Understanding Proposed 2024 Ohio Building, Mechanical & Plumbing Code Rules

The next Ohio Building (OBC), Mechanical (OMC) & Plumbing Codes (OPC) will be adopted by the Board of Building Standards (Board) differently than previous code updates. The next OBC, OMC & OPC will be based on the 2021 International Codes (I-Codes) published by the International Code Council (ICC). In previous code cycles, the Board would duplicate model code language from the I-Codes into the Ohio Administrative Code (OAC).

However, as part of Governor DeWine's and Lt Governor Husted's initiative to reform the OAC by targeting duplicative provisions, outdated sections and unnecessary requirements, the Board will no longer duplicate model code language unchanged by Ohio in the OBC, OMC & OPC rules. This means that the proposed rules will look different than they have in the past, but once adopted the published OBC, OMC, OPC code books – both online and in print – will look the same as they do today integrating both the model code and Ohio modifications into cohesive documents.

Administrative Provisions & Rules of Construction

As Ohio code administration requirements are specific to Ohio law, the Board is not adopting the provisions of Chapters 1 of the IBC, IMC & IPC. Proposed rule 4101:1-1-01 continues to specify the administrative requirements for building code compliance and enforcement in Ohio and will appear in the code in its entirety. New provisions in proposed rule 4101:1-1-01 provide general *Rules of Construction* that apply to all proposed OBC, OMC, & OPC rules, such as replacing all references to "permit" in the model codes with "approval," to be consistent with how certain references, terms and phrases have traditionally been applied in Ohio's codes.

Reviewing Proposed Rules

The proposed rules will now only list provisions in the model codes that Ohio is deleting, modifying or replacing. This will require comparison between the proposed Ohio rules to the model codes. To aid in stakeholder review, below are examples of how to compare proposed model code documents with the proposed rules. Stakeholders can view the base 2021 International Building, Mechanical & Plumbing Codes for free on ICC's website.

2021 International Building Code

2021 International Mechanical Code

2021 International Plumbing Code

Additional referenced standards are also available for review:

2021 International Energy Conservation Code

2021 International Fuel Gas Code

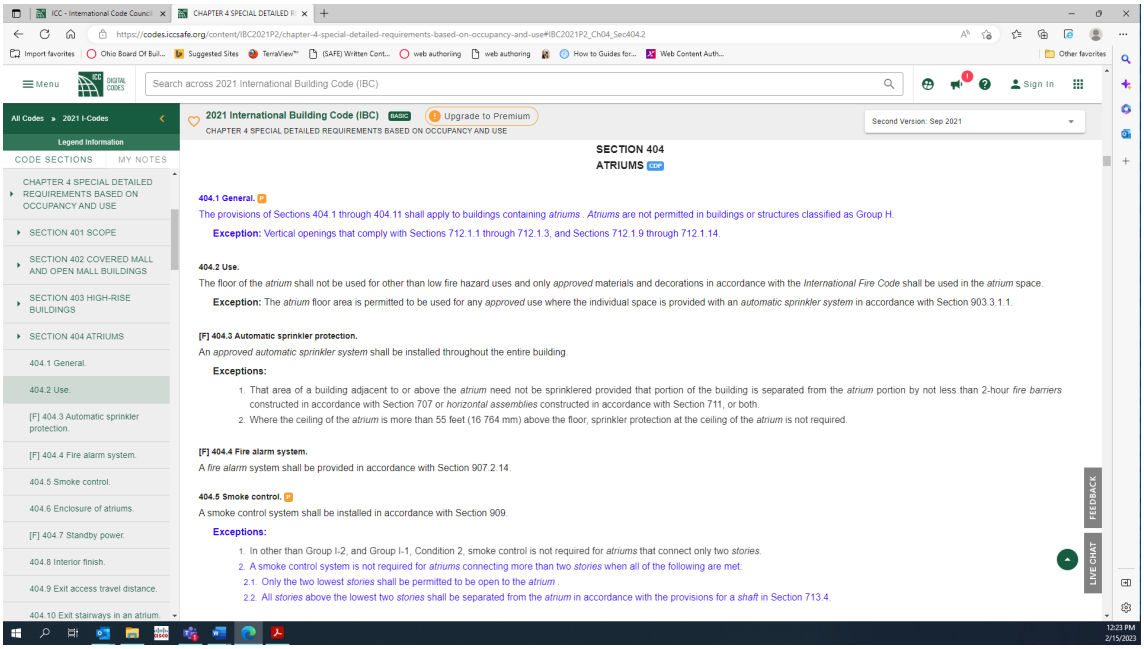
2021 International Existing Buildings Code

2021 International Fire Code

Example 1: No Ohio change. Model code to be adopted verbatim.

IBC Chapter 4 addresses "Special detailed requirements based on occupancy and use," and proposed rule 4101:1-4-01 adopts all of IBC Chapter 4 except as modified in the rule.

IBC Section 404 addresses atriums:



2021 International Building Code (IBC)

CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

SECTION 404
ATRIUMS

404.1 General.
The provisions of Sections 404.1 through 404.11 shall apply to buildings containing *atriums*. *Atriums* are not permitted in buildings or structures classified as Group H.

Exception: Vertical openings that comply with Sections 712.1.1 through 712.1.3, and Sections 712.1.9 through 712.1.14.

404.2 Use.
The floor of the *atrium* shall not be used for other than low fire hazard uses and only *approved* materials and decorations in accordance with the *International Fire Code* shall be used in the *atrium* space.

Exception: The *atrium* floor area is permitted to be used for any *approved* use where the individual space is provided with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

[F] 404.3 Automatic sprinkler protection.
An *approved automatic sprinkler system* shall be installed throughout the entire building.

Exceptions:

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Where the ceiling of the *atrium* is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the *atrium* is not required.

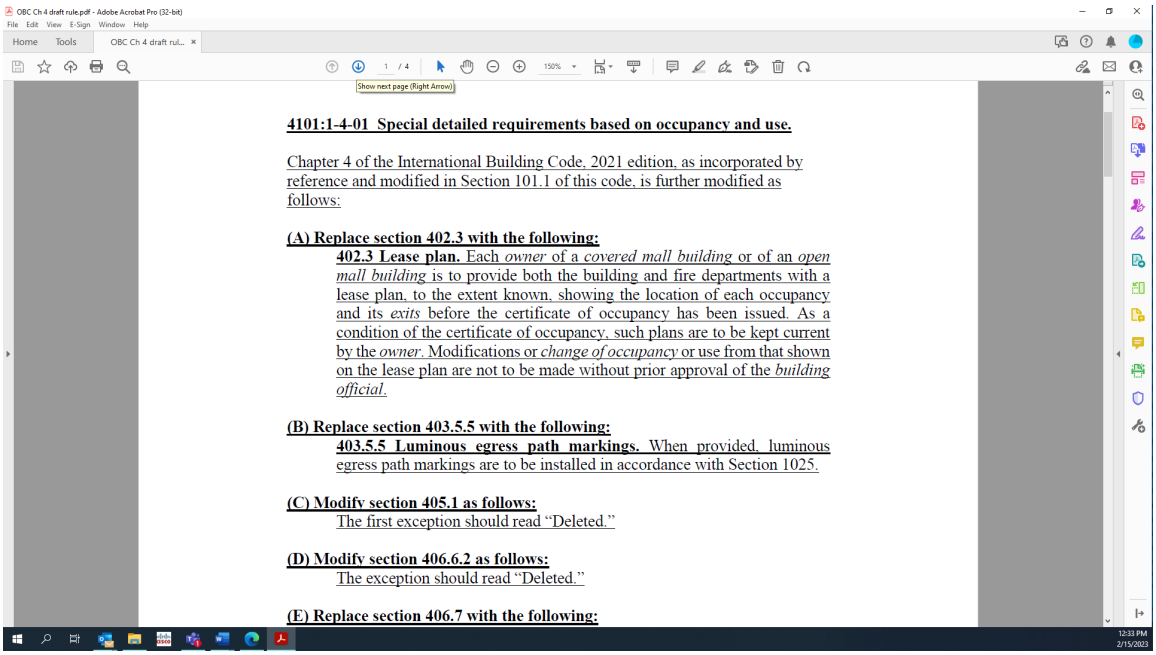
[F] 404.4 Fire alarm system.
A *fire alarm* system shall be provided in accordance with Section 907.2.14.

404.5 Smoke control.
A smoke control system shall be installed in accordance with Section 909.

Exceptions:

1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for *atriums* that connect only two *stories*.
2. A smoke control system is not required for *atriums* connecting more than two *stories* when all of the following are met:
   2.1. Only the two lowest *stories* shall be permitted to be open to the *atrium*.
   2.2. All *stories* above the lowest two *stories* shall be separated from the *atrium* in accordance with the provisions for a *shaft* in Section 713.4.

Proposed rule 4101:1-4-01 does not list any modifications to Section 404.



4101:1-4-01 Special detailed requirements based on occupancy and use.

Chapter 4 of the International Building Code, 2021 edition, as incorporated by reference and modified in Section 101.1 of this code, is further modified as follows:

(A) Replace section 402.3 with the following:

402.3 Lease plan. Each *owner* of a *covered mall building* or of an *open mall building* is to provide both the building and fire departments with a lease plan, to the extent known, showing the location of each occupancy and its *exits* before the certificate of occupancy has been issued. As a condition of the certificate of occupancy, such plans are to be kept current by the *owner*. Modifications or *change of occupancy* or use from that shown on the lease plan are not to be made without prior approval of the *building official*.

(B) Replace section 403.5.5 with the following:

403.5.5 Luminous egress path markings. When provided, luminous egress path markings are to be installed in accordance with Section 1025.

(C) Modify section 405.1 as follows:

The first exception should read "Deleted."

(D) Modify section 406.6.2 as follows:

The exception should read "Deleted."

(E) Replace section 406.7 with the following:

Therefore, all of IBC Section 404 will appear in the code verbatim:

SECTION 404
ATRIUMS

404.1 General. The provisions of Sections 404.1 through 404.11 shall apply to buildings containing *atriums. Atriums* are not permitted in buildings or structures classified as Group H.

Exception: Vertical openings that comply with Sections 712.1.1 through 712.1.3, and Sections 712.1.9 through 712.1.14.

404.2 Use. The floor of the *atrium* shall not be used for other than low fire hazard uses and only *approved* materials and decorations in accordance with the International Fire Code shall be used in the *atrium* space.

Exception: The *atrium* floor area is permitted to be used for any *approved* use where the individual space is provided with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

[F] 404.3 Automatic sprinkler protection. An *approved automatic sprinkler system* shall be installed throughout the entire building.

Exceptions:

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Where the ceiling of the *atrium* is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the *atrium* is not required.

[F] 404.4 Fire alarm system. A *fire alarm* system shall be provided in accordance with Section 907.2.14.

404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.

Exceptions:

1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for *atriums* that connect only two *stories.*
2. A smoke control system is not required for *atriums* connecting more than two *stories* when all of the following are met:
   2.1. Only the two lowest *stories* shall be permitted to be open to the *atrium.*
   2.2. All *stories* above the lowest two *stories* shall be separated from the *atrium* in accordance with the provisions for a *shaft* in Section 713.4.

404.6 Enclosure of atriums. *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a *smoke partition* is provided. The glass wall shall comply with all of the following:
   1.1. *Automatic* sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
   1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
   1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or automatic-closing.
2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a $^{3}/_{4}$-hour *fire protection rating* is provided.

3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of up to three floors of the *atrium* provided that such spaces are accounted for in the design of the smoke control system.
4. A *fire barrier* is not required between the *atrium* and the adjoining spaces where the *atrium* is not required to be provided with a smoke control system.
5. A *horizontal assembly* is not required between the *atrium* and openings for escalators complying with Section 712.1.3.
6. A *horizontal assembly* is not required between the *atrium* and openings for *exit access stairways* and *ramps* complying with Item 4 of Section 1019.3.

[F] 404.7 Standby power. Equipment required to provide smoke control shall be provided with standby power in accordance with Section 909.11.

404.8 Interior finish. The *interior finish* of walls and ceilings of the *atrium* shall be not less than Class B. Sprinkler protection shall not result in a reduction in class.

404.9 Exit access travel distance. *Exit access* travel distance for areas open to an *atrium* shall comply with the requirements of Section 1017.

404.10 Exit stairways in an atrium. Where an *atrium* contains an *interior exit stairway* all the following shall be met:

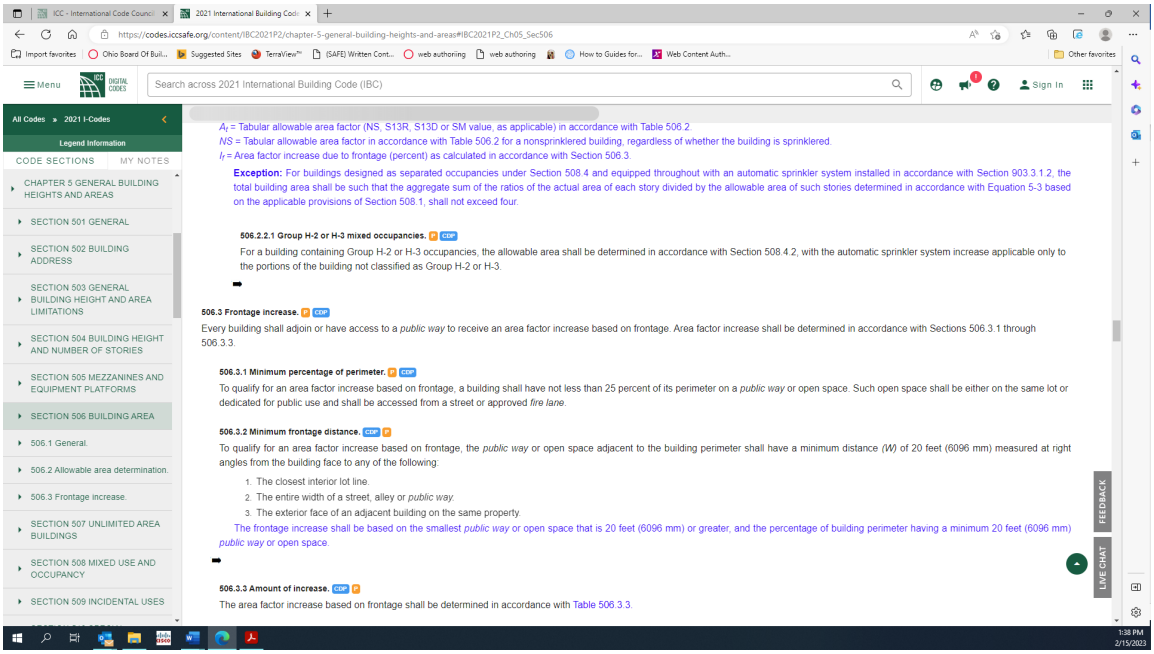
1. The entry to the exit stairway is the edge of the closest riser of the exit stairway.
2. The entry of the exit stairway shall have access from a minimum of two directions.
3. The distance between the entry to an exit stairway in an atrium and the entrance to a minimum of one exit stairway enclosed in accordance with Section 1023.2 shall comply with the separation required by Section 1007.1.1.
4. Exit access travel distance shall be measured to the closest riser of the exit stairway.
5. Not more than 50 percent of the exit stairways shall be located in the same atrium.

404.11 Interior exit stairway discharge. Discharge of *interior exit stairways* through an *atrium* shall be in accordance with Section 1028.

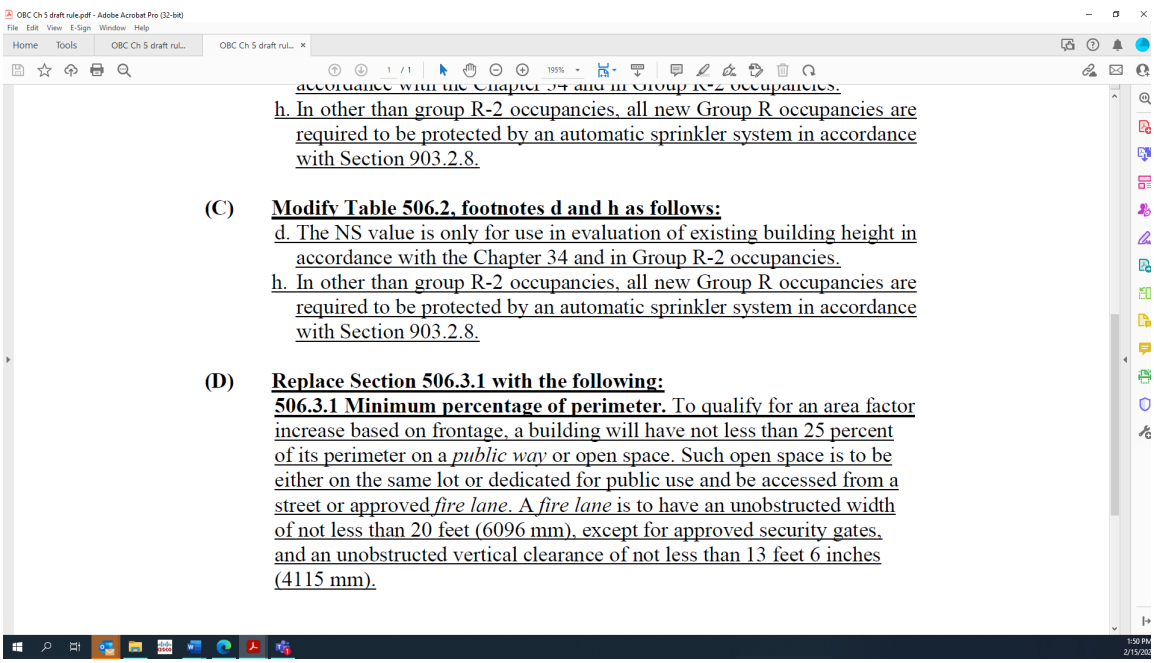
Example 2: Ohio replaces model code language in its entirety.

IBC Chapter 5 addresses "General Building Heights and Areas," and proposed rule 4101:1-5-01 adopts all of IBC Chapter 5 except as modified in the rule.

IBC Section 506.3.1 addresses minimum percentage of perimeter:



Proposed rule 4101:1-5-01 replaces IBC Section 506.3.1 in its entirety with Ohio language.



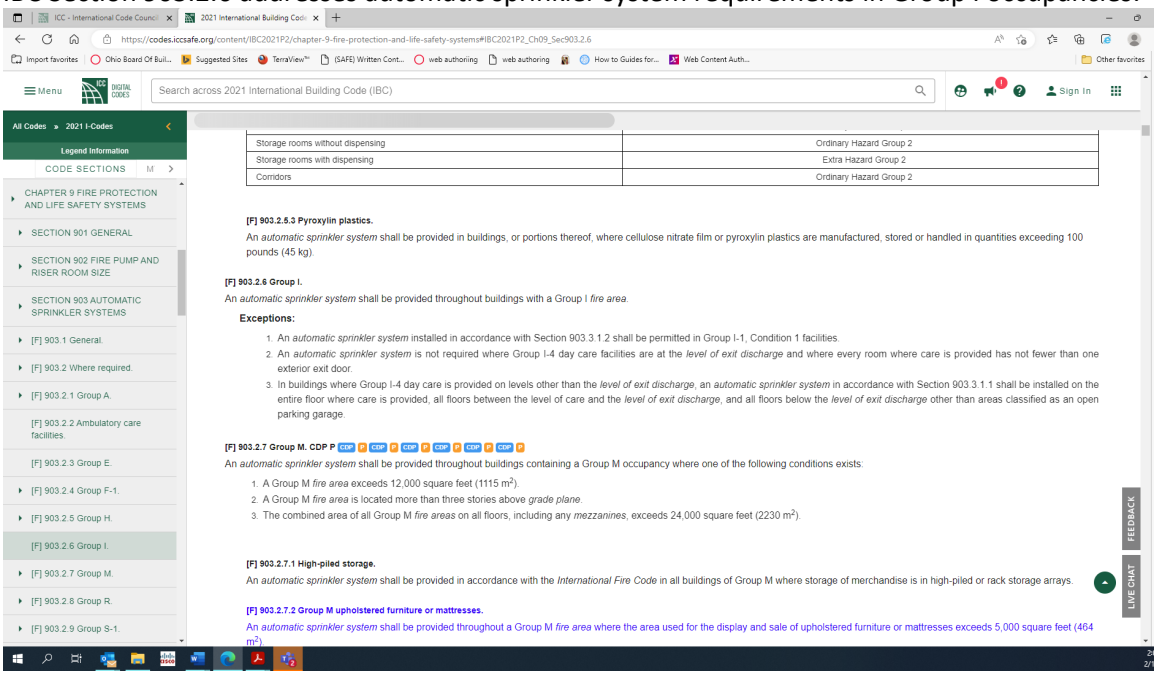
Therefore, the IBC language will not appear in the code, but the Ohio language will:

506.3.1 Minimum percentage of perimeter. To qualify for an area factor increase based on frontage, a building will have not less than 25 percent of its perimeter on a *public way* or open space. Such open space is to be either on the same lot or dedicated for public use and be accessed from a street or approved *fire lane*. A *fire lane* is an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

Example 3: Ohio modifies model code in part.

IBC Chapter 9 addresses “Fire Protection and Life Safety Systems,” and proposed rule 4101:1-9-01 adopts all of IBC Chapter 9 except as modified in the rule.

IBC Section 903.2.6 addresses automatic sprinkler system requirements in Group I occupancies:



Storage rooms without dispensing	Ordinary Hazard Group 2
Storage rooms with dispensing	Extra Hazard Group 2
Corridors	Ordinary Hazard Group 2

[F] 903.2.5.3 Pyroxylin plastics.
An *automatic sprinkler system* shall be provided in buildings, or portions thereof, where cellulose nitrate film or pyroxylin plastics are manufactured, stored or handled in quantities exceeding 100 pounds (45 kg).

[F] 903.2.6 Group I.
An *automatic sprinkler system* shall be provided throughout buildings with a Group I *fire area*.

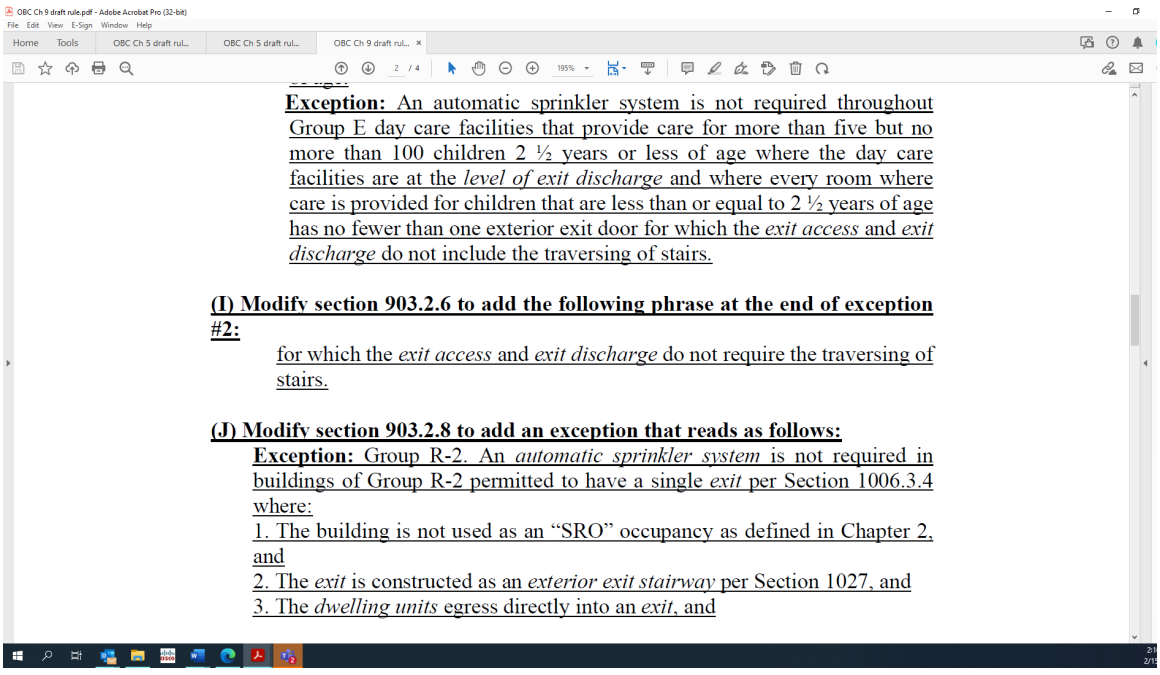
Exceptions:
1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1, Condition 1 facilities.
2. An *automatic sprinkler system* is not required where Group I-4 day care facilities are at the *level of exit discharge* and where every room where care is provided has not fewer than one exterior exit door.
3. In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided, all floors between the level of care and the *level of exit discharge*, and all floors below the *level of exit discharge* other than areas classified as an open parking garage.

[F] 903.2.7 Group M. CDP P
An *automatic sprinkler system* shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:
1. A Group M *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group M *fire area* is located more than three stories above *grade plane*.
3. The combined area of all Group M *fire areas* on all floors, including any *mezzanines*, exceeds 24,000 square feet (2230 m^2).

[F] 903.2.7.1 High-piled storage.
An *automatic sprinkler system* shall be provided in accordance with the *International Fire Code* in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

[F] 903.2.7.2 Group M upholstered furniture or mattresses.
An *automatic sprinkler system* shall be provided throughout a Group M *fire area* where the area used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m^2).

Proposed rule 4101:1-5-01 modifies IBC Section 903.2.6 in part with Ohio language:



Exception: An automatic sprinkler system is not required throughout Group E day care facilities that provide care for more than five but no more than 100 children 2 ½ years or less of age where the day care facilities are at the *level of exit discharge* and where every room where care is provided for children that are less than or equal to 2 ½ years of age has no fewer than one exterior exit door for which the *exit access* and *exit discharge* do not include the traversing of stairs.

(I) Modify section 903.2.6 to add the following phrase at the end of exception #2:

for which the *exit access* and *exit discharge* do not require the traversing of stairs.

(J) Modify section 903.2.8 to add an exception that reads as follows:

Exception: Group R-2. An *automatic sprinkler system* is not required in buildings of Group R-2 permitted to have a single *exit* per Section 1006.3.4 where:
1. The building is not used as an “SRO” occupancy as defined in Chapter 2, and
2. The *exit* is constructed as an *exterior exit stairway* per Section 1027, and
3. The *dwelling units* egress directly into an *exit*, and

Therefore, Section 903.2.6 will appear in the code as follows:

903.2.6 Group I. An *automatic sprinkler system* shall be provided throughout buildings with a Group I *fire area*.

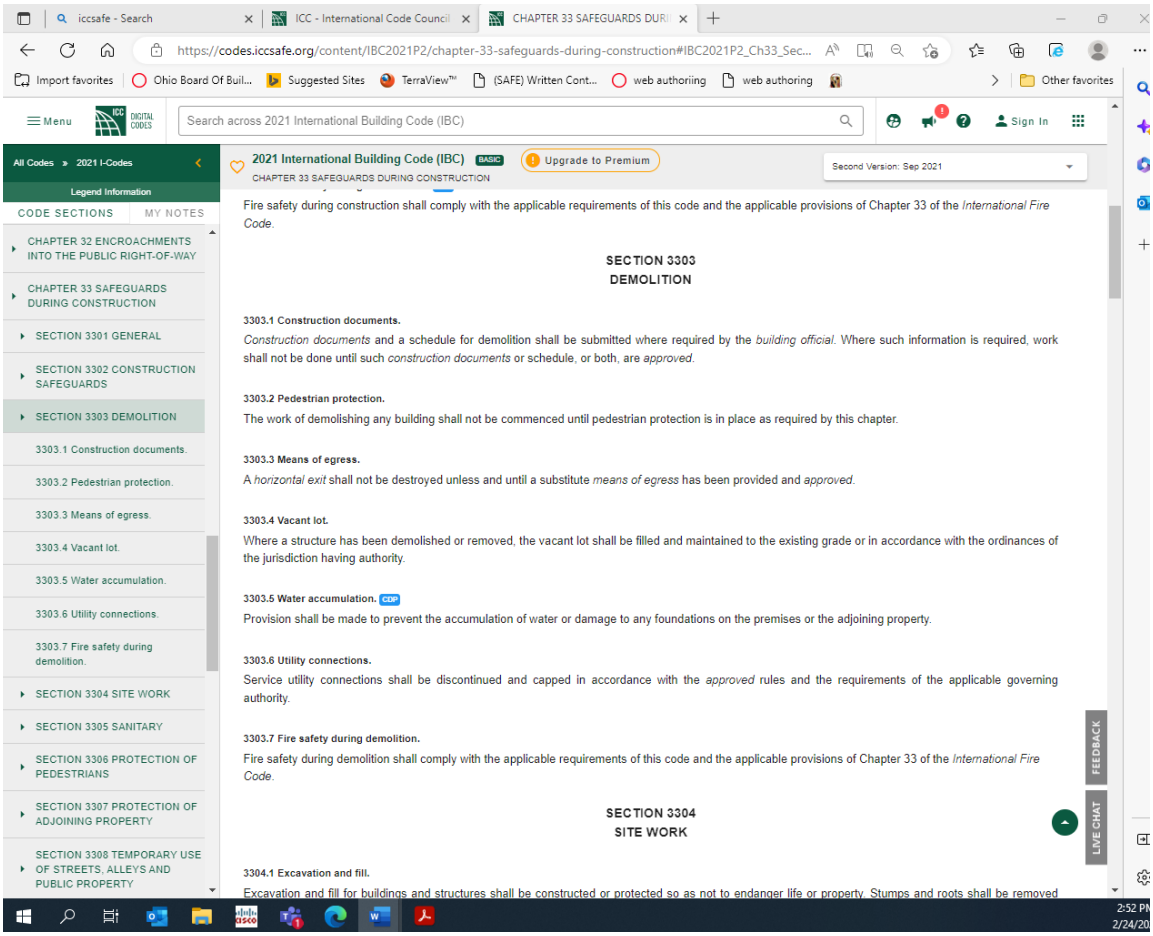
Exceptions:

1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1, Condition 1 facilities.
2. An *automatic sprinkler system* is not required where Group I-4 day care facilities are at the *level of exit discharge* and where every room where care is provided has not fewer than one exterior exit door for which the exit access and exit discharge do not require the traversing of stairs.
3. In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided, all floors between the level of care and the *level of exit discharge*, and all floors below the *level of exit discharge* other than areas classified as an open parking garage.

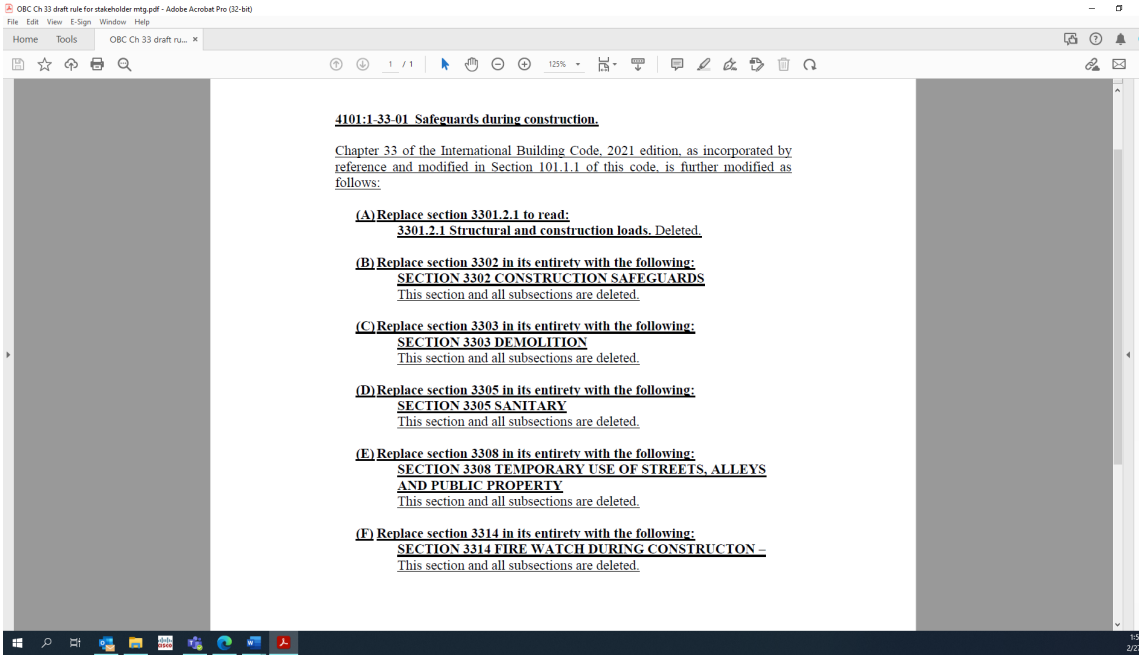
Example 4: Ohio deletes entire section of model code language. The section will not apply in Ohio.

IBC Chapter 33 addresses “Safeguards During Construction,” and proposed rule 4101:1-33-01 adopts all of IBC Chapter 33 except as modified by the rule.

IBC Section 3303 address demolition:



Proposed rule 4101:1-33-01 deletes IBC Section 3303 in its entirety:



4101:1-33-01 Safeguards during construction.

Chapter 33 of the International Building Code, 2021 edition, as incorporated by reference and modified in Section 101.1.1 of this code, is further modified as follows:

(A) Replace section 3301.2.1 to read:
3301.2.1 Structural and construction loads. Deleted.

(B) Replace section 3302 in its entirety with the following:
SECTION 3302 CONSTRUCTION SAFEGUARDS
This section and all subsections are deleted.

(C) Replace section 3303 in its entirety with the following:
SECTION 3303 DEMOLITION
This section and all subsections are deleted.

(D) Replace section 3305 in its entirety with the following:
SECTION 3305 SANITARY
This section and all subsections are deleted.

(E) Replace section 3308 in its entirety with the following:
SECTION 3308 TEMPORARY USE OF STREETS, ALLEYS AND PUBLIC PROPERTY
This section and all subsections are deleted.

(F) Replace section 3314 in its entirety with the following:
SECTION 3314 FIRE WATCH DURING CONSTRUCTON –
This section and all subsections are deleted.

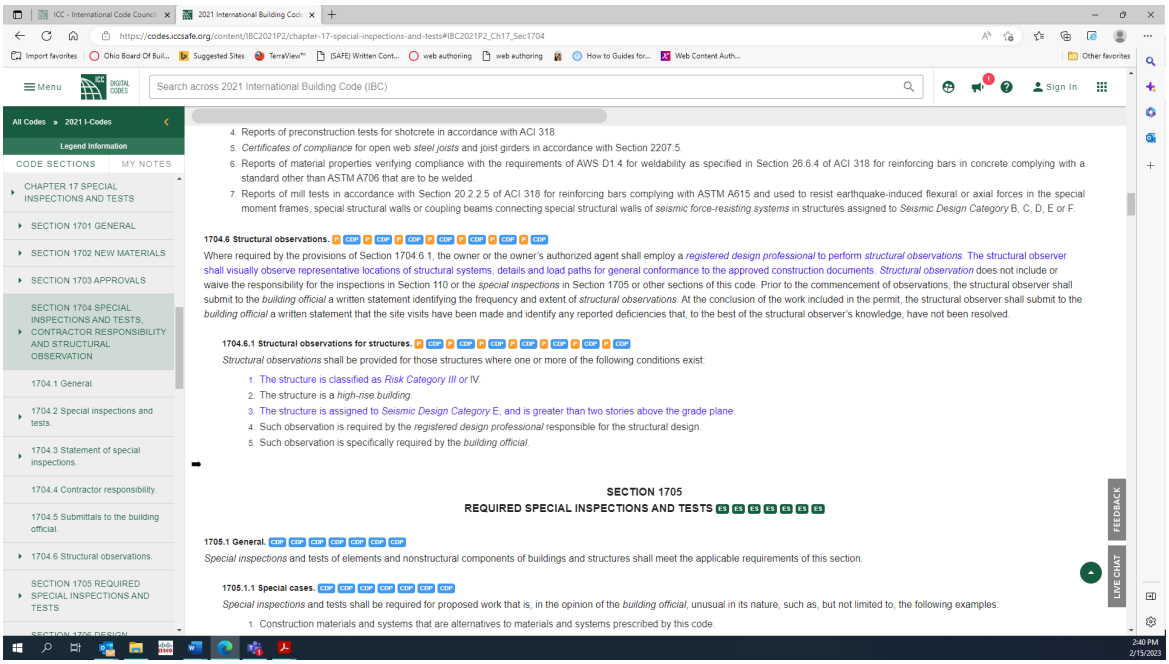
Therefore, Section 3303 will appear in the code as follows:

SECTION 3303 Demolition
This section and all subsections are deleted.

Example 5: Ohio deletes subsection of model code language. The subsection will not apply in Ohio.

IBC Chapter 17 addresses "Special Inspections and Tests," and proposed rule 4101:1-17-01 adopts all of IBC Chapter 17 except as modified in the rule.

IBC Section 1704.6.1 addresses structural observations for structures:



4. Reports of preconstruction tests for shotcrete in accordance with ACI 318.
5. *Certificates of compliance* for open web *steel joists* and joist girders in accordance with Section 2207.5.
6. Reports of material properties verifying compliance with the requirements of AWS D1.4 for weldability as specified in Section 26.6.4 of ACI 318 for reinforcing bars in concrete complying with a standard other than ASTM A706 that are to be welded.
7. Reports of mill tests in accordance with Section 20.2.2.5 of ACI 318 for reinforcing bars complying with ASTM A615 and used to resist earthquake-induced flexural or axial forces in the special moment frames, special structural walls or coupling beams connecting special structural walls of *seismic force-resisting systems* in structures assigned to *Seismic Design Category* B, C, D, E or F.

1704.6 Structural observations. Where required by the provisions of Section 1704.6.1, the owner or the owner's authorized agent shall employ a *registered design professional* to perform *structural observations*. The structural observer shall visually observe representative locations of structural systems, details and load paths for general conformance to the approved construction documents. *Structural observation* does not include or waive the responsibility for the inspections in Section 110 or the *special inspections* in Section 1705 or other sections of this code. Prior to the commencement of observations, the structural observer shall submit to the *building official* a written statement identifying the frequency and extent of *structural observations*. At the conclusion of the work included in the permit, the structural observer shall submit to the *building official* a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.

1704.6.1 Structural observations for structures. *Structural observations* shall be provided for those structures where one or more of the following conditions exist:

1. The structure is classified as *Risk Category III or IV*.
2. The structure is a *high-rise building*.
3. The structure is assigned to *Seismic Design Category* E, and is greater than two stories above the grade plane.
4. Such observation is required by the *registered design professional* responsible for the structural design.
5. Such observation is specifically required by the *building official*.

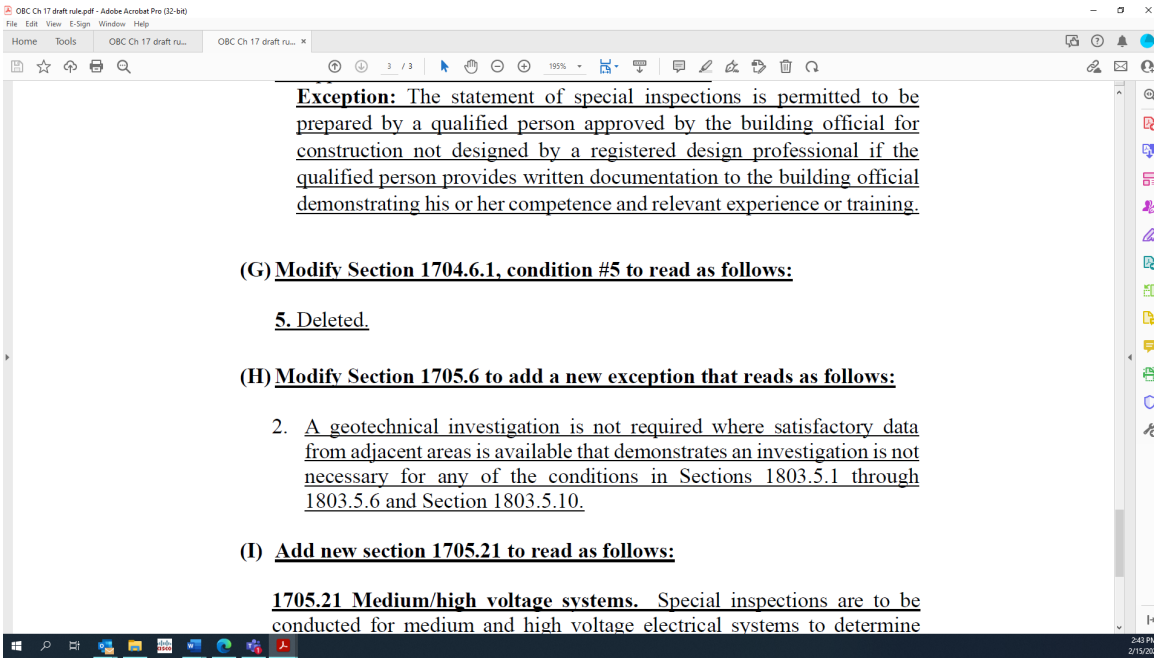
SECTION 1705
REQUIRED SPECIAL INSPECTIONS AND TESTS

1705.1 General. *Special inspections* and tests of elements and nonstructural components of buildings and structures shall meet the applicable requirements of this section.

1705.1.1 Special cases. *Special inspections* and tests shall be required for proposed work that is, in the opinion of the *building official*, unusual in its nature, such as, but not limited to, the following examples:

1. Construction materials and systems that are alternatives to materials and systems prescribed by this code.

Proposed rule 4101:1-17-01 deletes condition #5 from IBC 1704.6.1:



Exception: The statement of special inspections is permitted to be prepared by a qualified person approved by the building official for construction not designed by a registered design professional if the qualified person provides written documentation to the building official demonstrating his or her competence and relevant experience or training.

(G) Modify Section 1704.6.1, condition #5 to read as follows:

5. Deleted.

(H) Modify Section 1705.6 to add a new exception that reads as follows:

2. A geotechnical investigation is not required where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections 1803.5.1 through 1803.5.6 and Section 1803.5.10.

(I) Add new section 1705.21 to read as follows:

1705.21 Medium/high voltage systems. Special inspections are to be conducted for medium and high voltage electrical systems to determine

Therefore, Section 1704.6.1 will appear in the code as follows and the requirement for observation by the building official is not an option in Ohio:

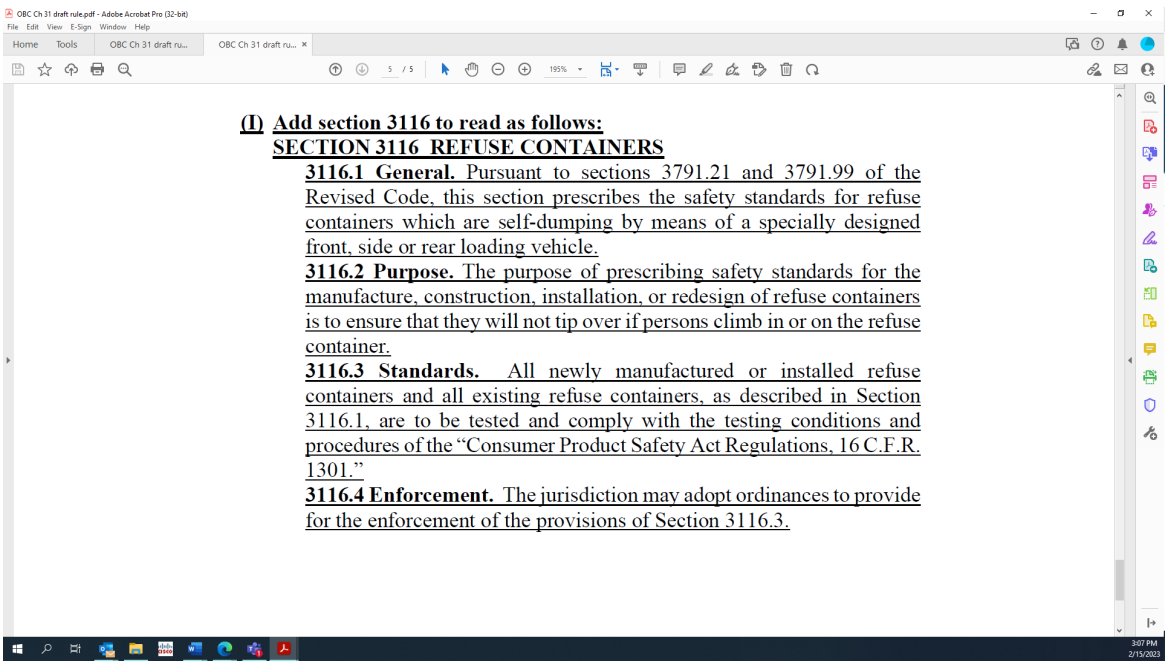
1704.6.1 Structural observations for structures. Structural observations shall be provided for those structures where one or more of the following conditions exist:

1. The structure is classified as Risk Category III or IV.
2. The structure is a high-rise building.
3. The structure is assigned to Seismic Design Category E, and is greater than two stories above the grade plane.
4. Such observation is required by the registered design professional responsible for the structural design.
5. Deleted.

Example 6: Ohio only language. Provisions do not appear in model code.

IBC Chapter 31 addresses "Special Construction," and proposed rule 4101:1-31-01 adopts all of IBC Chapter 31 except as modified in the rule.

IBC Chapter 31 includes Sections 3101 through 3115, but does not have a section 3116. Proposed rule 4101:1-31-01, in addition to other modifications, adds section 3116 pursuant to Revised Code Section 3791.21 which requires the Board to adopt rules for refuse containers:



(I) Add section 3116 to read as follows:

SECTION 3116 REFUSE CONTAINERS

3116.1 General. Pursuant to sections 3791.21 and 3791.99 of the Revised Code, this section prescribes the safety standards for refuse containers which are self-dumping by means of a specially designed front, side or rear loading vehicle.

3116.2 Purpose. The purpose of prescribing safety standards for the manufacture, construction, installation, or redesign of refuse containers is to ensure that they will not tip over if persons climb in or on the refuse container.

3116.3 Standards. All newly manufactured or installed refuse containers and all existing refuse containers, as described in Section 3116.1, are to be tested and comply with the testing conditions and procedures of the "Consumer Product Safety Act Regulations, 16 C.F.R. 1301."

3116.4 Enforcement. The jurisdiction may adopt ordinances to provide for the enforcement of the provisions of Section 3116.3.

Therefore, Section 3116 will appear in the code as follows:

SECTION 3116 REFUSE CONTAINERS

3116.1 General. Pursuant to sections 3791.21 and 3791.99 of the Revised Code, this section prescribes the safety standards for refuse containers which are self-dumping by means of a specially designed front, side or rear loading vehicle.

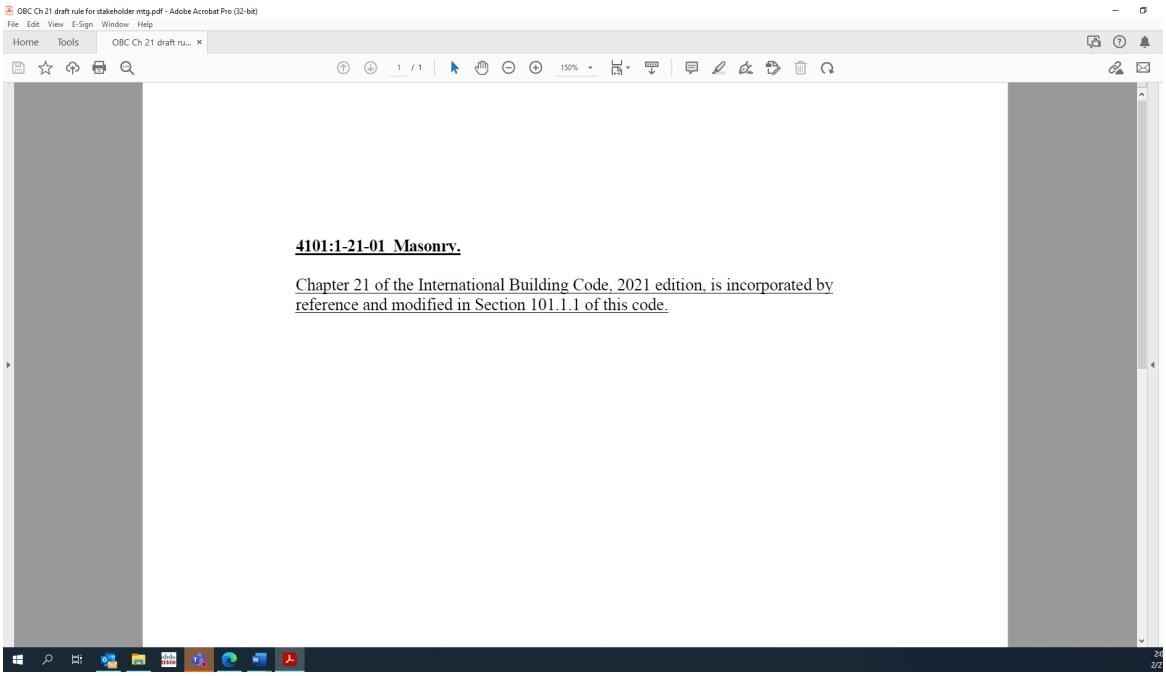
3116.2 Purpose. The purpose of prescribing safety standards for the manufacture, construction, installation, or redesign of refuse containers is to ensure that they will not tip over if persons climb in or on the refuse container.

3116.3 Standards. All newly manufactured or installed refuse containers and all existing refuse containers, as described in Section 3116.1, are to be tested and comply with the testing conditions and procedures of the "Consumer Product Safety Act Regulations, 16 C.F.R. 1301."

3116.4 Enforcement. The jurisdiction may adopt ordinances to provide for the enforcement of the provisions of Section 3116.3.

Example 7: Entire chapter of model adopted. No Ohio changes.

IBC Chapter 21 addresses “Masonry,” and proposed rule 4101:1-21-01 adopts all of IBC Chapter 21 without any Ohio modifications.



Therefore, IBC Chapter 21 will appear in the code verbatim.