

January 10, 2013

TO: Members of the MAG Building Codes Committee

FROM: Michael Williams, Tempe, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, **January 16, 2013** - 2:00 pm
MAG Office, Second Floor, Ironwood Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Building Codes Committee (BCC) has been scheduled for the time and place noted above. Members of the MAG Building Codes Committee may attend in person, by videoconference or by telephone conference call. Those attending by telephone conference call must make arrangements with Steve Gross at MAG at (602) 254-6300 at least one day prior to the meeting.

If you drive to the meeting, please park in the garage under the building and bring your ticket to the meeting; parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Scott Wilken at the MAG office. Requests should be made as early as possible to allow time to arrange for accommodation.

Please be advised that under procedures approved by the MAG Regional Council on June 26, 1996, all MAG committees must have a quorum to conduct business. A quorum is a simple majority of the membership, or 12 people for the MAG Building Codes Committee. If you are unable to attend the meeting, please send a proxy from your jurisdiction or agency to represent you.

If you have any questions or require additional information, please contact Scott Wilken at (602) 254-6300 or swilken@azmag.gov.

TENTATIVE AGENDA
MAG Building Codes Committee Meeting
January 16, 2013

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| 1. <u>Call to Order</u> | 2. For information. |
| 2. <u>Introductions</u> | 3. Review and approve the minutes of the November 14, 2012 meeting. |
| 3. <u>November 14, 2012 Meeting Minutes</u> | 4. For information and discussion. |
| 4. <u>Call to the Audience</u>

Members of the public may request to speak on items that fall under the jurisdiction of the MAG Building Codes Committee (BCC) and are not scheduled on the agenda; or, on items on the agenda for discussion but not for action. A total of 15 minutes will be provided for the Call to the Audience, with a limit of three minutes per speaker, unless the Chair requests an exception to this limit. Those requesting to comment on action agenda items may be provided an opportunity to do so at the time the agenda item is heard. | 5. For information and discussion. |
| 5. <u>Comments From the Committee</u>

An opportunity will be provided for Building Codes Committee members to present a brief summary of current events. The Building Codes Committee is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed in accordance with the Arizona Open Meeting Law. | 6. For information and discussion. |
| 6. <u>2012 IECC System Conditioning Requirements for Mechanical and Lighting Systems in Commercial Buildings</u>

The 2012 IECC has new system commissioning requirements for commercial buildings. Henny van Lambalgen from Quest Energy Group will give an overview of these new requirements. Please see Attachment One . | |

7. AZBO Code Amendments to the 2012 International Codes

AZBO has acted on its recommended amendments to the 2012 ICC family of codes. The amendments will be presented to the Committee for discussion and possible recommendation to member jurisdictions to consider them if adopting the 2012 edition of the codes.

8. MAG Building Code Amendments and Standards Book

Discussion about committee review of code amendments and building construction standards for possible inclusion in the upcoming MAG Building Codes Amendments and Standards. Please see **Attachment Two** for updated draft copies of the documents for discussion. Please see **Attachment Three** for the full table of documents and their status.

9. Updated MAG Building Codes Committee Membership

We are requesting that Committee members review **Attachment Four**, Committee Roster, sent with this agenda. Please forward any changes to Scott Wilken prior to the meeting or provide them at the meeting.

10. Update Survey of Code Adoption

Attachment Five identifies the codes that member agencies have adopted. Please review this information and provide any updates or corrections to Scott Wilken.

11. Topics for Future Agendas

Potential topics for the next meeting will be discussed. Please think of any items of discussion or presentations that you would be interested in hearing about at future meetings.

The next meeting is scheduled for Wednesday February 20, 2013 at 2:00 p.m. in the MAG Ironwood Room.

12. Adjournment

7. For information, discussion, and possible action.

8. For information, discussion and possible action.

9. For information and discussion.

10. For information and discussion.

11. For information and discussion.

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
BUILDING CODES COMMITTEE

November 14, 2012

Maricopa Association of Governments Office
302 N. 1st Ave
Chaparral Room
Phoenix, AZ

COMMITTEE MEMBERS

Michael Williams, Tempe, Chair

A-Randal Westacott, Avondale

*Phil Marcotte, Buckeye

*Mike Tibbett, Carefree

Mike Baxley, Cave Creek

A-Mike DeWys for Martin Perez, Chandler

Mary Dickson, El Mirage

*Jason Field, Fountain Hills

Larry Taylor, Gilbert

Tom Paradise, Glendale

*Ed Kulik, Goodyear

*Chuck Ransom, Litchfield Park

Tom Ewers, Maricopa County

A-Steven Hether, Mesa

Bob Lee, Paradise Valley

*Dennis Marks, Peoria

Julie Belyeu, Phoenix

Dustin Schroff for Michael Clack, Scottsdale

Dale Crandell, Tolleson

Kevin Bruce, Wickenburg

*Jim Fox, Youngtown

Jackson Moll, Home Builders Association

Sharon Bonesteel, Salt River Project

OTHERS IN ATTENDANCE

Scott Wilken, MAG

Steve Gross, MAG

Daran Wastchak, DR Wastchak LLC

Brad Townsed, MASCO

Judd Jensen, Energy Inspectors

Thomas Cochran, Energy Inspectors

*Those members neither present nor
represented by proxy.

A-Those members participating via
audioconference

1. Call to Order

Michael Williams, Chair, called to order the November 14, 2012 meeting of the MAG Building Codes Committee (BCC) at 2:15 p.m.

2. Introductions

Voting member Randal Westacott, Mike DeWys, and Steven Hether attended via telephone conference call. All members and guests introduced themselves.

3. September 19, 2012 Meeting Minutes

Bob Lee made a motion to approve the September 19, 2012 minutes. Tom Ewers seconded the motion, and the motion passed unanimously.

4. Call to the Audience

Sharon Bonesteel talked about potential code changes for the 2015 International Energy Conservation Code (IECC). She said that she attended a meeting in Thornton, Colorado, that included representatives from across the country. She said that one of the most critical items to come from that meeting was a commitment to limit code changes to: 1) only items that fix parts of the 2012 code; 2) clarify things that need more interpretation; 3) melding in the Energy Star or similar rating systems. She said that general consensus was that there would be about a 5% increase in energy efficiency.

5. Comments From the Committee

Tom Paradise announced that Tanger Outlet Mall in Glendale would be opening the next day.

Michael Williams said there has been a series of meetings in the east valley started by the east valley chambers of commerce. He said the topic has been best practices in permitting. He said the group has been developing a list of best practices, and he would like to bring the list to the Building Codes Committee at some point in the future.

6. 2012 IECC Testing Requirements

Daran Wastchak gave a presentation on 2012 IECC testing requirements. He talked about the Residential Energy Services Network (RESNET) and its various committees. He said that the RESNET product is the Home Energy Rating System (HERS). He said that the HERS score provides for a uniform rating of a home's energy consumption. He said that HERS has become the standard for measuring home energy performance. He gave a history of how sampling started, saying that some raters in the past tested every house that was to be rated. He said that cost of testing is very high, and doing every home was prohibitively expensive. He said that sampling provides a cost-effective means to achieve the goals of the rating system. He said that the Environmental Protection Agency (EPA) proposed a sampling protocol in January 2004, and requested that RESNET create and adopt an accreditation standard for sampling providers. He said RESNET had a task force that worked for more than 2 years drafting a standard, which went into effect on January 1, 2008. He said the standard is recognized by the EPA for the Energy Star for Homes program, the Department of Energy (DOE) for their Builders Challenge

program, and the Internal Revenue Service (IRS) for federal new homes tax credit. He said the IRS allows a tax credit of \$2,000 per home.

Daran Wastchak said the sampling starts with creating a Sample Set. He said the homes to be sampled can be selected from the same subdivision or metropolitan area and climate zone. He said that all tests and inspections of the sample set at a particular stage of construction must be completed within 30 days. He said sample sets do not have to consist of the same 7 homes throughout all the stages of construction. He said that participating subdivisions must be subject to sampling controls at least once every 90 days and have a minimum of 1 home start every 90 days. He said that sampling controls must be completed at a minimum ratio of one test or inspection per seven homes. He said that sampling controls can be completed on a single home or several homes within a given sample set. He said that builders qualify for sampling by first completing 7 consecutive homes without a failure. He said that sampling is only done on individual items that a builder has qualified for sampling, rather than the whole house. He said that new subdivisions require 3 consecutive homes to pass without failure before starting sampling, and that if a failure occurs the failed items must be inspected or tested in 2 additional homes. He said that if one or more of those 2 additional homes fails, the fail item must be tested or inspected in the remaining homes in the sample set. He said that until the failure is corrected in all the identified failed homes in the sample set, none of the homes shall be deemed to meet the threshold or labeling criteria. He said that if 3 additional failures occur within a 90 day period on the same item, the failed item must pass 7 consecutive homes before it can be sampled again, and if 3 additional failures occur within a 90 day period on several different items, the builder must re-qualify to sample by completing 7 consecutive homes without failure or the builder can do a root cause analysis.

Daran Wastchak said that RESNET Sampling Providers oversee the raters themselves. He said that sampling providers must first be accredited as a RESNET Rating Provider. He said there is a separate application and approval process to become a RESNET Accredited Sampling Provider. He also said that Raters and Rating Field Inspectors are not eligible to sample homes unless working under an Accredited Sampling Provider. He then talked about the testing protocols for the 2012 International Energy Conservation Code (IECC), including testing for air leakage and duct leakage.

Daran Wastchak gave his recommendations to the committee. He said he recommends requiring third-party testing and inspections of building envelope, blower door testing and duct leakage; all testing and inspections following RESNET standards; third-party testing and inspections must be completed by RESNET-certified raters or rating field inspectors; and testing and inspections subject to RESNET quality assurance field review procedures.

Sharon Bonesteel said that a recent stakeholders meeting on this subject produced a document that could be adopted by the Building Codes Committee.

Tom Paradise asked about the Above Code Program. He asked if that is more restrictive than code. Sharon Bonesteel said that at the AZBO code change hearing, they looked finding an appropriate way to create a standard to allow RESNET to be used in partnership with the 2012 IECC and the energy sections of the IRC. She said in some ways it could be considered above the code, but in some aspects it differs from code. Daran Wastchak offered suggestions to the language of the proposed document.

Bob Lee said that the Paradise Valley builders asked that third-party inspections be allowed, and that they be allowed to use the performance method rather than the prescriptive method.

Tom Paradise asked what the document was proposed to be. Sharon Bonesteel said that the code allows the building official to approve a third-party inspection for these items. She said that this could be a guideline for when an official approves a third-party inspection. Tom Paradise said it could be something that a building official could use if so desired, but the official could also do something else. Sharon Bonesteel said that the goal is to establish a MAG standard that could be referred to in order to get consistency across the county.

Mike Baxley said that the testing in the IRC and IECC need to be amended in order to use a standard like this. Michael Williams said that the idea behind the proposed document was to create a standard that could be used as an above code inspection method. Tom Paradise said that he doesn't see in the document that the third-party inspection would be made to happen, rather than allowed to happen. Sharon Bonesteel said that the committee could approve this as a standard that could be used by building officials as a nationally recognized standard. Daran Wastchak pointed out that this deals with both the testing and inspection protocols and the sampling procedures. Michael Williams said that both of those would allow for uniformity across the valley.

Tom Paradise asked if there is a similar protocol for commercial buildings. Daran Wastchak said that there is, but it is more about energy modeling. He said that it is not mature yet, but is coming in the future. Larry Taylor talked about the difference between applying this testing to production builders and to custom builders. Michael Williams said that the document is intended to provide the flexibility needed for that difference. Larry Taylor asked what the procedure for reviewing the document will be. Michael Williams said that the item is on the agenda as information and discussion only, so it can be an item for action on a future agenda. He also pointed out that the document refers to sampling as "an above-code program" rather than "the above-code program," indicating that other alternatives are possible. Randal Westacott pointed out that the discussion is only about testing the building envelope, rather than the energy efficiency of the whole home. He said that the language should change to reflect the fact that this would only be a portion of an above-code program. Sharon Bonesteel volunteered to coordinate a revised wording of the document for future review by the committee. Tom Paradise asked if there is a standard for certification for third party testing available already. Sharon Bonesteel said that the International Code Council (ICC) has residential and commercial inspector certifications.

Tom Ewers said that the committee can't adopt resolutions, but can approve standards that can be adopted by the local jurisdictions. He said the document will need to be rewritten to not be a resolution. Jackson Moll suggested writing the standard in the form of model language that could be adopted by the local jurisdictions.

7. MAG Building Code Amendments and Standards Book

Michael Williams said that a number of the code amendment documents were included as attachments for discussion and possible revision.

Scott Wilken introduced Item 4, the Special Inspections Manual. He said the document was originally reviewed in 1995. Bob Lee said that this document was originally borrowed from the City of Phoenix. He asked if Phoenix still uses it. Julie Belyeu said that they use what's in the

IBC for special inspections. Bob Lee said that this document may not be in use anymore. He made a motion to include Item 4 in the Historic section of the book. Mike Baxley seconded the motion and the motion passed unanimously.

Scott Wilken introduced Item 10, Rammed Earth and Straw Bale structures. He said that Randal Westacott had found an updated version of the document from Pima County and provided an updated version for the committee. Randal Westacott made a motion to include Item 10 as updated. Mike Baxley seconded the motion and the motion passed unanimously.

Michael Williams said the Bob Lee had updated Item 16, gas line realignment without a permit. Bob Lee made a motion to include the updated Item 16. Randal Westacott seconded the motion and the motion passed unanimously.

Michael Williams said that Item 19 and Item 20 are still in the process of being updated. Scott Wilken said that the Registrar of Contractors is working on state-wide rules for solar installation, and they will provide revised documents when that process is finished.

Scott Wilken introduced Item 27, Dryer Label, saying that he wanted to check if the IRC code citation was current. Bob Lee made a motion to include the document, but update the code reference to 1502.4.4. Tom Paradise seconded the motion. Mike Baxley said that some of the measurements are not current. Randal Westacott said that the 2012 IRC said the maximum length of exhaust duct shall be 35 feet. Michael Williams said that this might need to be tabled for further research and future discussion. Bob Lee withdrew his motion. Mike Baxley made a motion to table Item 27 to the next meeting. Bob Lee seconded the motion, and the motion passed unanimously.

Michael Williams introduced Item 31, Single Family Pad Certification. Scott Wilken said that the IRC code reference may be out of date. Randal Westacott said that he had polled other jurisdictions recently, and it seems that everyone is getting pad certification. He said that in the past pad certifications had a time limit of 90 days to 6 months. He said that it is up to the building official if they ask for recertification for pads older than that. Tom Ewers said that the question now is if a MAG Standard is needed stating this policy. Randal Westacott said that it is a good idea to have a current certification, so he recommended keeping this document current. Scott Wilken asked if the IRC reference is current. Randal Westacott said that it is. Tom Ewers made a motion to include Item 31 as written. Dale Crandall seconded the motion, and the motion passed unanimously.

Bob Lee suggested tabling the rest of the items until the next meeting.

8. Updated MAG Building Codes Committee Membership

There were no updates.

9. Update Survey of Code Adoption

Bob Lee said that Paradise Valley will go to Town Council to adopt the 2012 I-codes and 2011 NEC, effective January 1, 2013.

Tom Paradise said that Glendale is going to the 2012 I-codes and 2011 NEC December 1, 2012. He said that the option will be given to use the 2012 IPC or UPC.

10. Topics for Future Agendas

Scott Wilken announced that Steve Gross would be retiring from MAG effective Jan 4, 2013.

11. Adjournment

Dale Crandall made a motion to adjourn. Bob Lee seconded the motion and the motion passed unanimously. The meeting was adjourned at 4:05 pm.

Commissioning of Building Energy Systems with 2012 IECC Highlights



Maricopa Association of Governments
Building Codes Committee 1/16/2013

Critical Steps for a Highly Performing Building

1. Design

- Identify and implement cost effective EEM in building design
(Energy Modeling)

2. Construction

- Ensure the identified EEMs are installed and functioning per the Design Intent
 - *(Commissioning of Building Energy Systems)*

3. Operations

- Ensure the building continues to operate per the Design Intent
(Measurement & Verification)



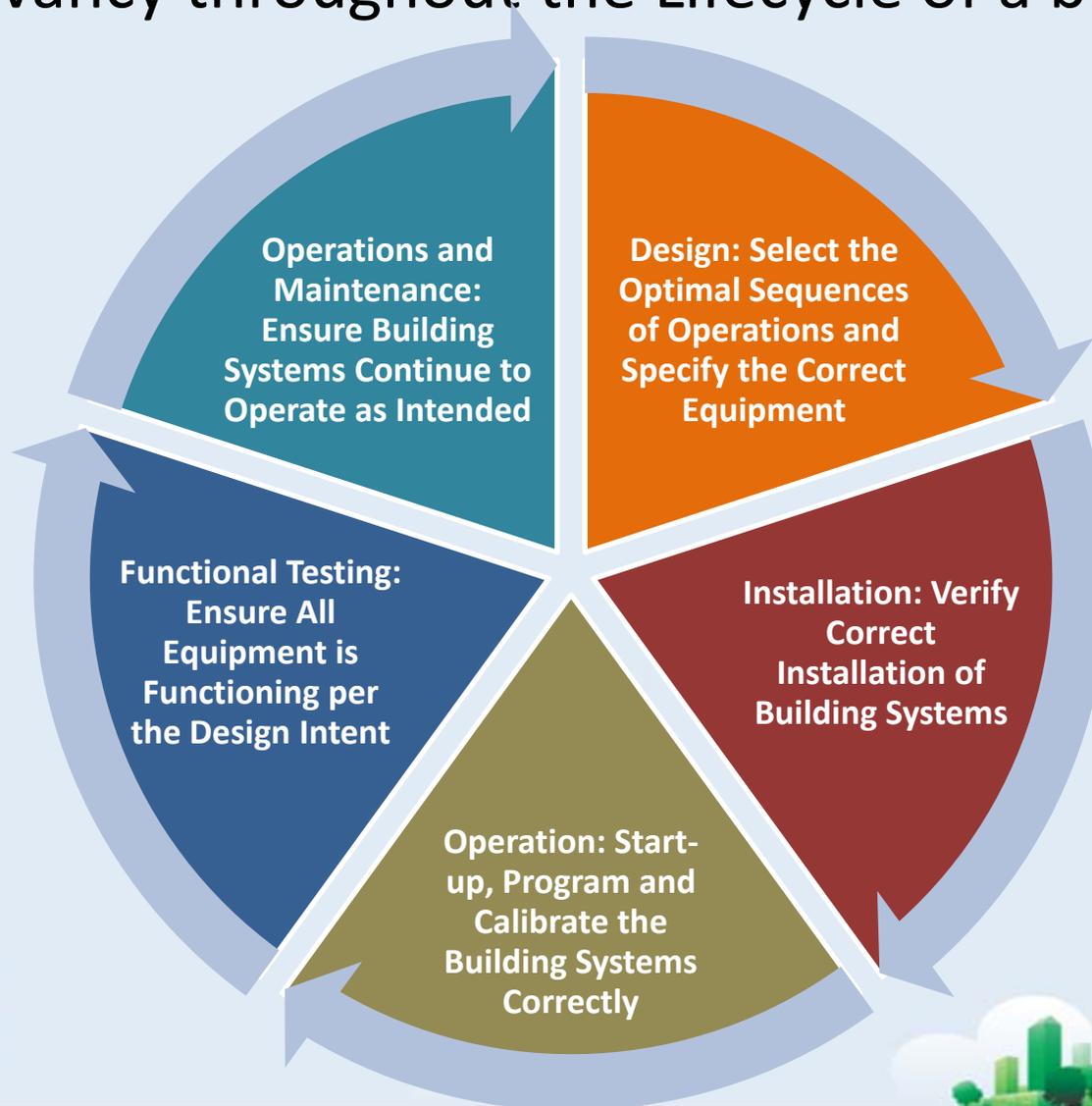
Intent of Commissioning

- Ensure Building Energy Related Systems are:
 - Selected and Sized Correctly
 - Installed
 - Calibrated
 - And Functioning
- In accordance with
 - Owner's Project Requirements
 - Basis Of Design
 - And Construction Documents

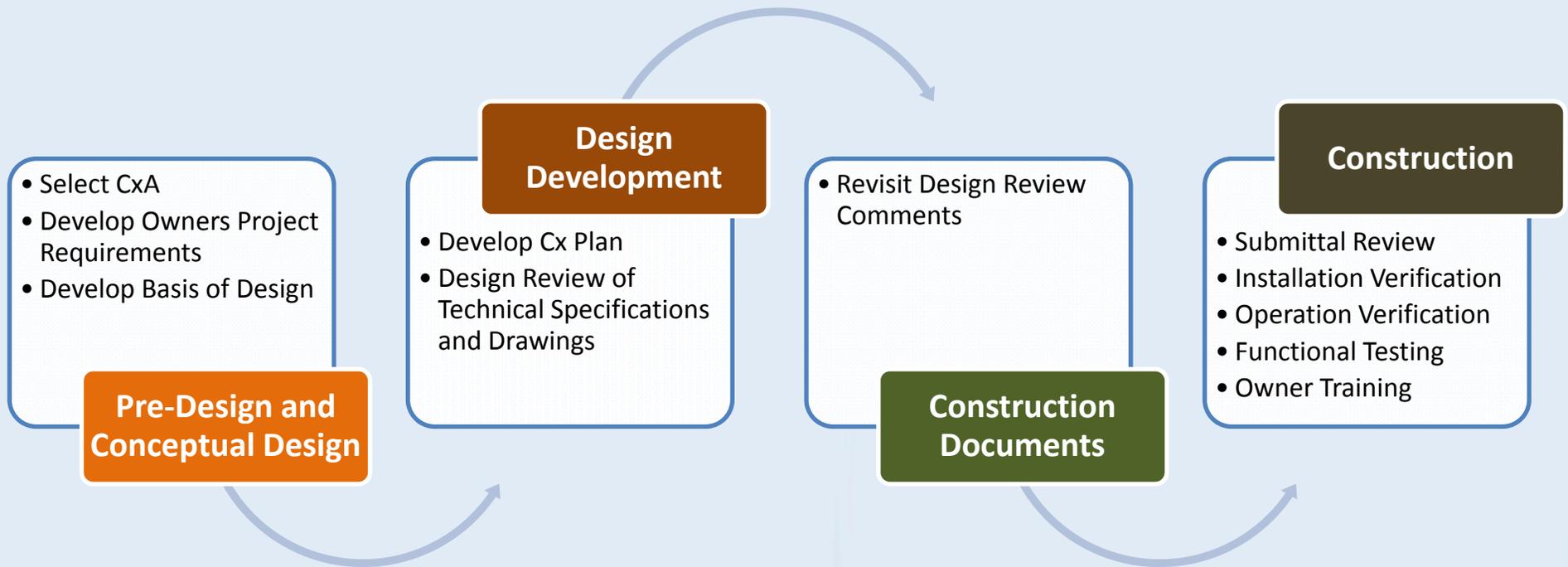


Commissioning of Building Energy Systems

Relevancy throughout the Lifecycle of a building



Commissioning Process during both Design and Construction



Pre-Design/Design Phase

- Designating a Commissioning Authority (CxA)
- Owner's Project Requirements (OPR)
 - Responsible Party: Design team with Owner
- Basis Of Design (BOD)
 - Responsible Party: Design team



Commissioning Plan

(Design Development)

- Outline Commissioning activities and responsibilities
- Document Project Data
- Commissioned Systems
 - HVAC&R
 - Lighting Controls
 - Domestic Water Heating
 - Renewable Energy Systems
- Document Commissioning Team
 - Responsible Party: CxA



Specifications and Design Review

(Design Development and Construction Documents)

- Commissioning Specifications
 - Responsible Party: CxA
- Design Review at 50% and 100% CDs
 - OPR
 - BOD
 - Project Manual
 - Construction Documents/Drawings



Construction Phase

- Commissioning Kick-Off Meeting
 - Include pertinent sub-contractors
 - Field Observation Reports
- Field Observation Reports
 - Generated during site visits
 - Typically include picture and description of problem identified



Construction Phase

- Submittal Review
 - Responsible Party: CxA
- Pre-Functional Checklists or Field Installation Verification (PFC/FIV)
 - Responsible Party: CxA or Installing Contractor
 - Ensure system is installed properly
- Operational Performance Testing or Start-up Documentation and P2P (OPT)
 - Responsible Party: CxA & Installing Contractor
 - Ensure system has undergone correct start-up procedures and completed point-to-point testing



Construction Phase Cont.

- Test and Balance Review
 - Responsible Party: CxA or Engineer
 - Ensure systems have been calibrated and balanced
- Functional Performance Testing (FPT)
 - Responsible Party: CxA with the assistance of the Installing Contractor
 - Ensure that the entire system rather than individual components are working on concert to achieve the design intent



Construction Phase Cont.

- Systems Manual
 - Supplemental to O&M from GC
 - Include system performance expectations
 - Operational procedures
 - Recommended maintenance requirements
 - Final Test and Balance report
 - Equipment Schedules
 - Access notes
 - Blank retesting sheets



Construction Phase Cont.

- Owner Training
 - Responsible Party: General Contractor
 - CxA to verify that training has taken place and that training content is comprehensive
 - May include the following
 - Power Point Presentations
 - Training Videos
 - Training Summary Outlines



Post-Construction Phase

- Building Operations Review
 - 10 months after substantial completion
 - Review building performance
 - Review building operation
 - Unresolved construction deficiencies
 - Changes in building operations
 - Operations and Maintenance Manual and Training



Construction Phase Cont.

- **Commissioning Report**
 - Should include the following elements
 - Executive Summary
 - Revised OPR & BOD
 - Commissioning Plan
 - Commissioning Specifications
 - Design Review Comments (Enhanced Only)
 - Submittal Review Comments (Enhanced Only)
 - Field Installation Verification (FIV)
 - Operational Performance Testing (OPT)
 - Point-to-Point testing(P2P)
 - TAB Review
 - Functional Performance Testing (FPT)
 - Field Observation Reports (FOR)
 - As-Built Drawings
 - Blank Retesting Forms
 - Training Verification (Enhanced Only)
 - Systems Manual (Enhanced Only)



Commissioning as a Code Requirement

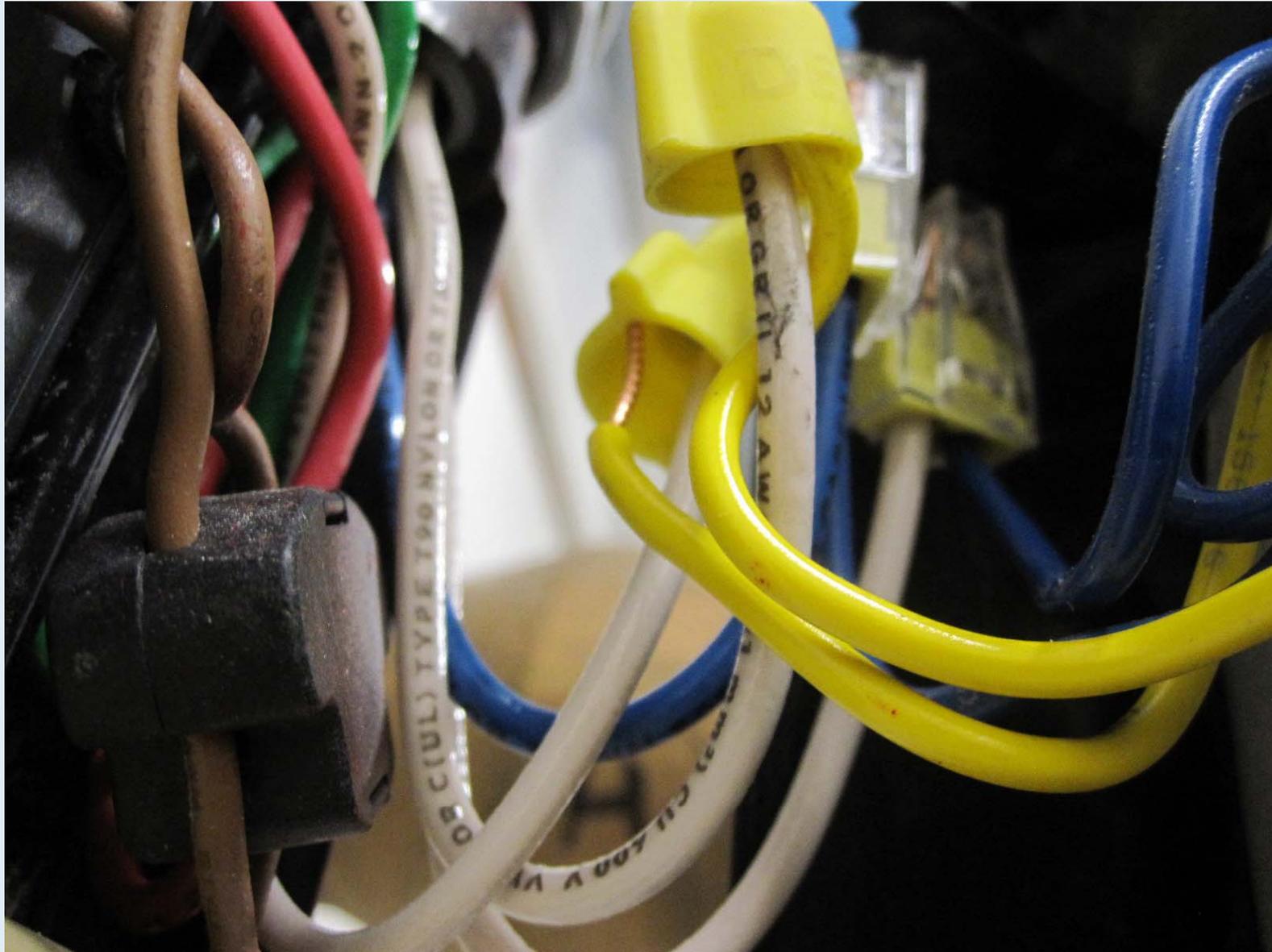
- LEED (all buildings require Cxing)
- CALGreen requires Cxing (>10,000 ft²)
 - LEED Fundamental + Systems Manual & Owner Training
 - Requires Cxing of irrigation & water reuse systems
- IGCC
 - LEED Fundamental +Enhanced
 - Requires envelope Cxing, material tracking, IEQ tracking, etc.
- IECC
 - LEED Fundamental – OPR/BOD + Systems Manual
 - Requires HVAC & automatic lighting only

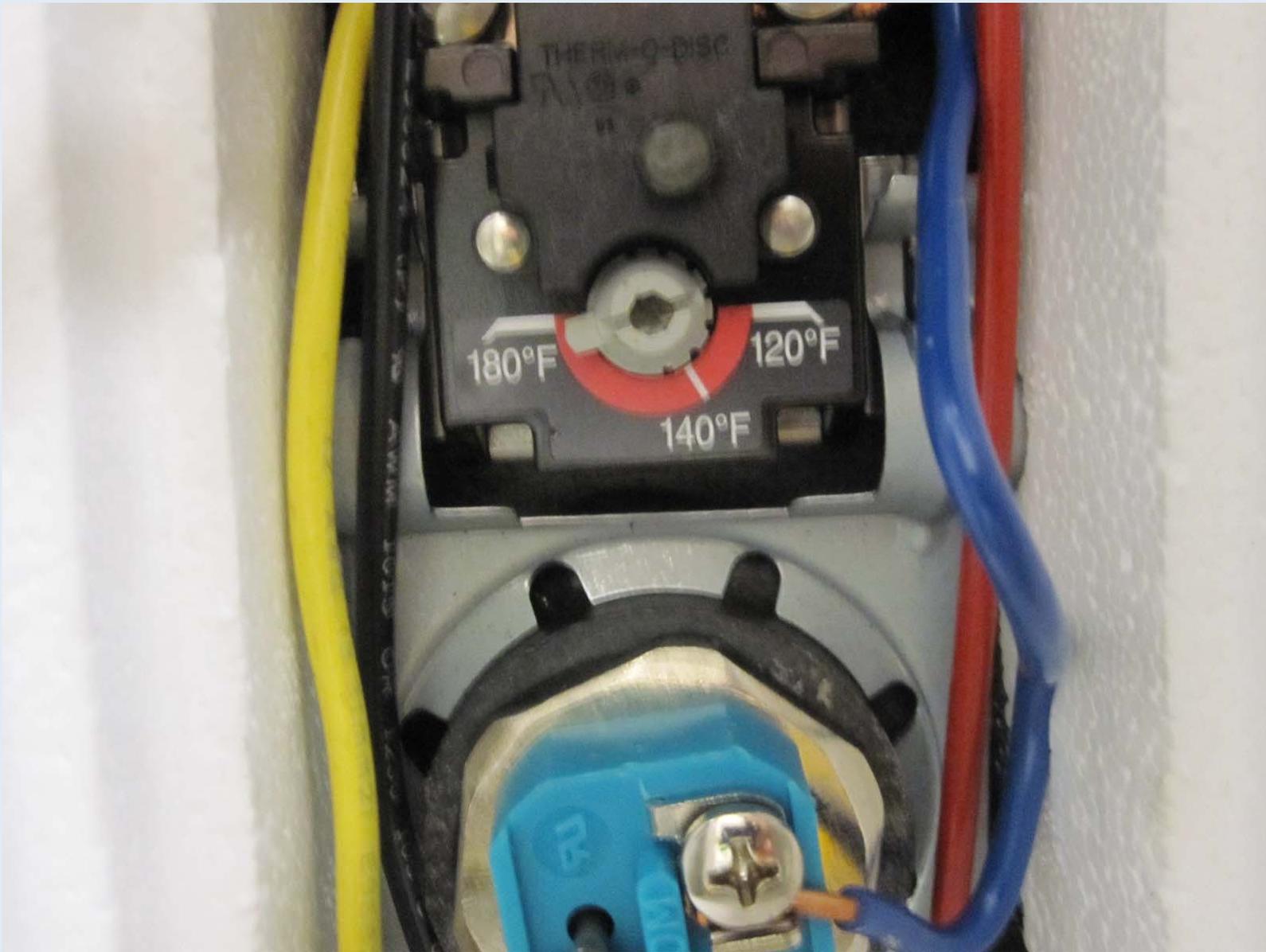


















IECC 2012 Changes

- **A new section on building commissioning has been added:** It is now necessary for a *registered design professional (or agency) to develop a mechanical system commissioning plan, and provide evidence of commissioning prior to the final mechanical inspection. HVAC air and water flow rates now must be balanced, and equipment, controls, and lighting must be performance tested.*
 - **Building Commissioning:** In 2012 IECC a newly defined term - Verifying and documenting that a building operates according to the owner's requirements and to minimum code requirements.
 - 2009 IECC 503.2.9 HVAC System Completion changed to C403.2.9 Mechanical Systems Commissioning and Completion Requirements
 - All of Section 503.2.9 and its subsections have been moved to Section C408.2.
 - Final Cx report must include: (1) results of performance tests; (2) deficiencies found during testing and corrective measures proposed; and (3) performance test procedures used. An exception exists for test deferred due to climatic conditions.
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- **Source: The US Dept. of Energy and Pacific Northwest National Labs :**
http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-21435.pdf



A stylized illustration of a city skyline with several green skyscrapers of varying heights, interspersed with green trees. The scene is set against a light blue sky with white clouds. The entire illustration is positioned above a solid green horizontal band.

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MAG Standard for Installation of Residential Dryer Vents February 19, 2004

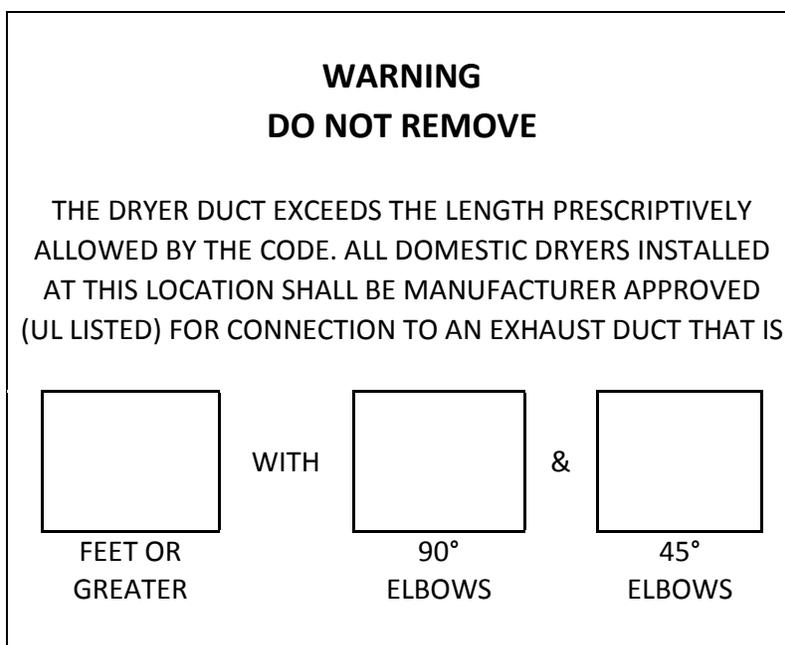
International Residential Code Section **M1501.3** Length limitation states:

“The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm) from the dryer location to the wall or roof termination. The maximum length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend. The maximum length of the exhaust duct does not include the transition duct.

Exception: Where the make and model of the clothes dryer to be installed is known and the manufacturer’s installation instructions for such dryer are provided to the building official, the maximum length of the exhaust, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer’s installation instructions.”

Since it is not possible to know what dryer make and model will be installed by subsequent building occupants and the intent of the code is to ensure a safe installation, a placard will be required on all installations that do not meet the 25-foot length with reductions.

A durable placard, at least 3 inches vertically and 4 inches horizontally, shall be permanently affixed near the dryer and contain the following message:



Arizona Residential Post-Tensioned Round Table Recommendations for Standards of Construction and Design #1

1/16/2008

Special Inspection

The requirements for special inspection of concrete construction are provided in the 2012 International Building Code (IBC), Section 1705.3. Table 1705.3 lists 12 different inspection items for concrete construction. Six of the items (numbers 1, 5, 6, 7, 9, 11) could be applied to post-tensioned slabs on ground. The Arizona Residential Post-Tensioned Round Table makes the following recommendations for special inspections of residential post-tensioned slabs-on-ground:

1. Inspection of reinforcing steel, including pre-stressing tendons and placement, shall occur prior to slab pour.
5. Verifying use of required design mix shall occur periodically.
6. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump tests, and determine the temperature of the concrete.
7. Inspection of concrete placement for property application and techniques shall occur for the full duration of concrete placement.
9. Verification of pre-stressing forces shall occur at the time of pre-stress application.
11. Prior to stressing of tendons in post-tensioned concrete, periodic verification of in-situ strength shall be performed per ACI 228.

The recommendations listed above satisfy the intent of the code.

Please see Appendix A for Table 1705.3

Table 1705.3 (to be updated)
Required Verification and Inspection of Concrete Construction

Verification and Inspection	Continuous	Periodic	Referenced Standard	IBC Reference
1. Inspection of reinforcing steel, including pre-stressing tendons, and placement	-	X	ACI 318: 3.5, 7.1-7.7	1903.5, 1907.1, 1907.7, 1914.4
2. Inspection of reinforcing steel welding in accordance with Table 1704.3 Item 5B	-	-	AWS D1.4 ACI 318: 3.5.2	1903.5.2
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased	X	-	-	1912.5
4. Verifying use of required design mix	-	X	ACI 318: Ch. 4, 5.2 – 5.4	1904, 1905.2-1905.4, 1914.2, 1914.3
5. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	-	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1905.6, 1914.10
6. Inspection of concrete and shotcrete placement for proper application techniques	X	-	ACI 318: 5.9, 5.10	1905.9, 1905.10, 1914.6, 1914.7, 1914.8
7. Inspection for maintenance of specified curing temperature and techniques	-	X	ACI 318: 5.11 – 5.13	1905.11, 1905.13, 1914.9
8. Inspection of pre-stressed concrete: a. Application of pre-stressing forces b. Grouting of bonded pre-stressing tendons in the seismic-force-resisting system	X X	-	ACI 318: 18.20 ACI 318: 18.18.4	-
9. Erection of precast concrete members	-	X	ACI 318: Ch. 16	-
10. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs	-	X	ACI 318: 6.2	1906.2

Arizona Residential Post-Tensioned Round Table Recommendations for Standards of Construction and Design #2

1/16/2008

Evaluation and Acceptance of Concrete

The requirements for evaluation and acceptance of concrete are provided in the **2003 International Building Code (IBC) Section 1905.6**. There are no exceptions to these provisions. The Arizona Residential Post-Tensioned Round Table makes the following recommendations for evaluation and acceptance of concrete for residential post-tensioned slabs on ground.

Because of the large variations in slab thickness, slab size, and scheduling of pours, the Arizona Residential Post-Tensioned Round Table recommends that cylinders be taken on every lot. This would satisfy the intent of the code and provide consistent documentation for the structural engineers and building officials.

It is recommended that a minimum of four cylinders be cast as a strength sampling for each lot: one cylinder for early strength testing, two cylinders to verify $f'c$ (**1905.2.4**), one cylinder for a 56 day strength break if required.

Please see Appendix A for further information.

Code Reference: IBC 2003 Section 1905.6.2 Frequency of Testing

The frequency of conducting strength tests of concrete shall be as specified in Section 1905.6.2.1 through 1905.6.2.4

1905.6.2.1 Minimum Frequency

Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, nor less than once for each 150 cubic yards of concrete, nor less than once for each 5,000 square feet of surface area for slabs or walls.

1905.6.2.2 Minimum Number

On a given project, if the total volume of concrete is such that the frequency of testing required by Section 1905.6.2.1 would provide less than 5 strength tests for a given class of concrete, tests shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.

1905.2.3 Small Volume

When the total volume of a given class of concrete is less than 50 cubic yards, strength tests are not required when evidence of satisfactory strength is submitted to and approved by the building official.

1905.2.4 Strength Test

A strength test shall be the average of the strength of two cylinders made from the same sample of concrete and tested at 28 days or at the test age designated for the determination of $f'c$.

The parameters stated in 1905.6.2.1 are very specific. We have observed that PT slabs vary in thickness from 6" to 10". For an average 1,800 square foot house, the concrete yardage could vary from 34 cubic yards for a 6" thick slab to 56 cubic yards for a 10" thick slab. In the large home communities with an average 2,500 square foot house, the range could be between 46 and 78 cubic yards. It is not uncommon to see houses on the same tract with different slab thicknesses as well as large variations in square footage. There are larger slabs that require over 120 cubic yards of concrete due to size and thickness.

The requirement states in 1905.6.2.1 that cylinders must be taken at least once a day, or every 150 yards or every 5,000 square feet. Collecting all of the information to meet these three criteria with the wide variety of design specifications, variety of sizes of slabs in a given subdivision and the imprecise nature of pour schedules creates considerable tracking issues. It is the position of the Arizona Residential Post-Tensioned Round Table that cylinders are taken on every lot. This procedure ensures that a record of concrete strength is provided for each post-tensioned slab and satisfies the intent of the code.

MAG Building Code Committee

Proposed MAG Standard

2012 IECC/IRC Residential Testing Protocols

2012 IRC

Add Section N1102.1.2

N1102.1.2 RESNET Testing & Inspection Protocol. The Residential Energy Services Network (RESNET) Mortgage Industry National Home Energy Rating System Standards Protocol for third party testing and inspections, shall be deemed to meet the requirements of sections N1102.4.1.1, N1102.4.1.2 and N1103.2.2. and shall meet the following conditions:

1. Third Party Testing and Inspections shall be completed by RESNET certified Raters or Rating Field Inspectors and shall be subject to RESNET Quality Assurance Field Review procedures.
2. Sampling in accordance with Chapter 6 of the RESNET Standards shall be performed by Raters or Rating Field Inspectors working under a RESNET Accredited Sampling Provider.
3. Third Party Testing is required for the following items:
 - a. N1102.4.1.1 –Building Envelope – Thermal and Air Barrier Checklist
 - b. N1102.4.1.2 –Testing – Air Leakage Rate
 - c. N1103.2.2 – Sealing – Duct Tightness
4. The other requirements identified as “mandatory” in Chapter 4 shall be met.
5. Alternate testing and inspection programs and protocols shall be allowed when approved by the Code Official.

2012 IECC

Add Section R102.1.2

R102.1.2 RESNET Testing & Inspection Protocol. The Residential Energy Services Network (RESNET) Mortgage Industry National Home Energy Rating System Standards Protocol for third party testing and inspections, shall be deemed to meet the requirements of sections R402.4.1.1, R402.4.1.2 and R403.2.2. and shall meet the following conditions:

1. Third Party Testing and Inspections shall be completed by RESNET certified Raters or Rating Field Inspectors and shall be subject to RESNET Quality Assurance Field Review procedures.
2. Sampling in accordance with Chapter 6 of the RESNET Standards shall be performed by Raters or Rating Field Inspectors working under a RESNET Accredited Sampling Provider.
3. Third Party Testing is required for the following items:
 - d. R402.4.1.1 –Building Envelope – Thermal and Air Barrier Checklist
 - e. R402.4.1.2 –Testing – Air Leakage Rate
 - f. R403.2.2 – Sealing – Duct Tightness
4. The other requirements identified as “mandatory” in Chapter 4 shall be met.
5. Alternate testing and inspection programs and protocols shall be allowed when approved by the Code Official.

REF #	MEETING DATE	CODE AFFECTED	CODE YEAR	SECTIONS	BRIEF DESCRIPTION	Have Doc	Include As Is	Needs Update	Historic	Not Needed	Tabled to Jan	Done	In Process	Update Refs
<u>1</u>	4/22/1992	UPC	1991	N/A	A motion was passed to approve amendments to the 1991 UPC that were developed by the MAG Plumbing and Mechanical Working Group.	No			3/21			X		
<u>2</u>	1/27/1993	N/A	N/A	N/A	A motion was passed to approve a One Coat Stucco Compliance Program For MAG Member Agencies.	Yes			3/21			X		
<u>3</u>	5/19/1993	UMC	1991	N/A	A motion was passed to approve amendments to the 1991 UMC that were developed by the MAG Plumbing and Mechanical Working Group.	No			3/21			X		
<u>4</u>	5/24/1995	UBC	1994	N/A	A motion was passed approving the MAG Special Inspections Standards Manual.	Yes			11/14			X		
<u>5</u>	6/21/1995	N/A	N/A	N/A	A motion was passed stating that the Committee supports uniform reporting of information to the County Assessor as opposed to all member agencies using a uniform permitting process.	Yes			3/21			X		
<u>6</u>	4/17/1996	UBC	1994	Chapter 12	A motion was passed adopting a Model Sound Attenuation Ordinance for New Residential Construction as a MAG Standard.	Yes	3/21					X		
<u>7</u>	4/17/1996	NEC	1993	N/A	A motion was passed stating that utility companies installing lighting on private property will be subject to all MAG member agency code requirements including permits, and inspection. Management Committee supported this action on May 15, 1996 and the Regional Council supported the action on May 29, 1996.	Yes			9/19			X		
<u>8</u>	10/22/1997	N/A	N/A	N/A	A motion was passed adopting MAG Model Standards for fireplaces, wood stoves or other solid fuel burning devices.	Yes	6/20					X		
<u>9</u>	10/21/1998	UBC	1997	2343.6	A motion was passed to approve the plastic tag identified at the meeting for use in marking trusses and that a committee be established to address future markings of tags. It was also noted that the Wood Truss Council of America would make the tags available.	No			6/20			X		
<u>10</u>	2/17/1999	UBC	1997	N/A	A motion was passed adopting the Pima County Standard on Strawbale Construction as a MAG standard without amending it.	Yes	1/8					X		
<u>11</u>	4/19/2000	UBC	1997	2343.6	A motion was passed to approve a standard for the marking of trusses developed by the MAG Building Inspector/Plan Examiner Group.	Yes			6/20			X		
<u>12</u>	11/1/2000	UBC	1997	Chapter 11	A motion was passed to recommend compliance with the accessibility standards in the Fair Housing Act or 1997 UBC Chapter 11 either by ordinance or through the alternate design methods section of the Uniform Building Code.	Yes			5/16			X		
<u>13</u>	5/16/2001	UMC	1997	> 307.5.2	A motion was passed to approve an interpretation of the 1997 UMC that either the use of permanently installed railings on the roof, or one side railing extension would meet the intent of the code for roof access.	Yes			5/16			X		
<u>14</u>	9/12/2001	UBC	1997	Section 2306.4	A motion was passed to require pressure treated sill plates in both interior and exterior applications as required by UBC Section 2306.4	Yes			5/16			X		
<u>15</u>	11/14/2001	IRC	2000	Table R301.2 (1)	A motion was passed recommending the use of Table R 301.2 (1) with the following assumed values: Ground Snow Load: 0 psi; Wind Speed: 90 mph; Seismic Design Category: B; Weathering: NEGLIGIBLE; Frost Line Depth: 12"; Termite: Moderate to Heavy; Decay: None to slight; Winter Design Temperature: 34 degrees F; Flood Hazards: Jurisdiction Specific, as a MAG Standard. (The Winter Design Temperature was updated January 16, 2002 from 27 degrees to 34)	Yes	1/8					X		
<u>16</u>	2/20/2002	N/A	N/A	N/A	A motion was passed to accept standard language of an agreement authorizing Southwest Gas to relocate a gas line without permit or clearance requirement.	Yes	11/14					X		
<u>17</u>	3/20/2002	IRC	2000	Chapter 11	A motion was passed adopting a proposal that explains alternatives for complying with Chapter 11 of the IRC, the Energy Chapter.	Yes			5/16			X		
<u>18</u>	3/20/2002	IMC	2000	Section 403.3	A motion was passed approving a resolution which stated "The MAG Building Codes Committee recognizes that the exception clause in the International Mechanical Code section 403.3 may be used in evaluating the outdoor ventilation air requirements for schools".	Yes			5/16			X		
<u>19</u>	5/15/2002	NEC	1999	Article 690	A motion was passed to approving the permit requirements for Commercial Solar Photovoltaic (PV) Installations.	Yes		11/14			11/14		X	
<u>20</u>	5/15/2002	NEC	1999	Article 690	A motion was passed approving permit requirements for Residential Solar Photovoltaic (PV) Installations.	Yes		11/14			11/14		X	
<u>21</u>	10/16/2002	IBC, IRC, IMC	2000	N/A	A motion was passed adopting the AZBO Code Review & Development Committee Report of Final Actions 2001-2002, dated July 15 2002, as MAG amendments.	Yes			X			X		
<u>22</u>	1/15/2003	IBC, IRC	2000	1202.2, R806	A motion was passed accepting the following statement, "Due to the climatic conditions in our area and recent research into the field of energy conservation, the Maricopa Association of Governments Building Codes Committee recognizes that there are circumstances and methods that allow the use of ventless attics. This recognition would encourage member jurisdictions to look at those circumstances and those methods with the goal of energy conversation in mind".	Yes			5/16			X		

REF #	MEETING DATE	CODE AFFECTED	CODE YEAR	SECTIONS	BRIEF DESCRIPTION	Have Doc	Include As Is	Needs Update	Historic	Not Needed	Tabled to Jan	Done	In Process	Update Refs
<u>23</u>	4/16/2003			N/A	A motion was passed requiring a permit for Solar Water Heater Systems as a standard.	Yes	5/16					X		
<u>24</u>	5/21/2003	IRC	2000	R602.8.1.2	A motion was passed to disallow the use of foam products for fireblocking, unless they are listed as firestop material. Field testing found that foam products that were often used for fireblocking were in fact flammable.	Yes	1/8					X		
<u>25</u>	5/21/2003	I Codes	2003	N/A	A motion was passed stating that all member agencies should strive to use the 2003 International Codes with a goal of an effective date of July 2004.	No			5/16			X		
<u>26</u>	10/14/2003	N/A	N/A	N/A	A motion was passed adopting recommendations for Post-Tension Slab construction.	Yes	6/20					X		
<u>27</u>	10/14/2003	N/A	N/A	N/A	A motion was passed adopting a MAG standard that would require the attachment of a label to a dryer that informs consumers of changes or exceptions to the code that have been allowed for the installation of the dryer.	Yes		6/20					X	X
<u>28</u>	11/19/2003	I Codes	2000	N/A	A motion was passed adopting the AZBO Code Review & Development Committee proposed amendments to the 2000 codes updated to the 2003 ICC codes.	Yes			6/20			X		
<u>29</u>	3/17/2004	NEC	2002	N/A	A motion was passed accepting the AZBO 2002 NEC Amendment Packet.	Yes			6/20			X		
<u>30</u>	8/18/2004	N/A	N/A	N/A	A motion was passed to adopt an interpretation allowing for the temporary use of Port-A-John, among other things, in order to meet ADA requirements in a case where a sales office or model home in a subdivision would ultimately become sold to a homeowner.	Yes	6/20	1/8					X	
<u>31</u>	12/16/2004	IRC	2003	R401.2	A motion was passed requiring that each builder provide a current pad certification report for all single family lots, in tract subdivisions, at the time of footing inspection.	Yes	1/8					X		
<u>32</u>	12/16/2004	IRC	2003	R703.6.2.1	A motion was passed to allow the installation of deco drain directly below the weep screed as an alternate method of allowing excess moisture inside the wall to drain to the exterior of the building. If the patio is integral to the post tension slab, this alternative method would not be acceptable.	Yes	1/8					X		
<u>33</u>	11/19/2005	NEC	2002	312.5; 314.17	A motion was passed that approved amendments to the 2002 National Electric Code that allows cable attachment outside an SES under certain circumstances that are specifically addressed in Exhibit "A."	Yes		6/20					X	X
<u>34</u>	6/21/2006	IRC & NEC	2003 and 2006; 2002 and 2005	IRC E3803.4	A motion was passed to establish that storage space located under stairs not be considered as underfloor spaces requiring lighting for the sake of consistency throughout Maricopa County.	Yes	1/8					X		
<u>35</u>	6/21/2006	UBC or IBC	1997 UBC or any edition of the IBC	N/A	A motion was passed that member jurisdictions will recognize and accept the City of Phoenix Approved Structural Steel Fabricators program and list as meeting the special structural inspections alternatives for structural steel fabricated by an approved fabricator as allowed in the building codes.	Yes	6/20					X		
<u>36</u>	11/21/2006	IBC, IRC, IGC, IMC, IPC	2006	N/A	A motion was passed recommending the AZBO Code Review & Development Committee proposed amendments to the 2006 ICC codes be forwarded to the MAG member agencies for their consideration.	Yes			6/20			X		
<u>37</u>	1/16/2008	IBC	2003	1704.4 1905.6	A motion was passed to accept the recommendations made by the Arizona Residential Post-Tensioned Round Table (ARPTRT) so that all MAG member agencies have the same standards for inspection, evaluation and acceptance of the concrete pour for residential post-tensioned slabs-on-ground.	Yes		6/20					X	X
<u>38</u>	6/18/2008	IRC supplement	2007	R301.3 Story height R602.10.4 Wall bracing	A motion was passed that the committee generally supports the 2007 supplement to the IRC for story height and wall bracing requirements.	Yes	6/20					X		
<u>39</u>	11/19/2008	I-Codes	2009	N/A	A motion was made to recommend that each jurisdiction consider adopting the 2009 family of I-codes as published by the International Code Council (ICC).	No			6/20			X		
<u>40</u>	6/20/2012	N/A	N/A	N/A	9.5 Course Wall Details	Yes	8/15					X		
<u>41</u>	1/16/2013	IECC	2012		2012 IECC Residential Testing Protocols	Yes		11/14			11/14		X	

MAG BUILDING CODES COMMITTEE MEMBERSHIP AS OF
1/10/2013

Voting Members				
Name	Representing	Telephone #	Fax #	E-mail Address
Michael Williams (Chair)	Tempe	480-350-8670	480-350-8677	michael_williams@tempe.gov
Mary Dickson (Vice Chair)	El Mirage	623-876-2932	623-876-4607	mdickson@cityofelmirage.org
Randal Westacott	Avondale	623-333-4026	623-333-0400	rwestacott@avondale.org
Phil Marcotte	Buckeye	623-349-6200	623-349-6221	pmarcotte@buckeyeaz.gov
Mike Tibbett	Carefree	480-488-1471	480-488-3845	mike@carefree.org
Mike Baxley	Cave Creek	480-488-6637	480-488-2263	mbaxley@cavecreek.org
Martin Perez	Chandler	480-782-3109	480-782-3110	martin.perez@chandleraz.gov
Jason Field	Fountain Hills	480-816-5127	480-837-3145	jfield@fh.az.gov
Larry Taylor	Gilbert	480-503-6958	480-497-4923	larry.taylor@gilbertaz.gov
Tom Paradise	Glendale	623-930-3143	623-915-2695	tparadise@glendaleaz.com
Ed Kulik	Goodyear	623-882-7932	623-882-7114	ekulik@goodyearaz.gov
Chuck Ransom	Litchfield Park	623-935-1066	623-535-9754	cransom@litchfield-park.org
Tom Ewers	Maricopa County	602-506-7145	602-506-3282	tomewers@mail.maricopa.gov
Steven Hether	Mesa	480-644-2039	480-644-4900	steve.hether@mesaaz.gov
Bob Lee	Paradise Valley	480-348-3631	480-951-3751	rlee@paradisevalleyaz.gov
Dennis Marks	Peoria	623-773-7232	623-773-7233	dennis.marks@peoriaaz.gov
Julie Belyeu	Phoenix	602-495-0821	602-495-5430	julie.belyeu@phoenix.gov
VACANT	Queen Creek			
Michael Clack	Scottsdale	480-312-7629	480-312-9029	mclack@scottsdaleaz.gov
VACANT	Surprise			
Dale Crandell	Tolleson	623-936-7111	623-936-7117	dcrandell@tollesonaz.org
Kevin Bruce	Wickenburg	928-684-5451 x513	602-506-1580	kbruce@wickenburgaz.org
Jim Fox	Youngtown	623-933-8286 x117	623-209-3026	jfox@youngtownaz.org
Non-Voting Members				
Name	Representing	Telephone #	Fax #	E-mail Address
Jackson Moll	Home Builders Assn.	602-274-6545	480-556-5478	mollj@hbaca.org
Sharon Bonesteel	Salt River Project	602-236-4498	602-236-2791	sharon.bonesteel@srpnet.com
Jim Ricker	Town of Guadalupe	480-505-5380	480-730-3097	jim@guadalupeaz.org
Alfonso Rodriguez	Fort McDowell Yavapai Nation	480-789-7740	480-789-7798	arodriguez@ftmcdowell.org
Michael McMillan	Brown and Associates	480-991-3751	480-596-5065	mac@brown-and-associates.net
Dennis Dixon (T)	Apache Junction	480-671-5156	480-982-7010	dennisdixon@ajcity.net
Scott Wilken	MAG	602-254-6300	602-452-5098	swilken@azmag.gov

(T) Temporary

Survey of Code Adoption

Jurisdiction	Building	Mechanical	Plumbing	Electric	Residential	Fire	Energy	Existing Building Code	Fuel Gas	Performance	Green Construction	Notes	URL	Anticipated Adopted Date by Council	Anticipated Effective Date for 2009 or 2012 ICC Codes (Month and Year)
Apache Junction	2006 IBC	2006 IMC	1994 UPC	2005 NEC	2006 IRC	2006 IFC							Apache Junction		
Avondale	2009 IBC	2009 IMC	2009 IPC	2008 NEC	2009 IRC	2003 IFC	2009 IECC		2009 IFGC				Avondale	January 2013	Plan to adopt 2012 codes effective 7/1/13
Buckeye	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC		2006 IFGC				Buckeye		No plans to adopt 2009 codes.
Carefree	2003 IBC	2003 IMC	1994 UPC	2002 NEC	2003 IRC	2003 IFC						Effective July 1, 2006	Carefree		Not going to adopt, staying with 2003.
Cave Creek	2009 IBC	2009 IMC	2009 IPC	2008 NEC	2009 IRC	2009 IFC	2009 IECC	2009 IEBC	2009 IFGC			Effective January 1, 2012	Cave Creek	11/21/2011	
Chandler	2009 IBC	2009 IMC	2009 IPC	2008 NEC	2009 IRC	2006 IFC	2009 IECC	2009 IEBC	2009 IFGC			Effective July 1, 2011	Chandler		
El Mirage	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC	2006 IFGC			1997 ICC/ANSI Accessibility Code with Arizonans with Disabilities Act.	El Mirage	January/February 2010	
Fountain Hills	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC					Codes adopted April 17, 2008 with town amendments available on Web site.	Fountain Hills		No plans to adopt 2009 codes.
Gila Bend	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC							Gila Bend		
Gila River	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC	None						Gila River		
Gilbert	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC		2006 IFGC			ADAAG per state requirements	Gilbert	No date	No plans to adopt 2009 codes.
Glendale	2012 IBC	2012 IMC	2012 UPC	2011 NEC	2012 IRC	2012 IFC	2012 IECC	2012 IEBC	2012 IFGC			With city amendments. Effective December 1, 2012	Glendale		December 1, 2012
Goodyear	2006 IBC	2006 IMC	1994 UPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC					Adopted 5-14-2007.	Goodyear		
Guadalupe	1997 UBC	1997 UMC	1994 UPC	1999 NEC	1997 UBC	1997 UFC							Guadalupe		
Litchfield Park	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC	2006 IECC		2006 IFGC			Codes effective July 1, 2008	Litchfield Park		
Maricopa County	2009 IBC	2009 IMC	2009 IPC	2008 NEC	2009 IRC				2009 IFGC			WITH MAG/AZBO AMENDMENTS	Maricopa County	Adopted August 18, 2010	Effective date of 10-1-10, w/ grace period to 1-1-11.
Mesa	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2009 IECC (Effective 1/3/12)	2006 IEBC	2006 IFGC				Mesa		
Paradise Valley	2012 IBC	2012 IMC	2012 IPC	2011 NEC	2012 IRC	2012 IFC	2012 IECC		2012 IFGC				Paradise Valley		January 1, 2013
Peoria	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC			2006 IFGC			Adopted 2012 IPMC, 2012 IECC, effective 5/1/13, not IFC	Peoria	Adopted 5/1/2012	Adopted 2012 codes, effective 5/1/13
Phoenix	2006 IBC	2006 IMC	2006 UPC	2008 NEC	2006 IRC	2006 IFC w/ Amendments	2006 IECC	2006 IEBC	2006 IFGC	2006 ICCP for Buildings and Facilities	IGCC Public Version 2	Effective July 2, 2008	Phoenix		Discussing 2012 ICC, anticipated July 2013
Queen Creek	2006 IBC	2006 IMC	2006 UPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC				Effective Aug. 7, 2008	Queen Creek		No plans to adopt 2009 codes.
Salt River	2003 IBC	2003 IMC	2003 UPC	2002 NEC	2003 IRC	2003 IFC	None						Salt River		
Scottsdale	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC				IGCC Public Version 2	Effective Sep. 1, 2007, except IPC June 30, 2008	Scottsdale	January/February 2010	July 2010

Survey of Code Adoption

Jurisdiction	Building	Mechanical	Plumbing	Electric	Residential	Fire	Energy	Existing Building Code	Fuel Gas	Performance	Green Construction	Notes	URL	Anticipated Adopted Date by Council	Anticipated Effective Date for 2009 or 2012 ICC Codes (Month and Year)
Surprise	2006 IBC	2006 IMC	2006 IPC	2006 IEC w/ 2005 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC	2006 IFGC			Adopted June 28, 2007	Surprise	January 2010	July 2010
Tempe	2009 IBC	2009 IMC	2009 IPC	2008 NEC	2009 IRC	2006 IFC	2009 IECC	2009 IEBC	2009 IFGC				Tempe		October 24, 2011
Tolleson	2006 IBC	2006 IMC	2006 IPC	2005 NEC w/ 2006 IEC	2006 IRC	2006 IFC	2006 IECC					2006 Fuel Gas Code, 2006 IPMC, 2006 NEAC. Adopted 2/20/07, effective 7/1/07.	Tolleson	January/February 2010	July 2010
Wickenburg	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC	2006 IECC	2006 IEBC	2006 IFGC				Wickenburg		No plans to adopt 2009 codes.
Youngtown	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC			2006 IFGC				Youngtown	November 2010	January 2011

This is intended to be used as a guide for the selected codes, as to what member agencies have adopted or intend to adopt.

Last updated November 15, 2012 by Scott Wilken, MAG

Source: MAG Building Codes Committee Members