# Maricopa Association of Governments

# Building Code Amendments and Standards Historical Archive

# 2013 Edition

Approved by MAG Regional Council

June 19, 2013

## Introduction

The MAG Building Code Amendments and Standards (BCAS) is the result of the work of the MAG Building Codes Committee, which made up of municipal and county building officials from the MAG region, as well as others representing organizations interested in local building codes.

The goal of the BCAS is to provide a set of documents that supplement the standard building codes in order to address building issues specific to the MAG region. These documents have been reviewed and vetted by the members of the Building Codes Committee with an interest in using the national building codes to address local conditions.

The goal of the BCAS is not to create a standard set of building codes to be used by all jurisdictions in the MAG region. Adoption and use of the BCAS and the documents within it are completely optional at the discretion of the local jurisdictions. Jurisdictions may adopt the BCAS in whole, or may adopt specific documents within the BCAS as they see fit. Jurisdictions may also adopt and amend documents within the BCAS if desired.

The BCAS is designed to allow jurisdictions to refer to specific document citations as part of their local amendments to their adopted building codes.

The MAG Building Codes Committee typically recommends that its members adopt the most current versions of the standard national building codes. As such, the code references in the BCAS will always strive to refer to the most current national building code set. Jurisdictions not using the most current set of national codes should note that specific code references may need to be adjusted to reflect the code being amended.

The BCAS will be reviewed and updated as needed, typically once per year.

## Historical Archive

As the BCAS is reviewed and updated, documents may be determined to be no longer relevant. This could be due to the amendment or standard getting incorporated into the standard building codes, changes in building construction practice, the original problem a document was created to address no longer existing, or many other reasons. When a document is deemed no longer relevant by the Building Codes Committee, will be removed from the BCAS and placed in BCAS Historical Archive and exist as a reference of past recommendations of the Building Codes Committee.

When a document is removed from the BCAS, it will be given a new reference number, beginning with the letter H, and an introductory statement providing the original discussion related to the item and the reason for its removal from the BCAS.

Please note that documents H1 to H17 were documents reviewed by the Committee prior to the creation of the BCAS and determined to be no longer relevant at the time of the BCAS creation in 2013.

# 2013 Building Code Amendments and Standards
# Historical Archive
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| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H1** | |
|---|---|
| Title: **One Coat Stucco Compliance Program** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **1/27/1993** | |
| Archived to Historical Section by MAG Building Codes Committee: **3/21/2012** | |

At the January 27, 1993, Building Codes Committee meeting, the Committee reviewed the final draft of a standard for Third Party Inspection Programs for One-Coat Stucco Systems.

At the March 21, 2012 Building Codes Committee meeting, the Committee reviewed the earlier document. The Committee determined that whatever problems existed in 1993 that necessitated this inspection program have been solved, and that this document is no longer relevant. The Committee voted unanimously to move this document to the Historical Archive.

# One Coat Stucco Compliance Program

May 10, 1993

The MAG Building Codes Committee (BCC) takes this opportunity to inform all stucco manufacturers, contractors, and designers engaged in construction projects within the jurisdictions of Maricopa County of the new One Coat Stucco Compliance Program.

Effective July 1, 1993, the jurisdictions listed below shall require one coat stucco installations to comply with the attached One Coat Stucco Compliance Program. As an integral part of the program, each one coat stucco manufacturer must submit to the Building Safety Department of each jurisdiction on a quarterly basis a current listing of installers authorized to install their system in order to be recognized as an approved stucco system.

The manufacturer's installation card will be required to be posted at the time of the lath inspection identifying the installer's name, address, and phone number. Only installers listed on the manufacturer's currently listing will be approved to proceed with stucco installation. In order to avoid construction project delays, we recommend that each one coat stucco manufacturer submit a copy of their authorized installers to each jurisdiction prior to July 1, 1993.

The following jurisdictions will be enforcing the provisions of the compliance program:

| | |
|---|---|
| Carefree | Paradise Valley |
| Chandler | Peoria |
| Fountain Hills | Phoenix |
| Gilbert | Scottsdale |
| Glendale | Surprise |
| Goodyear | Tempe |
| Litchfield Park | Maricopa County |

# One Coat Stucco Compliance Program

July 1, 1993

1. Purpose

   Local Adjustments for exterior one coat stucco systems are required based upon the recent history of irregularities and failure of the products to perform as intended; the non-conformance of installers/plastering contractors to comply with the installation requirements of the International Conference of Building Officials, Evaluation Service (ICBO-ES) or Council of American Building Officials, National Evaluation Service (CABO-NES) evaluation reports; and the apparent failure of the manufacturers to train installers and, in general, ensure that the product installations comply with their approved ICBO-ES or CABO-NES evaluation reports.

   The following requirements are for exterior one coat stucco systems not covered by the requirements of Chapter 47 of the Uniform Building Code (UCB).

2. Evaluation Report Required

   All exterior one coat stucco systems shall be listed and approved by either ICBO-ES or CABO-NES and have a current evaluation report.

3. Installers Must Be Manufacturer-Approved

   All installers of one coat stucco systems must be approved by the manufacturer of each system. At the beginning of each quarter of the year (January, April, July, and October) the manufacturer must submit to each jurisdiction a current list of installers authorized to install their systems.

   The approved installer listings shall include the installers' State of Arizona contractor's license number along with the category of the license. Installers not properly licensed will not be accepted as an approved installer by the jurisdictions. Appropriate city or county business licenses must also be acquired.

   Home owners must hire an approved installer, or must obtain a manufacturer's written approval to be an authorized installer. Homeowners are exempt from the State contractor's licensing requirements.

4. Design and Installation Details

   All jurisdictions participating in this agreement require compliance with the following design and installation details:

   a. Evaluation reports: Each system must be installed exactly in accordance with the manufacturer's installation instructions and with details of the ICBO-ES or CABO-NES evaluation report for that particular product.

b. Weather-Resistive Barrier Required: Weather-resistive barrier shall be required for full wall height on all installations.

c. Weep Screed Required: Approved weep screeds are required at the base of all walls as prescribed in the ICBO-ES or CABO-NES evaluation report.

d. Control Joints Required: Control joints shall be installed as shown on the elevation drawings submitted for plan review and approved for the permit, in a location determined by the building designer.

5. Installation and Application Card

Installation of any one coat stucco system shall be done only by manufacturer-approved installers who are listed with the jurisdiction where the installation is to be done.

a. Installation Card and Evaluation Report to be Posted:
    i. Post the ICBO-ES or CABO-NES evaluation report for the product to be used on the site of installation.
    ii. Post the installation card on the job site indicating the name, address, and phone number of the installer at the time of lath inspection. The card shall bot be signed and certified until after complete installation.

b. Inspections Required: Inspection and approval of the lath installation must be obtained prior to application of the stucco as required by the local jurisdiction.

c. Final Inspection/Installation Card Required: The completed installation card for each job must be left at the job site for the owner and a copy submitted to the jurisdiction upon completion of the work or prior to the final inspection of the project. Failure to submit the installation card to the jurisdiction or evidence of a non-complying installation is cause for rejection of the stucco system until the manufacturer submits a satisfactory independent third-party test report on the completed installation.

6. Participating Jurisdictions

Under the authority of Section 105 of the UBC, the following jurisdictions agree to accept and follow the procedures set forth in this agreement. Questions regarding factors or conditions not considered in the provisions of this agreement should be addressed to the individual jurisdictions.

| | |
|---|---|
| Carefree | Paradise Valley |
| Chandler | Peoria |
| Fountain Hills | Phoenix |
| Gilbert | Scottsdale |
| Glendale | Surprise |
| Goodyear | Tempe |
| Litchfield Park | Maricopa County |

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H2** | |
|---|---|
| Title: **Special Inspections Manual** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **5/24/1995** | |
| Archived to Historical Section by MAG Building Codes Committee: **11/14/2012** | |

At the May 24, 1995, Building Codes Committee meeting, the Committee reviewed the final draft of the City of Phoenix Special Inspections Manual. The Manual was created to assist in implementing a special inspection program and in promoting uniformity in the enforcement of special inspection code provisions identified in the Uniform Building Code.

At the November 14, 2012 Building Codes Committee meeting, the Committee reviewed the original document. The City of Phoenix representative indicated that the city no longer uses this manual, and instead follows the special inspections provisions in the International Building Code. As the manual was no longer relevant, the Committee voted unanimously to move this document to the Historical Archive.

# Special Inspections Manual

Prepared by the MAG Subcommittee for Special Inspections
March 22, 1995

Committee Members:
Dan Fleming, City of Phoenix, Committee Chair
Joe Gervasio, Bldg Safety Advisory Board, City of Phoenix
Mac McFarland, City of Tempe
Jay Mundy, City of Phoenix
Sohrab Navaz, City of Chandler
David Potter, City of Scottsdale
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Lanny McMahill, City of Phoenix, Committee Chair
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John Hobbins, EHTC
Rob Meade, Grommes-Meade Engineering
Joel Rencsok, City of Phoenix
Bob Schuerger, Electro Test, Inc.

# Introduction

Special Inspection, as required by the 1994 Uniform Building Code (UBC) Section 1701, is best defined as the monitoring of the materials and workmanship which are critical to the integrity of the building structure or building service equipment and require special attention. This requires inspection by persons with specially-developed skills to check the material and workmanship against the approved plans, specifications and contract documents.

This document will be revised from time to time as dictated by experience gained in its implementation and as necessary due to changing practice and technology.

This manual is a descriptive procedure for special inspection administration. It defines the duties and responsibilities of the engineer or architect of record, special inspector, contractor, building official, and project owner.

This manual is divided into six sections as follows:

1. Special Inspection – An Overview:
   Gives an overview of jobsite quality control through special inspection.
2. General Program Guidelines:
   Describes overall purposes for special inspection, and respective duties and responsibilities of project owners, engineer or architect of record, special inspectors, building officials and contractors.
3. Procedures for Special Inspection – Job Task Analysis:
   List of job tasks required of special inspectors.
4. Procedures for Materials Sampling and Testing:
   Lists basic tests in use locally that supplement or alter the national standards and are considered local standard practice.
5. Special Inspector Qualifications:
   Lists competency and experience standards, and references performance standards for special inspectors. These suggested qualifications are designed to assist the building official in determining the special inspector's competence to perform specific tasks as listed in the 1994 UBC Section 1701.5.
6. Special Inspection Forms.

## Section 1: Special Inspection – An Overview

Under this program, the owner is required to provide specially qualified inspectors for inspection during construction in addition to called inspections provided by the local jurisdiction and in addition to periodic site visits provided by the architect/engineer.

The use of special inspectors is not discretionary. The 1994 UBC Section 1701 clearly states the conditions under which they must be utilized, but there is a provision for the building official to waive special inspection for work of a minor nature.

The code intent is to provide continuous inspection at all times work requiring special inspection occurs except "some inspections may be made on a periodic basis and satisfy the requirements of continuous

inspection, provided this periodic scheduled inspection is performed as outlined in the project plans and specifications and is approved by the building official." Additionally, some exceptions are specifically listed in the inspection codes as indicated in the 1994 UBC (see Section 1701.5).

Continuity of inspection is very important and is best provided by using one individual as Special Inspector for each discipline that requires special inspection. This paragraph is intended to discourage the use of multiple inspectors performing a given task.

An additional provision allows the building official to use discretion for the requirement of a special inspector in other cases where it is deemed appropriate.

The use of special inspectors is reserved for complex installations requiring certain specially developed inspection skills for the following types of work:

Inspection Code (as listed in the 1994 UBC 1701.5)

1. Concrete – during the taking of test specimens and placing of reinforced concrete and pneumatically placed concrete.

2. Bolts installed in concrete – during installation of bolts and placing of concrete around such bolts

3. Special moment resisting concrete frames

4.1 Pre-stressing steel tendons – during stressing and grouting of pre-stressed concrete and placing of reinforcing steel, placing of tendons, and pre-stressing steel.

4.2 Reinforcing steel – prior to placement of concrete.

5.0 Structural welding – of ductile moment-resisting steel frames for structural welding and for lateral diaphragm metal decks.

5.1 General welding – any member designed to resist loads and forces.

5.2 Special moment resisting frames.

5.3 Welding of reinforcement steel.

6. High-strength bolting – during all bolt installations and tightening operations.

7.0 Structural masonry – during preparation of masonry wall prisms, sampling, and placing of masonry units, placement of reinforcement, inspection of grout spaces, and during all grouting operations.

7.1 Masonry other than fully grouted open-end hollow unit block.

7.2 Masonry fully grouted open-end hollow unit block.

8. Reinforced gypsum concrete – when cast-in-place Class B gypsum concrete is being mixed and placed.

9. Insulating concrete fill – during the application of insulating concrete fill when used as part of a structural system.

10. Spray-applied fireproofing.
11. Piling, drilled piers and caissons – during driving and testing of piles and construction of cast-in-place drilled piles or caissons.
12. Shotcrete – during the taking of test specimens and placing of shotcrete.
13. Special grading, excavation, and filling.
14. Smoke control system.
15. Adhered veneer.
16. Anchored veneer.
17. Accessibility for the disabled.
18. Complex electrical installation.
19. Special cases – work, when in the opinion of the Building Official involves special conditions or unusual hazards. (Examples: poke through penetrations, window and spandrel walls, architectural precast connections, structural light gauge metal structures.)

## Section 2: General Guidelines

A. Duties and Responsibilities of the Engineer or Architect of Record (E/AR)
The Engineer or Architect of Record (E/AR) shall be the design professional who sealed the calculations and plans for the types of work requiring special inspection as defined in Section 1 of this document. Structural special inspectors are required for work types 1, 2, 3, 4A, 4B, 5, 6, 7, 8, 9, 12, 15, and 16. Architectural special inspectors are required for Inspection Codes 10 and 17. Geotechnical special inspectors are required for Inspection Codes 11 and 13. Electrical special inspectors are required for work type 18. Mechanical and fire special inspections are required for Inspection Code 14. Duties and responsibilities or the E/AR shall include the following:

1. Identify the need for special inspection services.
   The project plans which are submitted to the building official shall clearly indicate the design parameters, material selection and where special inspection is necessary in accordance with the Code.
2. Determine the qualification(s) of all special inspectors.
3. Coordination of inspection activities.
   a. The E/AR shall be responsible for designation and coordination of the activities of the Special Inspector for the items for which he is responsible.
   b. The E/AR shall certify his special inspector(s) as meeting Stage 1 minimum qualification requirements. (See Staging Criteria).
4. Chair pre-conditioning meeting.
   Coordinate attendees with General Contractor. Establish agenda, review duties and responsibilities of attendees, establish reporting requirements, and review special cases.
5. Site visits required.
   The E/AR(s) shall visit the site at least monthly during the construction of the inspection code items for which he is responsible. This is in addition to the special inspections performed by the field inspector(s).

6. Specification of testing and test procedures.
   The E/AR shall be responsible for defining and specifying tests and testing procedures as may be required for the E/AR's work.
7. Submission of required reports.
   The E/AR shall submit, under his seal, all the required reports to the Building Department.
8. Document all revisions.
   The E/AR shall document all plan revisions to the Building Department.
9. Designated Engineer of Record (DE/AR).
   With concurrence of the Building Official and the E/AR, or Project Owner, a Designated Engineer of Record may assume the responsibilities and duties of items 2, 3, 4, 6, and 9 for E/AR.
10. Submit Special Inspection Certificate.
    Upon completion of all requirements, the E/AR shall submit the sign Special Inspection Certificate and other documentation as may be necessary to the Building Department for all items for which this professional was responsible. The Special Inspection Certificate shall be sign by the E/AR.

B. Duties and Responsibilities of the Special Inspector

The special inspector shall be the E/AR or his designated representative(s) working under his direct supervision who observes those critical features which they are qualified to inspect. Duties of special inspectors include the following:

1. Signify presence at jobsite.
   Special inspectors shall notify contractor personnel of their presence and responsibilities at the jobsite.
2. Inspect all work for which they are responsible.
   Special inspectors shall inspect all work for conformance with the official building department approved drawings and specifications, and applicable provisions of the Construction Code.
3. Separately identify all nonconforming work.
   Special inspectors shall bring all nonconforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner, or is about to be incorporated in the work, the building official and the E/AR shall be notified immediately by telephone or in person, and the special inspector shall issue a discrepancy notice.
4. Issue discrepancy notice.
   The special inspector shall post the discrepancy notice at the jobsite. This notice shall contain, as a minimum, the following information about each nonconforming item:
   a. Description and exact location.
   b. Reference to applicable detail of approved plans/specifications.
   c. Name and title of each individual notified and method of notification.
   d. Resolution or corrective action.
5. Provide daily reports
   The special inspector shall complete written inspection reports for each inspection visit. These reports shall be organized on a daily format and a copy shall remain at the jobsite with the contractor. Special inspectors shall:
   a. Describe inspections and tests made with applicable locations.
   b. List all nonconforming items, parties notified, time and method of notification.
   c. Indicate how nonconforming items were resolved.
   d. List unresolved items.

e. Provide daily reports to the contractor for retention on jobsite.

6. Provide semi-monthly report.
   Building Department and Owner shall receive copies of the following documents mailed each month on the 15th and last day of the month:
   a. Sealed form commenting on testing results and listing the dates of all special inspections made.
   b. Attached all special documents and testing results received to date.
   c. All current design changes and corrections documented and sealed.
7. Provide final reports.
   a. When construction reaches the point that inspections are only required to verify discrepancy corrections, the semi-monthly report shall be noted "Final Report." This Final Report shall list all unresolved discrepancies.
   b. E/AR or D/EAR will only sign Special Inspection Certificate after all outstanding issues are resolved.

C. Duties and Responsibilities of the General Contractor
The general contractor's (as designated on the building permit) duties include the following:

1. Responsible for setting up the pre-construction conference.
   a. Prior to construction establish date and location for meeting. Coordinate attendee list with the E/AR. Attendees shall include: all E/ARs for required inspection codes, General Contractor, building official, Special Inspector, and others as necessary.
   b. In cases where the earthwork begins before the building permit is issued, the General Contractor shall call two meetings. The first meeting shall include the Geotechnical E/AR, General Contractor, Special Inspector, Building Structural Engineer, Earthwork Subcontractor and other as necessary. The second meeting is after the building permit is issued and is the same as paragraph a.
   c. In case of multiple building permits, more than two meetings may be required.
2. Notify the special inspector.
   The contractor is responsible for notifying the special inspector of the work progress and when construction items are ready for inspection. Adequate notice shall be provided so that the special inspector has time to schedule all inspections.
3. Provide access to the project.
   The contractor is responsible for providing the special inspector access to the jobsite at the work.
4. Retain records on jobsite.
   The contractor is responsible for retaining at the jobsite approved city drawings, all special inspection records, and reports by the special inspector. Upon request he shall provide these documents for review by the building official.
5. Notification.
   The contractor shall, in addition to calling for special inspections, notify the building department of all other required inspections in accordance with UBC Section 305 which will result in an inspection by the building official.
6. Performance of the Work.
   The contractor is charged with the construction of the project in compliance with the official plans approved by the Building Official. The contractor is responsible for installation of all items in accordance with applicable Codes and Standards. If a conflict arises between the Code and the official plans, this conflict will immediately be brought to the attention of the E/AR.

D. Duties and Responsibilities of the Building Official

The specific provisions of providing for special inspection services are mandatory under Section 108.1 which states, "All construction or work for which a permit is required shall be subject to inspection by the building official." In addition, certain types of construction shall have continuous or periodic inspection as specified in Section 1701.5 in addition to local required inspections.

1. Review and examine plans, specifications and other contract documents for compliance with special inspection requirements
   The building official is charged with the legal authority to review the plans and specifications for compliance with the requirements of the UBC (Code reference: UBC Sections 302b, 303a, AND 306A).
2. Communicate special inspection requirements to the E/AR, contractor and project owner.
   Once special inspection requirements are identified in the plan approval process, the building official shall require the owner and E/AR to sign the Special Inspection Certificate.
3. Monitor the special inspection activities.
   The building official shall monitor the jobsite to see that special inspection is provided as required and that an adequate number of special inspection staff is present depending upon extent and complexity of the project. (Code reference: UBC Section 108.1 and 1701.5)
4. Review inspection reports.
   The building official receives and makes the semi-monthly inspection reports part of the inspection records (Code reference: UBC Section 1701.3).
5. Inspection of jobsite.
   The building official shall perform all inspections required under Section 108. Failure to have the required Special Inspector's inspection reports available to the building official shall be cause for the building official to stop work on those items requiring special inspection until such time that all required reports are provided.
6. Issue Certificate of Occupancy/Final Acceptance.
   The building official shall perform a final inspection and issue a Certificate of Occupancy or final acceptance, where applicable. This inspection and issuance shall not be done until after the final report has been received and accepted by the building official and the Special Inspection Certificate has been signed and sealed by the E/AR.

E. Duties and Responsibilities of the Project Owner.

The project owner is responsible for employing special inspection services (Code Reference: UBC Section 1701.1).

1. Participate in choosing the special inspector when designated engineer or architect is assigned.
2. Notify the design engineer in the event a D/EAR is chosen to provide the special inspection duties as described in paragraph A.8, Duties and Responsibilities of the E/AR.
3. Amend the Special Inspection Certificate and forward to the building official.

F. Pre-Job Conference.

For Determination of Responsibility

1. Refer to Duties of the E/AR, page 2-1.
2. Refer to Duties of the Contractor, page 2-4.

# Section 3: Special Inspector Job Task Listing

The job tasks listed in this section are intended to represent the basic inspection tasks and do not necessarily describe every detail of the job descriptions. For more specific analysis consult your local codes or regulations applicable to the task in question. Inspection codes shown refer to inspection codes listed on pages 1-1, 1-2.

A. Reinforced and Prestressed Concrete Job Tasks
   UBC Codes 1, 2, 3, 4A and B.
   1. Concrete preparation
      a. Mix Design
         Check with the E/AR in order to verify concrete product codes.
      b. Batch Plant
         Verify that batch plant has current annual inspection by an accepted inspection agency for conformance to National Ready Mixed Concrete Association recommendations.
      c. Trip Ticket
         Determine that mixer truck delivery ticket specifies required mix and batch time.
   2. Concrete Reinforcement
      a. Rebar Type and Grade
         Inspect type, grade, and visual conformity of rebar with specifications.
      b. Rebar Condition
         Inspect that rebar is free of oil, dirt, excessive rust and damage in shipment to jobsite.
      c. Rebar Tying and Bracing
         Inspect that rebar is adequately tied, chaired, and supported to prevent displacement during concrete placement.
      d. Rebar Clearance
         Inspect minimum and maximum clear distances between bars and minimum structural distance to outside of concrete and to surface of concrete.
      e. Rebar Placement
         Inspect the size, location, and quantity of rebar. Verify bar laps for proper length and stagger, and bar bends for minimum diameter, slope, and length.
      f. Rebar Welding
         Inspect that welding of rebar is with proper rods and procedures.
   3. Concrete Formwork and Embedded Items
      a. Concrete Construction Joints.
         Inspect proper preparation of construction joint surface prior to placing.
      b. Formwork Construction
         Inspect that the formwork is tight to prevent leakage. Generally inspect inside dimensions of formwork.
      c. Embedded Items
         Inspect that embedded items are properly spaced and sized.
      d. Prestressing Steel Anchorage
         Inspect location, size and placement of prestressing steel anchorage as detailed in plans and specifications.
   4. Concrete Preparation, Placement, Curing and Protection

a. Prepour Base Moisture
   Inspect that the concrete base is properly wetted and standing water is removed before concrete is placed.
b. Concrete Placement
   Inspect that concrete conveyance and depositing avoids segregation due to rehandling or flowing and proper joint construction.
c. Concrete Vibrated
   Inspect that concrete is vibrated
d. Concrete Curing
   Inspect that appropriate curing is performed.
e. Protection
   Determine that appropriate hot- and cold-weather measures are taken for protection of the concrete and grout.

5. Samples and Tests
   a. Test Type
      Determine the type and number of concrete, grout, and reinforcing steel tests required.
   b. Test samples
      Observe sampling of fresh concrete and grout, slump tests, and molding of test specimens.
   c. Hardened Concrete Test Samples
      Observe removal of test samples and perform other test procedures on hardened concrete.
   d. Specimen Handling/Protection
      Observe proper handling, field curing, and place specimens in protected area after preparation and arrangement for transportation of specimens to test facility.
6. Prestressing Steel.
   a. Prestressing Steel Type and Grade.
      Determine that prestressing steel type, size, and grade, and tendon fabrication in conformance with specifications.
   b. Prestressing Steel Condition.
      Determine that prestressing steel is free of oil, dirt, scale, pitting, excessive rust; is free from damage; and is properly wrapped as required.
   c. Prestressing Steel Ties and Supports.
      Determine that prestressing steel tendons and post-tensioning ducts are adequately tied, chaired and supported to prevent displacement during concrete placement, and are adequate for intended stresses.
   d. Prestressing Steel Clearance.
      Inspect for minimum and maximum clear distances between prestressing steel and minimum structural distance to outside of concrete and to surface of concrete.
   e. Prestressing Steel Placement.
      Inspect placement of prestressing steel, tendons, or ducts as detailed in plans and specifications.
   f. Post-tensioning Ducts.
      Verify that post-tensioning ducts are correctly sized, are mortar-tight and nonreactive with concrete, tendons and filler materials.

g. Prestressing Steel Anchorage.
Inspect location, size, and placement of prestressing steel anchorage as detailed in plans and specifications.

7. Prestressing and Grouting
   a. Calibration of Stressing Ram.
   Review the calibration documentation for the steel stressing ram.
   b. Steel Stressing.
   Inspect that steel is prestressed at the proper time using proper techniques, including stressing locations, sequence, and with proper records of stressing and steel elongation.
   c. Grout Mix Design and Placement.
   Determine that mixer truck delivery ticket specifies required grout mix and batch time. Inspect placement of grout into post-tensioning ducts for bonded prestressing tendons.
   d. Tendon Finishing.
   Inspect correct trimming of excess tendon length after stressing. Inspect filling of stressing pockets.

B. Structural Masonry Job Tasks
UBC Inspection Code 7

1. Masonry Material – Storage and Certifications
   a. Masonry Material Certifications
   Inspect masonry material certifications or other documentation of masonry units, cement, lime, and additives for compliance with plans and specifications. Determine materials are in acceptable condition.
   b. Storage of Materials
   Reject cement and lime that has been exposed to excessive moisture. Reject aggregates that are contaminated.
   c. Masonry Reinforcing Material Certifications
   Inspect masonry reinforcing materials certifications, or other documentation of masonry reinforcement, for compliance with codes, plans, and specifications. Check that reinforcing materials are in acceptable condition.
2. Mortar Mix
   a. Mortar Aggregate
   Determine sand is clean.
   b. Mortar Cement
   Inspect mortar cement for dryness, type, and conformance to specified requirements.
   c. Mortar Water
   Inspect job-mix mortar proportioning of cement, aggregates, and admixtures for quantity and mixing time.
   d. Ready-mix Mortar
   Inspect ready-mixed mortar for type and conformance to specified requirements.
3. Masonry Preparation and Placement.
   a. Dowels/Anchors
   Inspect alignment of dowels and anchors extending out of the footings for masonry walls.

b. Base Conditions
   Inspect that masonry footing surfaces are clean.
c. Condition of Units
   Inspect that masonry units are clean and sound.
d. Placement
   Inspect the laying of masonry units, checking temperature, laying of masonry units, for stack or running bond or variations as per plans. Check that there is no deep furrowing of bed joints. Inspect mortar joints for proper thickness and tooling.
e. Joints
   Inspect construction, expansion, and contraction joints in accordance with details on approved drawings.

4. Masonry Reinforcement
   a. Vertical Reinforcement
      Inspect the placement and alignment of vertical bars and dowels for size, grade, and spacing. Inspect length of lap splices, clearances between bars, clearances to masonry units and positioning of steel.
   b. Horizontal Reinforcement
      Inspect horizontal joint reinforcement (HJR) steel and stagger, bond beam reinforcement bars for size, length of lap splices, dowels, clearances between bars, clearance to masonry units and positioning of steel.
   c. Ties
      Inspect ties in masonry for straightness, embedment, spacing, and size.
   d. Anchor Connections
      Inspect the installation of masonry anchor bolts, joist anchors, insert and straps.
5. Grout Mix
   a. Ready-mix Grout
      Inspect ready-mixed grout for conformance with mix design and workability.
   b. Grout Use
      Determine elapsed time since mixing of grout.
6. Masonry Grouting
   a. Grout Spaces
      Inspect that grout spaces are correctly sized and clean, cleanouts, when required, are closed after inspection and grout barriers are in place before grouting.
   b. Grouting
      Inspect proper grouting techniques including mechanical vibration to approved height of grout space.
   c. Dry Packing
      Inspect proper applications of dry packing.
7. Sample and Tests
   a. Test Prisms
      Inspect the construction of test prisms including those required prior to beginning construction. Check that test prisms contain the same masonry units, moisture content, mortar and workmanship as used in the building.
   b. Tests and Specimens
      Determine the type and number of masonry, mortar, grout and reinforcing steel tests required.

c. Specimen Handling/Protection
Observe protection of test specimens and arrangements for pickup or delivery of specimens to appropriate persons.

d. Masonry Samples
Observe removal of test specimens from completed masonry.

C. Structural Steel and Welding Job tasks
UBC Inspection Code 5, 6

1. Steel and Welding Materials

a. Structural Steel Materials
Review mill test reports (MTR), steel identification markings, or other documentation of structural steel for compliance with plans and specifications. Visually inspect bolts, nuts, and washers for conformance.

b. Welding Consumables
Review welding consumables for identification markings, or other documentation of welding materials for compliance with plans and specifications. Inspect rod containers for damage.

2. Welding

a. Qualification of Welders
Review qualification of welders, welding operators and tackers for conformance with the appropriate AWS code and the plans and specifications.

b. Welding Consumable Storage
Review Low Hydrogen Electrode storage conditions to determine material has been purchased in a hermetically sealed container and that storage ovens meet the minimum temperature and utilization requirements.
Review procedures for maintaining maximum atmospheric exposure times for Low Hydrogen consumable utilization.

c. Welding and Joint Preparation
Inspect that the material to be welded is smooth, uniform, free from fins, tears, and cracks, and that cut edges are acceptable and free from foreign material.

d. Welding Procedures
Visually review that welding is done in conformance with AWS requirements for process, materials, workmanship, number of passes, preheat and interpass temperatures, cleaning between passes, weld lengths, welding technique and welding sequence. Review specifications for unusual requirements.

e. Weld Repairs and Heat Straightening
Inspect that weld repairs and heat straightening of structural members is done in compliance with approved procedures and AWS standards.

f. Welding of Reinforcing Steel
Review the Welding Procedure Specification and the Welding Procedure Qualification for compliance with AWS D1.4 and the contract documents. Note: There are no pre-qualified welding procedures for welding reinforcing bars; a Procedure Qualification Record (PQR) is required.

3. Steel Erection

a. Base Plates and Anchor Bolts
Inspect anchor bolt size and pattern size of base plates and anchor bolt hole pattern and size. Inspect the setting of the base plate for proper nut tightening and thread projection.

b. Members
Inspect to determine size and dimensions for weight, determine the weight, general location, shape, and proper connection of structural members.

c. Faying Surfaces
Inspect faying surfaces on connections utilizing high-strength bolts for compliance to applicable standards.

d. Bolts
1. Inspect correct type, location, and size of bolts, size of bolt holes and alignment in connections.
2. Inspect tightness of high strength bolts to applicable standards.

4. Samples and Nondestructive Tests
a. Bolt and Nut Sampling
Observe and sample bolts, nuts, and washers for testing, if required.

b. Nondestructive Testing
Observe nondestructive testing in accordance with approved procedures.

D. Anchored Veneer Job Tasks
UBC Inspection Code 16

1. Veneer Material Certifications and Storage
a. Veneer Material Certifications
Inspect veneer material certifications including material strength test results, or other documentation of veneer units, cement, lime, additives, and stone backing. Determine materials are in acceptable condition.

b. Construction Documents
Inspect installation design documents to determine that they have been properly sealed and approved by the Engineer of Record and the City.

c. Veneer Connection Material Certifications
Review veneer connection material certifications, or other documentation of connectors and corrosive protection. Determine that connection materials and connectors are in acceptable condition.

d. Storage of Materials
Reject cement and lime that has been exposed to excessive moisture. Reject aggregates that are contaminated.

2. Mortar Mix
Requirements same as structural masonry, Section 2.b.

3. Veneer Preparation and Placement.
a. Dowels/Anchors/Ties
Inspect alignment of dowels, anchors, and ties extending out of the footing or walls.

b. Base Conditions
Determine that bearing surfaces are clean and level.

c. Condition of Units
Determine that veneer units are required size and thickness, clean, sound, and free of cracks or chips that may adversely affect their attachment.

d. Placement
Inspection the setting of veneer units, for stack or running bond or variations as per plans. Determine that there is no deep furrowing of bed joints. Inspect mortar joints for proper thickness and tooling. Do not allow the installation of saturated or frozen veneer.

e. Joints
Inspect construction, expansion, and contraction joints for locations and as detailed.

4. Veneer Connectors
   a. Inspect the placement and alignment of connectors for size, type material and spacing. Inspect for required bearing lengths and widths, size and depth of embedment, straightness, edge and end distances of dowels and connectors in both the veneer and backup structural supports.
   b. Inspect mortar spot backups at connectors for size, location, and soundness.
   c. Inspect epoxy anchorages for type epoxy to be used and manufacturer's requirements for installation. Inspect size, depth of embedment, straightness and cleanness of surfaces to receive epoxy.
5. Veneer Ventilation
   Inspect the placement, size, type of material and location of weep holes. Inspect that weep holes are not clogged or obstructed, preventing their use.
6. Veneer Dampproofing
   a. Inspect veneer backing for compliance with manufacturer's requirements.
   b. Inspect flashing, gauge, shape, material, and installation.
7. Samples and Tests
   a. Field Mockup
      Inspect the materials and construction of field mockup, when required, prior to commencing with installation of veneer on structure.
   b. Test Prisms
      Witness the construction, when required, of test specimens, including those required prior to beginning construction.

E. Adhered Veneer Job Tasks
UBC Inspection Code 15
1. Pre-Application Verification
   Inspect the backing membrane for preparation and weatherproofing. Verify that height of adhered veneer does not exceed 30 feet, or size and weight limitations.
2. Application
   a. Inspect the mortar and epoxy bed for code and manufacturer conformance and check for absorption.
   b. Observe the placement of units closely for workmanship and provide necessary testing to determine adequacy of unit strength.

F. Accessibility for the Disabled Job Tasks
UBC Inspection Code 17
1. At this time, there are no specific requirements for job tasks. Generally the E/AR is responsible to provide inspection of the entire project for conformance with applicable local laws for compliance with handicap provisions.
2. Specialty areas requiring systems not generally inspected by the building official (e.g. hearing impairment, Braille, audio/visual).

G. Electrical Installation Job Tasks
UBC Inspection Code 18
1. Grount-Fault Protection Performance Test
   a. Visual Inspection
      1. Inspect for physical damage and compliance with engineered drawings and specifications.

2. Verify proper nameplate markings and ratings.
3. Verify integrity of grounded conductor.
4. Verify pickup and time delay settings are in accordance with settings provided by the engineer.

b. Mechanical Inspection

1. Inspect for proper mechanical operation.

c. Electrical Tests

1. Tests shall comply with engineered plans and specifications.
2. Tests shall be performed in accordance with manufacturer's recommendations or nationally recognized standards and practices.
3. Test grounded conductor insulation resistance to ground.
4. Test relay pickup current by current injection at the sensor and operate the circuit-interrupting device.
5. Test relay timing.
6. Test primary control voltage at not more than 57 percent of its rated voltage.

2. Switchboards, Panelboards, Motor Control Centers and other Equipment Rated 1000 Amperes or more, or over 600 Volts.

a. Visual Inspection

1. Inspect for physical damage and compliance with engineered drawings and specifications.
2. Verify proper nameplate markings and ratings.
3. Inspect proper anchorage, support, and alignment.
4. Verify barrier installation.
5. Verify connection and termination points for proper torque and alignment.

b. Mechanical Inspection

1. Inspect interlocks, switches, draw-out breakers, and auxiliary devices for proper mechanical operation.

c. Electrical Tests

1. Tests shall comply with engineered plans and specifications.
2. Tests shall be performed in accordance with manufacturer's recommendations or nationally recognized standards and practices.
3. Test grounded conductor insulation resistance and verify continuity of equipment grounding system.
4. Perform insulation resistance test on each bus and protective device. Test phase-to-phase and phase-to-ground.
5. Perform phase test on double ended systems.
6. Test control power transformer, control power circuits and potential circuits.
7. Test control and protective devices for proper operation.

3. Transformers Rated 100 KVA or More Single Phase and 300 KVA or More Three Phase

a. Visual Inspection

1. Inspect for physical damage and compliance with engineered drawings and specifications.
2. Verify proper nameplate markings and ratings.
3. Inspect for proper anchorage and support.
4. Inspect for proper equipment and core grounding.

5. Verify compliance with manufacturer's installation requirements.

b. Mechanical Inspection
   1. Inspect auxiliary devices for proper mechanical operation.

c. Electrical Tests
   1. Tests shall comply with engineered plans and specifications.
   2. Tests shall be performed in accordance with manufacturer's recommendations or nationally recognized standards and practices.
   3. Perform insulation resistance test on each winding. Test winding-to-winding and windings-to-ground.
   4. Perform a turns-ratio test for each winding at all tap settings.
   5. Test control power transformer, control power circuits and potential circuits.
   6. Test control and protective devices for proper operation.

4. Conductors that Supply Equipment Rated at 1000 Amperes or More, or Over 600 Volts
   a. Visual Inspection
      1. Inspect for physical damage and compliance with engineered drawings and specifications.
      2. Verify proper markings and ratings.
   b. Electrical Tests
      1. Tests shall comply with engineered plans and specifications.
      2. Tests shall be performed in accordance with manufacturer's recommendations or nationally recognized standards and practices.
      3. Perform insulation resistance test on each conductor. Test phase-to-phase and phase-to-ground.
      4. Perform dc high-potential test on each conductor. Test phase-to-phase and phase-to-ground.
5. Emergency and Standby Power Systems: Switchboards, Panelboards, Distribution Boards, Transfer Equipment, Power Source, Conductors, Fire Pumps, Exhaust and Ventilation Fans
   a. Visual Inspection
      1. Inspection for physical damage and compliance with engineered drawings and specifications.
      2. Verify proper markings, ratings, and signs.
      3. Inspect equipment for proper anchorage and support.
      4. Inspection for proper barriers, separation, protection, and location.
      5. Verify instruction manuals, special tools, testing devices, and manufacturer recommended spare parts are available.
      6. Verify maintenance and operation testing program is in place and maintained on the premises.
   b. Mechanical Inspection
      1. Inspect equipment for proper mechanical operation.
      2. Verify functional operation of system. Perform manual transfer operation.
   c. Electrical Tests
      1. Tests shall comply with engineered plans and specifications.
      2. Tests shall be performed in accordance with manufacturer's recommendations or nationally recognized standards and practices.
      3. Test control and protective devices for proper operation.

4. Perform phase rotation test.
5. Perform insulation resistance test on feeder conductors and equipment. Test phase-to-phase and phase-to-ground.
6. Perform automatic load transfer test. Test normal and emergency power, or normal and standby power, or both. Simulate loss of emergency and normal power, or standby and power, or both. Simulate all forms of single-phase condition.
7. Conduct operational test on system under load conditions.

H. Special Cases Job Tasks
UBC Inspection Code 19

1. The special case shall be identified by the building official before obtaining permits.
   a. The building official, with the E/AR's assistance, shall establish, prior to the special case construction, a job task analysis in writing for the specific area concerned.
2. The building official reserves the right to require special inspection when unusual or unanticipated conditions arise during the course of construction. The building official, with assistance from the E/AR, shall establish the job tasks required in these situations.
3. Sewer Installation
   This Special Inspection shall apply to the installation of sewer lines where it is impractical due to the depth of the street sewer or to the structural features or to the arrangement of any building or structure, to obtain the minimum slope required by the Uniform Plumbing Code Section 1106.
   a. Inspect sewer for proper material, support, alignment, and uniform slope.
   b. Verify that the sewer has been installed in accordance with the approved design and to the grades shown on the approved plans.
4. Unlisted Mechanical Equipment
   Reports which are submitted to the building official, as an alternative to a listing agency approval for those products or equipment which require approval, are not acceptable unless they provide at least the following:
   a. Date issued.
   b. Address at which the product or equipment is installed.
   c. General description of the product or equipment which is the subject of the report.
   d. Proposed objective to be achieved as a result of this examination.
   e. Data plate information which shall include at least the following:
      1. Manufacturer's name.
      2. Model and serial number.
      3. Type of fuel for fuel burning devices – input/output ratings.
      4. Electrical rating – volts, amps, phase (if applicable).
      5. Operating pressures (if applicable).
   f. Listing of specific test criteria:
      1. ASTM Standards
      2. ANSI Standards
      3. UL Standards
      4. AGA Standards
      5. Other standards
   g. Description of specific tests performed.

h. Evaluation of the product examined, including recommendations regarding correction of deficiencies if appropriate, or a statement that the device was in compliance with all applicable standards at the time of examination.
i. Submit drawing or photograph of the equipment which this report addresses.
j. Sign and seal all documents and other submittals.

I. Piling, Drilled, Piers, and Caissons Job Tasks
UBC Inspection Code 11

1. Driven Piles
   a. Materials and Equipment Verification
      To inspect pile material, splices, tip reinforcement, pile type, pile sizes, length, quality and straightness are as specified, and that leads, hammers, cushioning and other equipment are as specified.
   b. Pile Installation Verification
      Verify that horizontal and vertical locations of the piles are as specified, and that pile orientation and plumbness are as specified.
   c. Pile Driving
      Inspect the driving of the piles by recording the blow counts per foot of penetration, that the terminating blow count and/or pile tip elevation are as specified and that no damage, defects, or variation of specifications are observed during driving.
2. Auger-Cast-Piles
   a. Materials and Equipment Verification
      Inspect all materials, quality of material and equipment type and size are as specified. Have al concrete materials sampled and tested as required in section of this part.
   b. Pile Installation Verification
      Verify and inspect that vertical and horizontal pile locations are as specified, that plumbness, size, and tip elevation are as specified and that installation procedure, pump pressure and auger withdrawal during casting are as specified.
3. Drilled Piers and Caissons
   a. Installation Verification
      Inspect and verify that all drilling and cleaning operations are as specified, that shaft diameter, shaft length, shaft plumbness, underreemed diameter, underreemed height, underreemed shape are as specified, that bearing surface is cleaned as specified, and that the bearing material and penetration into the bearing material are as specified.
   b. Material Verification
      Inspect so the steel reinforcement and concrete placement are as specified in accordance with sections of this part.

J. Special Grading, Excavation, and Filling Special Inspection Job Tasks
UBC Inspection Code 13

1. Site Preparation Verification
   Inspect clearing and grubbing for conformity to plans and specifications and that excavation slopes are as specified.
2. Overexcavation and Scarification Verification
   Inspect, observe, and test as required all overexcavations required in foundation areas to the size, location, and depths as specified and that scarification, moisture conditioning and compaction are as specified.

3. Fill Placement Verification
   Inspect, observe, and test as required all fill placement, moisture conditioning, and compactions are as specified and that all fill slope configurations are as specified.
4. Utility Excavations and Backfilling Verification
   Inspect, observe, and test as required the location, placement, moisture conditioning and compaction of backfills within specified areas of the site for conformance with plans and specifications.
5. Foundation Excavation Verification
   Inspect, observe, and test as required all foundation excavations as to depth, size, bearing material, depth into bearing material, and cleaning of bearing surface for conformance with plans and specifications.
6. Material Verifications
   Inspect the steel reinforcement and concrete placement as specified in accordance with sections of this part.

K. Reinforced Gypsum Concrete Job Task
   UBC Inspection Code 8
   1. The inspection of reinforced gypsum concrete shall be as determined by the E/AR and the building official and be defined at the pre-job conference.

L. Shotcrete Job Tasks
   UBC Inspection Code 12
   1. General
      a. Shotcrete shall be defined as mortar or concrete pneumatically projected at high velocity onto a surface.
      b. Shotcrete placed for swimming pools and shotcrete work fully supported on earth and minor repairs, when in the opinion of the building official presents no special hazard, shall be exempt from special inspection.
   2. Concrete Mix Verification
      a. Mix Design
         Review proposed concrete mix design, that cement type is as specified, that aggregate type, weight and size are as specified and that admixture are correct.
      b. Preconstruction Verification
         A test panel shall be shot, cored, examined and tested prior to commencement of operations for the purpose of verifying the mix design and to qualify the nozzleman. The test panel shall be representative of the project and simulate job conditions as closely as possible. The panel thickness and reinforcing shall reproduce the thickest and most congested area specified in the structural design. It shall be shot at the same angle, using the same concrete mix design, the same equipment, and the same nozzleman that will be used on the project.
      c. Delivery Ticket
         Redi-mix Concrete: Determine that mixer truck delivery ticket specifies required mix and batch time.
      d. On-site Materials
         Concrete mixed on-site: Review certifications or other documentation of aggregates, cement and additives for compliance with plans and specifications. Determine that materials are in acceptable condition.
      e. Storage of Materials
         Reject cement or additives that have been exposed to excessive moisture. Reject aggregate that are contaminated.

f. Reinforcing Material Certifications
Inspect reinforcing materials certifications, or other documents for compliance with codes, plans and specifications. Check reinforcing materials for acceptable conditions.

M. Spray Applied Fireproofing Job Tasks
UBC Inspection Code 10

1. General
This Inspection shall apply to direct contact spray applied fire protection materials, such as “sprayed fiber” or “cementitious mixtures.”
2. Application
Sprayed products shall be inspected and tested when applied to members such as beams, columns, floor systems and related components.
3. Inspection Procedures
    a. Condition of Substrates
    Surfaces of substrates to receive the sprayed fire protection material shall be free of dirt, oil, grease, release agents, loose scale, loose paint and any extraneous materials.
    b. Thickness of Application
    Thickness of spray applied fire protection shall be determined in accordance with ASTM E605-77.
    c. Floor and Wall Sections
    A thickness test shall be conducted for every 2,500 square feet. Each unit or bay shall be divided into quarters. In each quarter, a 12 inch square shall be laid out and thickness measurements as described in ASTM E605-77 taken at each corner, averaged and reported as a single measurement.
    d. Beams and Columns
    Four sets of random measurements shall be taken for each bay or unit. The test locations on individual members shall be conducted as described in ASTM E605-77.
    e. Density
    Density of the fire protection material shall be tested in accordance with ASTM E605-77. Samples for density determination shall be one for each 10,000 square feet of floor area, but shall be no less than two per floor.
4. Condition of Finished Application
Inspect sprayed fire protection materials upon drying and curing. They shall be free of deep or wide cracks, voids, spalls, or any exposure of the substrate.
5. Patching
The special inspector shall insure that corrective measures have been applied to areas requiring re-spraying or patching where materials have been deliberately removed for testing, been damaged, or removed by other trades.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H3** | |
|---|---|
| Title: **Uniform Reporting to the County Assessor** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **6/21/1995** | |
| Archived to Historical Section by MAG Building Codes Committee: **3/21/2012** | |

At the June 21, 1995, Building Codes Committee meeting, the Committee discussed the activities of the Maricopa County Assessor's Task Force. The Task Force established a number of goals and objectives related to expediting taxation and incorporating GIS in local jurisdictions. Included among those goals and objectives was a goal of creating a uniform method of reporting building permit information to the Assessor, as opposed to establishing a uniform building permit across all jurisdictions. The Committee voted in favor of supporting the concept of uniform reporting information to the County Assessor.

At the March 21, 2012 Building Codes Committee meeting, the Committee discussed the current methods used to report information to the County Assessor and determined that the Assessor had established standards which each jurisdiction seemed to be following, and that a policy like this was no longer needed. The Committee voted unanimously to move this document to the Historical Archive.

# MAG Building Codes Committee Statement on Uniform Reporting of Information to County Assessor

## June 21, 1995

A motion was passed that the Building Codes Committee supports the concept of uniform reporting of information to the County Assessor as opposed to a standard building permit system.

Motion passed unanimously.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H4** | |
|---|---|
| Title: **MAG BCC Statement on Utility Companies Installing Lighting on Private Property** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **4/17/1996** | |
| Archived to Historical Section by MAG Building Codes Committee: **9/19/2012** | |

At the April 17, 1996, Building Codes Committee meeting, the Committee discussed the practice of utility companies installing lighting on private property without obtaining municipal zoning approval, building permits, or electrical inspections. The utility companies contended that the lights are exempt from municipal regulations because the utilities own the poles and simply sell the lighting to the private property owners. The perspective of the municipalities was that light poles and wiring on private property are subject to municipal codes for zoning and for electrical safety. The Committee voted unanimously to recommend that MAG support the position that utility companies installing lighting on private property be subject to all MAG member agency code requirements including permits and inspections. At the May 15, 1996, MAG Management Committee meeting, the Management Committee voted to support this recommendation. At the May 29, 1996, MAG Regional Council meeting, the Regional Council approved MAG support of the position that utility companies installing lighting on private property be subject to all MAG member agency code requirements including permits and inspections.

At the September 19, 2012, Building Codes Committee meeting, the Committee discussed the original statement, its intent, and the circumstances that necessitated its creation in 1996. The Committee determined that the wording of the original statement required a permit to be obtained and that the current building codes require a permit for this type of work. Because of this, the Committee determined that the statement as written was no longer needed. The Committee voted unanimously to move this document to the Historical Archive. The Committee also discussed revisiting the original intent of this document at a future meeting, to ensure that MAG and member agency policy is clear on this topic.

# MAG Building Codes Committee Statement on Utility Companies Installing Lighting on Private Property

**April 17, 1996**

A motion was passed stating that utility companies installing lighting on private property be subject to all MAG member agency code requirements including permits and inspections.

Motion passed unanimously.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H5** | |
|---|---|
| Title: **Standard for Marking Trusses** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **4/16/2000** | |
| Archived to Historical Section by MAG Building Codes Committee: **6/20/2012** | |

At the April 19, 2000, Building Codes Committee meeting, the Committee reviewed the standard for marking tresses that had been developed by the MAG Building Inspector/Plan Reviewer group.

At the June 20, 2012 Building Codes Committee meeting, the Committee reviewed the original document. A survey had been conducted to determine the current use of the standard. The vast majority of respondents did not use the standard anymore. The Committee voted unanimously to move this document to the Historical Archive.

# Truss Identification per UBC Section 2343.6

March 10, 2000

Volume 2 of the UBC, specifically section 2343.6, requires each truss be legibly branded, marked or otherwise have permanently affixed thereto the following information located within 2 feet of the center of the span on the face of the bottom cord. A tag of composite material that will not be affected by the elements affixed by a metal connector plate within 2 feet of the center of the span on the face of the bottom cord is acceptable.

1. Identity of the company manufacturing the truss.
   *MAG approved truss fabricator.*
2. The design load.
   *The designed live and dead load for the top and bottom cords.*
3. The spacing of trusses.
   *The maximum designed on center spacing.*

Section 22343.7.4.4 Alternatives: Special bearing location, permanent bracing and orientation of trusses may be identified by means of engineering drawings, erection plans and/or special details.
*Manufacturers truss calculation drawings approved by the Authority having Jurisdiction.*

**Explanation of Recommendations from MAG Building Inspector/Plan Reviewer Forum**

Composite Tags
The forum discussed the use of a composite tag and felt it was acceptable. The composite tag should provide a more reliable means of identification and source of information required on the truss.

1. This item is self explanatory per the code. The manufacturer shall also be listed and currently inspected on the MAG Approved Truss Manufacturers List.
2. The forum felt the code was addressing repetitive truss members with normal loads applied.
3. Again self explanatory, provide the maximum on center spacing the truss is designed for.

Alternatives:
The code allows the use of drawings for special conditions. The manufacturer's engineered truss calculation drawings submitted to the jurisdiction are the most consistent form for this information.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H6** | |
|---|---|
| Title: **MAG Building Codes Committee Statement on Accessibility Standards** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **11/1/2000** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the November 1, 2000, Building Codes Committee meeting, the Committee discussed Fair Housing Act and the Arizonans with Disabilities Act as they relate to building codes. The Committee voted to recommend compliance with the accessibility standards in the Fair Housing Act or the 1997 UBC Chapter 11 either by ordinance or through the alternate design methods section of the UBC.

At the May 16, 2012 Building Codes Committee meeting, the Committee reviewed the original statement. It was determined that, starting with the 2006 edition, the IBC now includes those standards in the code. The Committee voted unanimously to move this document to the Historical Archive.

# MAG Building Codes Committee Statement on Accessibility Standards

## November 1, 2000

A motion was passed to recommending compliance with the accessibility standards in the Fair Housing Act either through use of the Fair Housing Act Accessibility Guidelines or 1997 Uniform Building Code (UBC) Chapter 11 with either document being adopted by ordinance or use of the alternative design methods second of the UBC.

Motion passed 10 to 2 with 3 abstaining.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H7** | |
|---|---|
| Title: **Uniform Application Roof Access through Hatches/Scuttle Openings per 1997 UMC** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **2/14/2001** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the February 14, 2001, Building Codes Committee meeting, the Committee reviewed a recommendation from the MAG Building Inspectors/Plans Examiners forum that section 307.5.2.1.5 of the 1997 UMC be interpreted to allow the use of one ladder extension device as meeting the intent of the code.

At the May 16, 2012, Building Codes Committee meeting, the Committee reviewed the original document. The Committee determined that this interpretation had been incorporated into the IMC and was no longer needed. The Committee voted unanimously to move this document to the Historical Archive.

# Uniform Application Roof Access through Hatches/Scuttle Openings per 1997 UMC Section 307.5.2.1.5

2/14/2001

The requirements of the 1997 Universal Mechanical Code (UMC) Section 307.5.2.1.5 state “have side railings which extend at least 30 inches above the scuttle opening or coping to the step off.” The MAG Building Codes Committee makes the interpretation that the use of one ladder extension device is acceptable as meeting the intent of the code.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H8** | |
|---|---|
| Title: **MAG Building Codes Committee Statement on Pressure-Treated Sill Plates** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **9/21/2001** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the September 21, 2001, Building Codes Committee meeting, the Committee reviewed a recommendation from the MAG Building Inspectors/Plans Examiners Forum that pressure-treated sill plates be required in both interior and exterior applications as required by Section 2306.4 of the UBC.

At the May 16, 2012 Building Codes Committee meeting, the Committee reviewed the original document. The Committee determined that both the IRC and IBC have clarified this issue. The Committee voted unanimously to move this document to the Historical Archive.

# MAG Building Codes Committee Statement on Pressure-Treated Sill Plates

## September 12, 2001

A motion was passed to require pressure treated sill plates in both interior and exterior applications as required by UBC Section 2306.4.

Motion passed unanimously.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H9** | |
|---|---|
| Title: **Compliance with the IRC Energy Codes Chapter 11** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **3/20/2002** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the March 20, 2002, Building Codes Committee meeting, the Committee reviewed recommendation for alternative for complying with Chapter 11 of the 2000 IRC Energy Codes.

At the May 16, 2012 Building Codes Committee meeting, the Committee reviewed the original document. The Committee voted unanimously to move this document to the Historical Archive.

# Compliance with the IRC Energy Codes Chapter 11

3/20/2002

The MAG Building Codes Committee (BCC) recognizes that there are multiple approaches to meeting the energy efficiency requirements of Chapter 11 of the International Residential Code (IRC). Compliance can be demonstrated by one of the following methods:

A. For detached one- and two-family dwellings (Type A-1) with glazing area that does not exceed 15% of the gross area of exterior walls, compliance may be demonstrated by meeting one of the following requirements:
    a. Chapter 11 of the IRC; or
    b. Chapter 6 of the International Energy Conservation Code (IECC); or
B. For detached one- and two-family dwellings (Type A-1) with glazing area that exceeds 15% of the gross area of exterior walls, compliance may be demonstrated by meeting one of the following requirements:
    a. Chapter 4, System Analysis and Design of Buildings Utilizing Renewable Energy Sources, of the IECC; or
    b. Chapter 5, Component Performance Approach, of the IECC; or
C. For any detached one- and two-family dwelling, compliance may be demonstrated by complying with one of the packages entitled “Zone 3 Single-Family Prescriptive Packages – 1998/2000 IECC”; or
D. For any detached one- and two-family dwelling, compliance may be demonstrated by participation in the Energy Star, Engineered for Life, Environments for Living or other such nationally recognized third party energy programs.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H10** | |
|---|---|
| Title: **MAG Building Codes Committee Statement on IMC Exception Clause Section 403.3 for Schools** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **3/20/2002** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the March 20, 2002, Building Codes Committee meeting, the Committee reviewed a document regarding HVAC system requirements when schools renovate those systems.

At the May 16, 2012, Building Codes Committee meeting, the Committee reviewed the original document. The original issue in 2002 was due to schools receiving federal money to upgrade mechanical equipment. The Committee determined that a statement like this is no longer needed as a jurisdiction adopts an energy code. The Committee voted unanimously to move this document to the Historical Archive.

# MAG Building Codes Committee Statement on International Mechanical Code Exception Clause Section 403.3 for Schools

## March 20, 2002

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.

Motion passed 7-6 with one abstention.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H11** | |
|---|---|
| Title: **AZBO Code Review and Development Committee Report of Final Actions 2001-2002** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **10/16/2002** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the October 16, 2002, Building Codes Committee meeting, the Committee reviewed the report of final actions of the AZBO Code Review and Development Committee for 2001-2002.

At the May 16, 2012, Building Codes Committee meeting, the Committee reviewed the original document. The Committee voted unanimously to move this document to the Historical Archive.

# ARIZONA BUILDING OFFICIALS

## CODE REVIEW AND DEVELOPMENT COMMITTEE

# **REPORT OF FINAL ACTIONS 2001-2002**

July 15, 2002

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# INTRODUCTION LETTER

Mr. Terry Vosler, CBO
Chairman – Arizona Building Officials
Oro Valley, Arizona

July 14, 2002

Mr. Chairman;

The work of the Arizona Building Officials (AZBO) Code Change Committee continues. During the last year we have changed our name to the Code Review and Development Committee (CR&D) to better reflect what we are doing but our goals and mission remain the same.

In our continuing desire to assist the jurisdictions and the development community in Arizona, the AZBO CR&D Committee has been reviewing the International family of codes as requested by the organization to develop recommendations for common amendments for the State of Arizona. While new items were addressed in our local meetings, we also attended the International Code Council (ICC) Code Hearings in Pittsburgh, Pennsylvania in April to present those proposals that the Code Change Committee developed last year. See page VI for a report on that activity.

During the last year we have met seven times throughout the state as the full committee and five times as the structural subcommittee. While the meetings have been open to all, pages II, III and IV list the actual participants. As you see attendees represented many jurisdictions from around the state, architects, engineers, designers and builders. We very much value the partnerships with other construction professionals that have evolved out of this committee's activities.

Through this process the completeness and accuracy of the International family of codes has been reiterated. While thousands of hours have been spent reviewing and enforcing these codes, the number of proposals has declined appreciably from previously low levels. It has been an expressed goal of the committee to make as few changes as necessary.

Several significant items have been discussed at the meetings during the year. While no action has been taken on some of them, the work goes on. Probably the most important single item has been the work of Mr. Forrest Fielder of the City of Surprise in working with the Arizona Department of Health Services in developing code requirements for assisted living facilities that meet state laws and meet the needs of the inhabitants. Likewise Mr. Anthony Floyd of the City of Scottsdale brought forward proposals about the energy provisions of the International Residential Code that were enlightening for all the participants. Mr. Charles McKinney of Ranch West Properties did extensive research on attic access in bringing a proposal forward also.

It is with much pride that we, the members of the Arizona Building Officials Code Review and Development Committee, present these proposals to the Board and to the Organization with a recommendation that you support them to all the jurisdictions throughout the state.

Please feel free to contact me at (480) 488-6632 or email at blee@cavecreek.org if you have any questions.

Robert D. Lee, CBO
Chairman – AZBO Code Review and Development Committee
Cave Creek, Arizona

# DEDICATION

In an effort to encourage uniformity in the amendments and adoption of the construction codes enforced throughout the State of Arizona; and to assist in the uniform use and application of those codes, the AZBO Code Review and Development Committee continues to partner with the construction development community. The membership of the Code Review and Development Committee includes Building Officials, Fire Officials, Plans Examiners, Building Inspectors, Fire Inspectors, Architects, Engineers, Designers and Contractors. The Committee jointly reviewed the International Codes and developed amendments to the Codes to address five basic areas:

1. Errors in the printed codes
2. Coordination between the codes
3. Climatic/geographic considerations
4. Life and health safety issues
5. Local community issues

On behalf of the Board of Directors of the Arizona Building Officials, I would like to thank all of the Committee members for their dedication and hard work. Their willingness to work together in the effort of improving the Codes we all use and in providing a common set of amendments for use throughout Arizona is commendable.

A special dedication goes to Bob Lee, CBO, Building Official for Cave Creek, Arizona and Chairman of the 2001-2002 Code Review and Development Committee for his never-ending commitment to continued partnerships between the Arizona construction industry and the Building and Fire Code Enforcement Professionals and to the protection of the health, safety and welfare of the general public.

Terry Vosler, CBO
Town of Oro Valley, AZ Building Official
2001-2002 Chairman – Arizona Building Officials

# 2002-2003 AZBO
# CODE REVIEW &DEVELOPMENT COMMITTEE

| Name & initial if attended | Representing | Phone & Fax Numbers | Internet Contact Information |
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| | | | |
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# 2000-2001 AZBO
## CODE REVIEW & DEVELOPMENT STRUCTURAL SUBCOMMITTEE

| Name & initial if attended | Representing | Phone & Fax Numbers | Internet Contact Information |
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# AZBO CR& D Proposal Status

| Item # | AZBO Code Committee # | ICC Code Development # | ICC Code Development Action |
|---|---|---|---|
| 1 | IBC-3 | G1-02 | D |
| 2 | IBC-4 | S12-02 | D |
| 3 | IBC-7 | S90-02 | D |
| 4 | IBC-9 | S99-02, Item 1 | D |
| 5 | IBC-12 | G36-02 | D |
| 6 | IBC-15 | G9-02, Item 1 | D |
| 7 | IBC-17 | F123-02, Item 1 | D |
| 8 | IRC-1 | FG6-02 | D |
| 9 | IRC-2 | M8-02, Item 2 | D |
| 10 | IRC-6 | S99-02, Item 2 | WP |
| 11 | IRC-7 | G65-02, Item 2 | WP |
| 12 | IRC-8 | G65-02, Item 2 | WP |
| 13 | IRC-10 | G9-02, Item 9 | D |
| 14 | IRC-13 | RB45-02, Item 1 | D |
| 15 | IRC-14 | RP18-02 | WP |
| 16 | IRC-16 | F123-02, Item 2 | AS |
| 17 | IRC-17 | RB4-02 | D |
| 18 | IRC-19 | RB65-02 | AS |
| 19 | IRC-20 | RB99-02 | AS |
| 20 | IRC-23 | RB13-02, Item 2 | AS |
| 21 | IRC-34 | RB144-02, Item 1 | AS |
| 22 | IRC-38 | RM17-02 | AS |
| 23 | IMC-1 | M8-02, Item 1 | D * |
| 24 | IMC-3 | M12-02 | WP |
| 25 | IMC-4 | M3-02 | D |
| 26 | IMC-5 | FG13-02 | WP |

IBC-2, IBC-14, IRC-5, IRC-11, IRC-12 and IRC-15 were withdrawn.
AS = Approved as Submitted, D = Disapproved, WP = Withdrawn by Proponent
D * will be challenged (others may be challenged also).

# CODE REVIEW AND DEVELOPMENT COMMITTEE

**GOAL** – ***It shall be the goal of the Code Review and Development Committee to review the family of International Codes, the Code Requirements for Housing Accessibility, the provision for adult group care homes, and the Uniform Code for Building Conservation during the coming year.***

**SCOPE OF WORK** – ***Review codes and develop amendments as necessary to promote uniformity and consistency in code enforcement.***

**MISSION STATEMENT** – ***In an effort to provide better service to the developers, builders, and citizens within the State of Arizona, The Arizona Building Officials (AZBO), Code Review and Development Committee will work to develop a minimum set of uniform code amendments and/or revisions for the codes designated by AZBO utilizing the participation and assistance of the development, construction and design communities as well as that of all jurisdictions and all other interested parties throughout the state.***

***The five areas to address are; errors in the printed codes, coordination between codes, climatic/geographic considerations, life and health safety issues, and local community issues.***

# CODE REVIEW AND DEVELOPMENT COMMITTEE

## STRUCTURAL SUBCOMMITTEE

**GOAL** – ***It shall be the goal of the Code Review and Development Structural Subcommittee to review the family of International Codes and prepare amendments and/or revisions to be submitted to the full committee, if necessary.***

**SCOPE OF WORK** – ***Review codes and develop amendments as necessary to promote uniformity and consistency in code enforcement.***

**MISSION STATEMENT** – ***In an effort to provide better service to the developers, builders, and citizens within the State of Arizona, The Arizona Building Officials (AZBO), Code Review and Development Structural Subcommittee will work to develop a minimum set of uniform code amendments and/or revisions for the structural provisions of the codes designated by AZBO utilizing the participation and assistance of the engineering community as well as that of all jurisdictions and all other interested parties throughout the state.***

**BENCHMARK OR TEST** – ***Proposed amendments should address one of the following areas: errors in the printed codes, coordination between codes, climatic/geographic considerations, life and health safety issues, and local community issues.***

**QUORUM** – ***7 members shall be considered a quorum and a simple majority is required to pass any proposal.***

# AZBO Code Change Committee
# Final Actions Summary

**Legend:** AS = Approved as Submitted; AM = Approved as Modified; D = Disapproved; WP = Withdrawn by proponent; FS – Further Study.

| Item # | Code Section / Subject | Committee Action | Meeting Location | Action Date |
|---|---|---|---|---|
| **IBC-18** | Appendices | WP | Town of Cave Creek | Sep 7, 2001 |
| **IBC-20** | Chapter 11<br>Accessibility | AM | Town of Cave Creek | Sep 7, 2001 |
| **IBC-21** | 2113.1.1<br>Spark arrestor | FS | Home Builders' Association of Central Arizona | Dec 7, 2001 |
| **IBC-22** | 308.2,308.3, 310.1,310.2, (new) 419<br>Adult care homes | FS | City of Glendale | Feb 1, 2002 |
| **IBC-23** | 1209.3<br>Shower walls | WP | City of Goodyear | Apr 5, 2002 |
| **Structural 2** | Table 1607.1<br>Attic storage loads | AM | City of Casa Grande | Dec 14, 2001 |
| **Structural 4** | 1607.11.2.1<br>Roof live load & pitch | AM | City of Chandler | Feb 15, 2002 |
| **Structural 5** | 1704.5<br>Masonry construction | AS | City of Chandler | Mar 15, 2002 |

| Item # | Code Section / Subject | Committee Action | Meeting Location | Action Date |
|---|---|---|---|---|
| **IRC-27** | R324.1<br>Subterranean termite control | AM | Town of Cave Creek | Sep 7, 2001 |
| **IRC-35** | M1308.2<br>Foundations and supports | AM | Town of Cave Creek | Sep 7, 2001 |
| **IRC-37** | M1703.4<br>Attic combustion air | WP | Town of Cave Creek | Sep 7, 2001 |
| **IRC-39** | E3801.11<br>HVAC outlet | AM | Town of Prescott Valley | Nov 2, 2001 |
| **IRC-40** | P3005.2.4<br>Plumbing cleanouts | FS | Town of Prescott Valley | Nov 2, 2001 |
| **IRC-41** | G2414.9<br>Gas line burial depth | AM | Town of Prescott Valley | Nov 2, 2001 |
| **IRC-42** | R310.1<br>Emergency escape and rescue openings | AS | Home Builders' Association of Central Arizona | Dec 7, 2001 |
| **IRC-43** | E3802.9<br>Arc-fault circuit interrupters | AS | Home Builders' Association of Central Arizona | Dec 7, 2001 |

| | | | | |
|---|---|---|---|---|
| **IRC-44** | P2503.6<br>Water supply system testing | AS | Home Builders' Association of Central Arizona | Dec 7, 2001 |
| **IRC-45** | P3103.1<br>Plumbing vent termination | AS | Home Builders' Association of Central Arizona | Dec 7, 2001 |
| **IRC-46** | R1001.1.2<br>Spark arrestor | FS | Home Builders' Association of Central Arizona | Dec 7, 2001 |
| **IRC-47** | Figure R602.3 (2) | AM | City of Goodyear | Apr 5, 2002 |
| **IRC-48** | E3512.1 & E3512.2<br>Ranges and Clothes Dryer plugs and cords | FS | City of Glendale | Feb 1, 2002 |
| **IRC-49** | N1101.2.1<br>Energy compliance | WP | City of Glendale | Feb 1, 2002 |
| **IRC-50** | Table N1102.1<br>Insulation values | WP | City of Glendale | Feb 1, 2002 |
| **IRC-51** | Table R602.3(1)<br>Top plate lap | AS | City of Goodyear | Apr 5, 2002 |
| **IRC-52** | R807.1<br>Attic access | WP | City of Goodyear | Apr 5, 2002 |
| **Structural 1** | R401.4.2 (R401.5)<br>Geotechnical Report | AM | City of Casa Grande | Dec 14, 2001 |
| **Structural 3** | Table R301.4<br>Attic storage loads | AM | City of Chandler | Feb 15, 2002 |

| Item # | Code Section / Subject | Committee Action | Meeting Location | Action Date |
|---|---|---|---|---|
| **IFG-4** | 304.14 | AS | City of Glendale | Feb 1, 2002 |

# AZBO Code Review and Development Committee
# Report of Final Actions

## 2000 International Building Code

**IBC-19**

**Revision to:** Appendices

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal:**

Only the following appendices are adopted:

- Appendix B Board of Appeals
- Appendix C Group U – Agricultural Buildings
- Appendix I Patio Covers

**Reason:** This change will create uniformity throughout the state.

**Committee Action:** Withdrawn by proponent

**IBC-20** (Previously IBC-18)

**Revision to:** Chapter 11 Accessibility

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal:** Delete Chapter 11, Accessibility, in its entirety and substitute the following:

ARIZONANS WITH DIABILITIES ACT
"Arizonans with Disabilities Act" (Arizona Revised Statutes, Title 41, Chapter 9, Article 8), and the "Arizonans with Disabilities Act Implementing Rules" (Arizona Administrative Code, Title 10, Chapter 3, Article 4), which rules incorporate The federal "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities," be and the same is hereby adopted as the Arizonans with Disabilities Act of the Town, City or County, and shall apply to new construction and alterations and are not required in buildings or portions of existing buildings that do not meet the standards and specifications and this act is hereby referred to, adopted and made a part hereof as though fully set forth in this section.

Amendments to Arizonans with Disabilities Act

The Arizonans with Disabilities Act § 41-1492.07 "Exemptions for private clubs and religious organizations" shall be deleted.

**Reason:** The regulation of accessibility is currently governed by the Arizonan's with Disability Act. This change will create uniformity throughout the state.

**Cost impact**: None

**Committee Action:** AM

**Proposal:** Delete Chapter 11, Accessibility, in its entirety and substitute the following:

ARIZONANS WITH DIABILITIES ACT
"Arizonans with Disabilities Act" (Arizona Revised Statutes, Title 41, Chapter 9, Article 8), and the "Arizonans with Disabilities Act Implementing Rules" (Arizona Administrative Code, Title 10, Chapter 3, Article 4), which rules incorporate The federal "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities," be and the same is hereby adopted as the Arizonans with Disabilities Act of the Town, City or County, and shall apply to new construction and alterations and are not required in buildings or portions of existing buildings that do not meet the standards and specifications and this act is hereby referred to, adopted and made a part hereof as though fully set forth in this section.

**Reason:** All jurisdictions within the state are required by state law to enforce these provisions so this code change merely brings the International Building Code into compliance.

**IBC-21**

**Revision to:** Section 2113.1 General

**Proponent:** Dave Fizzell, City of Prescott

**Proposal: 2113.1.1 Spark arrester.** Where determined necessary by the building official due to local climatic conditions or where sparks escaping from the chimney would create a hazard, and chimneys attached to any appliance or fireplace that burns solid fuel shall be equipped with an approved spark arrester. The net free area of the spark arrester shall not be less than four times the net free area of the outlet of the chimney. The spark arrester screen shall have heat and corrosion resistance equivalent to 0.109-inch (2.77 mm) (No. 12 B.W. gage) wire, 0.042-inch (1.07 mm) (No. 19 B.W. gage) galvanized wire or 0.022-inch (0.56 mm) (No. 24 B.W. gage) stainless steel. Openings shall not permit the passage of spheres having a diameter larger than ½ inch (12.7 mm) and shall not block the passage of spheres having a diameter of less than 3/8 inch (9.5 mm).

Chimneys used with fireplaces or having heating appliances in which solid or liquid fuel is used shall be provided with a spark arrester as required in the Fire Code.

**EXCEPTION:** Chimneys that are located more than 200 feet (60,960 mm) from any mountainous, brush-covered or forest-covered land or land covered with flammable material and that are not attached to a structure having less than a Class C roof covering, as set forth in this code.

**Reason:** When buildings are located in or near heavily wooded or brushy areas preventing burning embers from escaping the chimney is extremely important. Adding this language, which is in the Uniform Building Code, will provide the building official with the means to require this equipment.

**Committee Action:** Tabled for further study.

**IBC-22**

**Revision to:** Sections 308.2,308.3, 310.1,310.2, (new) 419

**Proponent:** Forrest Fielder, City of Surprise

**Proposal: 308.2 Group I-1.** This occupancy shall include a building or part thereof housing more than ~~16~~ 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides ~~personal~~ supervisory care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers, and convalescent facilities. A facility such as the above with ~~five~~ 10 or fewer persons shall be classified as a group R-4 Condition 1. ~~A facility such as the above, housing at least six and not more than 16 persons shall be classified as a Group R-4.~~

**308.3 Group I-2.** This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than ~~five~~ 10 persons who are not capable of ~~self-preservation~~ responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to the following: hospitals, nursing homes (both intermediate care facilities and skilled nursing facilities), mental hospitals, and detoxification facilities. A facility such as the above with ~~five~~ 10 or fewer persons shall be classified as a Group ~~R-3~~ R-4 Condition 2.

**310.1…R-4**. Residential occupancies shall include buildings arranged for occupancy as Residential Care/Assisted Living Facilities including ~~more than five but not more than 16 occupants~~ up to 10 occupants, excluding staff.

**310.1.1 Condition 1.** This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of responding to an emergency situation without physical assistance from staff. Condition 1 occupancies

shall meet the requirements for construction as defined in Group R-3 except for the height and area limitations provided in Section 503. Condition 1 facilities housing more than 10 persons shall be classified as a Group I-1.

**310.1.2 Condition 2.** This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of responding to an emergency without physical assistance from staff. Condition 2 occupancies shall be designed and constructed in accordance with Section 419. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

**310.2 Definitions**

PERSONAL CARE SERVICE. ~~The care of residents who do not require chronic or convalescent medical or nursing care~~. Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and the administration of medications and treatments, as provided in ARS Title 9, Article 7. Personal care involves responsibility for the safety of the resident while inside the building.

DIRECTED CARE SERVICE. Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions, as provided in ARS Title 9, Article 7.

SUPERVISORY CARE SERVICE. General supervision, including daily awareness of resident functioning and continuing needs, as provided in ARS Title 9, Article 7.

RESIDENTIAL CARE/ASSISTED LIVING FACILITY. A building or part thereof housing a maximum of ~~16~~ 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory, personal, or directed care services. ~~The occupants are capable of responding to an emergency situation without physical assistance from staff.~~ This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug rehabilitation centers, and convalescent care facilities. ~~Residential care/assisted living facilities housing more than 16 persons shall be classified as Group I-1.~~

**419 RESIDENTIAL CARE/ASSISTED LIVING FACILTIES**

**419.1 Applicability.** The provisions of this section shall apply to a building or part thereof housing up to 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal or directed care services. Except as specifically required by this division, R-4 Condition 2 occupancies shall meet all applicable provisions of this code.

**419.2 General.** Buildings or portions of buildings classified as R-4 Condition 2 occupancies may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building, and shall not exceed 2000 square feet above the first story except as provided in Section 506.

**419.3 Special Provisions.** R-4 Condition 2 occupancies having more than 2000 square feet of floor area above the first floor shall be of not less than one-hour fire-resistive construction throughout.

**419.3.1 Mixed Uses.** R-4 Condition 2 occupancies shall be separated from other uses as provided in Table 302.3.3.

**419.4 Access and Means of Egress Facilities.**

**419.4.1 Accessibility.** R-4 Condition 2 occupancies shall be provided with at least one accessible route per Section 1104.

**419.4.2 Exits**

**419.4.2.1 Number of Exits.** Every story, basement, or portion thereof shall have not less than two exits.

**Exception:** Basements and stories above the first floor containing no sleeping rooms may have one exit.

**419.4.2.2 Distance to Exits.** The maximum travel distance from the center point of any room to an exterior exit door shall not exceed 75 feet.

**419.4.2.3 Emergency Exit Illumination.** In the event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the National Electric Code.

**419.4.3 Smoke Detectors and Sprinkler Systems**

**419.4.3.1 Smoke Detectors.** All habitable rooms and hallways in R-4 Condition 2 occupancies shall be provided with smoke detectors installed in accordance with Section 907.2.10.

**419.4.3.2 Sprinkler Systems.** R-4 Condition 2 occupancies shall be provided with a sprinkler system installed in accordance with NFPA 13D.

**Reason:** The purpose of this amendment is to bring the provisions of the code into agreement with the licensing rules of the Arizona Department of Health Services. DHS license categories have a threshold of 10 residents to move from a residential home setting to an institutional setting. DHS rules (R9-10-701) state, “Assisted living home” or

"home" means an assisted living facility that provides resident rooms to (10) or fewer residents, as distinct from an "assisted living center", which provides services to more than (10) persons. In addition, the license classifications to provide "personal care services" and "directed care services" to residents allow for residents to be bed-bound. The use of "Condition" distinctions is reflective of similar distinctions in I-occupancies.

Each state has unique agency programs for assisted living occupancies, which establish license categories based on numbers of residents and the familiar ambulatory/non-ambulatory distinction. Uniformity could be accomplished by either trusting health service agencies nationally to agree to uniform thresholds and other licensing characteristics, or by amending building codes to allow each state to adapt to that state's unique rules. If numerical thresholds are provided on a "fill in the blanks" basis, condition categories can be added or deleted, and definitions can be customized to match licensure definitions, the hazards associated with these facilities can be addressed comprehensively on a state-by-state basis.

The most hazardous scenario is a facility in an ordinary, un-rated residential structure, occupied by (10) bed-bound residents, supervised by a single caregiver. Provisions for exiting, smoke detectors, emergency illumination, sprinklers, et al, can substantially increase the chances of survival in a fire or other emergency for these residents.

**Committee Action:** Tabled for further study.

**IBC-23**

**Revision to:** Section 1209.3

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal: 1209.3 Showers.** Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth, nonabsorbent surface to a height not less than 72 ~~70~~ inches (1829 ~~1778~~ mm) above the drain inlet.

**Reason:** This change brings the IBC into agreement with Section R307.2 of the IRC that states, "**R307.2 Bathtub and shower spaces.** Bathtub and shower floors and walls above bathtubs with installed showerheads and in shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet (1829 mm) above the floor.

**Committee Action:** Withdrawn by proponent.

**Structural 2**

**Revision to:** Table 1607.1

**Proponent:** Brian Juedes

**Proposal:** Add a new footnote.

| OCCUPANCY OR USE | UNIFORM (psf) | CONCENTRATED (lbs.) |
|---|---|---|
| 27. Residential<br>Uninhabitable attics without storage [i]<br>*(no other changes in item 27)* | | |

i. This live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

**Reason:** For temporary safety and construction load, not for the life of the structure. This issue has been addressed in a previous nationally recognized model code; therefore, setting a precedence on this issue.

**Committee Action:** Approved as modified.

**Proposal:**

| OCCUPANCY OR USE | UNIFORM (psf) | CONCENTRATED (lbs.) |
|---|---|---|
| 27. Residential<br>Uninhabitable attics without storage [i]<br>(no other changes in item 27) | | |

i. For trussed systems, this live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

**Structural 4**

**Revision to:** Section 1607.11.2.1

**Proponent:** Mark Luther

**Proposal:** $R_2 = 1.2 - 0.05\,F$ for $4<F<12$ (Equation 16-9)
Exception : For light frame construction 5 stories or less, Pitch 4/12 to 8/12 live load to be 16 psf.

**Reason:** This would reconcile the differences between the IRC and the IBC regarding roof live load and pitch. Construction load is the largest applied live load and, historically, for pitched roofs 16 psf has been more than adequate.

**Committee Action:** Approved as modified.

**Proposal:** $R_2 = 1.2 - 0.05\,F$ for $4<F<12$ (Equation 16-9) [a]

a. For light frame construction 3 stories or less with a slope equal to 4/12 or greater $R_2$ may be used as 0.8.

**Reason:** This would provide consistency between the IRC Table R301.5 and the IBC Section 1607.11.2.1 regarding roof live load and pitch.

**Structural 5**

**Revision to:** Section 1704.5

**Proponent:** Edward J. Courtney

**Proposal:**

3. Masonry fences six feet or less in height above grade.
4. Masonry retaining walls four feet or less in height from bottom of footing to top of wall unless supporting a surcharge or impounding flammable liquids.
5. Masonry walls 10 feet or less in height and fireplaces of one and two family dwellings when designed at ½ stress.

**Reason:** Exception 3 – No previous codes ever required special inspection for masonry fences 6 feet in height or less.

Exception 4 – Retaining walls 4 feet or less in height from bottom of footing to top of wall and not supporting a surcharge or flammable liquids are exempt from building permit requirement.

Exception 5 – Special inspection for masonry walls of one and two family residences increase the cost of home construction and do little to improve life safety since designing at ½ stress is superior to the prescriptive method of design in the IRC.

**Committee Action:** Approved as submitted.

## 2000 International Residential Code

**IRC-27**

**Revision to:** Section R324.1

**Proponent:** Chuck King, Town of Oro Valley

**Proposal: R324.1 Subterranean termite control.** In areas ~~favorable to termite damage~~ designated as "moderate or heavy", as established by table ~~R301.2 (1)~~ R301.2 (6), methods of protection shall be by chemical soil treatment, pressure preservatively treated wood in accordance with the AWPA standards listed in Section R323.1, naturally

termite-resistant wood, or physical barriers (such as metal or plastic termite shields). ~~or any combination of these methods.~~

**Reason:** The first revision is due to the fact that "favorable to termite damage" is not defined. The table number revision is editorial. The final revision delete the last part of the sentence, is due to the fact that it just isn't necessary. These specified treatments stand alone as acceptable, and are not intended to work in combination with one another to become effective.

**Committee Action:** Approved as Modified

**Proposal: R324.1 Subterranean termite control.** In areas ~~favorable to termite damage~~ designated as "slight to moderate", "moderate to heavy" and "very heavy", as established by Table R301.2(1), methods of protection shall be by chemical soil treatment, pressure preservatively treated wood in accordance with the AWPA standards listed in Section R323.1, naturally termite-resistant wood, or physical barriers (such as metal or plastic termite shields), or any combination of these methods.

**IRC-35**

**Revision to:** Section 1403.2

**Proponent:** Chuck King, Town of Oro Valley

**Proposal: M1403.2 Foundations and supports.** Supports and foundations for ~~the~~ outdoor ~~unit of a heat pump~~ mechanical equipment shall be raised at least 3 inches (76 mm) above ~~the ground to permit free drainage of defrost water~~ the finished grade, and shall also conform to the manufacturer's installation instructions.

**Reason:** It is necessary to protect all outdoor equipment from problems associated with grade level installations, not just heat pumps.

**Committee Action:** Approved as Modified

**Proposal: M1308.2 Foundations and supports.** Foundations and supports for outdoor mechanical systems shall be raised at least 3 inches (76 mm) above the finished grade, and shall also conform to the manufacturer's installation instructions.

**IRC-37**

**Revision to:** Section M1703.4

**Proponent:** Chuck King, Town of Oro Valley

**Proposal:** Section M1703.4-#3 Figure M1703.3 is referenced, but should be Figure M1703.2 (3).

**Reason:** This revision is editorial in nature.

**Committee Action:** Withdrawn by proponent

**IRC-39**

**Revision to:** Section E3801.11

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal: E3801.11 HVAC outlet.** A convenience receptacle outlet shall be installed for the servicing of heating, air-conditioning and refrigeration equipment ~~located in attics and crawl spaces~~. The receptacle shall be accessible and shall be located on the same level and within 25 feet (7620 mm) of ~~the heating, air-conditioning and refrigeration~~ any mechanical equipment installed. The receptacle outlet shall not be connected to the load side of the HVAC equipment disconnecting means.

**Reason:** The equipment needs servicing wherever it is located so the qualifying of the location to attics and crawl spaces is not required.

**Committee Action:** Approved as Modified

**Proposal: E3801.11 HVAC outlet.** A convenience receptacle outlet shall be installed for the servicing of heating, air-conditioning and refrigeration equipment ~~located in attics and crawl spaces~~. The receptacle shall be accessible and shall be located on the same level and within 25 feet (7620 mm) of the heating, air-conditioning and refrigeration equipment. The receptacle outlet shall not be connected to the load side of the HVAC equipment disconnecting means.

**IRC-40**

**Revision to:** Section P3005.2.4

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal: P3005.2.4 Change of direction.** Cleanouts shall be installed at each change of direction of the drainage system greater than ~~45~~ 135 degrees, except not more than one cleanout shall be required in each 40 feet (12 192 mm) of run regardless of change of direction.

**Reason:** Uniform Plumbing Code Section 707.5 has allowed up to a 135 degrees of change of direction for years without any problem and a change to 45 degrees would be unnecessary, unwarranted and costly.

**Committee Action:** Tabled for further study.

**IRC-41**

**Revision to:** Section G2414.9

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal: G2414.9 (404.9) Minimum burial depth.** Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade for metal piping and 18 inches (457mm) for plastic piping, ~~except as provided for in Section G2414.9.1.~~

~~**G2414.9.1 (404.9.9) Individual outside appliances.** Individual lines to outside lights, grills or other appliances shall be installed a minimum of 8 inches (203 mm) below finished grade, provided that such installation is approved and is installed in locations not susceptible to physical damage.~~

**Reason:** The distinction between metal piping and plastic piping in regards to burial depth is because the plastic piping is more susceptible to damage and needs the increased depth for protection.

The elimination of the section addressing individual outside appliances is because the risks are the same whether the line serves multiple appliances or a single appliance. With similar risks, similar depths should be required.

**Committee Action:** Approved as Modified

**Proposal: G2414.9 (404.9) Minimum burial depth.** Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade for metal piping and 18 inches (457mm) for plastic piping, except as provided for in Section G2414.9.1.

**IRC-42**

**Revision to:** Section R310.1 Emergency escape and rescue openings

**Proponent:** Dave Fizzell, City of Prescott

**Proposal:** Add another sentence at the end of the paragraph to read as follows:

Such openings shall open directly into a public street, public alley, yard or court.

**Reason:** This is the same language that is in IBC Section 1009.1. Without this requirement the emergency escape and rescue window could open into a carport or enclosed patio.

**Committee Action:** Approved as submitted.

**IRC-43**

**Revision to:** Section E3802.9 Arc-fault circuit interrupters

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal:** **E3802.9 Arc-fault Protection.** All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere receptacle outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit interrupter(s).

**Reason:** The title of Section E3802 is "GROUND-FAULT AND ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION" but the body of that section does not mention arc-fault protection. Clearly some arc-fault protection was intended. Since Chapter 33 GENERAL REQUIREMENTS states that Chapters 33 through 42 are based on the 1999 *National Electric Code* (NEC) (NFPA 70-1999), the arc-fault requirement was extracted from NEC 210-12 (b).

**Committee Action:** Approved as submitted.

**IRC-44**

**Revision to:** Section P2503.6 Water supply system testing

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal:** A sentence at the end of this subsection should be added that reads: The test shall maintain such pressure for 15 minutes.

**Reason:** A specific length of time has been an industry standard practice and 15 minutes would allow sufficient time to determine that there are no leaks.

**Committee Action:** Approved as submitted.

**IRC-45**

**Revision to:** Section P3103.1 Plumbing vent termination

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal: P3103.1 Roof Extension.** All open vent pipes which extend through a roof shall be terminated at least 6 ~~[number]~~ inches above the roof or 6 ~~[number]~~ inches above the anticipated snow accumulation, except that where a roof is to be used for any purpose other than weather protection, the vent extensions shall be run at least 7 feet (2134 mm) above the roof.

**Reason:** For the sake of uniformity and continuity, a single number should be used by all jurisdictions. The 6" number comes from Section 906.1 of the 1994 Uniform Plumbing Code and would not constitute a change from the existing rules. The 7 feet above roofs used for other than weather protection comes from Section 906.3 of the 1994 Uniform Plumbing Code and indicates that this section is a logical one from which to select a number.

**Committee Action:** Approved as submitted.

**IRC-46**

**Revision to:** Section R1001.1.2 Spark arrestor

**Proponent:** Dave Fizzell, City of Prescott

**Proposal: R1001.1.2 Spark arrester.** Where determined necessary by the building official due to local climatic conditions or where sparks escaping from the chimney would create a hazard, and chimneys attached to any appliance or fireplace that burns solid fuel shall be equipped with an approved spark arrester. The net free area of the spark arrester shall not be less than four times the net free area of the outlet of the chimney. The spark arrester screen shall have heat and corrosion resistance equivalent to 0.109-inch (2.77 mm) (No. 12 B.W. gage) wire, 0.042-inch (1.07 mm) (No. 19 B.W. gage) galvanized wire or 0.022-inch (0.56 mm) (No. 24 B.W. gage) stainless steel. Openings shall not permit the passage of spheres having a diameter larger than ½ inch (12.7 mm) and shall not block the passage of spheres having a diameter of less than 3/8 inch (9.5 mm).

Chimneys used with fireplaces or having heating appliances in which solid or liquid fuel is used shall be provided with a spark arrester as required in the Fire Code.

**EXCEPTION:** Chimneys that are located more than 200 feet (60,960 mm) from any mountainous, brush-covered or forest-covered land or land covered with flammable material and that are not attached to a structure having less than a Class C roof covering, as set forth in this code.

**Reason:** When buildings are located in or near heavily wooded or brushy areas preventing burning embers from escaping the chimney is extremely important. Adding

this language, which is in the Uniform Building Code, will provide the building official with the means to require this equipment.

**Committee Action:** Tabled for further study.

**IRC-47**

**Revision to:** Section 602.3 and Figure R602.3 (2)

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal: R602.3.2 Top Plate.** Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and intersections with bearing partitions. End joints in top plates shall be offset at least 48 ~~24~~ inches (1219 ~~610~~ mm).

The exception to remain unchanged.

**Reason:** IRC Table R602.3 (1), on line ten states, "Double top plates, minimum 48-inch offset of end joints, face nail in lapped areas". Also, IBC Section 2308.9.2.1 Top Plates states, "End joints in double top plates shall be offset at least 48 inches (1219 mm), and shall be nailed with not less than eight 16d face nails on each side of the joint." This revision would arrive at consistency within provisions of the IRC and between the IRC and the IBC.

**Committee Action:** Approved as Modified.

**Proposal: Figure R602.3 (2) Framing Details** The note in the upper right corner of the page is edited to read "STAGGER JOIN~~S~~TS 2~~4~~ ft ~~IN~~. OR USE SPLICE PLATES—SEE SECTION R602.3.2".

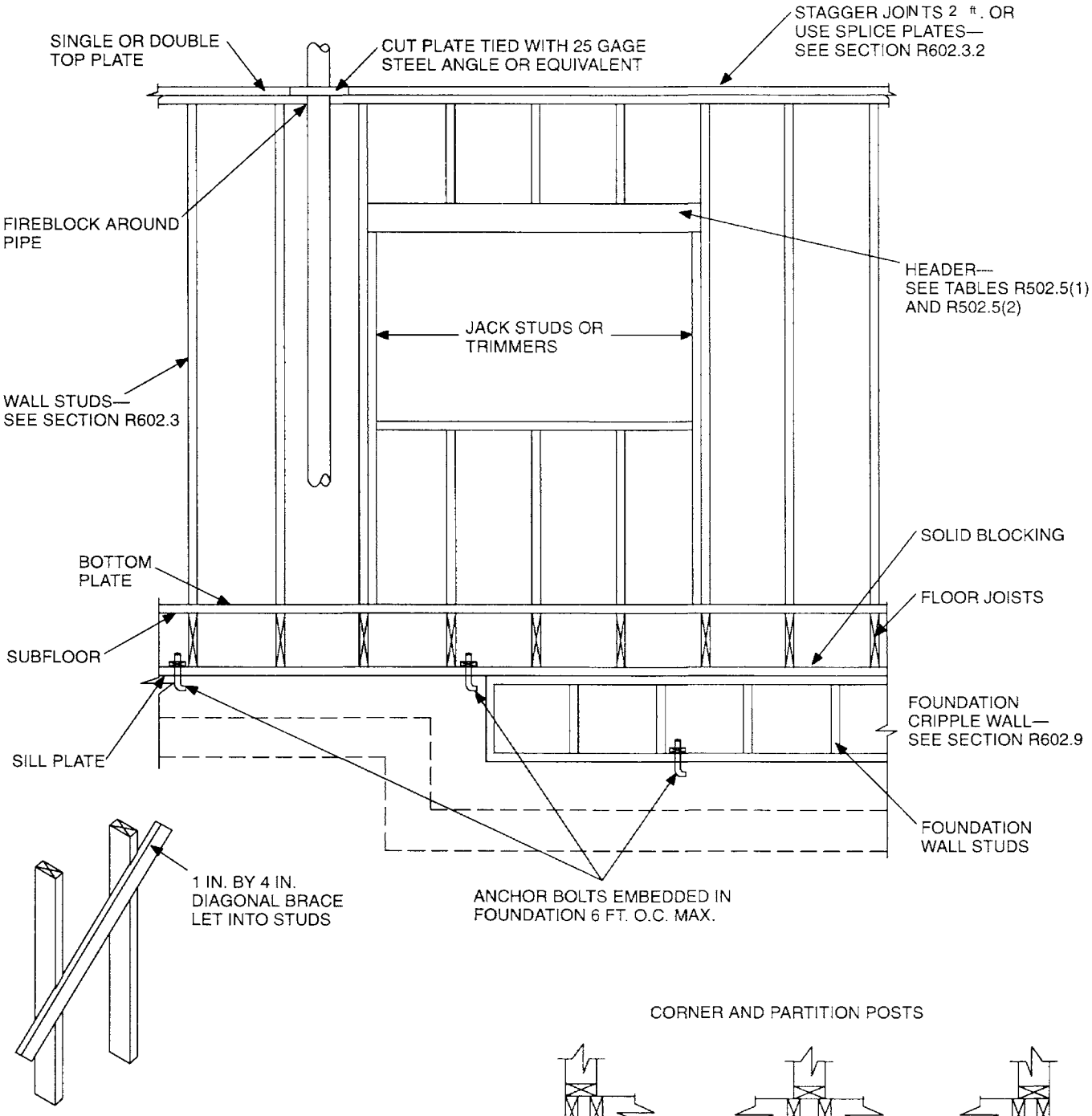
The remainder of the figure is to remain unchanged.

**Reason:** Section R602.3.2 states, "End joints in top plates shall be offset at least 24 inches (610 mm)." By revising the Figure, the information is consistent with the text of the code.

**IRC-48**

**Revision to:** Chapter 35

**Proponent:** Dave Fizzell, City of Prescott




APPLY APPROVED SHEATHING OR BRACE EXTERIOR WALLS WITH 1 IN. BY 4 IN. BRACES LET INTO STUDS AND PLATES AND EXTENDING FROM BOTTOM PLATE TO TOP PLATE, OR OTHER APPROVED METAL STRAP DEVICES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. SEE SECTION R602.10.

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

**Note:** A third stud and/or partition intersection backing studs shall be permitted to be omitted through the use of wood backup cleats, metal drywall clips or other approved devices that will serve as adequate backing for the facing materials.

**FIGURE R602.3(2)**
**FRAMING DETAILS**

**Proposal:** **SECTION E3512 FRAMES OF RANGES AND CLOTHES DRYERS**

**E3512.1 Frames of ranges and clothes dryers.** This section shall apply to existing branch-circuit installations only. New branch-circuit installations shall comply with Section E3512.2. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances shall be grounded in the manner specified by Section E3512.2; or shall be permitted to be grounded to the grounded circuit conductor if all of the following conditions are met.

(1) The supply circuit is 120/240-volt, single-phase, 3-wire; or 208Y/120-volt derived from a 3-phase, 4-wire wye-connected system.

(2). The grounded conductor is not smaller than No. 10 copper or No. 8 aluminum.

(3) The grounded conductor is insulated, or the grounded conductor is uninsulated and part of a Type SE service-entrance cable and the branch circuit originates at the service equipment.

(4) Grounding contacts of receptacles furnished as part of the equipment are bonded to the equipment.

**E3512.2 Cord- and plug-connected equipment.** Noncurrent-carrying metal parts of cord- and plug-connected equipment if grounded, shall be grounded by one of the following methods.

(a) By Means of an Equipment Grounding Conductor. By means of an equipment grounding conductor run with the power supply conductors in a cable assembly or flexible cord properly terminated in a grounding-type attachment plug with one fixed grounding contact.

Exception: The grounding contacting pole of grounding-type plug-in ground-fault circuit interrupters shall be permitted to be of the movable, self-restoring type on circuits operating at not over 150 volts between any two conductors, or over 150 volts between any conductor and ground.

(b) By Means of a Separate Flexible Wire or Strap. By means of a separate flexible wire or strap, insulated or bare, protected as well as practicable against physical damage, where part of equipment.

**Reason:** This language is the same as that in the 1996 NEC. It is felt that this should be included in the IRC to clearly state that it is necessary to separately ground these appliances.

**Committee Action:** Tabled for further study.

**IRC-49**

**Revision to:** Section N1101.2.1 Residential buildings, Type A-1

**Proponent:** Anthony Floyd, City of Scottsdale

**Proposal: N1101.2.1 Residential Buildings, Type A-1.** Compliance shall be demonstrated by either:

1. Meeting the requirements of this chapter for buildings with a glazing area that does not exceed 25 ~~15~~ percent of the gross area of the exterior walls; or
2. Meeting the requirements of the *International Energy Conservation Code* for residential buildings, Type a-1.

**Reason:** Compliance should not differ between single family dwellings and townhomes as there are no substantive differences in the structures.

**Committee Action:** Withdrawn by proponent.

**IRC-50**

**Revision to:** Table N1102.1 Insulation values

**Proponent:** Anthony Floyd, City of Scottsdale

**Proposal:**

| CDD | MAXIMUM GLAZING U-FACTOR | MINIMUM INSULATION *R*-VALUE [(hr·ft$^2$·ºF)/Btu] | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ceilings | Walls | Floors | Basement walls | Slab perimeter *R*-value and depth | Crawl space walls |
| 0-4,000 | Any | R-30 | R-19 | R-19 | R-0 | R-0 | R-0 |

The table above is an addition to the table as it appears.

**Reason:** The table addresses Heating Degree Days and the prescriptive requirements that are needed for cooler climates but neglects those climates where cooling is equally significant.

**Committee Action:** Withdrawn by proponent.

**IRC-51**

**Revision to:** Table R602.3 (1) Top plate lap

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal: Table R602.3 (1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS** Under the column entitled "**DESCRIPTION OF BUILDING ELEMENTS**", change the tenth line to read, "Double top plates, minimum 24 ~~48~~ – inch offset of end joints, face nail in lapped area". The remainder of the table is to remain unchanged.

**Reason:** IRC Section R602.32, states, "Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and intersections with bearing partitions. End joints in top plates shall be offset at least 24 inches (610 mm)." This change brings the Table into agreement with the text of the code.

**Committee Action:** Approved as submitted.

**IRC-52**

**Revision to:** Section R807.1 Attic access

**Proponent:** Charles M. McKinney, Ranch West Properties, L L C

**Proposal:** In buildings with combustible ceiling or roof construction, an attic access opening shall be provided to attic areas that exceed 30 square feet (2.8m$^2$) and have a vertical height of 30 inches (762 mm) or greater. The vertical height being defined as the distance from the bottom of the roof-framing member to the top of a platform provided for access and protection of building materials.

**Reason:** Clarification of when an attic is created is needed on low-sloped roofs.

**Committee Action:** Withdrawn by proponent.

**Structural 1**

**Revision to:** Sections R401.5 & R401.4.2

**Proponent:** Daryl Young

**Proposal:** R401.5 ~~Compressible~~ Collapsible or shifting soil. When top or subsoils are ~~compressible~~ collapsible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill or stabilized within each active zone by chemical, dewatering, or presaturation.

**Reason:** The reason for rewording R401.5 is that many soils investigation reports classify bearing soils as compressible and design procedures exist for designing foundations on compressible soils (e.g., PTI Design and Construction of Post Tensioned

Slabs-On-Ground). Thus, it is not necessary for all compressible soils to be removed; rather, it is the decision of the geotechnical engineer as to the best course of action to deal with any compressible soils. Also, it appears that the intent of this section is to avoid construction on unstable, shifting, and/or collapsible soils, such as quicksand, hydro-collapsible soils, landslides, etc.

**Committee Action:** Approved as modified.

**Proposal:** Add a new section.
**R401.4.2** In lieu of a complete geotechnical evaluation, when top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill ~~or~~ nor stabilized within each active zone by chemical, dewatering, or presaturation.

~~**R401.5 Compressible or shifting soil.** When top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to assure stable moisture content in each active zone and shall not be used as fill or stabilized within each active zone by chemical, dewatering, or presaturation.~~

**Structural 3**

**Revision to:** Table R301.4

**Proponent:** Mark Luther

**Proposal:** Revise Table by adding footnote "g":

| USE | LIVE LOAD |
|---|---|
| Attics without storage [b, e, g] | 10 |

(No other changes to Table)

g. Live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

**Reason:** For temporary construction and service load, not for the life of the structure. This issue has been addressed in a previous nationally recognized model code: therefore, setting precedence on this issue.

**Committee Action:** Approved as modified.

**Proposal:** Revise Table by adding footnote "g":

| USE | LIVE LOAD |
|---|---|
| Attics without storage [b, e, g] | 10 |

(No other changes to Table)

g. For trussed systems, this load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

## 2000 International Fuel Gas Code

**IFGC-4**

**Revision to:** Section 304.14

**Proponent:** Robert D. Lee, Town of Cave Creek

**Proposal: 304.14 Louvers and grilles.** In calculating free area in Sections 304.10, 304.11 and 304.12, the required size of openings for combustions, ventilation and dilution air shall be based on the net free area of each opening. If the free area through a design of louver or grille is known, it shall be used in calculating the size opening required to provide the free area specified. If the design and free area are not known, it shall be assumed that wood louvers will have ~~20~~ 25 percent free area and metal louvers and grilles will have ~~60~~ 75 percent free area. Louvers and grilles shall be fixed in the open position.

The exception shall remain unchanged.

**Reason:** The required size of louvers and grilles is a specific number and the net free area is a specific number for known louvers and grilles. Assuming a range of free areas may lead to confusion and nothing is gained in having a range. The choice of allowing the larger net free area was arbitrary.

**Committee Action:** Approved as submitted.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H12** | |
|---|---|
| Title: **MAG Building Codes Committee Statement on Ventless Attics** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual**<br>**Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **1/15/2003** | |
| Archived to Historical Section by MAG Building Codes Committee: **5/16/2012** | |

At the January 15, 2003, Building Codes Committee meeting, the Committee reviewed a statement that allowed for the possibility of a jurisdiction permitting a ventless attic.

At the May 16, 2012 Building Codes Committee meeting, the Committee reviewed the original document. The Committee determined that the original statement is now part of the code. The Committee voted unanimously to move this document to the Historical Archive.

# MAG Building Codes Committee Statement on Ventless Attics

## January 15, 2003

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 conservation in mind.

Motion passed 15-1.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H13** | |
|---|---|
| Title: **MAG Standard for Installation of Residential Dryer Vents** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **2/19/2004** | |
| Archived to Historical Section by MAG Building Codes Committee: **1/16/2013** | |

At the February 19, 2004, Building Codes Committee meeting, the Committee reviewed a standard tag that would be required to be affixed near residential clothes dryers.

At the January 16, 2013 Building Codes Committee meeting, the Committee reviewed the original document. The Committee determined that this requirement is part of the 2012 code. The Committee voted unanimously to move this document to the Historical Archive.

# 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:

**WARNING**
**DO NOT REMOVE**

THE DRYER DUCT EXCEEDS THE LENGTH PRESCRIPTIVELY ALLOWED BY THE CODE. ALL DOMESTIC DRYERS INSTALLED AT THIS LOCATION SHALL BE MANUFACTURER APPROVED (UL LISTED) FOR CONNECTION TO AN EXHAUST DUCT THAT IS

| | | | | |
|---|---|---|---|---|
| | WITH | | & | |
| FEET OR GREATER | | 90° ELBOWS | | 45° ELBOWS |

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H14** | |
|---|---|
| Title: **AZBO Code Review and Development Committee Annual Report 2003** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **11/19/2003** | |
| Archived to Historical Section by MAG Building Codes Committee: **6/20/2012** | |

At the November 19, 2003, Building Codes Committee meeting, the Committee reviewed the AZBO Code Review and Development Committee annual report for 2003.

At the June 20, 2012 Building Codes Committee meeting, the Committee reviewed the original document. The Committee voted unanimously to move this document to the Historical Archive.

# AZBO

# CODE REVIEW AND DEVELOPMENT COMMITTEE

# ANNUAL REPORT

## July 2003

## Revised November 2003

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# INTRODUCTION LETTER

Imad Eldurubi
Chair - Arizona Building Officials

June 20, 2003

Revised November 12,2003
Steve Brown
Chair – Arizona Building Officials

Mr. Chair,

The work of the Arizona Building Officials (AZBO) Code Review and Development Committee (CR & D) continues in an ongoing effort to encourage uniformity in the amendments and adoption of the construction codes enforced throughout the State of Arizona.

During the past year, Mr. Bob Lee has been the Chairperson of the AZBO CR & D Committee from August 2002 to March 7 2003. Mr. Bob Lee resigned in March 2003 and announced Vice Chair Autumn Hartsoe as the acting Chairperson of the Committee for the remaining term. Mr. Tom Hedges volunteered to assume the Vice Chair position for the remaining term.

During the past year, the Committee has met approximately every other month in various locations throughout the State to evaluate code change proposals to the International Family of Codes. In addition, the Structural Subcommittee met several times to evaluate specific structural issues of the International Building Code and the International Residential Code. Members of the Structural Subcommittee decided to disband in March of 2003 due to lack of issues being presented to the Committee. The Structural Subcommittee successfully addressed and resolved many structural issues. Meetings for both the full committee and the subcommittee have been open to all stakeholders in the development industry - refer to pages 5-7 for list of participants. Membership on the AZBO CR & D Committee is offered to anyone with an interest in developing the International Family of Codes and all members are permitted to vote.

The AZBO CR & D Committee has continued to follow the established five basic guidelines for reviewing and approving proposed amendments to the Codes. The five basic guidelines are as follows:

- Errors in the printed codes
- Coordination between codes
- Climatic/geographic considerations
- Life and health safety issues
- Local community issues

During the Inception of this committee, committee members were given the directive to remove code change proposals that were not approved by ICC during the code hearing process. The committee requests the AZBO Board of Directors to review and consider approval of a revision to this directive. The committee requests allowance for the AZBO CR & D Committee to reevaluate proposals that have been denied by ICC. The committee will either revise the proposal to

resubmit to ICC, will approve the proposal to remain as a State of Arizona amendment, or will remove the proposal from the committee's subsequent package of amendments.

The members of the AZBO CR & D Committee present two reports to the AZBO Board of Directors with a recommendation of support and approval of these reports. The first report titled *Report of Final Actions*, is a summary of the Committee's work during the past year - refer to pages 13-42. This report lists all submitted code change proposals, along with their current status. The second report tilted *2000 ICC Amendments Reformatted to the 2003 ICC Codes,* is a compilation of code change proposals approved by the CR & D Committee during the past three years - refer to pages 43-69. These approved code change proposals have been reformatted to the 2003 ICC Codes to assist jurisdictions and the development community with the adoption process of the 2003 ICC Codes. In addition, the committee reviewed and revised the amendment packet at the October 1, 2003 committee meeting to reflect the results of the September ICC Code Hearings. The committee will meet on January 9, 2004 to review the 2002 amendment packages that currently exist throughout the State. The committee will review and take action on these existing amendment packages to the current AZBO guidelines for approving code change proposals. The committee will provide to the AZBO Board a supplement amendment package of recommended amendments to the 2002 NEC.

Please feel free to contact me at (623) 932-3004 or email at ahartsoe@ci.goodyear.az.us with questions or concerns.

Sincerely,

Autumn Hartsoe
Chairperson - AZBO Code Review and Development Committee
Goodyear, Arizona

**2002-2003 AZBO**
**CODE REVIEW &DEVELOPMENT COMMITTEE**

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**2000-2001 AZBO**
**CODE REVIEW & DEVELOPMENT STRUCTURAL SUBCOMMITTEE**

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# AZBO Code Change Committee
# Final Actions Summary

**Legend:** AS = Approved as Submitted; AM = Approved as Modified; D = Disapproved; WP = Withdrawn by proponent; FS – Further Study.

| Item # | Code Section / Subject | Orignal Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IBC 3** | 101.2 exc 1 | AM | | | Delete | 10/1/03 | |
| **IBC 4** | 1604.8.1 | AS | | | Delete | 10/1/03 | |
| **IBC 5** | Table 1607.1 | AS | Yes | | Az.Only Amd. | 10/1/03 | |
| **IBC 7** | 1704.1 | AS | | | Delete | 10/1/03 | |
| **IBC 9** | 1805.3.1 | AS | | | Delete | 10/1/03 | |
| **IBC 10** | 3109 | AS | Yes | | Az.Only Amd. | 10/1/03 | |
| **IBC 12** | 310.1 | AS | | | Delete | 10/1/03 | |
| **IBC 14** | 406.1.4 item1 | AM | Yes | | Az.Only Amd. | 10/1/03 | |
| **IBC 15** | 201.4 | AM | | | Delete | 10/1/03 | |
| **IBC 17** | 907.2.10.1.1 907.2.10.1.2 | AS | | | Delete | 10/1/03 | |
| **IBC 20** | Chapter 11 | AM | Yes | | Az.Only Amd. | 10/1/03 | |

| Item # | Code Section / Subject | Original Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IBC-22** | 308.2 et al Adult care homes | AM | Yes | 5/2/03 | | | |
| **IBC-22a** **(Individually submitted to ICC by Tom H. & Forrest F.- Committee to support)** | 308.2 et al Adult care homes | AS | | 5/2/03 | | | |
| **IBC-24** | 507.3 Accessory Occupancy | AS | | 11/7/03 | Resubmit to ICC | 11/7/03 | |
| **IBC-25** | 1607.1 Canopy Loads | AS | | 2/6/03 | | | Included in 2003 IBC |
| **IBC-26** | Table 2111.1 Chimney | AM | | 3/7/03 | Delete | 10/1/03 | |
| **IBC-27** | Table 2902.1 Service Sink | AS | | 11/7/03 | Submit to ICC | 11/7/03 | |
| **IBC-28** | 1008.2 Egress | AS | | 2/6/03 | | | Approved As Submitted ICC 9/03 |
| **IBC-29** | 1003.3.1.9 Panic Hardware | AM | | 2/6/03 | | | Approved As Submitted ICC 9/03 |
| **IBC-30** | 2107.2.1 Half Stress Masonry | WD | | 3/7/03 | | | |
| **IBC-30a** | 1704.5.2 Half Stress Masonry | FS | | 3/7/03 | | | |

| Item # | Code Section / Subject | Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IBC-31** | 1704.1 Special Inspection | AS | | 3/7/03 | Delete | 10/1/03 | |
| **IBC-32** | 1804.2 Presumptive Loads | AS | | 3/7/03 | | | Approved As Submitted ICC 9/03 |
| **IBC-33** | 1503.4 Roof Drainage | AS | YES | 11/7/03 | | | |
| **IRC-1** | G2403 Appliances | AS | | 3/2/01 | Delete | 10/1/03 | |
| **IRC-2** | M1307.3 Clothes Dryer | AM | | 5/4/01 | Delete | 10/1/03 | |
| **IRC-3** | Table R301.4 Attic LL | AM | Yes | | Az.Only Amd. | 10/1/03 | |
| **IRC-5** | E3603.2 | AS | | | Delete | 10/1/03 | |
| **IRC-6** | R403.1.7.1 Footing Slope | AS | | | Delete | 10/1/03 | |
| **IRC-7** | R309.1 Garage Door | AM | Yes | | Revise & Resubmit to ICC | 10/1/03 | |
| **IRC-8** | R309.2 Table R702.3.4 | AS | | | Delete | 10/1/03 | |
| **IRC-9** | Appendix | AM | Yes | | Az Only Amd | 10/1/03 | |
| **IRC-10** | R201.4 Dictionary | AM | | | Delete | 10/1/03 | |
| **IRC-11** | M1307.6 LPG | AS | Yes | | Az Only Amd | 10/1/03 | |
| **IRC-12** | G2406.2 LPG | AM | Yes | | Az Only Amd | 10/1/03 | |

| Item # | Code Section / Subject | Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IRC-13** | R305.1 Ceiling height | AM | | | Delete | 10/1/03 | |
| **IRC-14** | P2710.1 Shower Walls | AM | | | | | Included in 2003 IRC |
| **IRC-15** | M1703.2 LPG Venting | AM | | 5/4/01 | Delete | 10/1/03 | |
| **IRC-16** | R313.1 Smoke Alarms | AM | | 4/6/01 | Delete | 10/1/03 | Possibly resubmit to ICC, revising to "Smoke Alarms" |
| **IRC-17** | R105.2 Exempt Work | AS | | 6/1/01 | Delete | 10/1/03 | |
| **IRC-18** | R316.2 Guard | AS | | 6/1/01 | | | Included in 2003 IRC |
| **IRC-19** | R313.1.1 Smoke alarm | AS | | 6/1/01 | Delete | 10/1/03 | |
| **IRC-20** | Table R503.2.1.1 (1) | AS | | 6/1/01 | | | Included in 2003 IRC |
| **IRC-23** | R113.3 Notice | AS | | 6/1/01 | | | Included in 2003 IRC |
| **IRC-27** | R320.1 Termite | AM | | | | | Approved As Submitted ICC 9/03 |
| **IRC-34** | Figure R1003.1 Fireplace | AS | | 6/1/01 | | | Included in 2003 IRC |
| **IRC-35** | M1308.3 Mech Equip | AM | | | | | Approved As Submitted ICC 9/03 |
| **IRC-38** | M2006.2 Pool Heater | AS | | 6/1/01 | | | Included in 2003 IRC |
| **IRC-39** | E3801.11 HVAC Outlet | AM | | | Delete | 10/1/03 | |
| **IRC-41** | G2415.9 Burial Depth | AM | Yes | | Az Only Amd | 10/1/03 | |

| Item # | Code Section / Subject | Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IRC-42** | R310.1 Emergency Escape | AS | | | | | Approved As Submitted ICC 9/03 – Floor Vote |
| **IRC-43** | E3802.9 Arc-Fault | AS | | | | | Included in 2003 IRC |
| **IRC-44** | P2503.6 Water Supply | AS | | | | | Approved As Modified ICC 9/03 |
| **IRC-45** | P3103.1 Plmg Vent | AS | Yes | | Az Only Amd | 10/1/03 | |
| **IRC-47** | Figure R602.3(2) Top Plate | AS | | | | | Included in 2003 IRC |
| **IRC-51** | Figure R602.3(1) Top Plate | AS | | | | | Included in 2003 IRC |
| **IRC-53** | R202 Exterior Wall | AM | | 2/6/03 | | | Revise to ICC RB-21 Similar Amd Approved by ICC 9/03 |
| **IRC-54** | M1411.3.1 Secondary Drains | AM | | 2/6/03 | | | Approved As Submitted ICC 9/03 |
| **IRC-55** | Table R1003.1 Chimney | AM | | 3/7/03 | Revise & Resubmit to ICC | 10/1/03 | |
| **IRC-56** | M1305.1.5 Roof Equipment | AS | | 3/7/03 | Delete | 10/1/03 | |
| **IRC-57** | G2406.2 Prohibited Locations | D | | 2/6/03 | | | |

| Item # | Code Section / Subject | Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IRC-58** | R315.1 Handrails | WP | | 3/7/03 | | | |
| **IRC-59** | P2803.6.1 Req. of Discharge Pipe | AS | | 3/7/03 | Revise & Resubmit to ICC | 10/1/03 | |
| **IRC- 60** | R2404.9 | WP | | 11/7/03 | | | |
| **IFG-1** | 202 Appliance | AS | | 3/2/01 | Delete | 10/1/03 | |
| **IFG-2** | 305.3 Clothes Dryer | AM | | 5/4/01 | Delete | 10/1/03 | |
| **IFG-3** | 201.4 Dictionary | AM | | 4/6/01 | Delete | 10/1/03 | |
| **IMC-1** | 304.3 Clothes Dryer | AM | | 5/4/01 | Delete | 10/1/03 | |
| **IMC-3** | 306.5 Roof Ladder | AS | | 4/6/01 | | | Included in 2003 IMC |
| **IMC-4** | 201.4 Dictionary | AM | | 4/6/01 | Delete | 10/1/03 | |
| **IMC-5** | 303.3 Prohibited locations | AM | | 5/4/01 | Delete | 10/1/03 | |
| **IPC-1** | 101 Appendices | AS | Yes | 3/2/01 | AZ Only Amd | 10/1/03 | |
| **IPC-2** | 201.4 Dictionary | AM | | 4/6/01 | Delete | 10/1/03 | |
| **IPC-3** | 312.5 | AS | | 9/6/02 | | | Approved As Modified ICC 9/03 |

| Item # | Code Section / Subject | Committee Action | Az. Only Amd. | Action Date | Committee Action if denied by ICC | Action Date | Notes |
|---|---|---|---|---|---|---|---|
| **IPC-4** | 504.6.1 | AS | Yes | 3/7/03 | AZ Only Amd | 10/1/03 | |
| **Structural 1** | R401.5 & R401.4.2 Soils | AM | | | | | Approved As Submitted ICC 9/03 |
| **Structural 2** | Table 1607.1 Truss Design | AM | | | Resubmit to ICC | 10/1/03 | Challenge to be submitted to ICC – IRC Structural 3 was appr as submitted 9/03 |
| **Structural 3** | Table R301.5 Truss Design | AM | | | | | Approved As Submitted ICC 9/03 |
| **Structural 4** | 1607.11.2 | AM | | | Delete | 10/1/03 | |
| **Structural 5** | 1704.5 Special Insp. | AM | Yes | | AZ Only Amd | 10/1/03 | Deleted original Proposal item #5 |

## 2003 AZBO to ICC Code Submittals Tracking Summary

| AZBO Code Committee # | ICC Submittal to Code & Section # | 2003 Code Section # | ICC Code Change # | Comments | Results from 9/03 ICC Code Hearings |
|---|---|---|---|---|---|
| IBC 15 | IBC, IMC, IPC, IFGC, IRC, IECC, ICCEC, IPSDC, IPMC 201.4 | No Change | G17-03/04 | 2nd time submitted | Committee, Disapproved |
| IBC 17 | IBC, IFC 907.2.10.1.1 & 907.2.10.1.2 | No Change | F117-03/04 | 2nd time submitted | Committee, Disapproved |
| IBC 24 | IBC 507.3 | No Change | G114-03/04 | | Committee, Disapproved |
| IBC 25 | IBC Table 1607.1 | | | Already corrected by errata per Alan Carr | |
| IBC 26 | IBC Table 2111.1 | No Change | S58-03/04 | | Committee, Disapproved<br>Already approved in code |
| IBC 28 | IBC 1008.2 | 1024.3 | E105-03/04 | Section #s revised to 2003 by ICC | Committee, approved as submitted |
| IBC 29 | IBC 1003.3.1.9 | 1008.1.9 | E32-03/04 | | Committee, Disapproved |
| IBC 31 | IBC 1704.1 Exception 3 | No Change | S33-03/04 | | Committee, Disapproved<br>Needs proposal for Amd. to Chap. 21 (1/2 stress masonry) |
| IBC 32 | IBC 1804.2 | No Change | S48-03/04 | | Committee, approved as submitted |
| IFGC 4 | IFGC 304.14 | | | Per Greg Gress, Change already occurred in 2003 to Section 304.10 | |
| IMC 1 | IMC 304.3 | No Change | M6-03/04 | 2nd time submitted | Committee, Disapproved<br>Items 1 & 2 |
| IPC 3 | IPC 312.5 | No Change | P9-03/04 | | Committee, approved as modified<br>Items 1 & 2 |
| IPC 4 | IPC 504.6.1 | No Change | P46-03/04 | | Committee, Disapproved<br>Items 1 & 2 |
| IRC 1 | IRC G2403 | No Change | | Proposal withdrawn 7/21/03 | Committee, Disapproved<br>Items 1 & 2 |
| IRC 2 | IRC M1307.3 | No Change | M6-03/04 | 2nd time submitted | Committee, Disapproved<br>Items 1 & 2 |
| IRC 17 | IRC R105.2 | No Change | RB6-03/04 | 2nd time submitted | Committee, Disapproved |

| AZBO Code Committee # | ICC Submittal to Code & Section # | 2003 Code Section # | ICC Code Change # | Comments | Results from 9/03 ICC Code Hearings |
|---|---|---|---|---|---|
| IRC 27 | IRC R324.1 | R320.1 | RB109-03/04 | 2nd time submitted, Errata per Larry Frank & will announce @ hearing keep last sentence of proposal & delete last 2 sentences of reason | Committee, approved as submitted |
| IRC 35 | IRC M1308.2 | M1403.2 | RM19-03/04 | 2nd time submitted, not included in original monograph, will be in Code Change Website errata | Committee, approved as submitted |
| IRC 39 | IRC E3801.11 | | | Per Larry Franks, ICC, will need to be submitted through NFPA - Proposal withdrawn | |
| IRC 42 | IRC R310.1 | No Change | RB69-03/04 | 2nd time submitted | Floor vote, approved as submitted |
| IRC 43 | IRC E3802.9 | | | Change already occurred in 2003 - Section 3802.11 | |
| IRC 44 | IRC P2503.6 | No Change | P9-03/04 | 2nd time submitted | Committee, approved as modified<br>Items 1 & 2 |
| IRC 45 | IRC P3103.1 | No Change | RP27-03/04 | 2nd time submitted<br>Minor revision to proposal by ICC | Committee, Disapproved |
| IRC 47 | IRC Figure R602.3(2) | | | Per Larry Franks, ICC, corrected by errata | |
| IRC 51 | IRC Table R602.3(1) | | | Per Larry Franks, ICC, corrected by errata | |
| IRC 53 | IRC R202 | No Change | RB22-03/04 | ICC will revise reason | Committee, Disapproved |
| IRC 54 | IRC M1411.3.1 | No Change | RM4-03/04 | | Committee, approved as submitted |
| IRC 55 | IRC Table 1003.1 | No Change | RB260-03/04 | Per Larry Simpson, corrected by errata for vertical & horizontal reinforcing & bond beam. All other proposals to Table will be processed | Committee, Disapproved |
| IRC 56 | IRC M1305.1.5 & M1305.1.5.1 | No Change | RM2-03/04 | | Committee, Disapproved |
| AZBO Code Committee # | ICC Submittal to Code & Section # | 2003 Code Section # | ICC Code Change # | Comments | Results from 9/03 ICC Code Hearings |

| | | | | | |
|---|---|---|---|---|---|
| IRC 59 | IRC P2803.6.1 | No Change | P46-03/04 | | Committee, Disapproved Items 1 & 2 |
| Structural 1 | IRC R401.5 | R401.4.2 | RB123-03/04 | | Committee, approved as submitted |
| Structural 2 | IBC 1607.1 | No Change | S13-03/04 | | Committee, Disapproved |
| Structural 3 | IRC Table R301.4 | R301.5 | S13-03/04 | | Committee, approved as submitted |
| Structural 4 | IBC 1607.11.2.1 | No Change | S15-03/04 | Rewritten as exception to formula per advice from Alan Carr - 9/2/03 will w/drawl proposal @ hearings due to analysis from ICC (o.k. w/ original proponent) | Committee, Disapproved |
| Structural 5 | IBC 1704.5 | No Change | S36-03/04 | | Committee, Disapproved |

# AZBO CODE REVIEW AND DEVELOPMENT COMMITTEE

# REPORT of FINAL ACTIONS

# AZBO Code Review and Development Committee
**Report of Final Actions**

**IBC-22**

**Revision to: Sections 308.2,308.3, 310.1,310.2, (new) 419, 309.2.9, 1003.3.1.2, 1003.3.1.8.2**

**Proponent: Forrest Fielder - City of Surprise, Tom Hedges - Stantec**

**308.2 Group I-1.** This occupancy shall include buildings, structures or parts thereof housing more than 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a residential environment that provides supervisory care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:
Residential board and care facilities
Assisted living centers
Halfway houses
Group homes
Congregate care facilities
Social rehabilitation facilities
Alcohol and drug abuse centers
Convalescent facilities
A facility such as the above with 10 or fewer persons shall be classified as a Group R-4 Condition 1 or shall comply with the *International Residential Code* in accordance with Section 101.2 where the building is in compliance with Section 419 of this code.

**308.3 Group I-2.** This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing, custodial, personal, or directed care on a 24-hour basis of more than five persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:
Hospitals
Nursing homes (both intermediate-care facilities and skilled nursing facilities)
Mental hospitals
Detoxification facilities
A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

This occupancy shall also include buildings and structures used for assisted living homes providing supervisory, personal, or directed care on a 24-hr basis of more than 10 persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. A facility such as the above with ten or fewer persons shall be classified as R-4 Condition 2.

**310.1…R-4** Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living homes including not more than 10 occupants, excluding staff.

**310.1.1 Condition 1.** This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self preservation by responding to an emergency situation without physical assistance from staff. Condition 1 facilities housing more than 10 persons shall be classified as a Group I-1.

**310.1.2 Condition 2.** This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of self preservation by responding to an emergency without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

R-4 occupancies shall meet the requirements for construction as defined in Group R-3 except as otherwise provided for in this code, and Section 419 or shall comply with the International Residential Code in accordance with section 101.2 where the building is in compliance with Section 419 of this code

**310.2 Definitions**

**PERSONAL CARE SERVICE.** Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and the administration of medications and treatments.

**DIRECTED CARE SERVICE.** Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

**SUPERVISORY CARE SERVICE.** General supervision, including daily awareness of resident functioning and continuing needs.

**RESIDENTIAL CARE/ASSISTED LIVING HOME.** A building or part thereof housing a maximum of 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory, personal, or directed services. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living homes, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

**419 RESIDENTIAL CARE/ASSISTED LIVING HOMES**

**419.1 Applicability.** The provisions of this section shall apply to a building or part thereof housing not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all applicable provisions of Group R-3.

**419.2 General.** Buildings or portions of buildings classified as R-4 occupancies shall meet all the applicable provisions of Group R-3, may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building, and shall not exceed 2000 square feet above the first story except as provided in Section 506.

**419.3 Special Provisions.** R-4 occupancies having more than 2000 square feet of floor area above the first floor shall be of not less than one-hour fire-resistive construction throughout.

**419.3.1 Mixed Uses.** R-4 occupancies shall be separated from other uses as provided in Table 302.3.2.

**419.4 Access and Means of Egress Facilities.**

**419.4.1 Accessibility.** R-4 occupancies shall be provided with at least one accessible route per the Arizonans with disabilities act. Sleeping rooms and associated toilets shall be accessible.

**Exception:** Existing buildings shall comply with Section 3409. Bathing and toilet facilities need not be made accessible, but shall be provided with grab bars in accordance with ICC/ANSI A 117.1.

**419.4.2 Exits**

4**19.4.2.1Number of Exits.** Every story, basement, or portion thereof shall have not less than two exits.

Exception: Basements and stories above the first floor containing no sleeping rooms may have one means of egress as provided in Chapter 10.

**419.4.2.2 Distance to Exits.** The maximum travel distance shall comply with Section 1004, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

**419.4.2.3 Emergency Exit Illumination.** In the event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the ICC Electric Code.

**419.4.2.4 Emergency Escape and Rescue.** R-4 occupancies shall comply with the requirements of Section 1025, except that Exception 1 to Section 1025.1 does not apply to R-4 occupancies.

**419.4.2.5 Delayed egress locks.** In R-4 Condition 2 occupancies, delayed egress locks shall be permitted in accordance with Sections 1008.1.3.4 and 1008.1.8.6, items 1, 2, 4, 5 and 6.

**419.5 Smoke Detectors and Sprinkler Systems**

**419.5.1 Smoke Alarms.** All habitable rooms and hallways in R-4 occupancies shall be provided with smoke alarms installed in accordance with Section 907.2.10.

**419.5.2 Sprinkler Systems.** R-4 occupancies shall be provided with a sprinkler system installed in accordance with Section 903.2.9. Sprinkler systems installed under this Section shall be installed throughout, including attached garages, and in Condition 2 facilities shall include attics and concealed spaces of or containing combustible materials. Such systems may not contain unsupervised valves between the domestic water riser control valve and the sprinklers. In R-4 Condition 2 occupancies, such systems shall contain water-flow switches electrically supervised by an approved supervising station, and shall sound an audible signal at a constantly attended location.

**1008.1.2 Door swing.** Egress doors shall be side-hinged swinging.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Doors within or serving a single dwelling unit in Groups R-2, ~~and~~ R-3 as applicable in Section 101.2, <u>and R-4.</u>
4. (no other changes)

**Reason:** The purpose of this amendment is to bring the provisions of the code into agreement with the licensing rules of the Arizona Department of Health Services. DHS license categories have a threshold of 10 residents to move from a residential home setting to an institutional setting. DHS rules (R9-10-701) state, “Assisted living home” or “home” means an assisted living facility that provides resident rooms to (10) or fewer residents, as distinct from an “assisted living center”, which provides services to more than (10) persons. In addition, the license classifications to provide “personal care services” and “directed care services” to residents allow for residents to be bed-bound. The use of “Condition” distinctions is reflective of similar distinctions in I-occupancies.

Each state has unique agency programs for assisted living occupancies, which establish license categories based on numbers of residents and the familiar ambulatory/non-ambulatory distinction. Uniformity could be accomplished by either trusting health service agencies nationally to agree to uniform thresholds and other licensing characteristics, or by amending building codes to allow each state to adapt to that state’s unique rules. If numerical thresholds are provided on a “fill in the blanks” basis, condition categories can be added or deleted, and definitions can be customized to match licensure definitions, the hazards associated with these facilities can be addressed comprehensively on a state-by-state basis.

The most hazardous scenario is a facility in an ordinary, un-rated residential structure, occupied by (10) bed-bound residents, supervised by a single caregiver. Provisions for exiting, smoke detectors, emergency illumination, sprinklers, et al, can substantially increase the chances of survival in a fire or other emergency for these residents.

**IBC-1-01 Reason:** To bring the Building Code into agreement with Arizona Administrative Code, Title 9 Health Services, Article 7 Assisted Living Facilities. R9-10-701 states, '"Assisted living home" or "home" means an assisted living facility that provides resident rooms to ten or fewer residents.' An "Assisted living center" (rooms or residential units for eleven or more residents) is required to have "an individually keyed entry door" and "a kitchen area" by R9-10-720. Since the distinction for the state is between ten and eleven residents, it is felt that the Building Code should reflect the same distinction.
See http://www.sosaz.com/public services/Title 09/9-10.htm for the entire rule.

It is felt that the word "abuse" was inadvertently omitted for the definition of Group I-1 Occupancy.

Cost Impact: Slight

Committee Action: Approved as Submitted

IBC-24

**Revise 507.2 & 507.3**

**Proponent: Tom Hedges, Stantec**

**Revise as follows:**

**507.2 Sprinklered, one story.** The area of a one-story, Group B, F, M or S building or a one-story Group A-4 building of other than Type V construction shall not be limited when the building is provided with an automatic sprinkler system throughout in accordance with Section 903.3.1.1, and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

**Exceptions:**

1. (No change)

2. (No change)

<u>Such buildings may contain other occupancies, without H fire areas, provided that such occupancies do not occupy more than 10 percent of the area of any floor of a building, nor more than the tabular values permitted in the occupancy by Table 503 for such occupancy.</u>

<u>Exception: Group H fire areas as permitted by Section 507.6.</u>

**507.3 Two story.** The area of a two-story, Group B, F, M or S building shall not be limited when the building is provided with an automatic sprinkler system in accordance with Section 903.3.1.1 throughout, and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

<u>Such buildings may contain other occupancies, without H fire areas, provided that such occupancies do not occupy more than 10 percent of the area of any floor of a building, nor more than the tabular values permitted in the occupancy by Table 503 for such occupancy.</u>

<u>Exception: Group H fire areas as permitted by Section 507.6.</u>

**Reason:** The purpose of this proposal is to expand minor uses that would be permitted in an unlimited area building constructed in compliance with Sections 507.2 and 507.3. The current text is overly restrictive. As written, these buildings would not be allowed to contain separate tenants such as daycare, dance school, out-patient surgical center, restaurants, etc.. These would be considered different occupancies and no text exists to permit such uses in an unlimited area building of B, F, M or S occupancies.

It makes little sense to restrict other occupancies, while allowing an A-4, certain H's or motion picture theaters to be in unlimited area buildings.

This change will allow other use groups to be located in an unlimited area building of B, F, M or S uses as long as the aggregate area of the occupancies do no exceed 10% of the floor area of the main occupancy and further that the aggregate area of such occupancy does not exceed the tabular area permitted in Table 503.
Communications and interpretations from ICC staff in ICBO and Boca offices have confirmed there is a need for a change to allow these minor occupancies in an unlimited area building. This provision is in at least one other national code.
This change should provide a reduction in costs.

**Cost Impact: None**

**Committee Action: Approved as Submitted**

**IBC-25**

**Revision to: Table 1607.1**

**Proponent:** Edward J. Courtney, Pima County

**Proposal:** Revise Item 24 of Table 1607.1

**Table 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS AND MINIMUM CONCENTRATED LIVE LOADS**

| OCCUPANY OR USE | UNIFORM (psf) | CONCENTRATED (lbs.) |
|---|---|---|
| 24. Marquees ~~and canopies~~ | 75 | --- |

**Reason:**
Canopy live load is already covered in IBC Section 1607.2.4,

"**1607.11.2.4 Awnings and canopies.** Awnings and canopies shall be designed for a uniform live load of 5 pounds per square foot (0.240 kN/m$^2$) as well as for snow loads and wind loads as specified in Sections 1608 and 1609."

**Cost Impact:** None

**Committee Action: Approved as Submitted**

**IBC-26**

**Revision to: Table 2111.1**

**Proponent:** Autumn Hartsoe, City of Goodyear

**Proposal:** Revise Table as follows:

**TABLE 2111.1**

| ITEM | LETTER | REQUIREMENTS | SECTION |
|---|---|---|---|
| Hearth and hearth extension thickness | A | 4-inch minimum thickness for hearth, 2-inch minimum thickness for hearth extension. | 2111.9 |
| Hearth extension (each side of opening) | B | 8 inches for fireplace opening less than 6 square feet. 12 inches for fireplace opening greater than or equal to 6 square feet. | 2111.10 |
| Hearth extension (front of opening) | C | 16 inches for fireplace opening less than 6 square feet. 20 inches for fireplace opening greater than or equal to 6 square feet. | 2111.10 |
| Firebox dimensions | D | 20-inch minimum firebox depth. 12-inch minimum firebox depth for Rumford fireplaces. | 2111.11 |

| | | | |
|---|---|---|---|
| Hearth and hearth extension reinforcing | D | Reinforced to carry its own weight and all imposed loads | 2111.9 |
| Thickness of wall of firebox | E | 10 inches solid masonry or 8 inches where firebrick lining is used. | 2111.5 |
| Distance from top of opening to throat. | F | 8 inches minimum. | 2111.7 |
| Smoke chamber wall thickness dimensions | G | 6 inches lined; 8 inches unlined. Not taller than opening width; walls not inclined more than 45 degrees from vertical for prefabricated smoke chamber linings or 30 degrees from vertical for corbelled masonry. | 2111.8 |
| Chimney vertical reinforcing[b] | H | Four No. 4 full-length bars for chimney up to 40 inches wide. Add two No. 4 bars for each additional 40 inches or fraction of width, or for each additional flue. | 2111.3.1, 2113.3.1 |
| Chimney horizontal reinforcing[b] | J | 1/4-inch ties at each 18 inches, and two ties at each bend in vertical steel. | 2111.3.2, 2113.3.2 |
| Fireplace lintel | L | Noncombustible material with 4-inch bearing length of each side of opening. | 2111.7 |
| Chimney walls with flue lining | M | 4-inch-thick solid masonry with 5/8-inch fireclay liner or equivalent. 1/2-inch grout or airspace between fireclay liner and wall | 2113.10, 2113.11, 2113.12 |
| Effective flue area (based on area of fireplace opening and chimney) | P | See Section 2113.16. | 2113.16 |
| Clearances<br>From chimney<br>From fireplace<br>Combustible trim or materials<br>Above roof | R | 2 inches interior, 1 inch exterior<br>2 inches back or sides<br>6 inches from opening<br>3 feet above roof penetration, 2 feet above part of structure within 10 feet. | 2113.19<br>2111.12<br>2111.13<br>2113.9 |
| Anchorage[b]<br>Strap<br>Number<br>Embedment into chimney<br>Fasten to<br>Bolts | S | 3/16 inch by 1 inch<br>Two<br>12 inches hooked around outer bar with 6-inch extension.<br>4 joists<br>Two 1/2-inch diameter. | 2111.4<br>2113.4.1 |
| Footing<br>Thickness<br>Width | T | 12-inch minimum.<br>6 inches each side of fireplace wall. | 2111.2 |

For SI: I inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 $m^2$.

a. This table provides a summary of major requirements for the construction of masonry chimneys and fireplaces. Letter references are to Figure 2111.1, which shows examples of typical construction. This table does not cover all requirements, nor does it cover all aspects of the indicated requirements. For the actual mandatory requirements of the code, see the indicated section of text.

b. Not required in Seismic Design Category A,B, or C.

**Reason: Also adding footnote "b" for clarification on seismic reinforcing of masonry or concrete fireplaces in accordance with IBC Section 2111.3**

**Cost Impact: None**

**Committee Action: Approved as Modified**

**TABLE 2111.1[a]**

| ITEM | LETTER | REQUIREMENTS | SECTION |
|---|---|---|---|
| Hearth and hearth extension thickness | A | 4-inch minimum thickness for hearth, 2-inch minimum thickness for hearth extension. | 2111.9 |

| | | | |
|---|---|---|---|
| Hearth extension (each side of opening) | B | 8 inches for fireplace opening less than 6 square feet.<br>12 inches for fireplace opening greater than or equal to 6 square feet. | 2111.10 |
| Hearth extension (front of opening) | C | 16 inches for fireplace opening less than 6 square feet. 20 inches for fireplace opening greater than or equal to 6 square feet. | 2111.10 |
| Firebox dimensions | D | 20-inch minimum firebox depth. 12-inch minimum firebox depth for Rumford fireplaces. | 2111.11 |
| Hearth and hearth extension reinforcing | D | Reinforced to carry its own weight and all imposed loads | 2111.9 |
| Thickness of wall of firebox | E | 10 inches solid masonry or 8 inches where firebrick lining is used. | 2111.5 |
| Distance from top of opening to throat. | F | 8 inches minimum. | 2111.7 |
| Smoke chamber wall thickness dimensions | G | 6 inches lined; 8 inches unlined. Not taller than opening width; walls not inclined more than 45 degrees from vertical for prefabricated smoke chamber linings or 30 degrees from vertical for corbelled masonry. | 2111.8 |
| Chimney vertical reinforcing[b] | H | Four No. 4 full-length bars for chimney up to 40 inches wide. Add two No. 4 bars for each additional 40 inches or fraction of width, or for each additional flue. | 2111.3.1,<br>2113.3.1 |
| Chimney horizontal reinforcing[b] | J | 1/4-inch ties at each 18 inches, and two ties at each bend in vertical steel. | 2111.3.2,<br>2113.3.2 |
| Fireplace lintel | L | Noncombustible material with 4-inch bearing length of each side of opening. | 2111.7 |
| Chimney walls with flue lining | M | 4-inch-thick solid masonry with 5/8-inch fireclay liner or equivalent. 1/2-inch grout or airspace between fireclay liner and wall | 2113.10,<br>2113.11,<br>2113.12 |
| Effective flue area (based on area of<br>fireplace opening and chimney) | P | See Section 2113.16. | 2113.16 |
| Clearances<br>From chimney<br>From fireplace<br>Combustible trim or materials<br>Above roof | R | 2 inches interior, 1 inch exterior<br>2 inches back or sides<br>6 inches from opening<br>3 feet above roof penetration, 2 feet above part of structure within 10 feet. | 2113.19<br>2111.12<br>2111.13<br>2113.9 |
| Anchorage[b]<br>Strap<br>Number<br>Embedment into chimney<br>Fasten to<br>Bolts | S | 3/16 inch by 1 inch<br>Two<br>12 inches hooked around outer bar with 6-inch extension.<br>4 joists<br>Two 1/2-inch diameter. | 2111.4<br>2113.4.1 |
| Footing<br>Thickness<br>Width | T | 12-inch minimum.<br>6 inches each side of fireplace wall. | 2111.2 |

For SI: I inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 $m^2$.

c. This table provides a summary of major requirements for the construction of masonry chimneys and fireplaces. Letter references are to Figure 2111.1, which shows examples of typical construction. This table does not cover all requirements, nor does it cover all aspects of the indicated requirements. For the actual mandatory requirements of the code, see the indicated section of text.

d. Not required in Seismic Design Category A,B, or C.

Reason: This proposal will create uniformity and will delete conflicts between IBC Table 2111.1 and IRC Table R1003.1 Also adding footnote “b” for clarification on seismic reinforcing of masonry or concrete fireplaces in accordance with IBC Section 2111.3

**IBC-27**

**Revision to: Table 2902.1**

**Proponent:** Autumn Hartsoe, City of Goodyear

**Proposal:** Revise Table as follows:

Revise Items 2 and 6 of table (remainder of table unchanged):

**TABLE 2902.1**
**MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES[a]**

| No. | CLASSIFICATION | USE GROUP | DESCRIPTION | WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODEFOR URINALS) | | LAVATORIES | | BATHTUBS OR SHOWERS | DRINKING FOUNTAINS (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE) | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MALE | FEMALE | MALE | FEMALE | | | |
| 2 | Business (see Sections 2902.2, 2902.4, 2902.4.1 and 2902.6) | B | Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses | 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50 | | 1 per 40 for the first 50 and 1 per 80 for the remainder exceeding 50 | | — | 1 per 100 | ~~1 service sink~~ |
| | | | | | | | | | | |
| 6 | Mercantile (see Section 2902.2, 2902.5 and 2902.6) | M | Retail stores, service stations, shops, salesrooms, markets and shopping centers | 1 per 500 | | 1 per 750 | | — | 1 per 1,000 | ~~1 service sink~~ |

**REASON**: The current requirement for 1 service sink for mercantile and business occupancies is not necessary due to the nature of the occupancy. The majority of business and mercantile occupancies do not warrant the need to clean up spills that often occur in other occupancies. The requirement for a service sink often becomes overly restrictive to small tenant spaces. This revision will not apply if another governing agency, such as The State Health Department, requires a service sink.

**Cost Impact: None**

**Committee Action: Approved as Submitted**

**IBC-28**

**Revision to: Section 1008.2**

**Proponent:** Tom Hedges, Stantec

**Proposal:** Revise as follows:
**1008.2 Assembly other exits.** In addition to having access to a main exit, each level of an occupancy in Group A having an occupant load of greater than three hundred shall be provided with additional ~~exits~~ means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1004.2.2.

**Reason:** The IBC defines 'exit' in 1006 as being exterior doors, vertical exit enclosure, smokeproof enclosure, exit passageway and horizontal exits. ICC staff has interpreted that this section does not mean each 'additional exit' is required to comply solely with Section 1006. But that the code intends that assembly rooms may also be served by exit-access elements. If this interpretation is correct, then the Code should reflect the correct intent. By changing the word 'exit' to 'means of egress' clarifies the purported intent correctly.

**Cost Impact: None, may lower.**

**Committee Action: Approved as Submitted**

**IBC-29**

**Revision to: Section 1003.3.1.9**

**Proponent:** Tom Hedges, Stantec

**Proposal:** Revise as follows:

1003.3.1.9 Panic and fire exit hardware. Where panic and fire exit hardware is installed, it shall comply with the following:

1. The actuating portion of the releasing device shall extend at least one-half of the door leaf width.

2. A maximum unlatching force of 15 pounds (67 N).

Each door in a means of egress from an occupancy of Group A or E having an occupant load of 100 or more and any occupancy of Group H-1, H-2, H-3 or H-5 shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

Exception. A main exit, of a Group A use, in compliance with Section 1003.3.1.8 Exception 2.

If balanced doors are used and panic hardware is required, the panic hardware shall be of the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

**Reason:** Current text is overly restrictive. As written, these occupancies can not contain a lunch room if the occupant load is 51 persons as this would be an A-2 Occupancy and no text exists to permit such use in an unlimited area building of B, F, M or S uses.

The IBC has a conflict between Section 1003.3.1.8, Exception 2 and the second paragraph of Section 1003.3.1.9. Section 1003.3.1.9 requires panic hardware on all egress doors serving a Group A having an occupant load of 100 or more. However, Section 1003.3.1.8, Exception 2 permits the use of key operated locking devices on the egress side of the main exit door where the occupant load is 300 or less. In applying conflict resolution from Section 102.1, it is difficult to determine which of these sections is a general requirement and which is a specific requirement nor can you readily determine which is the more restrictive. By adding this exception to the second paragraph of Section 1003.3.1.9 the code will be consistent interpretations found in the 2000 IBC Q & A Application Guideline.

**Reason:** The IBC has a conflict between Section 1003.3.1.8, Exception 2 and the second paragraph of Section 1003.3.1.9. Section 1003.3.1.9 requires panic hardware on all egress doors serving a Group A having an occupant load of 100 or more. However, Section 1003.3.1.8, Exception 2 permits the use of key operated locking devices on the egress side of the main exit door where the occupant load is 300 or less. In applying conflict resolution from Section 102.1, it is difficult to determine which of these sections is a general requirement and which is a specific requirement nor can you readily determine which is the more restrictive. By adding this exception to the second paragraph of Section 1003.3.1.9 the code will be consistent with interpretations found in the 2000 IBC Q & A Application Guideline.

**Cost Impact: None**

**Committee Action: Approved as Modified**

**IBC-30**

**Revision to: Section 2107.2.1**

**Proponent:** Steven Hess, Caruso Turley Scott, Inc.

**Proposal:** Revise as follows:
**Committee Action: Approved as Modified**

1003.3.1.9 Panic and fire exit hardware. Where panic and fire exit hardware is installed, it shall comply with the following:

1. The actuating portion of the releasing device shall extend at least one-half of the door leaf width.

2. A maximum unlatching force of 15 pounds (67 N).

Each door in a means of egress from an occupancy of Group A or E having an occupant load of 100 or more and any occupancy of Group H-1, H-2, H-3 or H-5 shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

<u>Exception. A main exit, of a Group A use, in compliance with Section 1003.3.1.8 Exception 2.</u>

If balanced doors are used and panic hardware is required, the panic hardware shall be of the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

**2107.2.1 ACI 530/ASCE 5/TMS 402, Chapter 2.** Special inspection during construction shall be provided as set forth in Section 1704.5. <u>Special inspection will not be required when one-half allowable masonry stresses are used with the value of f'm limited to a maximum of 1500 psi for concrete or clay masonry for the following criteria.</u>

1. <u>The maximum height to width (nominal) ratio of a building wall is limited to 20.</u>
2. <u>The maximum soil retainage for a retaining wall is 5'-0" from the top of footing for an 8 inch wall or 7'-0" for a 12 inch wall.</u>
3. <u>The maximum height to width ratio of 10 for a cantilevered fence or combination fence and retaining wall as determined from the top of footing to the top of wall.</u>

**Committee Action: Withdrawn by Proponent**

**IBC-30a**

**Revision to: Section 1704.5.2**

**Proponent:** Steven Hess, Caruso Turley Scott, Inc.

**Proposal:** Revise as follows:

1704.5.2 Exception: When quality assurance provisions do not include requirements for special inspection as prescribed in Section 1704.5, the allowable stresses for masonry in Section 2107 shall be reduced by one half. The following limitations shall apply to this exception.

4. The maximum unsupported height (or length) to width (nominal) ratio of a building wall is limited to 20.
5. The maximum soil retaining for a retaining wall is 4'-0" from the top of footing for an 8 inch wall or 6'-0" for a 12 inch wall.
6. The maximum height to width ratio of 10 for a cantilevered fence or combination fence and retaining wall as determined from the top of footing to the top of wall.

**Reason:** Historically, one-half stresses in masonry has been allowed for years in the UBC. This proposal will again allow it in low profile buildings, short retaining walls, and fences thus eliminating the added burden and expense of special inspections.

**Cost Impact: None, may lower**

**Committee Action: Further Study**

**IBC-31**

**Revision to: Section 1704.1**

**Proponent:** Edward J. Courtney, Pima County

**Proposal:** Revise 1704.1 Exception 3 as follows:

3. ~~Unless otherwise required~~ When permitted by the building official, special inspections are not required for occupancies in Group R-3 as applicable in Section 101.2 and occupancies in Group U that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1. Masonry construction exempt from special inspection by this Section shall be designed at 1/2 stress.

**Reason:** The term "Unless otherwise required" assume that special inspections will not be routinely performed on residences and garages. In order for a special inspection to be performed, the building official must be proactive and place the requirement for a special inspection on the builder. In past times, with the relative lack of sophistication in residential construction, this approach may have been acceptable.

Today's higher level of specialized materials and construction techniques require the use of special inspections in many circumstances that include post-tensioned slabs, epoxied connectors, grout lifts in excess of code maximums and even structural steel welding. These materials and activities are not an aberration or unusual occurrences any longer.

Rather than put the building official in the proactive position of requiring special inspections in many circumstances, this change would recognize that these technically sophisticated materials and techniques are used and do require the services of a special inspector even in residential buildings. This change will still allow discretion by the building official to exempt the requirement for special inspection on a case-by-case basis.

**Cost Impact: None, may lower**

**Committee Action: Approved as Submitted**

**IBC-32**

**Revision to: Section 1804.2**

**Proponent:** Edward J. Courtney, Pima County

**Proposal:** Revise 1704.1 Exception 3 as follows:

**1804.2 Presumptive load-bearing values.** The maximum allowable foundation pressure, lateral pressure or lateral sliding resistance values for supporting soils ~~at or~~ near the surface shall not exceed the values specified in Table 1804.2 unless data to substantiate the use of a higher value are submitted and approved.

Presumptive load-bearing values shall apply to materials with similar physical characteristics and dispositions.

Mud, organic silt, organic clays, peat or unprepared fill shall not be assumed to have a presumptive load bearing capacity unless data to substantiate the use of such a value are submitted.

**EXCEPTION:** A presumptive load-bearing capacity is permitted to be used where the building official deems the load-bearing capacity of mud, organic silt or unprepared fill is adequate for the support of lightweight and temporary structures.

**Reason:** The wording <u>at or</u> near the surface would lead one to believe that the soil bearing values of Table 1804.2 may be applied at the ground surface. Where as Section 1805.2 states as follows:

**1805.2 Depth of footings.** The minimum depth of footings below the undisturbed ground surface shall be 12 inches (305 mm). Where applicable, the depth of footings shall also conform to Sections 1805.2.1 through 1805.2.3.

**Cost Impact: None**

**Committee Action: Approved as Submitted**

IBC-33

Revise Section 1503.4

Proponent: Tom Hedges, Stantec

**[P] 1503.4 Roof drainage.** Design and installation of roof drainage systems shall comply with <u>Section 1503.4 and</u> the *~~International~~ Plumbing Code*.

**1503.4.1 Gutters.** Gutters and leaders placed on the outside of buildings, other than Group R-3 as applicable in Section101.2, private garages and buildings of Type V construction, shall be of noncombustible material or a minimum of Schedule 40 plastic pipe.

<u>**1503.4.2 Where required.** All roofs, paved areas, yards, courts and courtyards shall drain into a separate storm sewer system, or a combined sewer system, or to an approved place of disposal.</u>

<u>**1503.4.3 Roof design.** Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked.</u>

<u>**1503.4.4 Overflow drainage required.** Overflow (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.</u>

<u>**1503.4.4.1 Separate systems required.** Overflow roof drain systems shall have the end point of discharge separate from the primary system. Discharge shall be above grade, in a location, which would normally be observed by the building occupants or maintenance personnel.</u>

**1503.4.4.2 Overflow drains and scuppers.** Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains may be installed in the adjacent parapet walls. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by the plumbing code. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.

**REASON**: This is proposed as an Arizona only amendment to resolve the problem of using the UPC rather than the IPC. The I codes place roof drainage in the plumbing code. The U codes have drainage required in the UBC and piping system design is per the UPC and scuppers per the UBC. When the IBC is used with the UPC, there is a gaping hole in having sufficient requirements to obtain a safe roof drainage system.

New Section 1503.4.2 is from IPC 1101.2. Section 1503.4.3 is from IPC 1101.7. Section 1503.4.4 is from IPC 1107.1. Section 1503.4.4.1 is from IPC 1107.2. Section 1503.4.4.2 is a combination of IRC R903.4.1and IPC 1107.3.

The text from the IRC provides the three times scupper sizing that existed in the UBC. Note that jurisdictions that have adopted the 2000 IPC without amendments will require overflow piping to be two times the size of the main piping but have no over sizing requirement for the scuppers. The 2003 no longer requires the overflow piping size to be doubled but still does not have the three times size for the scuppers.

**Cost Impact: None**

**Committee Action: Approved as Submitted**

## 2000 INTERNATIONAL RESIDENTIAL CODE

**IRC-53**

**Revision to: Section R202**

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal:** Revise R202 Definitions as follows:

**EXTERIOR WALL.** An above-grade wall enclosing conditioned and unconditioned space. Includes between floor spandrels, peripheral edges of floors, roofs and basement knee walls, dormer walls, gable end walls, walls enclosing a mansard roof, and basement walls with an average below grade wall area that is less than 50 percent of the total opaque and nonopaque area of that enclosing side.

**Reason:** When limiting Exterior Walls to those enclosing conditioned space in Section R302.1, it is possible to erect a wall enclosing unconditioned space such as a garage with a fire separation distance of less than 3 feet without a 1-hour fire-resistance rating. By also including those walls enclosing unconditioned space in the definition, any wall with a fire separation distance of less than 3 feet will be required to have the same 1-hour fire-resistance rating.

**Cost Impact:** None

**Committee Action: Approved as Modified**

**R202 DEFINITIONS**
**EXTERIOR WALL -** Energy Conservation. An above-grade wall enclosing conditioned space. Includes between floor spandrels, peripheral edges of floors, roofs and basement knee walls, dormer walls,

gable end walls, walls enclosing a mansard roof, and basement walls with an average below grade wall area that is less than 50 percent of the total opaque and nonopaque area of that enclosing side.

**EXTERIOR WALL.** A wall, bearing or nonbearing, that is used as an enclosing wall for a building and that has a slope of 60 degrees (1.05 rad) or greater with the horizontal plane. Includes between floor spandrels, peripheral edges of floors, roof and basement knee walls, dormer walls, gable end walls, walls enclosing a mansard roof, and basement walls.

**Reason:** The IRC uses the term exterior wall(s) in 71 different sections. Of those, only 3 sections in Chapter 11 are related to insulated walls around conditioned spaces. The remaining 68 sections use the terms in a similar manner to the definition in the IBC. This proposed change clarifies that the existing definition is for use in Chapter 11 and proposes a new definition for the remainder of the IRC. The proposed definition combines the IBC definition with the existing IRC definition to clarify intent related to fire resistance, structural, weather resistance and other conditions not related to energy conservation.

When limiting Exterior Walls to those enclosing conditioned space in Section R302.1, it is possible to erect a wall enclosing unconditioned space such as a garage with a fire separation distance of less than 3 feet without a 1-hour fire-resistance rating. By adding an additional definition, any wall with a fire separation distance of less than 3 feet will be required to have the same 1-hour fire-resistance rating.

If you picture a dwelling with an attached garage having the outside wall , bearing and non-bearing, of the garage with a separation distance of less than 3 feet apply each of the following code sections to the existing definition, one can readily see the need for an additional definition.

The following are the IRC Sections using the terms exterior wall(s):

**R105.2 Work exempt from permit.**
9. Window awnings supported by an **exterior wall**.

**R202**

**EXTERIOR WALL.** An above-grade wall enclosing conditioned space. Includes between floor spandrels, peripheral edges of floors, roof and basement knee walls, dormer walls, gable end walls, walls enclosing a mansard roof, and basement walls with an average below grade wall area that is less than 50 percent of the total opaque and nonopaque area of that enclosing side.

**GRADE.** The finished ground level adjoining the building at all **exterior walls**.

**GRADE PLANE.** A reference plane representing the average of the finished ground level adjoining the building at all **exterior walls**.

**GROSS AREA OF EXTERIOR WALLS.** The normal projection of all **exterior walls,** including the area of all windows and doors installed therein.

**BUILDING THERMAL ENVELOPE.** The basement walls, **exterior walls**, floor, roof and any other building element that enclose conditioned spaces.

**STANDARD TRUSS.** Any construction that does not permit the roof/ceiling insulation to achieve the required *R*-value over the **exterior walls**.

**R302.1 Exterior walls. Exterior walls** with a fire separation distance less than 3 feet (914 mm) shall have not less than a one hour fire-resistive rating with exposure from both sides. Projections shall not extend beyond the distance determined by the following two methods, whichever results in the lesser projections:
1. A point one-third the distance to the property line from an assumed vertical plane located where protected openings are required.
2. More than 12 inches (305 mm) into areas where openings are prohibited.
Projections extending into the fire separation distance shall have not less than one-hour fire-resistive construction on the underside. The above provisions shall not apply to walls which are perpendicular to the line used to determine the fire separation distance.

**Exception:** Tool and storage sheds, playhouses and similar structures exempted from permits by Section R105.2 are not required to provide wall protection based on location on the lot. Projections beyond the **exterior wall** shall not extend over the lot line.

**TABLE R301.4, MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (in pounds per square foot)**

Footnote f. See Section R502.2.1 for decks attached to **exterior walls**.
**R301.6 Deflection.** The allowable deflection of any structural member under the live load listed in Sections R301.4 and R301.5 shall not exceed the values in Table R301.6.

**TABLE R301.6, ALLOWABLE DEFLECTION OF STRUCTURAL MEMBERS**

| STRUCTURAL MEMBER | ALLOWABLE DEFLECTION |
|---|---|
| Rafters having slopes greater than 3/12 with no finished ceiling attached to rafters | L/180 |
| Interior walls and partitions | H/180 |
| Floors and plastered ceilings | L/360 |
| All other structural members | L/240 |
| **Exterior walls** with plaster or stucco finish | H/360 |
| **Exterior walls**—wind loads with brittle finishes | L/240 |
| **Exterior walls**—wind loads with flexible finishes | L/120 |

**R318.2.5 Siding backer board.** Foam plastic board of not more than 1/2-inch (12.7 mm) thickness may be used as siding backer board when separated from interior spaces by not less than 2 inches (51 mm) of mineral fiber insulation or 1/2-inch (12.7 mm) gypsum wallboard or installed over existing **exterior wall** finish in conjunction with re-siding, providing the plastic board does not have a potential heat of more than 2,000 Btu per square foot (22 720 kJ/m2) when tested in accordance with NFPA 259.

**R321.1 Two-family dwellings.** Dwelling units in two-family dwellings shall be separated from each other by wall and/or floor assemblies of not less than 1-hour fire-resistive rating when tested in accordance with ASTM E 119. Fire-resistance rated floor-ceiling and wall assemblies shall extend to and be tight against the **exterior wall**, and wall assemblies shall extend to the underside of the roof sheathing.

**R321.2 Townhouses.** Each townhouse shall be considered a separate building and shall be separated by fire-resistancerated wall assemblies meeting the requirements of Section
R302 for **exterior walls**.

**R321.2.4 Structural independence.** Each individual townhouse shall be structurally independent.
**Exceptions:**
1. Foundations supporting **exterior walls** or common

**R327.1.7 Flood-resistant materials.** Building materials used below the design flood elevation shall comply with the following:
1. All wood, including floor sheathing, shall be pressure preservatively treated in accordance with AWPA C1, C2, C3, C4, C9, C15, C18, C22, C23, C24, C28, P1, P2 and P3 or decay-resistant heartwood or redwood, black locust, or cedars.
2. Materials and installation methods used for flooring and interior and **exterior walls** shall conform to the provisions of FEMA/FIA-TB-2.

**R327.2.2 Enclosed area below design flood elevation.** Enclosed areas, including crawl spaces, that are below the design flood elevation shall:
1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings which shall meet the following criteria:

2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on **exterior walls**.

**R403.1 General.** All **exterior walls** shall be supported on continuous solid or fully grouted masonry or concrete footings, wood foundations, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill.

**R403.1.2 Continuous footings in Seismic Design Categories D1 and D2.** The braced wall panels at **exterior walls** of all buildings located in Seismic Design Categories D1 and
D2 shall be supported by continuous footings. All required interior braced wall panels in buildings with plan dimensions greater than 50 feet (15 240 mm) shall also be supported by continuous footings.

**TABLE R402.2**
**MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE**
Basement walls, foundation walls, **exterior walls** and other vertical concrete work exposed to the weather.

**R403.1.6Foundation anchorage.** (2nd paragraph)
The wood sole plate at **exterior walls** on monolithic slabs and wood sill plate shall be anchored to the foundation with anchor bolts spaced a maximum of 6 feet (1829 mm) on center. Anchor bolts shall also be located within 12 inches (305 mm) from the ends of each plate section. (12.7 mm) anchor bolts.

**R403.1.6.1 Foundation anchorage in Seismic Design Categories D1 and D2.** In addition to the requirements of Section R403.1.6, the following requirements shall apply to light-wood frame structures in Seismic Design Categories D1 and D2. Anchor bolts shall be located within 12 inches (305 mm) from the ends of each plate section at interior bearing walls, interior braced wall lines and at all **exterior walls.** Plate washers a minimum of 2 inches by……..

**R408.1 Ventilation.** The under-floor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement or cellar) shall be provided with ventilation openings through foundation walls or **exterior walls**. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet (0.67 m2 for each 100 m2) of under-floor space area. One such ventilating opening shall bewithin 3 feet (914mm)of each corner of said building. space. See Section M1305.1.4 for access requirements where mechanical equipment is located under floors.

**R502.2.1Decks.**Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads as applicable. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members, connections to **exterior walls** or other framing members, shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.4 acting on the cantilevered portion of the deck.

**R504.2.2 Moisture barrier.** Polyethylene sheeting of minimum 6-mil (0.15 mm) thickness shall be placed over the granular base. Joints shall be lapped 6 inches (152 mm) and left unsealed. The polyethylene membrane shall be placed over the pressure preservatively treated-wood sleepers and shall not extend beneath the footing plates of the **exterior walls**.

**R504.1 General.** Pressure preservatively treated-wood basement floors and floors on ground shall be designed to withstand axial forces and bending moments resulting from lateral soil pressures at the base of the **exterior walls** and floor live and dead loads. Floor framing shall be designed to meet joist deflection requirements in accordance with Section R301.

**R602.3 Design and construction. Exterior walls** of wood frame construction shall be designed and constructed in accordance with the provisions of this chapter and Figures R602.3(1) and R602.3(2) or in accordance with AF&PA's NDS. Components of **exterior walls** shall be fastened in accordance with Tables R602.3(1) through R602.3(4).

**R602.4 Interior load-bearing walls.** Interior load-bearing walls shall be constructed, framed and fire blocked as specified for **exterior walls**.

**FIGURE R602.3(2)**
APPLY APPROVED SHEATHING OR BRACE **EXTERIOR WALLS** WITH 1 IN. BY 4 IN. BRACES LET INTO STUDS AND PLATES AND EXTENDING FROM BOTTOM PLATE TO TOP PLATE, OR OTHER APPROVED METAL STRAP DEVICES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S
SPECIFICATIONS. SEE SECTION R602.10.

**R602.6 Drilling and notching—studs.** Any stud in an **exterior wall** or bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40 percent of a single stud width. Any stud may be bored or drilled, provided that the diameter of the resulting hole is no greater than 40 percent of the stud width, the edge of the hole is no closer than
5/8 inch (15.9 mm) to the edge of the stud, and the hole is not located in the same section as a cut or notch. See Figures R602.6(1) and R602.6(2). [See Figures R602.6(1) and R602.6(2).]

**Exceptions:**

1. A stud may be bored to a diameter not exceeding 60 percent of its width, provided that such studs located in **exterior walls** or bearing partitions are doubled and that not more than two successive studs are bored.

**R602.6.1 Drilling and notching of top plate.** When piping or ductwork is placed in or partly in an **exterior wall** or interior, braced or load-bearing wall, necessitating a cutting of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 gage) and 1.5 inches (38 mm) wide shall be fastened to each plate across and to each side of the opening with not less than six 16d nails. See Figure R602.6.1.

**FIGURE R602.6(1)**
**NOTCHING AND BORED HOLE LIMITATIONS FOR EXTERIOR WALLS AND BEARING WALLS**

**R603.1.1 Applicability limits.** The provisions of this section shall control the construction of exterior steel wall framing and interior load-bearing steel wall framing for buildings not greater than 60 feet (18 288 mm) in length perpendicular to the joist or truss span, not greater than 36 feet (10 973mm) in width parallel to the joist span or truss, and not greater than two stories in height with each story not greater than 10 feet
(3048 mm) high. All **exterior walls** installed in accordance with the provisions of this section shall be considered as load-bearing walls. Steel walls constructed in accordance with the provisions of this section shall be limited to sites subjected to a maximum design wind speed of 130 miles per hour (209 km/h) Exposure A, B or C and a maximum ground snow load of 70 pounds per foot (3.35 kN/m2).

**R603.5 Exterior wall covering.** The method of attachment of **exterior wall** covering materials to cold-formed steel stud wall framing shall conform to the manufacturer's installation instructions.

**R603.6 Headers.** Headers shall be installed above wall openings in all **exterior walls** and interior load-bearing walls in accordance with Figure R603.6 and Tables R603.6(1), R603.6(2), and R603.6(3). The number of jack and king studs shall comply with Table R603.6(4). King and jack studs shall be of the same dimension and thickness as the adjacent wall studs. Headers shall be connected to king studs in accordance with Table R603.6(5). One-half of the total number of screws shall be applied to the header and one-half to the king stud by use of a minimum 2-inch by 2-inch (51 mm by 51 mm) clip angle or 4-inch (102 mm) wide steel plate. The clip angle or plate shall extend the depth of the header minus 1/2 inch (12.7 mm) and shall have a minimum thickness of the header members or the wall studs, whichever is thicker.

**R603.7 Structural sheathing.** In areas where the basic wind speed is less than 110 miles per hour (177 km/h),wood structural sheathing panels shall be installed on all **exterior walls** of buildings in accordance with this section. Wood structural sheathing panels shall consist of minimum 7/16-inch (11.1 mm) thick oriented strand board or 15/32-inch (11.9 mm) thick plywood and shall be installed on all **exterior wall** surfaces in accordance with Section R603.7.1 and Figure R603.3. The minimum length of full height sheathing on **exterior walls** shall be determined in accordance with Table R603.7, but shall not be less than 20 percent of the braced wall length

in any case. The minimum percentage of full height sheathing in Table R603.7 shall include only those sheathed wall sections, uninterrupted by openings, which are a minimum of 48 inches (1120 mm) wide. The minimum percentage of full-height structural sheathing shall be multiplied by 1.10 for 9-foot (2743 mm) high walls and multiplied by 1.20 for 10-foot (3048 mm) high walls.
In addition, structural sheathing shall:

**TABLE R603.7**
**MINIMUM PERCENTAGE OF FULL HEIGHT STRUCTURAL SHEATHING ON EXTERIOR WALLS**

**R603.8.1.4 Attachment of braced walls to foundations and floor and roof diaphragms.**
(6th paragraph)
In regions where the basic wind speed equals or exceeds 110 miles per hour (177 km/h), the bottom track in **exterior walls** shall also comply with the provisions of Section R603.8.3.2.6 for uplift.

**R603.8.3.1 Braced wall design.**
(5th paragraph)
**Exterior walls** shall be sheathed with wood structural sheathing panels or other approved materials. Wood structural sheathing panels, and their attachments, shall comply with Section R603.8.1.2 except in regions where the basic wind speed exceeds 110 miles per hour (177 km/h) wood structural sheathing panels attached to framing spaced 24 inches (610 mm) on center shall be a minimum of 19/32 inch (15.1 mm). Attachment of wall sheathing materials other than wood structural sheathing panels shall comply with the manufacturer's instructions.

**TABLE R603.8.2.2**
**LIGHT WEIGHT ROOF AND LIGHT WEIGHT EXTERIOR WALL**

**R603.8.3.2.2 Uplift connection—wall assembly to wall assembly**. **Exterior wall** studs in the upper story wall of a two-story building shall be attached to the in-line framing wall studs in the supporting wall below, with connections capable of resisting the uplift loads listed in Table R603.8.3.2.2(1). Alternatively, a 1.25-inch-by-33-mil (32 mm by 0.84 mm) steel uplift strap shall be permitted with minimum No. 8 screws attached to each stud, as required by Table R603.8.3.2.2(2).

**R603.8.3.2.3 Uplift connection—wall assembly to foundation or floor assembly. Exterior wall** studs in bottom-story walls shall be attached to a wood sill plate or directly attached to the foundation by connections capable of resisting the uplift loads listed in Table R603.8.3.2.3(1). Alternatively, …….

**R603.8.3.2.6 Wall bottom track to foundation.** The bottom track of **exterior walls** shall be connected to a wood sill plate as shown in Figure R603.3.1(2). …….

**R603.8.3.2.5.2 Bottom story of a two-story building.** Uplift connections shall be provided to fasten the **exterior wall** studs in the upper story wall of a two-story building to the header below by connections capable of resisting the uplift loads listed in Table R603.8.3.2.2(1).

Uplift connections shall be provided to fasten the header to the jack studs by connectors capable of resisting the uplift loads listed in Table R603.8.3.2.2(1), multiplied by the number of framing members displaced, divided by two. An additional uplift strap shall be provided to fasten **exterior wall** studs in the upper story to king studs

**TABLE R606.14.1**
**MINIMUM CORROSION PROTECTION**

**TABLE R611.7(8)**
**MINIMUM PERCENTAGE OF SOLID WALL LENGTH ALONG EXTERIOR WALL LINES**

**R611.7.4 Minimum length of wall without openings.** Exterior ICF walls shall have a minimum of solid wall length to total wall length in accordance with TableR611.7(8), but not less than 15 percent for ICF walls supporting a light framed roof or 20 percent for ICF walls supporting an ICF or light framed second story and light framed roof. For attached dwellings in Seismic Design Category C, the minimum percentage of solid wall length shall be greater than or equal to the requirements in Table R611.7(9).

The minimum percentage of solid wall length shall include only those solid wall segments that are a minimum of 24 inches (610 mm) in length. The maximum distance between wall segments included in determining solid wall length shall not exceed 18 feet (5486 mm). A minimum length of 24 inches (610 mm) of solid wall segment, extending the full height of each wall story, shall occur at all corners of **exterior walls**.

**R702.3.5 Application.** Maximum spacing of supports and the size and spacing of fasteners used to attach gypsum board shall comply with Table R702.3.5. Gypsum sheathing shall be attached to **exterior walls** in accordance with Table R602.3(1). Gypsum board shall be applied at right angles or parallel to framing members. All edges and ends of gypsum board shall occur on the framing members, except those edges and ends that are perpendicular to the framing members. Interior gypsum board shall not be installed where it is exposed to the weather.

**R703.1 General. Exterior walls** shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing as described in Section R703.8. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water resistive barrier behind the exterior veneer as required by Section R703.2. A weather-resistant permeable membrane shall be provided over all sheathing, with horizontal overlaps in the membrane of not less than 2 inches (51 mm) and vertical overlaps of not less than 6 inches (152 mm).Where furring strips are used, they shall be 1 inch by 3 inches or 1 inch by 4 inches (25.4 mm by 76 mm or 25.4 mm by 102 mm) and shall be fastened horizontally to the studs with 7d or 8d box

**R703.2 Weather-resistant sheathing paper.** Asphalt-saturated felt free from holes and breaks, weighing not less than 14 pounds per 100 square feet (0.683 kg/m2) and complying with ASTMD 226 or other approved weather-resistant material shall be applied over studs or sheathing of all **exterior walls** as required by Table R703.4. exceed the maximum exposure specified in Table R703.5.2. ……
**Exception:** Such felt or material is permitted to be omitted in the following situations:
3. Under **exterior wall** finish materials as permitted in Table R703.4.

**TABLE R703.5.2**
**MAXIMUM WEATHER EXPOSURE FOR WOOD SHAKES AND SHINGLES ON EXTERIOR WALLS**

**R703.8 Flashing.**Approved corrosion-resistive flashing shall be provided in the exterior wall envelope in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. The flashing shall extend to the surface of the **exterior wall** finish and shall be installed to prevent water from reentering the exterior wall envelope. Approved corrosion-resistant flashings shall be installed at all of the following locations:

**R804.3.3.1Rafter framing.**Rafters shall be connected to a parallel ceiling joist to form a continuous tie between **exterior walls** in accordance with Figures R804.3 and R804.3.1(1) and Table R804.3.1(3)……..

**R905.2.7.1 Ice protection.** In areas where the average daily temperature in January is 25EF (-4EC) or less, an ice barrier that consists of a least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall be used in lieu of normal underlayment and extend from the eave's edge to a point at least
24 inches (610 mm) inside the **exterior wall** line of the building.

**R905.5.3 Underlayment.** In areas where the average daily temperature in January is 25EF (-4EC) or less, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet shall extend from the eave's edge to a point at least 24 inches (610 mm) inside the **exterior wall** line of the building. Underlayment shall conform with ASTM D 226, Type I.

**R905.6.3 Underlayment.** In areas where the average daily temperature in January is 25EF (-4EC) or less, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet shall extend from the eave's edge to a point at least 24 inches (610 mm) inside the **exterior wall** line of the building. Underlayment shall comply with ASTM D 226,
Type II. Underlayment shall comply with ASTM D 226, Type I.

**R905.7.3 Underlayment.** In areas where the average daily temperature in January is 25EF (-4EC) or less, an ice barrier that consists of at least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet shall extend from the eave's edge to a point at least 24 inches (610 mm) inside the **exterior wall** line of the building. Underlayment shall comply with ASTM D 226, Type I.

**R905.8.3 Underlayment.** In areas where the average daily temperature in January is 25EF (-4EC) or less, an ice barrier that consists of at least two layers of underlayment cemented together or a self-adhering polymer modified bitumen sheet shall extend from the edge of the eave to a point at least 24 inches (610 mm) inside the **exterior wall** line of the building. Underlayment shall comply with ASTM D 226, Type I.

**R1001.15 Chimney clearances.** Any portion of a masonry chimney located in the interior of the building or within the **exterior wall** of the building shall have a minimum air space clearance to combustibles of 2 inches (51 mm). Chimneys located entirely outside the **exterior walls** of the building, including chimneys that pass through the soffit or cornice, shall have a minimum air space clearance of 1 inch (25.4 mm). The air space shall not be filled, except to provide fire blocking in accordance with Section R1001.16.

**R1003.4 Seismic anchorage.** Masonry and concrete chimneys in Seismic Design Categories D1 and D2 shall be anchored at each floor, ceiling or roof line more than 6 feet (1829 mm) above grade, except where constructed completely within the **exterior walls**. Anchorage shall conform to the requirements of Section R1003.4.1.

**N1101.2.1 Residential buildings, Type A-1.** Compliance shall be demonstrated by either:

1. Meeting the requirements of this chapter for buildings with a glazing area that does not exceed 15 percent of the gross area of **exterior walls**; or

**N1101.2.2 Residential buildings, Type A-2.** Compliance shall be demonstrated by either:

1. Meeting the requirements of this chapter for buildings with a glazing area that does not exceed 25 percent of the gross area of **exterior walls**; or

**N1102.1.6 Slab-on-grade floors.** (2nd paragraph)

When installed between the **exterior wall** and the edge of the interior slab, the top edge of the insulation shall be permitted to be cut at a 45-degree (0.79 rad) angle away from the exterior wall. Insulation extending horizontally away from the building shall be protected by pavement or by a minimum of 10 inches (254 mm) of soil.

**M1413.1 General.** Cooling equipment that utilizes evaporation of water for cooling shall be installed in accordance with the manufacturer's installation instructions. Evaporative coolers shall be installed on a level platform or base not less than 3 inches (76 mm) above the adjoining ground and secured to prevent displacement. Openings in **exterior walls** shall be flashed in accordance with Section R703.8.

**G2426.6.7 (503.6.8) Exterior wall penetrations.** A gas vent extending through an **exterior wall** shall not terminate adjacent to the wall or below eaves or parapets, except as provided in Sections G2426.2.4 and G2426.3.4.

**G2426.10.16 (503.10.16) Single-wall connector penetrations of combustible walls.** A vent connector made of a single-wall metal pipe shall not pass through a combustible **exterior wall** unless guarded at the point of passage by a ventilated metal thimble not smaller than the following:

**P2603.6 Freezing.** In localities having a winter design temperature of 32EF (0EC) or lower as shown in Table R301.2(1) of this code, a water, soil or waste pipe shall not be installed outside of a building, in **exterior walls**, in attics or crawl spaces, or in any other place subjected to freezing temperature unless adequate provision is made to protect it from freezing by insulation or heat or both. Water service pipe shall be installed not less than 12 inches (305 mm) deep or less than 6 inches (152 mm) below the frost line.

**P2606.1General.** Roof and **exterior wall** penetrations shall be made water tight. Joints at the roof, around vent pipes, shall be water tight by the use of lead, copper or galvanized iron flashings or an

approved elastomeric material. Counterflashing shall not restrict the required internal cross-sectional area of any vent.

**E3801.2.2Wall space.** As used in this section, a wall space shall include the following:
2. The space occupied by fixed panels in **exterior walls**, excluding sliding panels.

**Cost impact**: None

**Committee Action: Approved as Modified**

**IRC-54**

**Revision to: Section M1411.3.1**

**Proponent:** Mike Seal, Town of Oro Valley

**Proposal:** Add text as shown to the 2nd line:

Drain piping shall be a minimum of 3/4 inch (19.1 mm) nominal pipe size, and shall slope to drain a minimum of 1/8 unit vertical, in 12 units horizontal (1%).

**Reason:** No slope requirement is in place, and to be consistent with the IMC.

**Cost impact**: None

**Committee Action: Approved as Modified**

**M1411.3.1 Auxiliary and secondary drain systems.** In addition to the requirements of Section M1411.3, a secondary drain or auxiliary drain pan shall be required for each cooling or evaporator coil where damage to any building components will occur as a result of overflow from the equipment drain pan or stoppage in the condensate drain piping. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Drain piping shall be a minimum of 3/4-inch (19.1 mm) nominal pipe size. One of the following methods shall be used:

(The remainder of the section to remain unchanged.)

**Reason:** This inserts the necessary prescriptive language that will provide proper discharge for condensing liquid. It also aligns the IRC with the same requirement shown in the International Mechanical Code Section 307.1.

**Cost impact**: None

**Committee Action: Approved as Modified**

**IRC-55**

**Revision to: TABLE R1003.1**

**Proponent:** Autumn Hartsoe, City of Goodyear

**Proposal:** Revise Table as follows:

TABLE R1003.1
**SUMMARY OF REQUIREMENTS FOR MASONRY FIREPLACES AND CHIMNEYS**

| ITEM | LETTER[a] | REQUIREMENTS | SECTION |
|---|---|---|---|
| Hearth slab thickness | A | 4" | R1003.9.1 |
| Hearth extension<br>(each side of opening) | B | 8" fireplace opening < 6 sq. ft.<br>12" fireplace opening ≥ 6 sq. ft. | R1003.10 |

| | | | |
|---|---|---|---|
| Hearth extension<br>(front of opening) | C | 16" fireplace opening < 6 sq. ft.<br>20" fireplace opening ≥ 6 sq. ft. | R1003.10 |
| Hearth slab reinforcing | D | Reinforced to carry its own weight and all imposed loads. | R1003.9 |
| Thickness of wall of firebox | E | 10" solid brick or 8" where a firebrick lining is used. Joints in firebrick 1/4" max. | R1003.5 |
| Distance from top of opening to throat | F | 8" | R1003.11 |
| Smoke chamber wall thickness<br>~~unlined walls~~ | G | 6" for unlined walls<br>8" for lined walls | R1003.8 |
| Chimney<br>Vertical reinforcing[b] | H | ~~8"~~<br>Four No. 4 full-length bars for chimney up to 40" wide. Add two No. 4 bars for each additional 40" or fraction of width or each additional flue | R1003.3.1 |
| Horizontal reinforcing[b] | J | ~~Four No. 4 full-length bars for chimney up to 40" wide. Add two No. 4 bars for each additional 40" or fraction of width or each additional flue~~<br>1/4-inch ties at each 18 inches and two ties at each bend in vertical steel | R1003.3.2 |
| Bond beams | K | ~~1/4" ties at 18" and two ties at each bend in vertical steel.~~ | R1001.1<br>R1001.5 |
| Fireplace lintel | L | Noncombustible material | R1003.7 |
| Chimney walls with flue lining | M | Solid masonry units or hollow masonry units grouted solid with at least 4 inch nominal thickness. | R1001.7 |
| Walls with unlined flue | N | 8" solid masonry. | R1003.8 |
| Distances between adjacent flues | - | See Section R1001.10. | |
| Effective flue area (based on area of fireplace opening) | P | See Section R1001.12. | |
| Clearances:<br>Combustible material<br>Mantel and trim<br>Above roof | R | See Sections R1001.15 and R1003.12.<br>See Section R1001.13.<br>3' at roofline and 2' at 10'. | |
| Anchorage[b]<br>Strap<br>Number<br>Embedment into chimney<br>Fasten to<br>Bolts | S | 3/16" x 1"<br>Two<br>12" hooked around outer bar with 6" extension<br>4 joists<br>Two 1/2" diameter. | R1003.4.1 |
| Footing<br>Thickness<br>Width | T | 12" min.<br>6" each side of fireplace wall. | R1003.2 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 $m^2$.

**NOTE**: This table provides a summary of major requirements for the construction of masonry chimneys and fireplaces. Letter references are to Figure R 1003.1, which shows examples of typical construction. This table does not cover all requirements, nor does it coverall aspects of the indicated requirements. For the actual mandatory requirements of the code, see the indicated section of text.

a. The letters refer to Figure R 1003.1.

a. Not required in Seismic Design Category A, B or C.

Reason: Corrected the following errors to table R1003.1:
Chimney, Vertical reinforcing
Horizontal reinforcing
Bond beam requirement
Add footnote “b” to vertical reinforcing
Add “Section” column to have the same format as IBC Table 2111.1

**Cost impact**: **None**

**Committee Action: Approved as Modified**

**IRC-56**

**Revision to: Section M1305.1**

**Proponent:** Chuck King, Town of Oro Valley

**Proposal: Add new sections as follow:**

**M1305.1.5 Equipment and appliances mounted on roofs or elevated structures.** When equipment or appliances are installed on roofs or elevated structures, there shall be a level working area on any side of the appliance or equipment for servicing purposes. This area shall be no less than 30 inches (762 mm) in any dimension and shall not exceed a slope of 3 units vertical in 12 units horizontal.

**M1305.1.5.1 Electrical requirements.** There shall be a receptacle outlet located within 25 feet (7620 mm) of any appliance or equipment for servicing purposes.

**Reason:** In nearly all applications (under floors, attics, etc.) there are requirements for access and working spaces for servicing appliances and equipment. Currently there are no parameters in place (in the IRC) for steep sloped roofs; meaning that equipment could be installed on roofs with extreme pitches that would render them virtually un-serviceable. The maximum slope requirement will provide a reasonable level of safety for service personnel, and the 30 inch dimension is consistent with other working space requirements. There are also requirements for service outlets in just about all other applications, and are certainly needed for roof mounted equipment. In addition, this will be more consistent with the requirements of the IMC and ICCEC.

**Cost Impact: Increase**

**Committee Action: Approved as Submitted**

**IRC-57**

**Revision to: Section M1305.1**

**Proponent:** Chuck King, Town of Oro Valley

**Proposal: Revise sections as follow:**

G2406.2 (303.3) Prohibited locations. Fuel-fired appliances shall not be located in, or obtain combustion air from, the following rooms or spaces:

1. Sleeping rooms
2. Bathrooms
3. Toilet rooms
4. ~~Storage closets~~

**Reason:** Installing a water heater in a storage-type closet is a typical application and has been done for many years. Using the terminology of “storage closets” as a prohibition is very open ended. What constitutes a storage closet? I would say that the primary purpose of **any** closet is for the storage of materials of some kind. If this interpretation were to be used, water heaters could not be installed in a closet of any kind.

**Cost Impact: None**

**Committee Action: Disapproved**

**IRC-58**

**Revision to: Section R315.1**

**Proponent:** Rick Mccracken, Artistic Stairs

**Proposal: Revise Exception 2 as follow:**

**R.315.1 Handrails**
**Exceptions:**
2. The use of a volute, turnout or starting ~~easing~~ newel shall be allowed over the lowest tread.

**Reason:** in the 2000 I.B.C. Handbook 1003.3.3.11.4 continuity, it states within dwelling units, handrails are permitted to terminate at a starting newel or volute, which is located on the first tread. It goes on to say, these types of terminations have been found in residences for years without a record of accidents or lawsuits for an unsafe practice. We believe this was an oversight in creating the I.R.C. codes because technically the easing is a part attached to the volute or turnout to create a change of pitch in the railing and not a stand alone starting feature. We ask that this be changed to accommodate a long standing practice in stair design without any safety issues.

Cost Impact: None

**Committee Action: Withdrawn by Proponent**

**IRC-59**

**Revision to: Section P2803.6.1**

**Proponent:** Mike Seal, Town of Oro Valley

**Proposal: Revise as follows:**

**P2803.6.1 Requirements of discharge pipe.** The outlet of a pressure relief valve, temperature relief valve or combination thereof, shall not be directly connected to the drainage system. The discharge from the relief valve shall be piped full size separately to the outside of the building or to an indirect waste receptor located inside the building. In areas subject to freezing, the relief valve shall discharge through an air gap into an indirect waste receptor located within a heated space, or by other approved means. The discharge shall be installed in a manner that does not cause personal injury or property damage and that is readily observable by the building occupants. The discharge from a relief valve shall not be trapped. The diameter of the discharge piping shall not be less than the diameter of the relief valve outlet. The discharge pipe shall be installed so as to drain by gravity flow and shall terminate atmospherically not ~~more~~ less than 6 inches (152mm) nor more than 24 inches (610 mm) above the floor or finish grade. The end of the discharge pipe shall not be threaded.

**Reason:** This code section speaks to both interior and exterior discharge of relief valves, but the termination seems to only address what was intended for interior locations. The possibility of the termination to occur “at grade”, which is now currently allowed, would have the unintended effect of concealing any discharge that might occur, or of plugging the discharge line. Requiring it to be a “minimum” of 6 inches (152 mm) above grade would resolve this. The 24 inch (610 mm) maximum height will assure that possible scalding water under pressure will not injure individuals in near proximity.

**Cost Impact: None**

**Committee Action: Approved as Submitted**

**IRC-60**

Revision to: Section R2404.9

Proponent: Chuck King, Town of Oro Valley

Revise as follows: Delete text

**Proposal:** Delete entire section and relocate text in new section as follows:
(Section Heading) **R324 Rodent Proofing** (Subsection below) R324.1 Rodent proofing. Buildings or structures and the walls enclosing habitable ~~or occupiable~~ rooms and spaces in which persons live, sleep or work, or in which ~~feed,~~ food or foodstuffs intended for human consumption are stored, prepared, processed, served or sold, shall be constructed to protect against the entry of rodents.

**Reason:** This code section was improperly located in the fuel gas section of the code. It needs to be in the general provisions or general planning area that also speaks to other types of protections such as termites. Speaking to the changes; striking "occupiable" simply removes a fabricated word which is found nowhere else in the code or in any dictionary, and is already covered by the previous word "habitable". The second strike out is to remove the word "feed" which is more applicable to livestock or other animals. It would be nearly impossible to protect "feed" which could be located in a variety of accessory structures that are covered by the IRC. Showing what I believe to be the intent, of adding the portion "intended for human consumption", is far more appropriate and compatible with life safety concerns.

**Cost Impact: None**

**Committee Action: Withdrawn by Proponent**

## 2000 INTERNATIONAL PLUMBING CODE

**IPC-3**

**Revision to: Section 312.5**

**Proponent:** Bob Lee, Town of Cave Creek

**Proposal: Revise as follow:**

**312.5 Water supply system test.** Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure not less than the working pressure of the system; or, for piping systems other than plastic, by an air test of not less than 50 psi (344kPa). This test shall be maintained for at least 15 minutes. The water utilized for tests shall be obtained from a potable source of supply. The required tests shall be performed in accordance with this section and Section 107.

**Reason:** All other tests specified in Section 312, whether Drainage and vent water test under Section 312.2, Drainage and vent air test under Section 312.3, Drainage and vent final test under Section 312.4, Gravity sewer test under Section 312.6 or Forced sewer test under Section 312.7, require 15 minute duration for the respective tests. This is sufficient time to determine that a leak is not present and would provide consistency within the testing section.

**Cost Impact: None**

**Committee Action: Approved as Submitted**

**IPC-4**

**Revision to: Section 504.6.1**

**Proponent:** Mike Seal, Town of Oro Valley

**Proposal: Revise as follow:**
**504.6.1 Discharge.** The relief valve shall discharge full size to a safe place of disposal such as the floor, outside the building, or an indirect waste receptor. The discharge pipe shall not have any trapped sections and shall have a visible air gap or air gap fitting located in the same room as the water heater. The outlet end of the discharge pipe shall not be threaded and such discharge pipe shall not have a valve or tee installed. Relief valve piping shall be piped independent of other equipment drains or relief valve discharge piping to the disposal point. ~~Such pipe shall be installed in a manner that does not cause personal injury to occupants in the immediate area or structural damage to the building.~~ The drain shall be constructed so as to discharge in a downward direction, and shall terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the finish surface or grade.

**Reason:** This prescriptive language removes the need to interpret what is intended by “shall be installed in a manner that does not cause personal injury to occupants in the immediate area...”. This is wide open for interpretation and discretion. The means and heights of the drain discharge also matches what is currently prescribed for drain pans in P504.7.2. Why should drain pans be specific and relief valve discharges, which relieve under pressure, be left open to interpretation?

**Cost Impact: None**

**Committee Action: Approved as Submitted**

# AZBO CODE REVIEW AND DEVELOPMENT COMMITTEE

# 2000 ICC CODE AMENDMENTS REFORMATTED TO THE 2003 ICC CODES

**AZBO Code Review and Development Committee**

**AZBO 2000 ICC Codes Amendments recommended for the 2003 ICC Codes**

**This report is a three year compilation of the AZBO amendments to the 2000 ICC codes that the Code Review and Development Committee have recommended to be included with the 2003 ICC codes to assist those jurisdictions in the adoption of the 2003 ICC codes. In addition, previous amendments that were not successful in the ICC code change process have been deleted, unless the item is scheduled to be resubmitted for inclusion in the 2006 editions of the ICC Codes. The items noted as "AZ only" have been determined by the committee to be items unique to Arizona in accordance with the guidelines approved by the AZBO Board of Directors.**

**The items are identified by the initials of the affected code, the original number assigned by the committee and the year the item was originally approved by the committee.**

## 2003 INTERNATIONAL BUILDING CODE

IBC-5-01 (AZ Only)

**Revision to: Table 1607.1**

**Committee Action: Approved as Submitted**

Revise as follows:

| OCCUPANCY OR USE | UNIFORM (psf) | CONCENTRATED (lbs.) |
|---|---|---|
| 27. Residential | | - |
| One- and two-family dwellings | | |
| Uninhabitable attics with storage | ~~20~~ 40 | |
| Habitable attics and sleeping areas | ~~30~~ 40 | |
| (no other changes in item 27) | | |

**Reason:** All habitable areas should be designed using the same design loads. Change is in line with industry standards. Local builders and designers support the change.

**Committee Reason:** Committee members representing industry indicated the homebuilders and designers preferred to continue with the 40 psf in bed room areas. There was support that this would lessen complaints from buyers.

**IBC-10-01** (AZ Only)

**Revision to: 3109**

**Committee Action: Approved as Submitted**

Revise as follows:

Section 3109 is hereby REPEALED

**Reason:** Section does not meet State law for pool enclosures. Local governing statute or code will regulate.

**IBC-14-01 (Resubmit to ICC)**

**Revision to: 406.1.4 Item 1.**

**Committee Action: Approved as Modified**

**406.1.4 Separation.** Separations shall comply with the following:
1. The private garage shall be separated from the dwelling unit and its attic area by means of a minimum 1/2-inch (12.7 mm) gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent. Door openings between a private garage and the dwelling unit shall be equipped with either solid wood doors, or solid or honeycomb core steel doors not less than 13/8 inches (34.9 mm) thick, or doors in compliance with Section 715.3.3. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be self-closing and self-latching.

In buildings protected with an automatic fire sprinkler system, including the private garage, the room finish materials shall be permitted to be a minimum 1/2-inch (12.7 mm) gypsum board applied to the garage side.

**Committee Reason:** These doors should be maintained self closing and latching at all times.

**IBC-20-02 (AZ Only)**

**Revision to:** Chapter 11 Accessibility

**Committee Action: Approved as Modified**

**Proposal:** Delete Chapter 11, Accessibility, in its entirety and substitute the following:

ARIZONANS WITH DIABILITIES ACT
"Arizonans with Disabilities Act" (Arizona Revised Statutes, Title 41, Chapter 9, Article 8), and the "Arizonans with Disabilities Act Implementing Rules" (Arizona Administrative Code, Title 10, Chapter 3, Article 4), which rules incorporate The federal "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities," be and the same is hereby adopted as the Arizonans with Disabilities Act of the Town, City or County, and shall apply to new construction and alterations and are not required in buildings or portions of existing buildings that do not meet the standards and specifications and this act is hereby referred to, adopted and made a part hereof as though fully set forth in this section.

**Reason:** All jurisdictions within the state are required by state law to enforce these provisions so this code change merely brings the International Building Code into compliance.

**IBC-22-03 (AZ only)**

**Revision to: Sections 308.2,308.3, 310.1,310.2, (new) 419, 309.2.9, 1003.3.1.2, 1003.3.1.8.2**

**Committee Action: Approved as Modified**

**308.2 Group I-1.** This occupancy shall include buildings, structures or parts thereof housing more than 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a residential environment that provides supervisory care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:
Residential board and care facilities
Assisted living centers
Halfway houses
Group homes
Congregate care facilities

Social rehabilitation facilities
Alcohol and drug abuse centers
Convalescent facilities
A facility such as the above with 10 or fewer persons shall be classified as a Group R-4 Condition 1 or shall comply with the *International Residential Code* in accordance with Section 101.2 where the building is in compliance with Section 419 of this code.

**308.3 Group I-2.** This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing, custodial, personal, or directed care on a 24-hour basis of more than five persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:
Hospitals
Nursing homes (both intermediate-care facilities and skilled nursing facilities)
Mental hospitals
Detoxification facilities
A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

This occupancy shall also include buildings and structures used for assisted living homes providing supervisory, personal, or directed care on a 24-hr basis of more than 10 persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. A facility such as the above with ten or fewer persons shall be classified as R-4 Condition 2.

**310.1…R-4** Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living homes including not more than 10 occupants, excluding staff.

**310.1.1 Condition 1.** This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self preservation by responding to an emergency situation without physical assistance from staff. Condition 1 facilities housing more than 10 persons shall be classified as a Group I-1.

**310.1.2 Condition 2.** This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of self preservation by responding to an emergency without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

R-4 occupancies shall meet the requirements for construction as defined in Group R-3 except as otherwise provided for in this code, and Section 419 or shall comply with the International Residential Code in accordance with section 101.2 where the building is in compliance with Section 419 of this code

**310.2 Definitions**

**PERSONAL CARE SERVICE.** Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and the administration of medications and treatments.

**DIRECTED CARE SERVICE.** Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

**SUPERVISORY CARE SERVICE.** General supervision, including daily awareness of resident functioning and continuing needs.

**RESIDENTIAL CARE/ASSISTED LIVING HOME.** A building or part thereof housing a maximum of 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory, personal, or directed services. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living homes, halfway houses, group homes, congregate care

facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

**419 RESIDENTIAL CARE/ASSISTED LIVING HOMES**

**419.1 Applicability.** The provisions of this section shall apply to a building or part thereof housing not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all applicable provisions of Group R-3.

**419.2 General.** Buildings or portions of buildings classified as R-4 occupancies shall meet all the applicable provisions of Group R-3, may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building, and shall not exceed 2000 square feet above the first story except as provided in Section 506.

**419.3 Special Provisions.** R-4 occupancies having more than 2000 square feet of floor area above the first floor shall be of not less than one-hour fire-resistive construction throughout.

**419.3.1 Mixed Uses.** R-4 occupancies shall be separated from other uses as provided in Table 302.3.2.

**419.4 Access and Means of Egress Facilities.**

**419.4.1 Accessibility.** R-4 occupancies shall be provided with at least one accessible route per the Arizonans with disabilities act. Sleeping rooms and associated toilets shall be accessible.

**Exception:** Existing buildings shall comply with Section 3409. Bathing and toilet facilities need not be made accessible, but shall be provided with grab bars in accordance with ICC/ANSI A 117.1.

**419.4.2 Exits**

4**19.4.2.1Number of Exits.** Every story, basement, or portion thereof shall have not less than two exits.

Exception: Basements and stories above the first floor containing no sleeping rooms may have one means of egress as provided in Chapter 10.

**419.4.2.2 Distance to Exits.** The maximum travel distance shall comply with Section 1004, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

**419.4.2.3 Emergency Exit Illumination.** In the event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the ICC Electric Code.

**419.4.2.4 Emergency Escape and Rescue.** R-4 occupancies shall comply with the requirements of Section 1025, except that Exception 1 to Section 1025.1 does not apply to R-4 occupancies.

**419.4.2.5 Delayed egress locks.** In R-4 Condition 2 occupancies, delayed egress locks shall be permitted in accordance with Sections 1008.1.3.4 and 1008.1.8.6, items 1, 2, 4, 5 and 6.

**419.5 Smoke Detectors and Sprinkler Systems**

**419.5.1 Smoke Alarms.** All habitable rooms and hallways in R-4 occupancies shall be provided with smoke alarms installed in accordance with Section 907.2.10.

**419.5.2 Sprinkler Systems.** R-4 occupancies shall be provided with a sprinkler system installed in accordance with Section 903.2.9. Sprinkler systems installed under this Section shall be installed throughout, including attached garages, and in Condition 2 facilities shall include attics and concealed spaces of or containing combustible materials. Such systems

may not contain unsupervised valves between the domestic water riser control valve and the sprinklers. In R-4 Condition 2 occupancies, such systems shall contain water-flow switches electrically supervised by an approved supervising station, and shall sound an audible signal at a constantly attended location.

**1008.1.2 Door swing.** Egress doors shall be side-hinged swinging.

Exceptions:

5. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
6. Group I-3 occupancies used as a place of detention.
7. Doors within or serving a single dwelling unit in Groups R-2, ~~and~~ R-3 as applicable in Section 101.2, <u>and R-4.</u>
8. (no other changes)

**Reason:** The purpose of this amendment is to bring the provisions of the code into agreement with the licensing rules of the Arizona Department of Health Services. DHS license categories have a threshold of 10 residents to move from a residential home setting to an institutional setting. DHS rules (R9-10-701) state, “Assisted living home” or “home” means an assisted living facility that provides resident rooms to (10) or fewer residents, as distinct from an “assisted living center”, which provides services to more than (10) persons. In addition, the license classifications to provide “personal care services” and “directed care services” to residents allow for residents to be bed-bound. The use of “Condition” distinctions is reflective of similar distinctions in I-occupancies.

Each state has unique agency programs for assisted living occupancies, which establish license categories based on numbers of residents and the familiar ambulatory/non-ambulatory distinction. Uniformity could be accomplished by either trusting health service agencies nationally to agree to uniform thresholds and other licensing characteristics, or by amending building codes to allow each state to adapt to that state’s unique rules. If numerical thresholds are provided on a “fill in the blanks” basis, condition categories can be added or deleted, and definitions can be customized to match licensure definitions, the hazards associated with these facilities can be addressed comprehensively on a state-by-state basis.

The most hazardous scenario is a facility in an ordinary, un-rated residential structure, occupied by (10) bed-bound residents, supervised by a single caregiver. Provisions for exiting, smoke detectors, emergency illumination, sprinklers, et al, can substantially increase the chances of survival in a fire or other emergency for these residents.

**IBC-1-01 Reason:** To bring the Building Code into agreement with Arizona Administrative Code, Title 9 Health Services, Article 7 Assisted Living Facilities. R9-10-701 states, ‘“Assisted living home” or “home” means an assisted living facility that provides resident rooms to ten or fewer residents.’ An “Assisted living center” (rooms or residential units for eleven or more residents) is required to have “an individually keyed entry door” and “a kitchen area” by R9-10-720. Since the distinction for the state is between ten and eleven residents, it is felt that the Building Code should reflect the same distinction.
See http://www.sosaz.com/public services/Title 09/9-10.htm for the entire rule.

It is felt that the word “abuse” was inadvertently omitted for the definition of Group I-1 Occupancy.

IBC-24-03 (Resubmit to ICC)

**Revise 507.2 & 507.3**

**Committee Action: Approved as Submitted**

**Revise as follows:**

**507.2 Sprinklered, one story.** The area of a one-story, Group B, F, M or S building or a one-story Group A-4 building of other than Type V construction shall not be limited when the building is provided

with an automatic sprinkler system throughout in accordance with Section 903.3.1.1, and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

**Exceptions:**

1. (No change)

2. (No change)

Such buildings may contain other occupancies, without H fire areas, provided that such occupancies do not occupy more than 10 percent of the area of any floor of a building, nor more than the tabular values permitted in the occupancy by Table 503 for such occupancy.

Exception: Group H fire areas as permitted by Section 507.6.

**507.3 Two story.** The area of a two-story, Group B, F, M or S building shall not be limited when the building is provided with an automatic sprinkler system in accordance with Section 903.3.1.1 throughout, and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

Such buildings may contain other occupancies, without H fire areas, provided that such occupancies do not occupy more than 10 percent of the area of any floor of a building, nor more than the tabular values permitted in the occupancy by Table 503 for such occupancy.

Exception: Group H fire areas as permitted by Section 507.6.

**Reason:** The purpose of this proposal is to expand minor uses that would be permitted in an unlimited area building constructed in compliance with Sections 507.2 and 507.3. The current text is overly restrictive. As written, these buildings would not be allowed to contain separate tenants such as daycare, dance school, out-patient surgical center, restaurants, etc.. These would be considered different occupancies and no text exists to permit such uses in an unlimited area building of B, F, M or S occupancies.
It makes little sense to restrict other occupancies, while allowing an A-4, certain H's or motion picture theaters to be in unlimited area buildings.

This change will allow other use groups to be located in an unlimited area building of B, F, M or S uses as long as the aggregate area of the occupancies do no exceed 10% of the floor area of the main occupancy and further that the aggregate area of such occupancy does not exceed the tabular area permitted in Table 503.
Communications and interpretations from ICC staff in ICBO and Boca offices have confirmed there is a need for a change to allow these minor occupancies in an unlimited area building. This provision is in at least one other national code.
This change should provide a reduction in costs.

**IBC-27-03 (Submit to ICC)**

**Revision to: Table 2902.1**

**Committee Action: Approved as Submitted**

Revise Items 2 and 6 of table (remainder of table unchanged):

**TABLE 2902.1**
**MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES[a]**

| No. | CLASSIFICATION | USE GROUP | DESCRIPTION | WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODEFOR URINALS) | | LAVATORIES | | BATHTUBS OR SHOWERS | DRINKING FOUNTAINS (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE) | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MALE | FEMALE | MALE | FEMALE | | | |
| 2 | Business (see Sections 2902.2, 2902.4, 2902.4.1 and 2902.6) | B | Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses | 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50 | | 1 per 40 for the first 50 and 1 per 80 for the remainder exceeding 50 | | — | 1 per 100 | ~~1 service sink~~ |
| | | | | | | | | | | |
| 6 | Mercantile (see Section 2902.2, 2902.5 and 2902.6) | M | Retail stores, service stations, shops, salesrooms, markets and shopping centers | 1 per 500 | | 1 per 750 | | — | 1 per 1,000 | ~~1 service sink~~ |

**REASON**: The current requirement for 1 service sink for mercantile and business occupancies is not necessary due to the nature of the occupancy. The majority of business and mercantile occupancies do not warrant the need to clean up spills that often occur in other occupancies. The requirement for a service sink often becomes overly restrictive to small tenant spaces. This revision will not apply if another governing agency, such as The State Health Department, requires a service sink.

**IBC-28-03 (Approved w/ ICC)**

**Revision to: Section 1024.3**

**Committee Action: Approved as Submitted**

**1024.3 Assembly other exits.** In addition to having access to a main exit, each level of an occupancy in Group A having an occupant load of greater than 300 shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1014.2.

**Reason:** The IBC defines ‘exit’ in 1006 as being exterior doors, vertical exit enclosure, smokeproof enclosure, exit passageway and horizontal exits. ICC staff has interpreted that this section does not mean each ‘additional exit’ is required to comply solely with Section 1006. But that the code intends that assembly rooms may also be served by exit-access elements. If this interpretation is correct, then the Code should reflect the correct intent. By changing the word ‘exit’ to ‘means of egress’ clarifies the purported intent correctly.

**IBC-29-03 (Approved w/ ICC)**

**Revision to: Section 1008.1.9**

**Committee Action: Approved as Modified**

**1008.1.9** Panic and fire exit hardware. Where panic and fire exit hardware is installed, it shall comply with the following:

1. The actuating portion of the releasing device shall extend at least one-half of the door leaf width.

2. A maximum unlatching force of 15 pounds (67 N).

Each door in a means of egress from an occupancy of Group A or E having an occupant load of 100 or more and any occupancy of Group H-1, H-2, H-3 or H-5 shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

Exception. A main exit, of a Group A use, in compliance with Section 1008.1.8.3 Exception 2.

If balanced doors are used and panic hardware is required, the panic hardware shall be of the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

**Reason:** The IBC has a conflict between Section 1008.1.8.3 Exception 2 and the second paragraph of Section 1008.1.9. Section 1008.1.9 requires panic hardware on all egress doors serving a Group A having an occupant load of 100 or more. However, Section 1008.1.8.3 Exception 2 permits the use of key operated locking devices on the egress side of the main exit door where the occupant load is 300 or less. In applying conflict resolution from Section 102.1, it is difficult to determine which of these sections is a general requirement and which is a specific requirement nor can you readily determine which is the more restrictive. By adding this exception to the second paragraph of Section 1008.1.9 the code will be consistent with interpretations found in the IBC Q & A Application Guideline.

**IBC-32-03 (Approved w/ ICC)**

**Revision to: Section 1804.2**

**Committee Action: Approved as Submitted**

**1804.2 Presumptive load-bearing values.** The maximum allowable foundation pressure, lateral pressure or lateral sliding resistance values for supporting soils near the surface shall not exceed the values specified in Table 1804.2 unless data to substantiate the use of a higher value are submitted and approved.

Presumptive load-bearing values shall apply to materials with similar physical characteristics and dispositions.

Mud, organic silt, organic clays, peat or unprepared fill shall not be assumed to have a presumptive load bearing capacity unless data to substantiate the use of such a value are submitted.

**EXCEPTION:** A presumptive load-bearing capacity is permitted to be used where the building official deems the load-bearing capacity of mud, organic silt or unprepared fill is adequate for the support of lightweight and temporary structures.

**Reason:** The wording at or near the surface would lead one to believe that the soil bearing values of Table 1804.2 may be applied at the ground surface. Where as Section 1805.2 states as follows:

**1805.2 Depth of footings.** The minimum depth of footings below the undisturbed ground surface shall be 12 inches (305 mm). Where applicable, the depth of footings shall also conform to Sections 1805.2.1 through 1805.2.3.

**IBC-33-03 (AZ Only)**

Revise Section 1503.4

Committee Action: Approved as Submitted

**[P] 1503.4 Roof drainage.** Design and installation of roof drainage systems shall comply with Section 1503.4 and the ~~*International*~~ *Plumbing Code*.

**1503.4.1 Gutters.** Gutters and leaders placed on the outside of buildings, other than Group R-3 as applicable in Section101.2, private garages and buildings of Type V construction, shall be of noncombustible material or a minimum of Schedule 40 plastic pipe.

**1503.4.2 Where required.** All roofs, paved areas, yards, courts and courtyards shall drain into a separate storm sewer system, or a combined sewer system, or to an approved place of disposal.

**1503.4.3 Roof design.** Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked.

**1503.4.4 Overflow drainage required.** Overflow (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.

**1503.4.4.1 Separate systems required.** Overflow roof drain systems shall have the end point of discharge separate from the primary system. Discharge shall be above grade, in a location, which would normally be observed by the building occupants or maintenance personnel.

**1503.4.4.2 Overflow drains and scuppers.** Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains may be installed in the adjacent parapet walls. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by the plumbing code. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.

**REASON**: This is proposed as an Arizona only amendment to resolve the problem of using the UPC rather than the IPC. The I codes place roof drainage in the plumbing code. The U codes have drainage required in the UBC and piping system design is per the UPC and scuppers per the UBC. When the IBC is used with the UPC, there is a gaping hole in having sufficient requirements to obtain a safe roof drainage system.

New Section 1503.4.2 is from IPC 1101.2. Section 1503.4.3 is from IPC 1101.7. Section 1503.4.4 is from IPC 1107.1. Section 1503.4.4.1 is from IPC 1107.2. Section 1503.4.4.2 is a combination of IRC R903.4.1and IPC 1107.3.

The text from the IRC provides the three times scupper sizing that existed in the UBC. Note that jurisdictions that have adopted the 2000 IPC without amendments will require overflow piping to be two times the size of the main piping but have no over sizing requirement for the scuppers. The 2003 no longer requires the overflow piping size to be doubled but still does not have the three times size for the scuppers.

**Structural 2-02 (Resubmit to ICC)**

**Revision to: Table 1607.1 by adding new footnote I to item 27.**

**Committee Action: Approved as modified.**

**Proposal:**

| OCCUPANCY OR USE | UNIFORM (psf) | CONCENTRATED (lbs.) |
|---|---|---|
| 27. Residential<br>Uninhabitable attics without storage [i]<br>(no other changes in item 27) | | |

i. For trussed systems, this live load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

**Reason:** For temporary safety and construction load, not for the life of the structure. This issue has been addressed in a previous nationally recognized model code; therefore, setting a precedence on this issue.

**Structural 5-02 (AZ only)**

**Revision to**: **Section 1704.5**

**Committee Action: Approved as submitted.**

**Proposal:**

3. Masonry fences six feet or less in height above grade.
4. Masonry retaining walls four feet or less in height from bottom of footing to top of wall unless supporting a surcharge or impounding flammable liquids.

**Reason:** Exception 3 – No previous codes ever required special inspection for masonry fences 6 feet in height or less.
Exception 4 – Retaining walls 4 feet or less in height from bottom of footing to top of wall and not supporting a surcharge or flammable liquids are exempt from building permit requirement.

## 2003 INTERNATIONAL RESIDENTIAL CODE

**IRC-3-01 (AZ only)**

**Revision to: TABLE R 301.4**

**Committee Action: Approved as Modified**

| USE | LIVE LOAD |
|---|---|
| Attics with storage [b,e] | ~~20~~ 40 |
| Sleeping rooms | ~~30~~ 40 |

(No other changes to Table)

**Reason:** All habitable areas should be designed using the same design loads. Change is in line with industry standards. Local builders and designers support the change.

**IRC-7-01 (Resubmit to ICC)**

**Revision to: R309.1**

**Committee Action: Approved as Modified**

**R309.1 Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 13/8 inch (35 mm) in thickness, solid or honeycomb core steel doors not less than 13/8 inches (35 mm) thick, or 20-minute fire-rated doors. Doors providing opening protection shall be self-closing and self-latching.

**Committee Reason:** These doors should be maintained self closing and latching at all times.

**IRC-9-01 (AZ only)**

**Revision to: APPENDIX**

**Committee Action: Approved as Modified**

**102.5 Appendices.** Provisions in the appendices shall not apply unless specifically adopted. The following appendices are adopted:
Appendix A SIZING AND CAPACITIES OF GAS PIPING
Appendix B SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE AND TYPE B VENTS
Appendix C EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS
Appendix D RECOMMENDED PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION
Appendix H PATIO COVERS
Appendix J EXISTING BUILDINGS AND STRUCTURES
Appendix K SOUND TRANSMISSION

**Reason:** Comply with State and Federal laws.

**IRC-11-01 (AZ only)**

**Revision to: M1307.6**

**Committee Action: Approved as Submitted**

Add new text as follows:

**M1307.5 Liquefied Petroleum Appliances.** LPG appliances shall not be installed in an attic, pit or other location that would cause a ponding or retention of gas.

**Reason:** Due to the nature of LP gas, being heavier than air, it should be a function of design to eliminate the hazard of gas being trapped. The attic location is a hazard due to the gas settling in insulated frame bays and the probability of an ignition source igniting the gas fuel. Any pit will hold LP gas until an appliance or other ignition source causes a fire or explosion.
Related sections include G2406.2 and M1703.2
This also provides consistency with the State plumbing code.

**IRC-12-01 (AZ only)**

**Revision to: G2406.2**

**Committee Action: Approved as Modified**

Add new item 5 text after the exceptions as follows:
**5. Liquefied Petroleum Appliances.** LPG appliances shall not be installed in an attic, pit or other location that would cause a ponding or retention of gas.

**Reason:** To make text compatible with change to Section M1307.5 and to clarify that the exceptions do not apply to this text. This also provides consistency with the State plumbing code.

IRC-27-02 (Approved w/ ICC for 2004 Supplement)

**Revision to: Section R320.1**

**Committee Action: Approved as Modified**

**Proposal: R320.1 Subterranean termite control.** In areas designated as “slight to moderate”, “moderate to heavy” and “very heavy”, as established by Table R301.2(1), methods of protection shall be by chemical soil treatment, pressure preservatively treated wood in accordance with the AWPA standards listed in Section R319.1, naturally termite-resistant wood, or physical barriers (such as metal or plastic termite shields), or any combination of these methods.

**Reason:** The first revision is due to the fact that “favorable to termite damage” is not defined. The table number revision is editorial. The final revision delete the last part of the sentence, is due to the fact that it just isn’t necessary. These specified treatments stand alone as acceptable, and are not intended to work in combination with one another to become effective.

IRC-35-02 (Approved w/ ICC for 2004 Supplement)

**Revision to: Section M1403.2**

**Committee Action: Approved as Modified**

**Proposal: M1403.2 Foundations and supports.** Supports and foundations for the outdoor mechanical systems shall be raised at least 3 inches (76 mm) above the finished grade, and shall conform to the manufacturer’s installation instructions.

**Reason:** It is necessary to protect all outdoor equipment from problems associated with grade level installations, not just heat pumps.

IRC-41-02 (AZ only)

**Revision to: Section G2415.9**

**Committee Action: Approved as Modified**

**Proposal: G2415.9 (404.9) Minimum burial depth.** Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade for metal piping and 18 inches (457mm) for plastic piping.

**Reason:** The distinction between metal piping and plastic piping in regards to burial depth is because the plastic piping is more susceptible to damage and needs the increased depth for protection.

The elimination of the section addressing individual outside appliances is because the risks are the same whether the line serves multiple appliances or a single appliance. With similar risks, similar depths should be required.

IRC-42-02 (Approved w/ ICC for 2004 Supplement)

**Revision to: R310.1 Emergency escape and rescue openings**

**Committee Action: Approved as submitted.**

**Proposal:** Add another sentence at the end of the paragraph to read as follows:

Such openings shall open directly into a public street, public alley, yard or court.

**Reason:** This is the same language that is in IBC Section 1025.1. Without this requirement the emergency escape and rescue window could open into a carport or enclosed patio.

IRC-44-02 (Approved w/ ICC for 2004 Supplement)

**Revision to: P2503.6 Water supply system testing**

**Committee Action: Approved as submitted.**

**Water-supply system testing.** Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure not less than the working pressure of the system; or, for piping systems other than plastic, by an air test of not less than 50 psi (344kPa). This pressure shall be held for at least 15 minutes. The water utilized for tests shall be obtained from a potable source of supply.

**Reason:** A specific length of time has been an industry standard practice and 15 minutes would allow sufficient time to determine that there are no leaks.

IRC-45-02 (Resubmit to ICC)

**Revision to: P3103.1 Plumbing vent termination**

**Committee Action: Approved as submitted.**

**Proposal: P3103.1 Roof Extension.** All open vent pipes which extend through a roof shall be terminated at least 6 inches above the roof or 6 inches above the anticipated snow accumulation, whichever is greater, except that where a roof is to be used for any purpose other than weather protection, the vent extensions shall be run at least 7 feet (2134 mm) above the roof.

**Reason:** For the sake of uniformity and continuity, a single number should be used by all jurisdictions. The 6" number comes from Section 906.1 of the 1994 Uniform Plumbing Code and would not constitute a change from the existing rules. The 7 feet above roofs used for other than weather protection comes from Section 906.3 of the 1994 Uniform Plumbing Code and indicates that this section is a logical one from which to select a number.

**Structural 1-02 (Approved w/ ICC)**

**Revision to: Sections R401.5 & R401.4.2**

**Committee Action: Approved as modified.**

**Proposal:** Add a new section.
**R401.4.2 Compressible or shifting soil**. In lieu of a complete geotechnical evaluation, when top or subsoils are compressible or shifting, such soils shall be removed to a depth and width sufficient to

assure stable moisture content in each active zone and shall not be used as fill ~~or~~ nor stabilized within each active zone by chemical, dewatering, or presaturation.

**Reason:** Section renumbered for clarity. The reason for rewording R401.5 is that many soils investigation reports classify bearing soils as compressible and design procedures exist for designing foundations on compressible soils (e.g., PTI Design and Construction of Post Tensioned Slabs-On-Ground). Thus, it is not necessary for all compressible soils to be removed; rather, it is the decision of the geotechnical engineer as to the best course of action to deal with any compressible soils. Also, it appears that the intent of this section is to avoid construction on unstable, shifting, and/or collapsible soils, such as quicksand, hydro-collapsible soils, landslides, etc.

**Structural 3-02 (Approved w/ ICC)**

**Revision to: Table R301.5**

**Committee Action: Approved as modified.**

**Proposal:** Revise Table by adding footnote "g":

| USE | LIVE LOAD |
|---|---|
| Attics without storage [b, e, g] | 10 |

(No other changes to Table)

g. For trussed systems, this load need not be considered as acting simultaneously with other live loads imposed upon the ceiling framing or its supporting structure.

**Reason:** For temporary construction and service load, not for the life of the structure. This issue has been addressed in a previous nationally recognized model code: therefore, setting a precedence on this issue.

**IRC-53-03 (Approved w/ ICC for 2004 Supplement)**

**Revision to: Section R202**

**Committee Action: Approved as Modified**

**R202 DEFINITIONS**
**EXTERIOR WALL.** An above-grade wall that defines the exterior boundaries of a building. Includes between floor spandrels, peripheral edges of floors, roofs and basement knee walls, dormer walls, gable end walls, walls enclosing a mansard roof, and basement walls with an average below grade wall area that is less than 50 percent of the total opaque and non-opaque area of that enclosing side.

**Reason:** Section R302 provides for the fire protection of exterior walls. If walls are defined as only enclosing conditioned space, garage walls or dwelling walls that do not enclose conditioned space would be exempt from fire protection requirements.

**IRC-54-02 (Approved w/ ICC for 2004 Supplement)**

**Revision to: Section M1411.3.1**

**Committee Action: Approved as Modified**

**M1411.3.1 Auxiliary and secondary drain systems.** In addition to the requirements of Section M1411.3, a secondary drain or auxiliary drain pan shall be required for each cooling or evaporator coil where damage to any building components will occur as a result of overflow from the equipment drain pan or stoppage in the condensate drain piping. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Drain piping shall be a minimum of 3/4-inch (19.1 mm) nominal pipe size. One of the following methods shall be used:

(The remainder of the section to remain unchanged.)

**Reason:** This inserts the necessary prescriptive language that will provide proper discharge for condensing liquid. It also aligns the IRC with the same requirement shown in the International Mechanical Code Section 307.1.

**IRC –55-03 (Resubmit to ICC)**

**Revision to Table R1003.1**

**Committee Action: Approved as Modified**

TABLE R1003.1
**SUMMARY OF REQUIREMENTS FOR MASONRY FIREPLACES AND CHIMNEYS**

| ITEM | LETTER[a] | REQUIREMENTS | SECTION |
|---|---|---|---|
| Hearth slab thickness | A | 4" | R1003.9.1 |
| Hearth extension<br>(each side of opening) | B | 8" fireplace opening < 6 sq. ft.<br>12" fireplace opening ≥ 6 sq. ft.<br>R1003.10 | |
| Hearth extension<br>(front of opening) | C | 16" fireplace opening < 6 sq. ft.<br>R1003.10<br>20" fireplace opening ≥ 6 sq. ft. | |
| Hearth slab reinforcing | D | Reinforced to carry its own weight and all<br>R1003.9<br>imposed loads. | |
| Thickness of wall of firebox | E | 10" solid brick or 8" where a firebrick lining is used. Joints in firebrick 1/4" max. | R1003.5 |
| Distance from top of opening to throat | F | 8" | R1003.7 |
| Smoke chamber wall thickness ~~unlined walls~~ | G | 6" for lined walls<br>8" for unlined walls | R1003.8 |
| Chimney<br>Vertical reinforcing[b] | H | Four No. 4 full-length bars for chimney up to<br>R1003.3.1<br>40" wide. Add two No. 4 bars for each additional 40" or fraction of width or each additional flue | |
| Horizontal reinforcing[b] | J | ¼-inch ties at each 18 inches and two ties at<br>R1003.3.2<br>each bend in vertical steel | |
| Bond beams | K | No specified requirement | |
| Fireplace lintel | L | Noncombustible material. | R1003.7 |
| Chimney walls with flue lining | M | Solid masonry units or hollow masonry units grouted solid with at least 4 inch nominal thickness. | R1001.7 |
| Walls with unlined flue | N | 8" solid masonry. | |
| Distances between adjacent flues | - | See Section R1001.10. | |
| Effective flue area (based on area of fireplace opening) | p | See Section R1001.12. | |
| Clearances:<br>Combustible material<br>Mantel and trim<br>Above roof | R | See Sections R1001.15 and R003.12.<br>See Section R1001.13.<br>3' at roofline and 2' at 10'. | |
| Anchorage[b]<br>Strap<br>Number<br>Embedment into chimney<br>Fasten to<br>Bolts | S | 3/16" x 1"<br>R1003.4.1<br>Two<br>12" hooked around outer bar with 6" extension<br>4 joists<br>Two 1/2" diameter. | |

| | | | |
|---|---|---|---|
| Footing<br>Thickness<br>Width | T | 12" min.<br>6" each side of fireplace wall. | R1003.2 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 $m^2$.

**NOTE**: This table provides a summary of major requirements for the construction of masonry chimneys and fireplaces. Letter references are to Figure R 1003.1, which shows examples of typical construction. This table does not cover all requirements, nor does it coverall aspects of the indicated requirements. For the actual mandatory requirements of the code, see the indicated section of text.

b. The letters refer to Figure R 1003.1.

c. Not required in Seismic Design Category A, B or C.

**Reason: This proposal will create uniformity and will delete conflicts between IRC Table R1003.1 and IBC Table 2111.1 In addition, the following errors to table R1003.1 have been corrected:**
**Chimney, Vertical reinforcing**
**Horizontal reinforcing**
**Bond beam requirement**
**Add footnote "b" to horizontal reinforcing**

**Add "Section" column to have the same format as IBC Table 2111.1**

## IRC-59-03 (Resubmit to ICC)

### Revision to Section P2803.6.1

**Committee Action: Approved as Submitted**

**Proposal: Revise as follows:**

**P2803.6.1 Requirements of discharge pipe.** The outlet of a pressure relief valve, temperature relief valve or combination thereof, shall not be directly connected to the drainage system. The discharge from the relief valve shall be piped full size separately to the floor, to the outside of the building or to an indirect waste receptor located inside the building. In areas subject to freezing, the relief valve shall discharge through an air gap into an indirect waste receptor located within a heated space, or by other approved means. The discharge shall be installed in a manner that does not cause personal injury or property damage and that is readily observable by the building occupants. The discharge from a relief valve shall not be trapped. The diameter of the discharge piping shall not be less than the diameter of the relief valve outlet. The discharge pipe shall be installed so as to drain by gravity flow and shall terminate atmospherically not less than 6 inches (152mm) nor more than 24 inches (610 mm) above the floor or finish grade. The outlet end of the discharge pipe shall not be threaded or have a valve installed.

**Reason:** This code section speaks to both interior and exterior discharge of relief valves, but the termination seems to only address what was intended for interior locations. The possibility of the termination to occur "at grade", which is now currently allowed, would have the unintended effect of concealing any discharge that might occur, or of plugging the discharge line. Requiring it to be a "minimum" of 6 inches (152 mm) above grade would resolve this. The 24 inch (610 mm) maximum height will assure that possible scalding water under pressure will not injure individuals in near proximity.

**2003 INTERNATIONAL FUEL GAS CODE**

**No Changes**

**2003 INTERNATIONAL MECHANICAL CODE**

**No Changes**

## 2003 International Plumbing Code

IPC-1-01 (AZ only)

**Revision to: 101**

**Committee Action: Approved as Submitted**

**Add a new section 101.5 to read as follows:**

**101.5 Appendices.** Provisions in the appendices shall not apply unless specifically adopted.

**Reason:**. This provision is included in all the other International codes and needs to be included in the International Plumbing Code to maintain uniformity among the codes.

**IPC-3-03 (Approved w/ ICC)**

**Revision to Section 312.5**

**Committee Action: Approved as Submitted**

**Proposal: Revise Section 312.5 as follow:**

**312.5 Water-supply system test.** Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure not less than the working pressure of the system; or, for piping systems other than plastic, by an air test of not less than 50 psi (344kPa). This pressure shall be held for at least 15 minutes. The water utilized for tests shall be obtained from a potable source of supply. The required tests shall be performed in accordance with this section and Section 107.

**Reason:** All other tests specified in Section 312, whether Drainage and vent water test under Section 312.2, Drainage and vent air test under Section 312.3, Drainage and vent final test under Section 312.4, Gravity sewer test under Section 312.6 or Forced sewer test under Section 312.7, require 15 minute duration for the respective tests. This is sufficient time to determine that a leak is not present and would provide consistency within the testing section.

**IPC-4-03 (Resubmit to ICC)**

**Revision to Section 504.6.1**

**Committee Action: Approved as Submitted**

**Proposal: Revise Section 504.6.1 as follow:**

**504.6.1 Discharge.** The relief valve shall discharge full size to a safe place of disposal such as the floor, outside the building, or an indirect waste receptor. The discharge pipe shall not have any trapped sections and shall have a visible air gap or air gap fitting located in the same room as the water heater. The outlet end of the discharge pipe shall not be threaded and such discharge pipe shall not have a valve or tee installed. Relief valve piping shall be piped independent of other equipment drains or relief valve discharge piping to the disposal point. Such pipe shall be constructed so as to discharge in a downward direction, and shall terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the finish surface or grade.

**Reason:** This prescriptive language removes the need to interpret what is intended by “shall be installed in a manner that does not cause personal injury to occupants in the immediate area...”. This is wide open for interpretation and discretion. The means and heights of the drain discharge also matches what is currently prescribed for drain pans in P504.7.2. Why should drain pans be specific and relief valve discharges, which relieve under pressure, be left open to interpretation?

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H15** | |
|---|---|
| Title: **2002 AZBO NEC Amendment Package** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **3/17/2004** | |
| Archived to Historical Section by MAG Building Codes Committee: **6/20/2012** | |

At the March 17, 2004, Building Codes Committee meeting, the Committee reviewed the AZBO Amendment Package to the 2002 NEC.

At the June 20, 2012 Building Codes Committee meeting, the Committee reviewed the original document. The Committee determined that the topics covered in the amendment package have been addressed in recent codes. The Committee voted unanimously to move this document to the Historical Archive.

# Resolution

WHEREAS The Maricopa Association of Governments Building Codes Committee (heretofore referred to as the "Committee") approved the amendments to the 2002 edition of the National Electrical Code (heretofore referred to as the "Code") with the intent to promote and present a uniform set of electrical codes and amendments for jurisdictions within Maricopa County AND;

WHEREAS Sections 312.5 and 314.17 of the 2002 NEC ( E3807.7 and E3806.1.1 of the 2003 IRC), that addresses cabinets, boxes and conduit bodies and the entry of said cabinets, boxes and conduit bodies by cables and conduit, have been in existence for at least two code cycles and requires the enclosure of openings through which cables enter a cabinet, box or conduit body, requires that nonmetallic cables be permitted to enter the top of a surface mounted enclosure only and that the nonmetallic cable be protected at points of entry into a cabinet, box, or conduit body from damage and abrasion, where cables are used, each cable shall be secured to the cabinet, cutout box or meter socket enclosure and has been largely ignored by installers and enforcers in the State of Arizona to this point in time AND;

WHEREAS a code change proposal has been submitted to the Code Making Panel of NFPA to validate the method of installation traditionally occurring in this region AND;

WHEREAS that code change proposal, 9-12 Log #463, was rejected by the Code Making Panel; AND

WHEREAS the immediate and strict adherence to and enforcement of in their entirety Sections 312.5 and 314.17 of the 2002 NEC ( E3807.7 and E3806.1.1 of the 2003 IRC) would pose a change in standard practice in this region and both industry and the enforcement community would benefit from a "phase-in" or transition period;

BE IT SO RESOLVED by the Committee that Sections 312.5 and 314.17 of the 2002 NEC ( E3807.7 and E3806.1.1 of the 2003 IRC) shall be enforced in their entirety so that each cable will be secured to the cabinet, cutout box or meter socket enclosure where it enters. This resolution shall have an effective date of April 1, 2005.

## 2002 National Electrical Code & 2003 International Residential Codes (Electrical Section)

**NEC-1-04 (AZ Only)**

**Revision to NEC Article 250.118**

250.118. Types of Equipment Grounding Conductors
The equipment grounding conductor run with or enclosing the circuit conductors shall be one or more or a combination of the following:

1. A copper, aluminum, or copper-clad aluminum conductor. This conductor shall be solid or stranded; insulated, covered, or bare; and in the form of a wire or a busbar of any shape.
2. Threaded Rigid metal conduit and fittings.
3. Threaded Intermediate metal conduit and fittings.
4. ~~Electrical metallic tubing.~~
5. ~~Flexible metal conduit with an individual equipment grounding conductor and where both the conduit and fittings are listed for grounding.~~
6. ~~Listed flexible metal conduit that is not listed for grounding and meeting all the following conditions.~~
   a. ~~The conduit is terminated in fittings listed for grounding.~~
   b. ~~The circuit conductors contained in the conduit are protected by overcurrent devices rated at 20 amperes or less.~~
   c. ~~The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground return path does not exceed 6 ft (1.83 m).~~
   d. ~~The conduit is not installed for flexibility.~~
7. ~~Listed liquidight flexible metal conduit meeting all the following conditions.~~
   a. ~~The conduit is terminated in fittings listed for grounding.~~
   b. ~~For trade sizes 3/8 in. through ½ in., the circuit conductors contained in the conduit are protected by overcurrent devices rated at 20 amperes or less.~~
   c. ~~For trade sizes ¾ in. through 1¼ in., the circuit conductors contained in the conduit are protected by overcurrent devices rated not more than 60 amperes and there is no flexible metal conduit, flexible metallic tubing, or liquidtight flexible metal conduit in trade sizes 3/8 in. or ½ in. in the grounding path.~~
   d. ~~The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground return path does not exceed 6 ft (1.83 m).~~
   e. ~~The conduit is not installed for flexibility.~~
8. ~~Flexible metallic tubing where the tubing is terminated in fittings listed for grounding and meeting all the following conditions.~~
   a. ~~The circuit conductors contained in the tubing are protected by overcurrent devices rated at 20 amperes or less.~~
   b. ~~The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground return path does not exceed 6 ft (1.83 m).~~
9. Armor of Type AC cable as provided in Section 333-21.
10. The copper sheath of mineral-insulated, metal-sheathed cable.
11. The metallic sheath or the combined metallic sheath and grounding conductors of Type MC cable with an individual equipment grounding conductor.
12. Cable trays as permitted in Sections 318-3(c) and 318-7.
13. Cablebus framework as permitted in Section 365-2(a).
14. Other electrically continuous metal raceways listed for grounding.

**Reason:** For reasons of extreme temperature fluctuations found throughout the State causing expansion and contraction of the metal conduit separating the non-threaded type fittings. This will eliminate the equipment grounding connection and therefore preventing a low impedance path to clear a ground fault. This situation would either set up a shock hazard or a fire hazard.

**Additional Supporting Information:**

SUBJECT: Technician Electrocuted While Performing
Maintenance on a Walk-In Cooler in Virginia
CAUSE: Electrocution

SUMMARY: On August 20, 1991, a 33-year-old male employed as a heating, ventilating, air-conditioning, and refrigeration (HVACR) technician, was electrocuted while performing refrigeration maintenance on a walk-in cooler at a restaurant.

The flexible metal conduit housing the power conductors to the refrigeration unit (RU) of the cooler had been designed to serve as the mechanical ground. The insulation on one of the three power conductors in the flexible conduit was damaged and allowed electrical arcing to a conduit connector on the RU starter box. The conduit connection from the RU to the RU starter box was loose, and effectively disconnected the mechanical ground from the RU. As the victim was servicing the RU, the temperature in the walk-in cooler must have caused the thermostat to close the starter, energizing the surfaces of the RU, and fatally shocking the technician when he touched it. NIOSH investigators concluded that to prevent similar occurrences, employers should:

o require that all electrical equipment be de-energized before any electrical repairs are performed

o provide a mechanical grounding conductor as part of the power feed to an appliance whenever possible

o provide ground-fault protection as part of the power feed to an appliance whenever possible

o provide employees with education and training in the recognition, avoidance, and prevention of unsafe work conditions.

**NEC-2-04 (AZ Only)**

**Revision to IRC Section E3808.8**

E3808.8 Types of equipment grounding conductors. The equipment grounding conductor run with of enclosing the circuit conductors shall be one or more or a combination of the following:

(No changes to Section with the exception of the following deletions):

2. Threaded rigid metal conduit and fittings.
3. Threaded intermediate metal conduit and fittings.
4. ~~Electrical metallic tubing.~~
5. ~~Flexible metal conduit, where both the conduit and fittings are listed for grounding.~~

**Reason:** For reasons of temperature fluctuations found throughout the State causing expansion and contraction of the metal conduit. See amended Section 250.118 coordination of NEC to IRC.

**NEC-3-04 (Directive)**

**Revision NEC Article 210.8 (a) & (b)**

210.8. Ground-Fault Circuit-Interrupter Protection for Personnel
FPN: See Section 215.9 for ground-fault circuit-interrupter protection for personnel on feeders.

(No changes to Article with the exception of the following revisions):

(A) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in (1) through (8) shall have ground-fault circuit-interrupter protection for personnel.

(7) ~~Wet bar sinks. Where the receptacles are installed to serve the countertop surfaces and are located within 1.8 m (6 ft) of the outside edge of the wet bar sink.~~ Convenience receptacles located within 1.8 m (6 ft) of any sink, wash basin, tub, or shower.

(B) Other than Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in (1) ~~, (2), and (3)~~ through (5) shall have ground-fault circuit-interrupter protection for personnel.

(4) Convenience receptacles located within 1.8 m (6 ft) of any sink, wash basin, tub, or shower.

(5) Outdoors.

**Reason:** Possibility of personnel coming in contact with electrical appliances that are in contact with wet conditions creating the possibility for electrocution.

**Additional supporting information:**

These are NIOSH reports:
FACE: 84WV17

SUBJECT: Electrocution in a Fast Food Restaurant
CAUSE: Electrocution

SUMMARY: On June 30, 1984, at about 1:05 A.M., an 18-year-old male employee with 15 months experience at a fast food restaurant was electrocuted while plugging a portable electric toaster into a 110 volt/20 amp receptacle.

A the time of the incident, employees had closed the restaurant and damp-mopped the floors. About 5 to 10 minutes after mopping, the victim was in the process of plugging the toaster into a floor outlet when he received the shock. The assistant manager and other employees were elsewhere and did not see the victim. The assistant manager heard a scream and investigated. The assistant manager and the other workers then found the victim with one hand on the plug, the other hand wrapped around the receptacle box, and with his face on top of the outlet. An employee tried to take the victim's pulse but was shocked. The assistant manager went to the breaker box to open the breaker for that circuit, but could not find the specific breaker. He then called the emergency squad, returned to the box and found the right breaker. The victim had by then been in contact with the current for 3 to 8 minutes. An employee checked the victim's pulse and found a very rapid radial pulse. The employee and assistant manager then unlocked the front door and placed another call to the rescue squad. The employee checked the victim's pulse again and found none. An employee living nearby arrived and started CPR, which was continued by the rescue squad upon its arrival. CPR was administered for 1.5 hours. The victim was DOA at the local hospital. Two different electricians later evaluated the circuit and found no serious problems. It is surmised that while holding the plug, the victim's right hand slipped forward to make contact through the index finger to the energized prong. With his left hand holding the spring-loaded cover open, a current path through the arms, chest, and heart would be established from the prong to the ground. After the accident the employer required employees to open circuits at the breaker box before plugging and unplugging equipment. This strategy is not recommended because it relies on positive human action and places excessive wear on the breakers. Recommendations:

o Ground Fault Circuit Interrupter Breakers (GFCI's) would have interrupted the circuit before sufficient current had passed to cause physical damage to the body. They are recommended as the best solution.

o The location and design of the receptacle, the design of the plug, and the recent mopping contributed to the incident.

o CPR should be initiated when an unstable pulse is detected, rather than later when no pulse is found.

FACE: 86NC43

SUBJECT: 25-Year-Old Restaurant Manager |
Electrocuted in North Carolina
CAUSE: Electrocution

SUMMARY: On August 3, 1986, a 25-year-old male restaurant manager was cleaning the floor of the kitchen when he came in contact with a refrigerator that had a ground fault. The manager was electrocuted.

The restaurant was closed and the manager's wife and 2-year-old daughter were in the dining area waiting for him to finish. The victim, who was wearing tennis shoes, put soap and water on the floor. He slipped and grabbed the handle of a commercial refrigerator. The refrigerator had a ground fault and was not grounded -- the cord did not have a ground prong. The ground fault was apparently caused by excessive wear on the insulation of the conductors (wires) supplying power to the compressor. The conductors were exposed at a cut-out hole in the case of the refrigerator, were not protected from abrasion, and were not protected by strain relief. The victim's wife heard a noise in the kitchen. She successfully pulled the victim from the refrigerator into the dining area, though she was shocked in the process. She summoned help and began CPR, but to no avail. Recommendations:

o All electrical equipment (such a refrigerators) should be designed and maintained to comply with all applicable requirements of the National Electrical Code. In this case the defects in the refrigerator apparently developed over time and were not recognized as hazardous. The refrigerator was bought used and the owner had no owner's manual.

o Restaurant owners and managers should be encouraged to conduct formalized safety training for all restaurant employees.

o All electrical receptacles (outlets) in restaurant kitchens should be protected by ground fault circuit interrupters. See NIOSH ALERT (85-104).

**NEC-4-04 (Directive)**

**Revision to IRC Section E3802.7**

E3807.2 ~~Bar sink receptacles~~ Sink, wash basin, tub, or shower receptacles. All 125-volt, single-phase,15- and 20-ampere convenience receptacles that ~~serve a countertop surface, and~~ are located within 6 feet (1829 mm) of the outside edge of ~~a wet bar~~ any sink , wash basin, tub, or shower shall have ground-fault circuit-interrupter protection for personnel.

**Reason:** Possibility of personnel coming in contact with appliances that are in contact with wet conditions creating the possibility for electrocution. See amended Section 210.8, this will coordinate the NEC and IRC.

**NEC-5-04 (AZ Only)**

**Revision to NEC Article 310.15 (b)(6) & NEC Table 310.15 (b)(6)**

(6) 120/240-Volt and 120/208-Volt, 3-Wire, Single-Phase Dwelling Services and Feeders. For dwelling units, conductors, as listed in Table 310-15(b)(6), shall be permitted as 120/240-volt and 120/208 volt, 3-wire, single-phase-service-entrance conductors, service lateral conductors, and feeder conductors that serve as the main power feeder to a dwelling unit and are installed in raceway or cable with or without an equipment grounding conductor. For application of this section, the main power feeder shall be the feeder(s) between the main disconnect and the lighting and appliance branch-circuit panelboard(s). The feeder conductors to a dwelling unit shall not be required to be larger than their service-entrance conductors. The grounded conductor shall be permitted to be smaller than the ungrounded conductors, provided the requirements of Sections 215-2, 220-22, and 230-42 are met.

Table 310-15(b)(6). Conductor Types and Sizes for 120/240-Volt and 120/208-Volt, 3-Wire, Single-Phase Dwelling Services and Feeders.

Conductor (AWG or kcmil)

| Copper | Aluminum or Copper-Clad Aluminum | ~~Service or Feeder Rating (Ampere)~~ | Service or Feeder Rating (Amperes) ≤ 30°C (86°F) | > 30°C 86°F) |
|---|---|---|---|---|
| 4 | 2 | ~~100~~ | 100 | |
| 3 | 1 | ~~110~~ | 110 | |
| 2 | 1/0 | ~~125~~ | 125 | 100 |
| 1 | 2/0 | ~~150~~ | 150 | 125 |
| 1/0 | 3/0 | ~~175~~ | 175 | 150 |
| 2/0 | 4/0 | ~~200~~ | 200 | 175 |
| 3/0 | 250 | ~~225~~ | 225 | 200 |
| 4/0 | 300 | ~~250~~ | 250 | 225 |
| 250 | 350 | ~~300~~ | 300 | 250 |
| 350 | 500 | ~~350~~ | 350 | 300 |
| 400 | 600 | ~~400~~ | 400 | 350 |
| 500 | 750 | | | 400 |

FPN: for single-phase panels feed from a 3-phase system, the grounded conductor cannot be reduced in size for a 120/208-volt system, see 220.22

**Reason:** Clarification to include 120/208-volt Single-Phase systems and ambient correction to Table for temperature conditions found throughout the State. These correction factors are already in the NEC at the bottom of Table 310.16.

**NEC-6-04 (AZ Only)**

**Add New Article to NEC**:

230.63. Location. All service equipment rated 1000 amperes or more located inside a building shall be enclosed within a room or space separated from the rest of the building by not less than one-hour fire-resistive occupancy separation or fire barrier installed in compliance with the building code.

**Reason:** For coordination with Utility company requirements. This will be proactive to the customer, catching this at plan review will prevent the customer from being refused Utility Service at final if they have Service Equipment 1000 amperes and larger inside of the building and not enclosed in a one-hour room.

**NEC-7-04 (Directive)**

**Revision to NEC Articles 334.10 & 334.12**

334.10 Uses Permitted. Type NM, Type NMC, and Type NMS cables shall be permitted to be used in the following:

1. One- and two-family dwellings, multifamily dwellings, and other residential accessory structures
   (b) 2. ~~Multifamily dwellings permitted to be Types III, IV, And V construction except as prohibited in 334.~~

(Items 3 & 4 to remain the same)

334.12. Uses Not Permitted.
(A) Types NM, NMC, and NMS. Types NM, NMC, and NMS cables shall not be used as follows:

(Item 1 remains the same)

~~2. As service-entrance cable~~
~~3. In commercial garages having hazardous (classified) locations as provided in Section 511-3~~
~~4. In theaters and similar locations, except as provided in Article 518.4.~~
~~5. In motion picture studios~~
~~6. In storage battery rooms~~
~~7. In hoistways or on elevators or escalators.~~
~~8. Embedded in poured cement, concrete, or aggregate~~
9. ~~In hazardous (classified) locations, except as permitted in the following:~~
   ~~a. 501.4(B) Exception~~
   ~~b. 502.4(B) Exception No.1~~
   ~~c. 504.20~~

(Item 10 to remain the same)

**Reason:** For clarification; Items deleted seem to identify occupancies other than Dwelling type structures would not be allowed to use this type of wiring method. This will clarify that this type of wiring method shall only be used in Dwelling type occupancies.

**NEC-8-04 (Directive)**

**Revision to NEC Articles 358.10 & 358.12**

358.10 Uses Permitted

(B) Corrosion Protection. Ferrous or nonferrous EMT, elbows, couplings, and fittings shall be permitted to be installed in concrete ~~,~~ that is not in direct contact with the earth ~~,~~ or in areas subject to severe corrosive influences where protected by corrosion protection and judged suitable for the condition.

358.12 Uses Not Permitted. EMT shall not be used under the following conditions:

(Items 1 through 6 to remain the same)

(7) On or below grade.

**Reason:** For clarification, EMT fittings are not approved to be installed on or below grade. 110.3(B) requires listed and labeled equipment to be installed per the manufacturer's installation instructions, there is currently no EMT fittings listed for direct burial. Table 300.5 identifies minimum cover for buried wiring methods, this table does not identify depth requirements for EMT.

**NEC-9-04 (AZ Only)**

**Revision to NEC Article 501.16 (B)**

501.16 (B) Types of Equipment Grounding Conductors.
(Article remains the same, delete exception):

~~Exception: In class I, Division 2 locations, the bonding jumper shall be permitted to be deleted where all the following conditions are met.~~
~~(a) Listed liquidtight flexible metal conduit 1.8 m (6 ft) or less in length, with fittings listed for grounding, is used.~~
~~(b) Overcurrent protection in the circuit is limited to 10 amperes or less.~~
~~(c) The load is not a power utilization load.~~

**Reason:** For coordination with Amendment to NEC Article 250.118

**NEC-10-04 (AZ Only)**

**Revision to NEC Article 502.16**

502.16 (B) Types of Equipment Grounding Conductors.
(Article remains the same, delete exception):

~~Exception: In class II, Division 2 locations, the bonding jumper shall be permitted to be deleted where all the following conditions are met.~~
~~(a) Listed liquidtight flexible metal conduit 1.8 m (6 ft) or less in length, with fittings listed for grounding, is used.~~
~~(b) Overcurrent protection in the circuit is limited to 10 amperes or less.~~
~~(c) The load is not a power utilization load.~~

**Reason:** For coordination with Amendment to NEC Article 250.118

**NEC-11-04 (AZ Only)**

**Revision to NEC Article 503.16 (B)**

503.16 (B) Types of Equipment Grounding Conductors.
(Article remains the same, delete exception):

~~Exception: In class III, Division 1 and 2 locations, the bonding jumper shall be permitted to be deleted where all the following conditions are met.~~
~~(a) Listed liquidtight flexible metal conduit 1.8 m (6 ft) or less in length, with fittings listed for grounding, is used.~~
~~(b) Overcurrent protection in the circuit is limited to 10 amperes or less.~~
~~(c) The load is not a power utilization load.~~

**Reason:** For coordination with Amendment to NEC Article 250.118

**NEC-12-04 (AZ Only)**

**Revision to IRC Table E3503.1**

Revise Table as Follows (Minimum Grounding Electrode Conductor Size to remain the same)

| CONDUCTOR TYPES AND SIZES-THHW,THW,THWN,USE,XHHW (Parallel sets of 1/0 and larger conductors are permitted in either a single raceway or in separate raceways) | | ~~Allowable Ampacity~~ | Service or Feeder Rating (Amperes) | |
|---|---|---|---|---|
| Copper (AWG) | Aluminum and copper-clad aluminum (AWG) | ~~Maximum Load (Amps)~~ | ≤30°C (86°F) | > 30°c (86°f) |
| 4 | 2 | ~~100~~ | 100 | |
| 3 | 1 | ~~110~~ | 110 | |
| 2 | 1/0 | ~~125~~ | 125 | 100 |
| 1 | 2/0 | ~~150~~ | 150 | 125 |
| 1/0 | 3/0 | ~~175~~ | 175 | 150 |
| 2/0 | 4/0 or two sets of 1/0 | ~~200~~ | 200 | 175 |
| 3/0 | 250 kcmil or two sets of 2/0 | ~~225~~ | 225 | 200 |
| 4/0 or two sets of 1/0 | 300kcmil or two sets of 3/0 | ~~250~~ | 250 | 225 |
| 250 kcmil or two sets of 2/0 | 350 kcmil or two sets of 4/0 | ~~300~~ | 300 | 250 |
| 350 kcmil or two sets of 3/0 | 500 or two sets of 250 kcmil | ~~350~~ | 350 | 300 |
| 400 kcmil or two sets of 4/0 | 600 or two sets of 300 kcmil | ~~400~~ | 400 | 350 |
| 500 kcmil | 750 kcmil | | | 400 |

**Reason:** Coordination with Amendment to NEC table 310.15 (b)(6).

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H16** | |
|---|---|
| Title: **AZBO Code Review and Development Committee amendments to the 2006 ICC Codes** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **11/21/2006** | |
| Archived to Historical Section by MAG Building Codes Committee: **6/20/2012** | |

At the November 21, 2006, Building Codes Committee meeting, the Committee reviewed the AZBO Code Review and Development Committee amendments to the 2006 codes.

At the June 20, 2012, Building Codes Committee meeting, the Committee reviewed the original document. The Committee voted unanimously to move this document to the Historical Archive.

# AZBO Code Review and Development Committee

## AZBO ICC Code Committee Amendments recommended for the 2006 I - Codes

**This report is a two year compilation of the AZBO amendments to the 2006 ICC codes that the Code Review and Development Committee have recommended to be included with the 2006 ICC codes to assist those jurisdictions in the adoption of the 2006 ICC codes. In addition, previous amendments that were not successful in the ICC code change process have been deleted. The items noted as "AZ only" have been determined by the committee to be items unique to Arizona in accordance with the guidelines approved by the AZBO Board of Directors.**

**The items are identified by the initials of the affected code, the original number assigned by the committee and the year the item was originally approved by the committee.**

### 2006 INTERNATIONAL BUILDING CODE

**IBC-1-06 (AZ Only)**
**Revision to: Table 1607.1**

**Committee Action: Approved as Submitted**

Revise as follows:

| OCCUPANCY OR USE | UNIFORM (psf) | CONCENTRATED (lbs.) |
|---|---|---|
| 28. Residential | | - |
| One- and two-family dwellings | | |
| Uninhabitable attics with ~~limited~~ storage | | |
| Habitable attics and sleeping areas | ~~20~~ 40 | |
| (no other changes in item 28) | ~~30~~ 40 | |

**Reason:** Industry standards in Arizona indicate designers based their calculations on the 40 psf for all second floor areas.

**Committee Reason:** Although this does exceed the minimum requirements set forth by the code, the committee members representing the building industry indicated the homebuilders and designers preferred to continue with the 40 psf in bed room areas. The increased design would lessen deflection in floor systems, provide a uniform design for headers and lessen complaints from buyers.

**IBC-2-06 (AZ Only)**

**Revision to: 3109**

**Committee Action: Approved as Submitted**

Revise as follows:

Section 3109 is hereby REPEALED

**Reason:** The requirements of this section do not comply with Arizona state law governing pool enclosure requirements.

**IBC-3-06 (AZ Only)**

**Revision to:** Chapter 11 Accessibility

**Committee Action: Approved as Submitted**

**Proposal:** Delete Chapter 11, Accessibility, in its entirety and substitute the following:

ARIZONANS WITH DISABILITIES ACT
"Arizonans with Disabilities Act" (Arizona Revised Statutes, Title 41, Chapter 9, Article 8), and the "Arizonans with Disabilities Act Implementing Rules" (Arizona Administrative Code, Title 10, Chapter 3, Article 4), which rules incorporate The federal "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities," be and the same is hereby adopted as the Arizonans with Disabilities Act of the Town, City or County, and shall apply to new construction and alterations and are not required in buildings or portions of existing buildings that do not meet the standards and specifications and this act is hereby referred to, adopted and made a part hereof as though fully set forth in this section.

**Reason:** The requirements of this chapter are superceded by Arizona state law which requires all jurisdictions within the state of Arizona to enforce the ARIZONAN'S WITH DISABILITIES ACT. his code change merely brings the International Building Code into compliance.

**IBC-4-06 (AZ only)**

**Revision to: Sections 308.2,308.3,(new) 310.1(new), 310.2, (new) 419, (new) 309.2.9, 1003.3.1.2, 1003.3.1.8.2**

**Committee Action: Approved as Submitted**

**308.2 Group I-1.** This occupancy shall include buildings, structures or parts thereof housing more than 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a residential environment that provides supervisory care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:
Residential board and care facilities
Assisted living centers
Halfway houses
Group homes
Congregate care facilities
Social rehabilitation facilities
Alcohol and drug abuse centers
Convalescent facilities
A facility such as the above with 10 or fewer persons shall be classified as a Group R-4 Condition 1 or shall comply with the *International Residential Code* in accordance with Section 101.2 where the building is in compliance with Section 419 of this code.

**308.3 Group I-2.** This occupancy shall include buildings and structures used for medical,

surgical, psychiatric, nursing, custodial, personal, or directed care on a 24-hour basis of more than five persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:
Hospitals
Nursing homes (both intermediate-care facilities and skilled nursing facilities)
Mental hospitals
Detoxification facilities
A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2.

This occupancy shall also include buildings and structures used for assisted living homes providing supervisory, personal, or directed care on a 24-hr basis of more than 10 persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. A facility such as the above with ten or fewer persons shall be classified as R-4 Condition 2.

**310.1...R-4** Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living homes including not more than 10 occupants, excluding staff.

**310.1.1 Condition 1.** This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self preservation by responding to an emergency situation without physical assistance from staff. Condition 1 facilities housing more than 10 persons shall be classified as a Group I-1.

**310.1.2 Condition 2.** This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of self preservation by responding to an emergency without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

R-4 occupancies shall meet the requirements for construction as defined in Group R-3 except as otherwise provided for in this code, and Section 419 or shall comply with the International Residential Code in accordance with section 101.2 where the building is in compliance with Section 419 of this code

**310.2 Definitions**

**PERSONAL CARE SERVICE.** Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and the administration of medications and treatments.

**DIRECTED CARE SERVICE.** Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

**SUPERVISORY CARE SERVICE.** General supervision, including daily awareness of resident functioning and continuing needs.

**RESIDENTIAL CARE/ASSISTED LIVING HOME.** A building or part thereof housing a maximum of 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory, personal, or_directed services. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living

homes, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

## 419 RESIDENTIAL CARE/ASSISTED LIVING HOMES

**419.1 Applicability.** The provisions of this section shall apply to a building or part thereof housing not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all applicable provisions of Group R-3.

**419.2 General.** Buildings or portions of buildings classified as R-4 occupancies shall meet all the applicable provisions of Group R-3, may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building, and shall not exceed 2000 square feet above the first story except as provided in Section 506.

**419.3 Special Provisions.** R-4 occupancies having more than 2000 square feet of floor area above the first floor shall be of not less than one-hour fire-resistive construction throughout.

**419.3.1 Mixed Uses.** R-4 occupancies shall be separated from other uses as provided in Table 302.3.2.

**419.4 Access and Means of Egress Facilities.**

**419.4.1 Accessibility.** R-4 occupancies shall be provided with at least one accessible route per the Arizonans with disabilities act. Sleeping rooms and associated toilets shall be accessible.

**Exception:** Existing buildings shall comply with Section 3409. Bathing and toilet facilities need not be made accessible, but shall be provided with grab bars in accordance with ICC/ANSI A 117.1.

**419.4.2 Exits**

**419.4.2.1Number of Exits.** Every story, basement, or portion thereof shall have not less than two exits.

Exception: Basements and stories above the first floor containing no sleeping rooms may have one means of egress as provided in Chapter 10.

**419.4.2.2 Distance to Exits.** The maximum travel distance shall comply with Section 1004, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

**419.4.2.3 Emergency Exit Illumination.** In the event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the ICC Electric Code.

**419.4.2.4 Emergency Escape and Rescue.** R-4 occupancies shall comply with the requirements of Section 1025, except that Exception 1 to Section 1025.1 does not apply to R-4 occupancies.

**419.4.2.5 Delayed egress locks.** In R-4 Condition 2 occupancies, delayed egress

locks shall be permitted in accordance with Sections 1008.1.3.4 and 1008.1.8.6, items 1, 2, 4, 5 and 6.

**419.5 Smoke Detectors and Sprinkler Systems**

**419.5.1 Smoke Alarms.** All habitable rooms and hallways in R-4 occupancies shall be provided with smoke alarms installed in accordance with Section 907.2.10.

**419.5.2 Sprinkler Systems.** R-4 occupancies shall be provided with a sprinkler system installed in accordance with Section 903.2.9. Sprinkler systems installed under this Section shall be installed throughout, including attached garages, and in Condition 2 facilities shall include attics and concealed spaces of or containing combustible materials. Such systems may not contain unsupervised valves between the domestic water riser control valve and the sprinklers. In R-4 Condition 2 occupancies, such systems shall contain water-flow switches electrically supervised by an approved supervising station, and shall sound an audible signal at a constantly attended location.

**1008.1.2 Door swing.** Egress doors shall be side-hinged swinging.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Doors within or serving a single dwelling unit in Groups R-2, ~~and~~ R-3 as applicable in Section 101.2, <u>and R-4.</u>
4. (no other changes)

**Reason:** The purpose of this amendment is to bring the provisions of the code into agreement with the licensing rules of the Arizona Department of Health Services. DHS license categories have a threshold of 10 residents to move from a residential home setting to an institutional setting. DHS rules (R9-10-701) state, "Assisted living home" or "home" means an assisted living facility that provides resident rooms to (10) or fewer residents, as distinct from an "assisted living center", which provides services to more than (10) persons. In addition, the license classifications to provide "personal care services" and "directed care services" to residents allow for residents to be bed-bound. The use of "Condition" distinctions is reflective of similar distinctions in I-occupancies.

Each state has unique agency programs for assisted living occupancies, which establish license categories based on numbers of residents and the familiar ambulatory/non-ambulatory distinction. Uniformity could be accomplished by either trusting health service agencies nationally to agree to uniform thresholds and other licensing characteristics, or by amending building codes to allow each state to adapt to that state's unique rules. If numerical thresholds are provided on a "fill in the blanks" basis, condition categories can be added or deleted, and definitions can be customized to match licensure definitions, the hazards associated with these facilities can be addressed comprehensively on a state-by-state basis.

The most hazardous scenario is a facility in an ordinary, un-rated residential structure, occupied by (10) bed-bound residents, supervised by a single caregiver. Provisions for exiting, smoke detectors, emergency illumination, sprinklers, et al, can substantially increase the chances of survival in a fire or other emergency for these residents.

**IBC-1-01 Reason:** To bring the Building Code into agreement with Arizona Administrative Code, Title 9 Health Services, Article 7 Assisted Living Facilities. R9-10-701 states, "'Assisted living home" or "home" means an assisted living facility that provides resident

rooms to ten or fewer residents.' An "Assisted living center" (rooms or residential units for eleven or more residents) is required to have "an individually keyed entry door" and "a kitchen area" by R9-10-720. Since the distinction for the state is between ten and eleven residents, it is felt that the Building Code should reflect the same distinction.
See http://www.sosaz.com/public services/Title 09/9-10.htm for the entire rule.

It is felt that the word "abuse" was inadvertently omitted for the definition of Group I-1 Occupancy.

**IBC-5-06 (AZ Only)**

**Revise Section 1503.4**

**Committee Action: Approved as Submitted**

**[P] 1503.4 Roof drainage.** Design and installation of roof drainage systems shall comply with Section 1503.4 and the ~~*International*~~ *Arizona State Plumbing Code (1994 UPC).*

**1503.4.1 Gutters.** Gutters and leaders placed on the outside of buildings, other than Group R-3 as applicable in Section101.2, private garages and buildings of Type V construction, shall be of noncombustible material or a minimum of Schedule 40 plastic pipe.

**1503.4.2 Where required.** All roofs, paved areas, yards, courts and courtyards shall drain into a separate storm sewer system, or a combined sewer system, or to an approved place of disposal.

**1503.4.3 Roof design.** Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked.

**1503.4.4 Overflow drainage required.** Overflow (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.

**1503.4.4.1 Separate systems required.** Overflow roof drain systems shall have the end point of discharge separate from the primary system. Discharge shall be above grade, in a location, which would normally be observed by the building occupants or maintenance personnel.

**1503.4.4.2 Overflow drains and scuppers.** Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains may be installed in the adjacent parapet walls. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by the plumbing code. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.

**REASON**: This is proposed as an Arizona only amendment to resolve the problem of using the UPC rather than the IPC. The I codes place roof drainage in the plumbing code. The U codes have drainage required in the UBC and piping system design is per the UPC and scuppers per the UBC. When the IBC is used with the UPC, there is a gaping hole in having sufficient requirements to obtain a safe roof drainage system.

New Section 1503.4.2 is from IPC 1101.2. Section 1503.4.3 is from IPC 1101.7. Section 1503.4.4 is from IPC 1107.1. Section 1503.4.4.1 is from IPC 1107.2. Section 1503.4.4.2 is a combination of IRC R903.4.1and IPC 1107.3.

The text from the IRC provides the three times scupper sizing that existed in the UBC. Note that jurisdictions that have adopted the 2000 IPC without amendments will require overflow piping to be two times the size of the main piping but have no over sizing requirement for the scuppers. The 2003 no longer requires the overflow piping size to be doubled but still does not have the three times size for the scuppers.

**IBC-6-06 (Submitted for 09 proposal)**

**Revise Section 2902.7**

**Committee Action: Approved as Submitted**

**IBC 2902.7 DRINKING FOUNTAINS**
**2902.7.1 Approval.** Drinking fountains shall conform to ASME A112.19.1M ASME A11219.2M or ASME A112.19.19M and water coolers shall conform to ARI 1010. Drinking fountains and water coolers shall conform to nsf61, section 9. Where water is served in restaurants, drinking fountains shall not be required. In other occupancies, where drinking fountains are required, bottled water dispensers or water coolers shall be permitted to be substituted.

2902.7.2 Prohibited locations. Drinking fountains, water coolers and dispensers shall not be installed in public restrooms.

**IBC-6-06 (Submitted for 09 proposal)**

**Revise Section 1503.6**

**Committee Action: Approved as Submitted**

**1503.6 Crickets and saddles.** A cricket or saddle shall be installed on the ridge side of any chimney greater than 30 inches (762 mm) wide. Cricket or saddle coverings shall be sheet metal of the same material as the roof covering.

## 2003 INTERNATIONAL RESIDENTIAL CODE

**IRC-1-06 (AZ only)**

**Revision to: TABLE R 301.4**

**Committee Action: Approved as Modified**

| USE | LIVE LOAD |
|---|---|
| Attics with storage [b,e] | ~~20~~ 40 |
| Sleeping rooms | ~~30~~ 40 |

(No other changes to Table)

**Reason:** Industry standards in Arizona indicate designers based their calculations on the 40 psf for all second floor areas.

**Committee Reason:** Although this does exceed the minimum requirements set forth by the code, the committee members representing the building industry indicated the homebuilders and designers preferred to continue with the 40 psf in bed room areas. The increased design would lessen deflection in floor systems, provide a uniform design for headers and lessen complaints from buyers.

**IRC-2-06 (AZ only)**

**Revision to: APPENDIX**

**Committee Action: Approved as Modified**

**102.5 Appendices.** Provisions in the appendices shall not apply unless specifically adopted. The following appendices are adopted:
Appendix A SIZING AND CAPACITIES OF GAS PIPING
Appendix B SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE AND TYPE B VENTS
Appendix C EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS
Appendix D RECOMMENDED PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION
Appendix H PATIO COVERS
Appendix J EXISTING BUILDINGS AND STRUCTURES
Appendix K SOUND TRANSMISSION

**Reason:** Comply with State and Federal laws.

**IRC-3-06 (AZ only)**

**Revision to: M1307.6**

**Committee Action: Approved as Submitted**

Add new text as follows:

**M1307.6 Liquefied Petroleum Appliances.** LPG appliances shall not be installed in an attic, pit or other location that would cause a ponding or retention of gas.

**Reason:** Due to the nature of LP gas, being heavier than air, it should be a function of design to eliminate the hazard of gas being trapped. The attic location is a hazard due to the gas settling in insulated frame bays and the probability of an ignition source igniting the gas fuel. Any pit will hold LP gas until an appliance or other ignition source causes a fire or explosion.
Related sections include G2406.2 and M1703.2
This also provides consistency with the State plumbing code.

**IRC-4-06 (AZ only)**

**Revision to: G2406.4**

**Committee Action: Approved as Modified**

Add new section text as follows:
**G2406.4 Liquefied Petroleum Appliances.** LPG appliances shall not be installed in an attic, pit or other location that would cause a ponding or retention of gas.

**Reason:** To make text compatible with change to Section M1307.5 and to clarify that the exceptions do not apply to this text. This also provides consistency with the State plumbing code.

**IRC-5-06 (AZ only)**

**Revision to: Section G2415.9 & G2415.9.1**

**Committee Action: Approved as Modified**

**Proposal: G2415.9 (404.9) Minimum burial depth.** Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade for metal piping and 18 inches (457mm) for plastic piping.

**Reason:** The distinction between metal piping and plastic piping in regards to burial depth is because the plastic piping is more susceptible to damage and needs the increased depth for protection.

The elimination of the section addressing individual outside appliances is because the risks are the same whether the line serves multiple appliances or a single appliance. With similar risks, similar depths should be required.

**IRC-6-06 (Submitted for 09 proposal)**

**Revise Section 903.2.2**

**Committee Action: Approved as Submitted**

**R903.2.2 Crickets and saddles.** A cricket or saddle shall be installed on the ridge side of any chimney greater than 30 inches (762 mm) wide. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.

**IRC-7-06 (Submitted for 09 proposal)**

**Revise Section 905.2.8.6**

**Committee Action: Approved as Submitted**

**R905.2.8.6 Drip edge**. Provide drip edge at eaves and gables of shingle roofs. Overlap to be a minimum of 2 inches (51 mm). Eave drip edges shall extend 0.25 (6.4 mm) below the sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be mechanically fastened a maximum of 12 inches (305 mm) o.c.

## 2006 INTERNATIONAL FUEL GAS CODE

**IGC-1-06 (Submitted for 09 proposal)**

**Revise Section 2406.2**

**Committee Action: Approved as Submitted**

**G2406.2 (303.3) Prohibited locations**. Appliances shall not be located in, or obtain combustion air from, any of the following rooms or spaces:

1) Sleeping rooms
2) Bathrooms
3) Toilet rooms
4) ~~Storage~~ Clothes closets

## 2006 INTERNATIONAL MECHANICAL CODE

**IMC-1-06 (Submitted for 09 proposal)**

**Revise Section 307.2.2**

**Committee Action: Approved as Submitted**

**307.2.2 Drain pipe material and sizes.**
**Components of the condensate disposal system shall be.....size shall not be less than ¾" internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes for more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with ~~an approved method~~ the following:**

| EQUIPMENT CAPACITY | MINIMUM CONDENSATE PIPE DIAMETER |
|---|---|
| Up to 20 tons (70.3 kw) of refrigeration | ¾ inch (19 mm) |
| Over 20 tons (70.3 kw) to 40 tons (141 kw) of refrigeration | 1 inch (25 mm) |
| Over 40 tons (141 kw) to 90 tons (317 kw) of refrigeration | 1 ¼ inch (32 mm) |
| Over 90 tons (317 kw) to 125 tons (440 kw) of refrigeration | 1 ½ inc (38 mm) |
| Over 125 tons (440 kw) to 250 tons (879 kw) of refrigeration | 2 inch (51 mm) |

**Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eigth unit vertical in 12 units horizontal (1-perceant slope)**

**IMC-2-06 (Submitted for 09 proposal)**

**Revise Section 307.2.2**

**Committee Action: Approved as Submitted**

**M1305.1.1 ~~Central~~ Furnaces and air handlers.** ~~Central~~ Furnaces and air handlers within compartments or alcoves shall have a minimum working space clearance of 3 inches (76 mm)

along the sides, back, and top, with a total width of the enclosing space being at least 12 inches (305 mm) wider than the furnace or air handler. Furnaces having a firebox open to the atmosphere shall have at least a 6 inch (152 mm) working space along the front combustion chamber side. Combustion air openings at the rear and side of the compartment shall comply with the requirements of chapter 17.

**Exception:** This section shall not apply to replacement appliances installed in existing compartments and alcoves
where the working space clearances are in accordance with the equipment or appliance manufacturer's installation
instructions.

**M1305.1.5 Heating, Air Conditioning, and Refrigeration Equipment Outlet.** A 125-volt, single phase, 15 or 20 ampere rated receptacle outlet shall be installed in an accessible location for the servicing of heating, air conditioning, and refrigeration equipment. The receptacle shall be located on the same level and within 25 feet (7.5 meters) of the heating and air conditioning, and refrigeration equipment. The receptacle outlet shall not be connected to the load side of the equipment disconnecting means.

**IMC-3-06 (Submitted for 09 proposal)**

**Revise Section 2005.2**

**Committee Action: Approved as Submitted**

**M2005.2 Prohibited locations.** Fuel-fired water heaters shall not be installed in a ~~room used as a storage~~ clothes closet. Water heaters installed in a bedroom or bathroom shall be installed in a sealed enclosure so that the combustion air will not be taken from the living space. Direct-vent water heaters are not required to be installed within an enclosure.

## 2006 International Plumbing Code

**IPC-1-06 AZ only**

**Revision to: 101**

**Committee Action: Approved as Submitted**

**Add a new section 101.5 to read as follows:**

**101.5 Appendices.** Provisions in the appendices shall not apply unless specifically adopted.

**Reason:**. This provision is included in all the other International codes and needs to be included in the International Plumbing Code to maintain uniformity among the codes.

**IPC-2-06 (Submitted for 09 proposal)**

**Revise Section 3005.2.10**

**Committee Action: Approved as Submitted**

**P3005.2.10 Cleanout equivalent.** A ~~fixture trap or a~~ fixture with an integral trap, readily removable without disturbing concealed piping shall be acceptable as a cleanout equivalent.

| **Maricopa Association of Governments Building Code Amendments and Standards Manual**<br>**BCAS #H17** | |
|---|---|
| Title: **Recommendations of the Arizona Residential Post-Tensioned Round Table for Special Inspections, Evaluation, and Acceptance** | MARICOPA ASSOCIATION of GOVERNMENTS<br>**BCAS Manual Historical Archive** |
| Originally Reviewed by MAG Building Codes Committee: **1/16/2008** | |
| Archived to Historical Section by MAG Building Codes Committee: **1/16/2013** | |

At the January 16, 2008, Building Codes Committee meeting, the Committee reviewed the recommendations of the Arizona Residential Post-Tensioned Round Table.

At the January 16, 2013 Building Codes Committee meeting, the Committee reviewed the original document. The Committee determined that the items in the document are covered by the current codes. The Committee voted unanimously to move this document to the Historical Archive.

# 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<br>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<br>ASTM C 31<br>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:<br>a. Application of pre-stressing forces<br>b. Grouting of bonded pre-stressing tendons in the seismic-force-resisting system | <br>X<br>X | - | <br>ACI 318: 18.20<br>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.