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Course Description

Code Conforming Wood Design - This presentation is based on a set of new publications summarizing allowable wood use in buildings in accordance with the 2012 IBC. Titled Code Conforming Wood Design (CCWD), the documents feature an overview of the design flexibilities permitted for wood in commercial construction and should not be considered a replacement for the building code. However, it should help engineers, architects and building officials better understand how wood can be used in a variety of applications. The CCWD series includes a comprehensive document summarizing wood use in the IBC. A series of eight smaller documents are specific to different use groups such as assembly, business and educational buildings. Participants can download a complimentary copy of the CCWD at:

http://www.awc.org/codes/ccw/index.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 www.awc.org

ICC

- The International Code Council is a member-focused association.
- It is dedicated to developing model codes and standards used in the design, build and compliance process to construct safe, sustainable, affordable and resilient structures.
- More info at iccsafe.org.

History of AWC

- 1902 – National Lumber Manufacturers Association
- 1965 – National Forest Products Association
  - 1991 – American Wood Council – Codes & Engineering
- 1993 – American Forest & Paper Association
- 2010 – American Wood Council
The American Wood Council (AWC) provides wood design and construction information to assist building industry professionals, develops structural and fire performance data on a wide range of traditional and engineered wood products, and engages in long-term research.

American Wood Council

References Standards

- American Wood Council (AWC) Standards
  - 2008 Special Design Provisions for Wind and Seismic, AWC SDPWS-08
  - 2012 Wood Frame Construction Manual®, AWC WFCM-12®

Referenced Standards

- IBC Chapter 35
  - List of referenced standards
    - Agency that writes the standard
    - Identification and title of the standard
    - Effective date
  - Conflicts 102.4.2
    - Code applies
Resources

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 www.awc.org

CCWD 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
- Others (see IBC 303)

Occupancy classification

- Structure’s purpose not listed
  - Classified as most nearly resembled occupancy
  - Classification Section 302.1 General
Occupy classification--new

- Section 303.1.3- Rooms or spaces used for assembly purposes that are associated with a Group E occupancy are not considered separate A occupancies, but can be part of the E occupancy.
- Casinos were added to Group A-2
- R-4 group homes no longer have the IRC as a compliance option (310.6)

Table 503 Excerpt, Allowable Building Heights and Areas

<table>
<thead>
<tr>
<th>Group</th>
<th>Height (ft)</th>
<th>Type of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type III</td>
<td>Type IV</td>
</tr>
<tr>
<td></td>
<td>A 65</td>
<td>B 55</td>
</tr>
<tr>
<td>Stories (S)</td>
<td>Area (A)</td>
<td></td>
</tr>
<tr>
<td>A-1</td>
<td>S 3 2 2 1 1</td>
<td>14,000</td>
</tr>
<tr>
<td></td>
<td>S 3 2 2 1 1</td>
<td>14,000</td>
</tr>
<tr>
<td></td>
<td>S 3 2 2 1 1</td>
<td>14,000</td>
</tr>
<tr>
<td></td>
<td>S 3 2 2 1 1</td>
<td>14,000</td>
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<tr>
<td></td>
<td>S 3 2 2 1 1</td>
<td>14,000</td>
</tr>
<tr>
<td></td>
<td>S 3 2 2 1 1</td>
<td>25,500</td>
</tr>
</tbody>
</table>

Types of Construction

- IBC Chapter 6
  - Defines types of construction
  - Wood frame construction is typical in Types III, IV, and V

Type V Construction

- Permits the use of wood or other approved materials for structural elements.
  - Type VA
  - Type VB
Type IV Construction

- Heavy Timber (HT) has ...
  - Exterior walls made of noncombustible materials or fire-retardant-treated wood (FRTW).
  - Interior building elements are made of solid or laminated wood 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 IIIA
  - Type IIIB

Type I and II Construction

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

Allowable Heights and Areas

- IBC Chapter 5 contains the general criteria for wood building size
  - Size thresholds for wood structures are often determined by structural considerations rather than code limitations
### Table 503 Excerpt, Allowable Building Heights and Areas

<table>
<thead>
<tr>
<th>Group</th>
<th>Height (ft)</th>
<th>Type of Construction</th>
<th>Stories (S)</th>
<th>A</th>
<th>B</th>
<th>HT</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
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<tr>
<td>A-1</td>
<td>65</td>
<td>Type III</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>A-2</td>
<td>60</td>
<td>Type IV</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<td>3</td>
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<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>A-3</td>
<td>55</td>
<td>Type V</td>
<td>2</td>
<td>3</td>
<td>2</td>
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<td></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>65</td>
<td>SU</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>L</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>60</td>
<td>UL</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>UL</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

### Maximum Allowable Area

**Section 506**

*Allowable building area per story*

\[ A_o = \{ A_s + [A_x \times I_s] + [A_y \times I_s] \} \]  
(Equation 5-1, base equation)

Frontage Sprinkler

\[ I_s = (F / P – 0.25) \times W / 30 \]  
(Equation 5-2, factor for open frontage)

\[ W = (L_1 \times W_1 + L_2 \times W_2 + L_3 \times W_3 + \ldots) / F \]  
(Equation 5-3, weighted average for the width of the open space)  
(w = 20’ min. & 30’ max unless public way)  

**Sprinkler system increases**

- When a building is equipped throughout with an NFPA 13-compliant automatic sprinkler system (Section 903.3.1.1), the allowable floor area is permitted to be increased:
  - \( I_s \)
  - Single-story building – 3x
  - Multistory building – 2x
Exception

- In addition to the area increase, Section 504.2 also permits the Table 503 building heights to be increased:
  - 20 feet
  - 1 story above grade.

Exception CBC

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum building height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one. These increases are permitted in addition to the building area increase in accordance with Section 506.2. In either Group A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.21 regulated by the Office of the State Fire Marshal, these increases are permitted in addition to the area increase in accordance with Section 506.3. For Group R-2 buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum building height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one, but shall not exceed 60 feet (18 288 mm) or four stories, respectively.

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

(see pg. 12 of CCWD)
Allowable Building Area Calculation

\[
A_f = 9,500 \\
F = 250 + 100 = 350 \\
P = (250 + 100 + 250 + 350) = 700 \\
W = (0 + 250(30) + 100(30) + 0)/30 = 30 \\
I_f = [(350/700) – 0.25] \times 30/30 = 0.25 \text{ frontage} \\
I_s = 300\% \text{ sprinklers} \\
A_a = 9,500 + (9,500 \times 0.25) + (9,500 \times 3) = 40,375 \text{ sf} \\
\text{Actual Area} = 250 \times 100 = 25,000 \text{ sf}
\]

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.
- These 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.

Some 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

Total Building Area

- **506.4 Single Occupancy Buildings** three or more stories above grade have a total building area of the allowable building area per story \(A_a\) multiplied by three.
Building Area – four or more stories

For buildings of four stories or more,

\[ A_{\text{total building area}} = 3 \times A_{\text{allowable area per story}} \]

If the allowable area per story is 37,500, then the maximum allowable area per story for a 4-story building of equal floor areas is:

\[ \frac{(37,500 \times 3)}{4} = 28,125 \text{ sq. ft. per floor} \]

CCWD Building Area Tables (at end of CCWD)

<table>
<thead>
<tr>
<th># of stories</th>
<th>% frontage</th>
<th>Maximum floor area per story (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IIIA</td>
<td>IIIb</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-25</td>
<td>23,500</td>
<td>14,500</td>
</tr>
<tr>
<td>50</td>
<td>29,370</td>
<td>25,370</td>
</tr>
<tr>
<td>100</td>
<td>41,120</td>
<td>33,250</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-25</td>
<td>23,500</td>
<td>14,500</td>
</tr>
<tr>
<td>50</td>
<td>29,370</td>
<td>18,120</td>
</tr>
<tr>
<td>100</td>
<td>41,120</td>
<td>25,370</td>
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<tr>
<td>3</td>
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<tr>
<td>0-25</td>
<td>23,500</td>
<td>NP</td>
</tr>
<tr>
<td>50</td>
<td>29,370</td>
<td>NP</td>
</tr>
<tr>
<td>100</td>
<td>41,120</td>
<td>NP</td>
</tr>
</tbody>
</table>

Total Building Area

- **506.4 Exception:** A 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

Mixed Occupancy

- **Section 508.3 Nonseparated occupancies**
- **Section 508.4 Separated occupancies**
  - Fire Barriers and/or horizontal assemblies
Incidental Uses

- **Section 509 Incidental uses** (no longer part of mixed occupancies in the 2012 IBC) NEW
  - Both single-occupancy or mixed-occupancy
  - Incidental uses – auxiliary functions
  - NOT considered as separate and distinct occupancy
  - Floor area limitation retained
  - Table 509 ALL need to comply with 509.

---

Fire walls create separate buildings (706.1)

- In Type V construction, fire walls may be wood frame
- In Types III and IV construction, fire walls must be of noncombustible materials in accordance with Section 706.3.
Unlimited Area Buildings

- Section 507 has provisions for unlimited area Group B, F, M, and S building up to two stories in height
- There are unlimited area provisions for Groups A, E, and mixed use buildings as well

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.
- See several options in the subsection of Section 510.

Unlimited Area Buildings

- In most cases, 60 feet of open perimeter is required on all sides, and sprinklers
- The open perimeter can be reduced somewhat per Section 507.5; it requires rated exterior walls at reduced perimeter frontage
  - < 75% Perimeter
    - 3-hr fire rating required on walls and all openings

Building Height – Stacked Buildings (510.2)

- 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
Fire Resistance-Table 601

Table 601 Fire-resistance Rating Requirements For Building Elements (hr)

<table>
<thead>
<tr>
<th>BUILDING ELEMENT</th>
<th>TYPE I</th>
<th>TYPE II</th>
<th>TYPE III</th>
<th>TYPE IV</th>
<th>TYPE V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>A²</td>
<td>B</td>
<td>HT</td>
</tr>
<tr>
<td>Primary structural frame (see Section 202)</td>
<td>3²</td>
<td>2³</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bearing walls, Exterior</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bearing walls, Interior</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Nonbearing walls and partitions, Exterior</td>
<td>See Table 602</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonbearing walls and partitions, Interior</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Floor construction and associated secondary members (see Section 202)</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Roof construction and associated secondary members (see Section 202)</td>
<td>1</td>
<td>1/2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Fire resistance-tested assemblies (703.2)

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

Fire resistance-alternative methods

- 703.3 contains five alternative methods to determine fire resistance:
  - Fire resistive designs in approved sources
  - Prescriptive designs per Section 721
  - Calculation per 722
  - Engineering analysis based on a comparison of tested building elements, components or assemblies
  - Alternative protection methods per 104.11

Based criteria specified in ASTM E 119 or UL 263.
Prescriptive assembly

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

DCA 3
http://www.awc.org/codes/dcaindex.php

Calculated resistance

- 722.1 - 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.


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.

DCA 4- Component Additive Method (CAM)
http://www.awc.org/codes/dcaindex.php
Wood in Noncombustible Construction

- Types I and II construction 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
  - Nonbearing partitions < 2 hours FRR.
  - Roof construction, including structural framework, (except for Type IA construction)
    - 3 stories or more
    - lowest roof member is less than 20 feet measured vertically from the upper floor. (Table 601 footnote b)

Fire-Retardant-Treated Wood (FRTW)

- May be used in exterior walls of Type III and IV construction (602.3, 602.4).

Heavy Timber (HT)

- Permitted in roof construction as an alternative to 1-hour or less fire-resistance rated noncombustible construction (all construction types except IA) (Table 601 footnote c)
Wood Interior Finish

- Wood materials may be used as interior finish in almost all occupancies (Table 803.9)

Wood Interior Finish Classification System – Nonsprinklered Buildings

<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, B-2, I-3, I-4</td>
</tr>
</tbody>
</table>

Flame spread: (0-25) (26-75) (76-100)

Wood Interior Finish Classification System – Sprinklered Buildings

<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, B-2, I-3, I-4</td>
</tr>
<tr>
<td>Enclosed spaces and rooms</td>
<td>I-2, I-4</td>
</tr>
</tbody>
</table>

Wood Interior Finish

803.1

- Class C - wood species
- Class B - some, such as cedar, west coast hemlock, Idaho white pine, redwood, and spruce
- Class A - wood boards and panels when pressure treated with a fire-retardant chemical.

DCA 1

http://www.awc.org/codes/dcaindex.php
### Wood Interior Finish

**Exceptions:**
- 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 (806.5)
- 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 (705.8).

### Windows and Doors

- Unlimited amounts of unprotected openings are permitted by Table 705.8
  - Exterior walls > 30 feet from lot line, or
  - > 10 feet 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
  - < 3 feet from the lot line
**Windows and doors**

- Interior wood door assemblies (Sections 706 through 710) required to be fire-protection rated:
  - Wall assembly requires a fire resistance rating and opening protection.

**Wood siding**

- Wood shingles as a weather covering are required to be a minimum \( \frac{3}{8} \)-inch thick and wood siding without sheathing is required to be \( \frac{1}{2} \)-inch thick (Table 1405.2).

**Wood veneer**

- Type I, II, III or IV construction wood exterior wood veneer is allowed up to 40 feet above grade (60 feet if FRTW) (Section 1406)
  - 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**

- Exterior balconies (Section 1406.3)
  - Type IV construction or
  - Wood construction that provides a fire-resistance rating equal to the floor rating required by Table 601.
Open Exterior Stairs and Ramps

- Open exterior exit stairs and ramps (Sections 1009.9 and 1010.8)
  - Wood - building is of Type IV and V construction
  - ≤ six stories

Wood roof covering

- Roof assemblies and coverings are divided into classifications by testing to the ASTM E 108 or UL 790 standard (1505).

Wood roof covering

- Table 1505.1 requires a minimum Class B roof covering for all types of construction
  - except Types IIB, IIIB and VB (Class C materials)
- No. 1 cedar or redwood shakes and No. 1 shingles
  - Two-story buildings
  - ≤ 6,000 sq. ft. of roof area
  - 10 ft. of frontage width on all sides

Table 1505.1 – Minimum Roof Covering Classification

<table>
<thead>
<tr>
<th>Table 1505.1</th>
<th>Minimum Roof Covering Classification for Types of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA IIB IIIA IIIB IIIA IV VA VB</td>
<td>B B C B C B B C</td>
</tr>
</tbody>
</table>

UNO - International Wildland-Urban Interface Code
Wood projections – limits

- In Types III, IV, and V construction, projections of any material are permitted, per the limitations of Section 705.2.3.
- Combustible projections located where protection of some openings is required or within five feet of the lot line must be one of the following:
  - Minimum 1-hour fire-resistance-rated construction,
  - Type IV construction,
  - FRTW

Wood projections - limits

- No projections permitted with less than 2 feet FSD

Wood projections - limits

- 2 feet to less than 5 feet fire separation distance

Wood projections - limits

- 5 feet FSD to a FSD where Table 705.8 allows the area of unprotected openings to be unlimited
Wood Rooftop Structures

- Wood penthouses of FRTW may be placed on:
  - Type I construction two stories or less above grade plane
  - Type II construction with the penthouse at least 5 feet from the lot line
  - See Section 1509

Wood in Locations Subject to Decay or Termites

- Wood must be naturally durable wood species or preservative-treated wood using water-borne preservatives, in accordance with AWPA U1 (2303.1.8).
- Location are listed in Section 2304.11

Wood Rooftop Structures

- Type III, IV and VA
  - penthouse Type IV construction or FRTW
  - 20 feet or more from the lot line (1509.2.5 exception 3).
- Type III, IV and V (see limitations in Section 1509.5)
  - Wood towers, spires, domes and cupolas are permitted on buildings of.

Precautions during construction

- During construction, one portable fire extinguisher must be placed at (3309):
  - Each stairway on all floor levels with combustible materials,
  - Each storage or construction shed and where special hazards exist
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 (3310).

When standpipes are required for the building, a minimum of one standpipe must be available during construction for fire department use (3311).
- The standpipe is installed before the construction is 40 feet above fire department access.

Sprinkler system must be tested and approved (commissioned) before the certificate of occupancy is awarded (3312).

Additional requirements for fire safety during construction are contained in the IFC.
- Temporary heating equipment must be listed and labeled (IFC 3303).
- Smoking is prohibited except in approved areas with posted signage (IFC 3304).
- A fire watch must be maintained with qualified personnel if required by the fire code official (IFC 3304).
Precautions during construction

- 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 the fire prevention program during construction (IFC 3308).
- An accessible emergency phone must be provided in an approved location at the construction site (IFC 3309).

Fire-fighting vehicle access must be provided within 100 feet of temporary or permanent fire department connections (IFC 3310).

An approved water supply for fire protection must be available when combustible material is at the construction site (IFC 3312).

Requirements for safeguards during roofing operations (IFC 3317).

Design for Code Acceptance

- The Design for Code Acceptance documents can be downloaded for free at [www.awc.org/Codes/dcaindex.html](http://www.awc.org/Codes/dcaindex.html)

American Wood Council Standards

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Resources

ALLOWABLE USE OF WOOD IBC 2009 & 2012

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

Questions?

This concludes The American Institute of Architects Continuing Education Systems Course

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