdictions find the post-certificate of occupancy commissioning requirements excessive and hesitate to adopt the IgCC on that basis. This proposal will improve adoptions, but leave an alternative in the code for those jurisdictions that find the post-certificate of occupancy requirements valuable.

Cost Impact: Will not increase the cost of construction

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