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Course Description

This presentation is based on a new publication which summarizes allowable wood use in buildings in accordance with the 2012 International Building Code (IBC). Titled Code Conforming Wood Design (CCWD), the document features an overview of the design flexibilities permitted for wood in non-residential and multi-family construction and should not be considered a replacement for the building code. However, CCWD and this presentation will help engineers, architects and building officials better understand how wood can be used in a variety of applications related to heights and areas, use of sprinklers, fire resistance, and exterior and interior finishes per Chapters 5 through 9 of the IBC. Participants may download a complimentary copy of the CCWD at:

http://www.awc.org/codes/ccwdindex.html
Objectives

Upon completion, participants will be better able to:

1. Identify building size and use parameters for wood as the primary structural elements.
2. Identify methods specified by the code for establishing fire resistance of wood assemblies and elements, and fire precautions during construction.
3. Apply special provisions for design of wood structures that involve compartmentalization and sprinkler systems.
4. Apply code provisions for the non-structural use of wood in buildings, such as for finishes, appendages, siding, and trim.

CCWD document

- This program is based on the Code Conforming Wood Design (CCWD) document.
- The CCWD is intended as a brief yet comprehensive resource for wood design in accordance with the IBC.
- Download at (go to “Codes and Standards” and then “Codes”; or just type “CCWD” in the search box).

Classifications

- Group A, Assembly occupancies
- Group B, Business occupancies
- Group E, Educational occupancies
- Group F, Factory/Industrial occupancies
- Group I, Institutional occupancies
- Group M, Mercantile occupancies
- Group R, Residential occupancies
- Group S, Storage occupancies
BUILDING SIZE

p. 7-12 of the CCWD

Table 503 Excerpt, Allowable Building Heights and Areas

<table>
<thead>
<tr>
<th>Group</th>
<th>Height (ft)</th>
<th>Type of Construction</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>A-3</td>
<td>S</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>S</td>
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<tr>
<td>M</td>
<td>S</td>
<td>4</td>
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<tr>
<td>R-1</td>
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<td>R-2</td>
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</tr>
<tr>
<td>S-1</td>
<td>A</td>
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</tr>
</tbody>
</table>

CCWD Table 12: Group M NFPA 13–Compliant Sprinklered Buildings
– Maximum floor area per story a, b, c

<table>
<thead>
<tr>
<th># of stories</th>
<th>% frontage</th>
<th>Maximum floor area per floor (sq. ft.)</th>
<th>IIIA</th>
<th>IIIB</th>
<th>IV</th>
<th>VA</th>
<th>VB</th>
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<td>87,120</td>
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</tr>
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<td>UL</td>
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<td>42,000</td>
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(table continued on next slide)

CCWD Table 12: Group M NFPA 13–Compliant Sprinklered Buildings
– Maximum floor area per story a, b, c (cont.)

<table>
<thead>
<tr>
<th># of stories</th>
<th>% frontage</th>
<th>Maximum floor area per floor (sq. ft.)</th>
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<th>VB</th>
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</thead>
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<td>NP</td>
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<tr>
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<td>NP</td>
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<td>57,650</td>
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<td>NP</td>
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<td>NP</td>
<td>46,120</td>
<td>NP</td>
<td>NP</td>
<td></td>
</tr>
</tbody>
</table>

a. The maximum floor area for four or more stories above grade plane was determined by dividing the maximum total allowable building area by the number of stories in accordance with Section 506.4. The floor area of the stories is assumed to be equal.
b. Frontage based on open space widths of 30 feet or more.
c. Interpolation permitted.
d. Sprinklered Group M buildings of one or two stories may be unlimited in area if the frontage width is at least 60 feet in accordance with Sections 507.3 and 507.4.
Allowable Building Area Calculation

Given: Single-story Type VB grade school
Provided with an NFPA 13-compliant automatic sprinkler system throughout and located on lot as shown.

Determine: Maximum allowable building area

Maximum Allowable Area

\[ A_a = \{ A_t + [ A_t \times I_f] + [ A_t \times I_s] \} \]  
(Equation 5-1)

\[ A_a = \{ 9500 + [ 9500 \times I_f] + [ 9500 \times I_s] \} \]  
(Table 503)

\[ I_f = \left( \frac{F}{P - 0.25} \right) \times \frac{W}{30} \]  
(Equation 5-2)
### Maximum Allowable Area

\[ A_a = \{A_t + [A_t \times I_f] + [A_t \times I_s]\} \]  
(Equation 5-1)
\[ A_a = \{9500 + [9500 \times I_f] + [9500 \times I_s]\} \]  
(Table 503)

\[ I_f = (F / P - 0.25) \times W / 30 \]  
(Equation 5-2)
\[ I_f = (350/700 - 0.25) \times 30/30 = .25 \]  
(where W < 30, use 30, 506.2.1)

\[ I_s = 3 \text{ for single story} \]  
(Section 506.3)

\[ A_a = \{9500 + [9500 \times I_f] + [9500 \times I_s]\} \]  
(Where W < 30, use 30)

\[ I_f = (350/700 - 0.25) \times 30/30 = .25 \]  
(Section 506.3)

\[ A_a = 40,375 \]
Maximum Allowable Area

\[ A_o = \{A_t + [A_t \times I_f] + [A_t \times I_s]\} \]  
\[ A_o = \{9500 + [9500 \times I_f] + [9500 \times I_s]\} \]  
(Equation 5-1)  
(Table 503)

\[ I_f = (F / P - 0.25) \times W / 30 \]  
(Equation 5-2)

\[ I_f = (350/700 - 0.25) \times 30/30 = 0.25 \]  
(where \( W < 30 \), use 30)

\[ I_s = 3 \text{ for single story} \]  
(Section 506.3)

\[ A_o = \{9500 + [9500 \times 0.25] + [9500 \times 3]\} \]  
\[ A_o = 40,375 \]

Actual area = \((250)(100) = 25,000 \checkmark OK\)

W vs. Fire Separation Distance

CCWD

\[ \checkmark \text{About height limits . . .} \]
Table 503 Excerpt, Allowable Building Heights and Areas

<table>
<thead>
<tr>
<th>Group</th>
<th>Height (ft)</th>
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<th>Type IV</th>
<th>Type V</th>
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<td>A</td>
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<td>15,000</td>
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</tr>
<tr>
<td></td>
<td>A</td>
<td>23,500</td>
<td>14,500</td>
<td>25,500</td>
</tr>
</tbody>
</table>

Height increases for sprinklers

Height increases for sprinklers

Table 503 limit

Table 503 limit

+ 1 story and 20 ft.
CCWD

❖ About Chapter 9 sprinkler thresholds

Chapter 9 Area Limits for Nonsprinklered Buildings

❖ Many occupancies have floor area limits allowed by Chapter 5 that are greater than those permitted in Chapter 9 for nonsprinklered buildings
  ▪ The same thresholds apply to all construction types, not just wood. The allowable area per story can exceed allowable fire areas and a sprinkler system may be required

Chapter 9 Area Limits for Nonsprinklered Buildings

[F] 903.2.7 Group M. 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 (1,115 m²).
  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 (2,230 m²).
  4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).

[F] 903.2.7.1 High-piled storage. An automatic sprinkler system shall be provided in accordance with the

Sprinkler Trade-offs

❖ Reductions in corridor ratings and corridor opening protection
❖ Flexibility in means of egress (travel distance to exits, number and separation of exits, common path of travel)
❖ Reductions in dwelling unit separations
❖ Alternate to emergency escape openings
❖ Alternate to certain fire and smoke damper requirements
❖ Interior finish flexibility
❖ Other trade-offs
CCWD

- About total building area limits...

Building Area

- Based on Single Story Maximum Area
  Assume a maximum area ($A_a$) of 37,500 ft per story

Building Area

- Two story building:
  - Total allowable building area $A_{total} = 2(A_a)$

Building Area

- Three story building
  - Total allowable building area $A_{total} = 3(A_a)$
Building Area

- Four story building
  - Total allowable building area $A_{total}$ remains $3(A_a)$

(total building area = $(3)(37,500) = 112,500$; $112,500/4 = 28,125$ per story)
Four story building of unequal stories:
- \( A_{\text{total}} = 3(A_a) \), and no single story \( > (A_a) \)

---

Four story building of unequal stories:
- \( A_{\text{total}} = 3(A_a) \), and no single story \( > (A_a) \)

---

Four story building of unequal stories:
- \( A_{\text{total}} = 3(A_a) \), and no single story \( > (A_a) \)

---

Now using the CCWD tables . . .
Table 5 (p. 32) – Group E Nonsprinklered Buildings –
Maximum floor area per story \(^a, b, c\)

<table>
<thead>
<tr>
<th># of stories</th>
<th>% of frontage</th>
<th>Maximum floor area per story (sq. ft.)</th>
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<td></td>
<td></td>
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<td>41,120</td>
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<tr>
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<td>0-25</td>
<td>23,500</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>29,370</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>41,120</td>
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<td>29,370</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>41,120</td>
</tr>
</tbody>
</table>

Footnotes – Table 5 (p. 32) Group E, nonsprinklered buildings

- Footnotes: Group E, nonsprinklered buildings
- a. Frontage based on open space widths of 30 feet or more.
- b. Interpolation permitted.
- c. Sprinklers must be provided for Group E occupancies when the fire area exceeds 12,000 square feet in accordance with Section 903.2.3, or by reason of other specific conditions in that section. In lieu of sprinklers, compartmentalization of the floor area into fire areas not more than 12,000 square feet can be provided with fire-resistance-rated construction in accordance with Chapter 7.

Example – Group E

Given: Single-story Type VB grade school
Provided with an NFPA 13-compliant automatic sprinkler system throughout and located on lot as shown

Determine: Maximum allowable building area

Footnotes – Group E

- Frontage Increase (Section 506.2) (Section 506.2)
- 50% of the open space qualifies for the frontage increase
Example – Group E

Table 6 (p. 32) – Group E NFPA 13-Compliant Sprinklered Buildings – Maximum floor area per story a, b, c

<table>
<thead>
<tr>
<th># of stories</th>
<th>% frontage</th>
<th>Maximum floor area per story (sq. ft.)</th>
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</thead>
<tbody>
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</table>

(Table 10) Footnotes – Group I-1 (p. 36), NFPA 13R or 13D-compliant buildings

NP = Not Permitted
a. The maximum floor area for four stories above grade plane was determined by dividing the maximum total allowable building area by the number of stories in accordance with Section 506.4. The floor area of the stories is assumed to be equal.
b. Frontage based on open space widths of 30 feet or more.
c. Interpolation permitted.
d. Section 903.2.6 permits Group I-1 occupancies to be sprinklered with NFPA 13R and NFPA 13D-compliant systems. The occupancy does not qualify for area increases due to sprinklers.
e. Type VB construction does not permit three stories above grade plane.
f. Use of NFPA 13D is allowed when specific conditions in Section 903.2.6 are met.

Example – Group I-1

Given: Two-story Type II B NFPA 13-R compliant sprinklered nursing home

Determine: Maximum allowable building area

Frontage Increase: 50% of the open space qualifies for the frontage increase
Example – Group I-1

Table 10 (p. 36) – Group I-1, NFPA 13R or 13D-Compliant Sprinklered Buildings – Maximum floor area per story

<table>
<thead>
<tr>
<th># of stories</th>
<th>% frontage</th>
<th>IIIA</th>
<th>IIIB</th>
<th>IV</th>
<th>VA</th>
<th>VB</th>
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<td>23,620</td>
<td>NP</td>
<td>NP</td>
</tr>
</tbody>
</table>

CCWD

- About mixed occupancies

Mixed Occupancy

- Single-story basement does not need to be included in the total allowable building area, when the basement does not exceed the area permitted for a single story (506.4)
Mixed occupancy buildings are permitted a total allowable building area calculated in accordance with Section 506.5

- Section 508.3 Nonseparated
- Section 508.4 Separated
- Section 506.5 Single and multistory mixed occupancy buildings
Stacked Buildings

- Buildings of different types of construction and occupancy are allowed to be built on top of each other—they are commonly referred to as pedestal buildings.

510.2 Horizontal Building Separation Allowance

- 3-hr rated Horizontal Assembly required between the lower and upper buildings
  - Limits in Section 510.2
  - Group B, M and R occupancies and Group S-2 open and enclosed parking garages are permitted in either building
  - Multiple Group A occupancies, each with an occupant load of less than 300, are also permitted in either building
  - Group S occupancies other than parking garages are permitted only in the upper building

Building Height – Stacked Buildings

- Building Height – in feet
  - Upper building height (feet) is measured from grade plane
- Building Height – stories
  - Upper building height (stories) – measured from top of lower building
Stacked Buildings

- See other alternatives for stacked buildings in subsections 510.3 through 510.9

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UNLIMITED AREA BUILDINGS

p. 14 of the CCWD

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One or two-story - Sprinklered

- Unlimited area Group B, F, M and S
  - Limits in Section 507.3
  - Building must be equipped throughout with an NFPA 13-compliant automatic sprinkler system
  - Must be surrounded on all sides by public ways or yards not less than 60 feet wide

---

One-story - Sprinklered

- Group A-1 and A-2 occupancies are allowed in unlimited area mixed occupancy buildings containing Group B, F, M or S occupancies
  - Limits in Section 507.3.1
  - Type III or IV construction
  - Occupancies are separated as required in Section 508.4.4
  - All exit doors from Group A-1 and A-2 occupancies must discharge directly to the exterior of the building
One-story - Sprinklered

- Unlimited area Group A-3 buildings
  - Limits in Section 507.7
  - Type III or IV construction
  - Building used for religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor swimming pool or tennis court

- Unlimited area Group A-4 buildings
  - Limits in Section 507.3
  - Type IIIA, IIIB and IV construction

Reduced Open Space

There must be at least 40 feet open width provided and the exterior wall and all openings on those portions will require 3-hour minimum fire-resistance and fire protection ratings.

3-hr fire rating required on walls and all openings

FIRE WALLS

- Unlimited area Group E buildings
  - Limits in Section 507.10
  - Type IIIA or IV construction
  - Each classroom must have two means of egress, with one means of egress a direct exit to the outside of the building
  - Must be surrounded on all sides by public ways or yards not less than 60 feet wide

p. 16 of the CCWD
Fire walls

- Fire walls define separate buildings for allowable building size (706)
  - Not fire barriers (707)
  - Not fire partitions (708)
  - Not smoke barriers, smoke partitions, or horizontal assemblies

Fire Walls

<table>
<thead>
<tr>
<th>TABLE 706.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE WALL FIRE-RESISTANCE RATINGS</td>
</tr>
<tr>
<td>GROUP</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>A, B, E, H-4, I, R-1, R-2, U</td>
</tr>
<tr>
<td>F-1, H-3b, H-5, M, S-1</td>
</tr>
<tr>
<td>H-1, H-2</td>
</tr>
<tr>
<td>F-2, S-2, R-3, R-4</td>
</tr>
</tbody>
</table>

a. In Type II or V construction, walls shall be permitted to have a 2-hour fire-resistance rating.
b. For Group H-1, H-2 or H-3 buildings, also see Sections 415.6 and 415.7.

Fire Walls

- Type V construction:
  - Fire walls may be wood frame

- Types III and IV construction:
  - Fire walls must be of noncombustible materials in accordance with Section 706.3

FIRE RESISTANCE

p. 17-18 of the CCWD
702.3 and 703.3 Methods for determining fire resistance

- Five methods to determine fire resistance:
  - Tested fire assembly (per ASTM E119 or UL 263)
  - Prescriptive designs in Section 721 or approved sources
  - Calculation of fire resistance per Section 722
  - Engineering analysis based on a comparison of building element, component or assembly designs
  - Alternative protection methods per 104.11 as approved by the code official

Tested assembly

- Tested to the ASTM E 119 or UL 263 standard
- Choose listed assemblies from fire-resistance publications or directories

Prescriptive assembly

- Fire-resistance of certain wood assemblies is prescribed in Section 721 based on testing using ASTM E 119 or UL 263
- Fire-resistance designs documented in approved sources

Calculated resistance

- Fire resistance of exposed wood members may be calculated using the provisions of Chapter 16 of the National Design Specification® (NDS®)
Calculated resistance

- AWC’s Technical Report No. 10 (TR10), Calculating the Fire Resistance of Exposed Wood Members contains explanations and examples of the method

- Document of origin in AWC’s DCA-4, containing all the same provisions, with background
- Ten Rules of Fire Resistance Rating (Harmathy’s Rules)

Calculated resistance

- Fire resistance of wood frame assemblies also may be calculated based on the known fire resistance of the components, using the provisions of Section 722.6 (Component Additive Method)

Engineering analysis based on comparisons of tested elements

- Engineering analysis—one of the original five alternatives for establishing ratings
- Based on comparison of tested elements
- DCA-4 embodies this for 1-hour assemblies
- It can be applied to other elements and other ratings with appropriate and qualified fire protection engineering judgment
TYPE OF CONSTRUCTION

p. 5-6 of the CCWD

Type IV Construction

- Heavy Timber (HT) has ...
  - Exterior walls made of noncombustible materials or fire-retardant-treated wood (FRTW)
  - Interior building elements of heavy timber or laminated wood meeting minimum dimensions and without concealed spaces

Type III Construction

- Requires exterior walls to be noncombustible material or FRTW and have a minimum 2-hour fire-resistance rating (bearing walls)

Type V Construction

- Permits the use of wood or other approved materials for structural elements
Type I and II Construction

- Type I and II construction require building elements constructed of noncombustible materials.

Type I Building

Type I Building

WOOD USE IN NONCOMBUSTIBLE CONSTRUCTION

p. 18-19 of the CCWD

Type I and II Applications

- Require the use of noncombustible materials

- Section 603 specifies 25 applications where combustible materials are permitted

Fire-Retardant-Treated Wood (FRTW)

- There are many additional applications for fire-retardant-treated wood (FRTW) in Type I and II construction:
  - Permitted in nonbearing partitions where the fire-resistance rating does not exceed 2 hours
  - Nonbearing exterior walls (unrated)
  - Roof construction, including structural framework, permits FRTW, except for Type IA construction of three stories or more where the lowest roof member is less than 20 feet measured vertically from the upper floor
    - (can be used in exterior walls of Types III and IV)
Heavy Timber (HT)

- Permitted in roof construction as an alternative to 1-hour or less fire-resistance rated (FRR) noncombustible construction

Type I and II Applications

- Some other examples:
  - Interior finishes, millwork, trim, flooring, windows, and doors
  - Partitions of limited height, platforms, blocking for fixtures
  - Exterior wall coverings, balconies and projections

Wood Interior Finish

- Wood materials may be used as interior finish in almost all occupancies

WOOD FEATURES IN BUILDINGS

p. 19-25 of the CCWD
Wood Interior Finish – Nonsprinklered Buildings (p. 20, CCWD; T803.9 IBC)

<table>
<thead>
<tr>
<th>Location</th>
<th>Minimum Interior Finish Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit enclosures and exit passageways</td>
<td>A, B, E, I, M, R-1, R-4</td>
</tr>
<tr>
<td>Corridors</td>
<td>A, I-2, I-3, I-4</td>
</tr>
<tr>
<td>Enclosed spaces and rooms</td>
<td>I, A-1, A-2, R-4</td>
</tr>
</tbody>
</table>

Wood Interior Finish – Sprinklered Buildings (p. 21, CCWD; T803.9, IBC)

<table>
<thead>
<tr>
<th>Location</th>
<th>Minimum Interior Finish Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit enclosures and exit passageways</td>
<td>I-3</td>
</tr>
<tr>
<td>Corridors</td>
<td>A, I-2, I-4</td>
</tr>
<tr>
<td>Enclosed spaces and rooms</td>
<td>I-2, I-4</td>
</tr>
</tbody>
</table>

Wood Interior Finish

- Most wood species qualify as Class C, while some, such as cedar, west coast hemlock, Idaho white pine, redwood, and spruce, can qualify as Class B
- Wood boards and panels may meet Class A criteria when pressure treated with a fire-retardant chemical
- AWC’s DCA-1 documents the performance

Exceptions (803.3):
- Traditional wood floor covering (804.1)
- Exposed portions of Type IV structural members (803.3)
Wood Interior Trim

- Trim is required to meet a Class C classification.
- Combustible trim, excluding handrails and guards, cannot exceed 10 percent of the wall or ceiling area to which it is attached (806.5).

Windows and doors

- Exterior openings are required to be protected with fire protection rated window or door assemblies when the exterior wall is within given distances of a lot line.

- Unlimited amounts of unprotected openings are permitted by Table 705.8:
  - When exterior walls are 30 feet or more from the lot line.
  - 10 feet or more from the lot line (Type IIB or VB construction).

- No unprotected openings are permitted in the exterior wall:
  - Within 5 feet of the lot line (nonsprinklered buildings).

- No openings:
  - When wall is closer than 3 feet from the lot line.

- Interior wood door assemblies are required to be fire-protection rated when the wall assembly they are in requires a FRR and opening protection (Table 716.5).
Wood siding

- Wood siding is regulated in 1406 (see height limits as combustible exterior wall covering)
- Minimum thicknesses in Table 1405.2
- See Chapter 23 for wood siding as a structural building material

Exterior wood veneer (1405.5)

- Type I, II, III or IV –
  - allowed up to 40 feet above grade, 60 feet if FRTW, provided the veneer is 1-inch nominal thickness, 7/16-inch exterior hardboard siding or 3/8-inch exterior-type wood structural panels or particleboard.

Wood Balconies (1406.3)

- Exterior balconies may be of Type IV construction or construction that provides a fire-resistance rating equal to the floor rating required by Table 601
  - Length is limited to 50% of perimeter, each floor
  - See exceptions for sprinkler-protected balconies

Open Exterior Stairs and Ramps

- Open exterior exit stairs and ramps may be constructed of wood when the building is of Type IV and V construction (1009.9 and 1010.8)
  - Buildings up to six stories and no high-rise
Wood Rooftop Structures

**Wood penthouses of FRTW may be placed:**
- On Type I construction two stories or less above grade plane
- On Type II construction with the penthouse at least 5 feet from the lot line

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Wood Rooftop Structures (1509)

**Type III, IV and VA construction permits the penthouse to be Type IV construction or FRTW when 20 feet or more from the lot line**

**Wood towers, spires, domes and cupolas are permitted on buildings of Type III, IV and V**

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PRECAUTIONS DURING CONSTRUCTION

p. 25-26 of the CCWD
Fire Extinguishers - 3309

- During construction, one portable fire extinguisher must be placed:
  - At each stairway on all floor levels with combustible materials,
  - At each storage or construction shed and where special hazards exist

Maintaining Means of Egress - 3310

- During construction, when a building height reaches 50 feet or four stories, a minimum of one temporary lighted stairway must be provided unless a permanent stairway is available for use at all times

Standpipes - 3311

- A minimum of one standpipe must be available during construction for fire department use
  - The standpipe must be installed before the construction is 40 feet above fire department access; see other conditions

Sprinkler System Commissioning - 3312

- Sprinkler system must be tested and approved before the certificate of occupancy is granted.
Requirements of the IFC

- Additional requirements for fire safety during construction are contained in the IFC (now directly referenced in Section 3302.3 of the IBC)

Requirements of the IFC – Chapter 33

- Additional requirements for fire safety during construction are contained in the IFC.
  - Temporary heating equipment must be listed and labeled.
  - Smoking is prohibited except in approved areas with posted signage.
  - A fire watch must be maintained with qualified personnel if required by the fire code official.

Requirements of the IFC – Chapter 33

- Welding operations must follow the provisions of IFC Chapter 35. Electrical wiring must follow the provisions of NFPA 70 (IFC 3304).
- The owner must designate a fire prevention superintendent responsible for implementing a fire prevention program during construction.
- An accessible emergency phone must be provided in an approved location at the construction site.

Requirements of the IFC – Chapter 33

- Fire-fighting vehicle access must be provided within 100 feet of temporary or permanent fire department connections.
- An approved water supply for fire protection must be available when combustible material is at the construction site.
- Requirements for safeguards during roofing operations.
AWC standards referenced in the IBC

| 2008 SPFWS-2608 | 2008 Special Design Provisions for Wind and Seismic |
| 2012 WECM | 2012 Wood Frame Construction Manual for One- and Two-Family Dwellings |
| 2012 ANSI/AF&PA Span Tables for Joists and Rafter |
| WCD No. 4-2003 | 2003 ANSI/AF&PA Wood Construction Data—Plank and Beam Framing for Residential Buildings |

These standards and related code publications, design aids, technical reports and guides for wood design and construction can be purchased or downloaded for free at www.awc.org.

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IBC Chapter 23

- 2301 General
- 2302 Definitions
- 2303 Minimum Standards and Quality
- 2304 General Construction Requirements
- 2305 General Design Requirements for Lateral Force-resisting Systems
- 2306 Allowable Stress Design
- 2307 Load and Resistance Factor Design
- 2308 Conventional Light-frame Construction
AWC standards referenced in the IBC

SDPWS

Wood Frame Construction Manual

Coming in the 2015 IBC

- Reformatted height and area provisions
- Provisions for Cross Laminated Timber
- New engineered wood rim board standard

Coming in 2015 IBC

- Inclusion of Cross Laminated Timber in Type IV construction type (and reference of ANSI/APA PRG 320-2012)
Coming in 2015 IBC

- CLT Handbook now available
- www.masstimber.com
- Free download

Coming in 2015 IBC

- New standard referenced for engineered wood rim boards – ANSI/APA PRR 410-2011

Coming in 2015 IBC

- Slightly broader application of WFCM
- Re-organization of Conventional Wood Frame Construction Provisions (2308)
- Revised span tables based on new Southern Pine design values

QUESTIONS?

This concludes The American Institute of Architects Continuing Education Systems Course

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