2015 International Building Code

Revise as follows:

1023.4 Openings. Interior exit_stairway and ramp opening protectives shall be in accordance with the requirements of Section 716.

Openings in interior exit_stairways and ramps other than unprotected exterior openings shall be limited to those necessary required for exit access to the enclosure from normally occupied spaces and for egress from the enclosure.

Elevators shall not open into interior exit_stairways and ramps.

Reason: The word “necessary” is subjective. However, the word “required” is more definitive and has been used throughout the code consistently.

Cost Impact: Will not increase the cost of construction
The code change proposal does not seek to change requirements, it merely seeks to install improved regulatory language, therefore cost of construction is not at issue.
Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Existing Building Code

Revise as follows:

301.1.1 Prescriptive compliance method. Repairs, alterations, additions, and changes of occupancy and relocation of existing buildings and structures, including historical buildings, complying with Chapter 4 of this code in buildings complying with the International Fire Code shall be considered in compliance with the provisions of this code.

301.1.2 Work area compliance method. Repairs, alterations, additions, changes in of occupancy of existing structures, including historic and relocated buildings, moved structures complying with the applicable requirements of Chapters 5 through 13 of this code shall be considered in compliance with the provisions of this code.

301.1.3 Performance compliance method. Repairs, alterations, additions, changes in of occupancy of existing structures, including historic and relocated buildings, moved structures complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.

Reason: This change brings these sections in line with Sections 401.1, 501.1 and 1401.1, respectively.

Cost Impact: Will not increase the cost of construction

This proposal is editorial.
2015 International Building Code

Revise as follows:

717.1.2 Ducts that penetrate fire-resistance-rated assemblies without dampers. Ducts that penetrate fire-resistance-rated assemblies walls and are not required by this section to have dampers shall comply with the requirements of Sections 714.2 through 714.3.3. Ducts that penetrate horizontal assemblies not required to be contained within a shaft and not required by this section to have dampers shall comply with the requirements of Sections 714.4 through 714.5.2.

Reason: The purpose of this proposal is to clarify that Section 714.3 is on rated walls and 714.3 is on horizontal assemblies. To say "fire-resistance-rated assemblies" may confuse some code users.

Cost Impact: Will not increase the cost of construction

This proposal will not increase cost of construction. Since this proposal is only clarification to the code language, it will not increase the cost of construction. Here, "assemblies" actually is eluding to "walls" all along. There are no newly added technical requirements that would trigger additional cost.
717.5.2 Fire barriers. Ducts and air transfer openings of fire barriers shall be protected with approved listed fire dampers installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for interior exit stairways and ramps and exit passageways, except as permitted by Sections 1023.5 and 1024.6, respectively.

**Exception:** In occupancies other than Group H, fire dampers are not required at penetrations of fire barriers where any of the following apply:

1. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an approved smoke control system in accordance with Section 909 and where the use of a fire damper would interfere with the operation of a smoke control system.
3. Such walls are penetrated by ducted HVAC systems, have a required fire-resistance rating of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with approved listed fire and smoke dampers installed in accordance with their listing.

**Exceptions:**

1. Fire In occupancies other than Group H, fire dampers are not required at penetrations of shafts where any of the following criteria are met:
   1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
   1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
   1.3. Ducts are used as part of an approved smoke control system designed and installed in accordance with Section 909 and where the fire damper will interfere with the operation of the smoke control system.
   1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.

2. In Group B and R occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, smokedampers are not required at penetrations of shafts where all of the following criteria are met:
   2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
   2.2. The subducts extend not less than 22 inches (559 mm) vertically.
   2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.

3. Smoke dampers are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.

4. Smoke dampers are not required at penetrations of shafts where ducts are used as part of an approved mechanical smoke control system designed in accordance with Section 909 and where the smoke damper will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smoke dampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

**Reason:** Section 717.5.4 (fire partitions) already exclude H occupancies from these exceptions. Fire barriers which are more restrictive than fire partitions should have the same requirements. In entire Section 717.5, fire and smoke dampers or combination of F/S dampers are required to be "listed", except for these two locations that are calling for "approved" for no apparent reason.

**Cost Impact:** Will increase the cost of construction
This proposal could potentially increase the cost of construction. Switching from "approved" to "listed" could increase the cost of construction. The definition for "approved" is: "Acceptable to the code official or AHJ". This leaves it to the discretion of the AHJ on how to approve a damper. On the other hand, the definition of "listed" is more specific to evaluation of products by a recognized laboratory or a testing agency. The other change, excluding H Occupancies from this exception, will increase the cost of construction since all ducts penetrating shaft enclosures in H Occupancies will, now, have to be equipped with fire dampers.
2015 International Building Code

Revise as follows:

717.6.2 Membrane penetrations. Ducts and air transfer openings constructed of approved materials in accordance with the International Mechanical Code that penetrate the ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with one of the following:

1. A shaft enclosure in accordance with Section 713.
2. A listed ceiling radiation damper installed at the ceiling line where a duct penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.

Exceptions:

1. A fire resistance rated assembly tested in accordance with ASTM E 119 or UL 263 showing that ceiling radiation dampers are not required in order to maintain the fire resistance rating of the assembly.
2. Where exhaust duct penetrations are protected in accordance with Section 714.4.1.2 are located within the cavity of a wall and do not pass through another dwelling unit or tenant space.
3. Where duct and air transfer openings are protected with a duct outlet penetration system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.

3. A listed ceiling radiation damper installed at the ceiling line where a diffuser with no duct attached penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.

Exceptions:

1. A fire resistance rated assembly tested in accordance with ASTM E 119 or UL 263 showing that ceiling radiation dampers are not required in order to maintain the fire resistance rating of the assembly.
2. Where duct and air transfer openings are protected with a duct outlet penetration system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.

717.6.2.1 Ceiling radiation dampers testing and installation. Ceiling radiation dampers shall be tested in accordance with Section 717.3.1. Ceiling radiation dampers shall be installed in accordance with the details listed in the fire-resistance-rated assembly and the manufacturer's instructions and the listing. Ceiling radiation dampers are not required where one of the following applies:

1. Tests in accordance with ASTM E 119 or UL 263 have shown that ceiling radiation dampers are not necessary in order to maintain the fire resistance rating of the assembly.
2. Where exhaust duct penetrations are protected in accordance with Section 714.4.2, are located within the cavity of a wall and do not pass through another dwelling unit or tenant space.
3. Where duct and air transfer openings are protected with a duct outlet protection system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.

Reason: This proposal combines Section 717.6.2 and 717.6.2.1 in a way that the requirements could be understood better. The changes are merely editorial and not technical.

Cost Impact: Will not increase the cost of construction
The proposal will not increase the cost of construction since the code change, as mentioned under "reason", is merely editorial for the code user to understand it better.
2015 International Building Code

706.2 Structural stability. Fire walls shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.

Exception: In SDC C through F, where double fire walls are used in accordance with NFPA 221, floor and roof sheathing not exceeding 3/4 inch (19.05 mm) thickness shall be permitted to be continuous through the wall assemblies of light frame construction.
Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

706.2 Structural stability. Fire walls shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.

   Exception: Where double fire walls are used in accordance with NFPA 221, floor and roof sheathing not exceeding 3/4 inch (19.05 mm) thickness shall be permitted to be continuous through the wall assemblies of light frame construction.

Reason: There is widely accepted interpretation by many building departments and structural engineers that the roof and floor diaphragms must be continuous to properly perform its function. The sheathing which comprises these diaphragms in light frame construction is generally wood structural panels between 7/16 inches to 23/32 inches thickness. These panels represent a very small risk of causing failure of the wall on the unaffected side of a double fire wall assembly. The benefit of performing the seismic function as a diaphragm is generally regarded as well worth any very small risk caused by fire exposure from one side of a double fire wall.

The following link is to a Structural Engineers of Southern California recommendation to carry the floor sheathing through these fire walls.


Cost Impact: Will not increase the cost of construction

This code change does not create a new requirement. It allows an additional option for compliance that is not required.
2015 International Building Code

706.3 Materials. *Fire walls* shall be of any approved noncombustible materials.

 Exceptions:

1. Buildings of Type V construction.
2. In SDC C through F, two 2-hour fire walls of wood or steel light frame construction, with structural wood panel sheathing, shall be permitted to be substituted for a 3-hour non-combustible fire wall in building of Type III construction.
706.3

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

706.3 Materials. Fire walls shall be of any approved noncombustible materials.

Exceptions:

1. Buildings of Type V construction.
2. Two 2-hour fire walls of wood or steel light frame construction, with structural wood panel sheathing, shall be permitted to be substituted for a 3-hour non-combustible fire wall in building of Type III construction.

Reason: Substituting two 2-hour light frame walls for a single required 3-hour wall provides flexibility in design and construction while improving fire resistance, which outweighs material considerations. Some current fire walls designs in Type III construction call for the construction of three separate walls in order to accomplish the required rating with a noncombustible assembly in the center and a light frame assembly on each side with plywood sheathing providing vertical support and serving as a shear wall for the building on each side of the fire wall. Each of these walls could be utilized as a 2-hour fire wall with the floor sheathing continuous through at the floor and roof levels as proposed in a separate code change for Section 706.2. This proposed arrangement provides a better structural solution and also is an opportunity to minimize air infiltration or loss through the space between walls. This allows improved efficiency of materials and design while also improving structural and energy performance. From a fire standpoint, it is felt two 2-hour walls walls are better or equivalent to one 3-hour wall.

The following link is to a Structural Engineers of Southern California recommendation to carry the floor sheathing through fire walls.
http://www.icclabc.org/uploads/opinion_from_SEAOSC_on_Firewall_Final.pdf

Cost Impact: Will not increase the cost of construction

This code change does not create a new requirement. It allows an additional option for compliance that is not required.
2015 International Building Code

Revise as follows:

714.4.1.2 Through-penetration firestop system. Through penetrations shall be protected by an approved through-penetration firestop system installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating.
2. Floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space of a horizontal assembly do not require a T rating.
3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.
4. Floor penetrations in the parking garages do not require F and T ratings.

Reason: It makes no sense to have a large unprotected openings between floors such as vehicle ramps and then a small floor opening next to such ramp to have F and T ratings!!

Cost Impact: Will not increase the cost of construction

This code change will decrease the cost of construction. In order to effectively compartmentalize a fire, a floor must prevent the passage of smoke and flame and also prevent the temperature on the non-fire side from rising high enough to ignite materials stored on non-fire side. To achieve these requirements, certain listed/approved fire stopping assemblies need to be installed; thus the added cost. By adopting this new exception, that requirements goes away and with it the added cost of fire stopping assemblies.
503.1 General. Unless otherwise specifically modified in Chapter 4 and this chapter, building height, number of stories and building area shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and building area provisions shall be applied independently. Each portion of a building separated by one or more fire walls complying with Section 706 shall be considered to be a separate building. Buildings shall not cross lot lines.

Reason: No where in the code has any mention that buildings should not be crossing the property lines. Although this has been an obvious understanding and practice, there are still some designers that take the advantage of absence of this statement and claim that the code does not disallow this practice.

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of existing code provisions and will not increase the cost of construction.
510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of fire walls, limitation of number of stories and type of construction where all of the following conditions are met:

1. The buildings are separated with a horizontal assembly having a fire-resistance rating of not less than 3 hours. The horizontal assembly shall be of Type 1 construction.
2. The building below the horizontal assembly is of Type IA construction.
3. Shaft, stairway, ramp and escalator enclosures through the horizontal assembly shall have not less than a 2-hour fire-resistance rating with opening protectives in accordance with Section 716.5.
   Exception: Where the enclosure walls below the horizontal assembly have not less than a 3-hour fire-resistance rating with opening protectives in accordance with Section 716.5, the enclosure walls extending above the horizontal assembly shall be permitted to have a 1-hour fire-resistance rating, provided:
   1. The building above the horizontal assembly is not required to be of Type I construction;
   2. The enclosure connects fewer than four stories; and
   3. The enclosure opening protectives above the horizontal assembly have a fire protection rating of not less than 1 hour.
4. The building or buildings above the horizontal assembly shall be permitted to have multiple Group A occupancy uses, each with an occupant load of less 300, or Group B, M, R or S occupancies.
5. The building below the horizontal assembly shall be protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum building height in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the grade plane.

Reason: Existing language is unclear and can be interpreted to only require the greater type of construction below the 3 hour separation. The addition of the sentence to Item 1 makes it clear that the 3 hour horizontal assembly can not be constructed out of a type of construction that is different than the lower building.

Cost Impact: Will not increase the cost of construction
This code change does not create a new requirement. It clarifies existing code language to prevent misinterpretation of the code.
G 175-15

602.3, 602.4.1

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.

602.4.1 Fire-retardant-treated wood in exterior walls. Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

Reason: The word framing creates some confusion. Some have interpreted that framing does not include the sheathing utilized for lateral resistance to be framing. This has resulted in at least one interpretation that the walls cannot have FRT structural wood panel framing and yet another interpretation that the structural wood panel is permitted to be installed but unlike the studs does not need to be FRT. ASCE considers sheathing to be part of the framing system. The ICC ES has AQ for a product equivalent to FRT plywood for use on Type III construction.

The addition of sheathing clarifies wood framing and sheathing is permitted to be within the assembly if FRT.

Cost Impact: Will not increase the cost of construction

This code change does not create a new requirement. It clarifies existing code language to prevent misinterpretation of the code.
Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

603.1 Allowable materials.
Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. Fire-retardant-treated wood shall be permitted in:
   1.1. Nonbearing partitions where the required fire-resistance rating is 2 hours or less.
   1.2. Nonbearing exterior walls where fire-resistance-rated construction is not required.
   1.3. Roof construction, including girders, trusses, framing and decking.
      Exception: In buildings of Type IA construction exceeding two stories above grade plane, fire-retardant-treated wood is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
   1.4. Balconies, porches, decks and exterior stairways not used as required exits on buildings three stories or less above grade plane.
2. Thermal and acoustical insulation, other than foam plastics, having a flame spread index of not more than 25.
   Exceptions:
   1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a flame spread index of not more than 100.
   2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a flame spread index of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. Interior floor finish and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. Interior wall and ceiling finishes installed in accordance with Sections 801 and 803.
8. Trim installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant-treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible exterior wall coverings, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
16. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the International Mechanical Code.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m²), in size, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

Reason: The addition of Sub Section 1.4 is warranted to include the requirements of Section 1406.3, Exception 1 in here.

Cost Impact: Will not increase the cost of construction
The proposal is a clarification of existing requirements. It only creates cross references from one section to another. There is no technical changes to the code.
PROPOSED DEFINITION OF ATRIUM: 2015 INTERNATIONAL BUILDING CODE

2015 International Building Code
SECTION 202 DEFINITIONS

ATRIUM. An opening connecting two or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505. Openings that comply with Section 712.1.9 and 1019.3, Condition 1, shall not be considered an atrium.

Reason: One can look at the two Sections: 712.1.9 and 1019.3 (Condition 1) and conclude that those kinds of openings will constitute atrium under the definition of atrium. This has never been the intent of the code. So by adding this sentence, the clarification is made.

Cost Impact: Will not increase the cost of construction
The proposal adds clarity through definitions only, and does not change code requirements nor change the cost of construction.
FLOOR MODIFICATION

G 129-15 MAIEL 1

Proponent of Floor Modification: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

503.1 General. Unless otherwise specifically modified in Chapter 4 and this chapter, building height, number of stories and building area shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and building area provisions shall be applied independently. Each portion of a building separated by one or more fire walls complying with Section 706 shall be considered to be a separate building. Buildings shall not cross lot lines.

Exception: Party walls in compliance with Section 706.1.1 may cross property lines.