Residential Fall Protection Advisory Committee Meeting

November 2015

Historical perspective

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- 1669 was the rule(15 foot, 4 inch nominal)
- CA didn't like fall protection plan for framing
- 2 + years of meetings and consensus of Labor, Management, and Cal/OSHA personnel
- Developed 1716.2, proscriptions for processes from the ground up
- The data has shown we are already much safer for framing and roofing
- More injuries occur off ladders and setting up fall protection

Attachment 1

Fatal Work Injury Rates – Construction Industry

Year	CA[1]	US[2]
2011	6.5	9.1
2010	5.2	9.8
2009	6.1	9.9
2008	5.4	9.7
2007	Not available	10.8

Fall protection from zero feet

From the ground up, walking or working on joists, rafters, or roof trusses must be on center spacing not exceeding 24 inches.

Fall protection from zero feet

From the ground up, work installing floor joists require that workers work from joists laid on their sides on the top plate on center spacing not exceeding 24 inches, when walking or working within 24 inches of the top plate or other structural support.

Infeasibility of conventional fall protection from first story

The California trigger heights greater than seven and one half feet only apply to new production residential construction. Personal fall protection systems typically don't provide protection from workers hitting the ground below. Installation of netting systems typically can't stop the employee before they hit the surface below. Installation of guard rails involves a greater hazard for employees installing the guard rails, than the employees doing the work.

California exceptions to fall protection: Fall Protection Plans

§1671.1. Fall Protection Plan.

(a) This section applies to all construction operations when it can be shown that the use of conventional fall protection is impractical or creates a greater hazard.

(5) The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrails, personal fall arrest systems, or safety nets) are infeasible or why their use would create a greater hazard.

Section 1671.1(a)(Fall Protection Plan) applies where conventional fall protection is impractical or creates a greater hazard. In order to use a fall protection plan section 1671.1(a)(5)requires "documentation that the use of conventional fall protection systems are infeasible or why their use creates a greater hazard. The term "impractical" doesn't need to be defined, because it is limited to the term "infeasible".

California exceptions to fall protection: Fall Protection Plans

§1731. Roof Hazards - New Production-Type Residential Construction.

(c) Fall protection for roofing work.

(1) Roof Slopes 3:12 through 7:12: Employees shall be protected from falling when on a roof surface where the eave height exceeds 15 feet above the grade or level below by use of one or any combination of the following methods:

(A) Personal Fall Protection (Section 1670).

(B) Catch Platforms [Section 1724(c)].

(C) Scaffold Platforms [Section 1724(d)].

(D) Eave Barriers [Section 1724(e)].

(E) Standard Railings and Toeboards (Article 16).

(F) Roof Jack Systems [Section 1724(a)].

(2) Roof Slopes Steeper than 7:12: Employees shall be protected from falling by methods prescribed in Subsections (c)(1)(A), (B), (C), or (E) regardless of height.

Section 1731(Roof Hazards-New production-Type Residential Construction) requires conventional fall protection for roofs sloped 3:12 or greater, without the availability of a fall protection plan.

California exceptions to fall protection: Fall Protection Plans

§1716.2. Wood and Light Gage Steel Frame Construction, Residential/Light Commercial.

(e) Work on Top Plate, Joists and Roof Structure Framing.

(1) When employees are walking/working on top plates, joists, rafters, trusses, beams or other similar structural members over 15 feet above the surrounding grade or floor level below, fall protection shall be provided by scaffolding, guardrails, a personal fall protection system, or by other means prescribed by CSO Article 24, Fall Protection.

Section 1716.2(Wood and Light Gage Steel Frame Construction, Residential/Light Commercial) does allow for a fall protection plan, but only where it is infeasible, or creates a greater hazard, per 1671.1.

What creates a greater hazard continued

Employee exposure to falls is the hazard. Section 1716.2 (g)(3) and its exception. For gable end work, when the work is of short duration and limited exposure, and the hazards involved in rigging and installing the safety devices required equal or exceed the hazards involved in the actual construction, these provisions(conventional fall protection) may be suspended provided the work is performed by a qualified person.

What creates a greater hazard continued

Employee exposure to falls is the hazard. Often work done from ladders creates a greater hazard, as the platform the employee is standing on and working from is more unstable than the building under construction. Also, the employee is limited in reach and use of both hands while on ladders.

What creates a greater hazard continued

§1716.2. Wood and Light Gage Steel Frame Construction, Residential/Light Commercial.

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Exceptions: (A) When employees are walking/working on securely braced joists, rafters or roof trusses on center spacing not exceeding 24 inches, and more than 6 feet from an unprotected side or edge, they shall be considered protected from falls between the joists, rafters or roof trusses.

(B) When installing floor joists, employees shall be considered protected from falls up to and including 15 feet above the surrounding grade or floor level below when standing on or working from joists laid on their sides on the top plate on center spacing not exceeding 24 inches when walking/working within 24 inches of the top plate or other structural support.

Work more than six feet from an unprotected side or edge. This only applies under Section 1716.2(c)(1) exceptions, when walking/working on joists, rafters, or roof trusses.

What creates a greater hazard continued

The use of slide guards for roof sheathing on slopes more than 7:12. This only applies to first story construction, which would be highly unlikely to have this steep a roof sloop on a single story home.

Roofing Work: Use of parapets

Use of parapets for roofing fall protection is not allowed under Section 1731-Production residential.

Roofing Work: Use of a warning line without monitor for low sloped roofs

This is not allowed under Section 1731-Production residential. For custom homes, Section 1730 does allow it.

Roofing Work:
Use of eave barriers and roof jack systems.

CA Fall Protection regulations across multiple articles

§1716.1. Structural Wood Framing Systems.

(a) Scope. This section applies to the construction and placement of structural wood framing systems.

(b) Definitions.

(1) Structural wood framing systems. Operations, methods, and procedures associated with the installation of essentially horizontal wood framing systems (including panelized roof systems) that are typically associated with construction used in non-residential type structures, such as warehouses, gymnasiums, shopping malls or similar structures. These orders do not apply to framing procedures typically associated with residential structures.

§1716.2. Wood and Light Gage Steel Frame Construction, Residential/Light Commercial.

(a) Scope and Application. This section applies to work directly associated with the framing of new buildings or structures using the operations, methods, and procedures associated with residential-type framing activities, i.e., joists or trusses resting on stud walls.

Sections 1716.1 and 1716.2 both clearly define and describe what type of framing activities apply to each section.

CA Fall Protection regulations across multiple articles continued

§1730. Roof Hazards.

Exception to Section 1730: Section 1731 applies instead of Section 1730 for roofing work on new production-type residential construction with roof slopes 3:12 or greater.

§1731. Roof Hazards - New Production-Type Residential Construction.

(a) Scope and Application.

(1) This section shall apply only to roofing work on new production-type residential construction with roof slopes 3:12 or greater.

(2) This section does not apply to custom-built homes, re-roofing operations, roofing replacements or additions on existing residential dwelling units.

Sections 1730 and 1731 clearly define and describe which roofing activities apply to each section.

CA Fall Protection regulations across multiple articles continued

§1632. Floor, Roof, and Wall Openings to Be Guarded.

For holes and openings, Section 1632 is understood as the controlling regulation.

CA Fall Protection regulations across multiple articles continued

For open sides and edges , Section 1716.2 and Section 1731 are clearly understood as the controlling regulations.

Basement walls and siding, gutter and lighting installation

All this work is being done at fall heights above six feet or seven and one half feet, or is being done off of ladders. None of the above processes are applicable to Sections 1716.2 and 1731.

What creates a greater hazard

Employee exposure to falls is the hazard. When it takes longer to set up conventional fall protection than to do the work itself, the greater hazard is setting up fall protection. The above example is setting up bracket scaffolding. It takes 2 workers approximately 4 hours to set up and take down the bracket scaffolding on a typical 2000 square foot house.

What creates a greater hazard continued

Employee exposure to falls is the hazard. When it takes longer to set up conventional fall protection than to do the work itself, the greater hazard is setting up fall protection. The above example is setting up ground based scaffolding. It takes(number) workers approximately (number) hours to set up ground based scaffolding for a 2000 square foot house.