2019 CBC Supplement
to the
GUIDELINES
FOR
SPECIAL INSPECTION
AND
STRUCTURAL OBSERVATION
In Accordance with the 2016 CBC

Prepared by
SEAONC Construction Quality Assurance Committee
2021
Board of Directors, 2020-2021

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2019 CBC Supplement

To the

Guidelines for Special Inspection and Structural Observation

In Accordance with the 2016 CBC

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Introduction

The 2019 CBC Supplement is a partial update in the form of a Supplement to the Guidelines for Special Inspection and Structural Observation in Accordance with the 2016 CBC (the “Guidelines”), developed by the SEAONC Construction Quality Assurance Committee.

This document only discusses those changes to Chapter 17 of the California Building Code and the applicable national standards that result in substantive changes to the special inspection, structural observation, and testing for a construction project.

It is important to use this supplement with the Guidelines and the 2019 CBC. The Guidelines include the 2016 CBC Chapter 17 code language along with detailed commentary and discussion on each of the special inspection and testing requirements. There is also a discussion on Structural Observation and a complete template for preparing a Statement of Special Inspections for a construction project.

The Guidelines can be downloaded here:

https://www.seaonc.org/page/Publications

Local building jurisdictions and State agencies may have additional special inspection and testing requirements or jurisdiction specific forms that are not discussed in this document. The reader is urged to confirm the applicable special inspection and testing requirements with the building officials with jurisdiction over the specific project.

The suggestions, recommendations, and commentary discussed in this document are offered in an advisory capacity only and reflect the opinion solely of the authors. This document is not intended to define a standard of practice or to serve as a building code.

Use of this Document

The following sections discuss the substantive changes individually under a heading that identifies the 2019 CBC section and the subject of that section.

Actual code language, where shown, is indented and 2019 changes are indicated by red-strikeout (deletions), and blue bold (additions).
1704.6 - Structural Observation

Sections 1704.6.1 Structural observations for seismic resistance and 1704.6.2 Structural observations for wind requirements in the 2016 CBC were replaced by Section 1704.6.1 Structural observation for structures, Section 1704.6.2 Structural observations for seismic resistance and Section 1704.6.3 Structural observations for wind resistance in the 2019 CBC.

There is no effective change for structural observation of structures in Seismic Design Categories D, E and F.

The only change for structures in high wind areas is that the triggering speed changed from $V_{\text{asd}} > 110$ mph in the 2015 IBC to $V > or = 130$ mph in the 2019 CBC. Using the equation in the code for converting $V_{\text{asd}}$ to the basic wind speed a working stress wind speed of 110 mph corresponds to basic wind speed of 143 mph, so at first glance it appears that the triggering wind speed was lowered in the 2019 CBC. However, there were other changes in wind provisions in ASCE 7-16 including design wind speed reductions throughout the United States and introduction of maps for different risk categories. As a result, the triggering wind speed for structural observations in the 2019 CBC is similar to the triggering wind speed in the 2016 CBC in many areas. Note that this triggering wind speed is different from the wind speed in Section 1705.11 that triggers special inspections. The wind speed trigger in 1705.11 still uses $V_{\text{asd}}$, and is also dependent on the Exposure Category.

The introduction of structural observation requirements in Section 1704.6.1 for structures independent of Seismic Design Category or wind speed means that all Risk Category IV structures and high rise buildings must receive structural observation. Additionally, structural observation is required if the Registered Design Professional in Responsible Charge or building owner designates it.

Note that the inclusion of Risk Category IV buildings in Sections 1704.6.2 and 1704.6.3 is not needed because of the inclusion of all Risk Category IV structures in Section 1704.6.1.
1705.2.1 - Steel Construction – Non-Seismic Inspection and Testing per AISC 360

CBC Section 1705.2.1 Structural steel which invokes AISC 360-16, Chapter N for the specifics of special inspection and non-destructive testing, was not modified. However, there are several significant changes in AISC 360-16 compared to the 2010 version.

AISC 360-16 is only applicable to the structural steel frame and structural steel elements that are not part of the seismic-force-resisting system. AISC 341-16, The Seismic Provisions, Chapter J covers the special inspection and testing for seismic resistance.

In addition to the inspections for welding and bolting and the non-destructive testing of welds and base metal, Chapter N, Quality Assurance, includes requirements for submittals and inspection personnel qualifications. Only the inspection and testing requirements are invoked by CBC Chapter 17.

Welding and bolting inspection tasks are detailed in tables for before, during, and after welding or bolting.

Significant changes include:

- Inspection requirements for composite construction have been eliminated. The requirements related to the steel deck itself are now in the Steel Deck Institute’s “Standard for Quality Control and Quality Assurance for Installation of Steel Deck” (ANSI/SDI QA/QC-17), and the installation inspection of welded headed studs is now in the table for “during welding” (Table N5.4-2).
- A statement to the effect that QA inspections (which are the special inspections) must minimize interruption to the fabricator or erector has been removed.
- Verification of welder qualifications has been moved from the table for during welding to the “prior to” welding table, and the frequency designation has been changed from “Observe” to the more intense “Perform” level.
- Joint fit-up inspection, at the “Perform” level, has been added to the “prior to” welding table for complete joint penetration groove welds made without backing in HSS members in T-, Y-, and K- joints. As all other joint fit-up inspections are at the “Observe” level, this implies that the fit-up of each of these joints must be inspected before starting welding.
- Non-destructive testing (MT or PT) for thermally cut surfaces of weld access holes in heavier sections has been eliminated, but visual inspection for cracks is now required at the weld access hole after welding for heavy shapes and heavy built-up shapes.

A visual inspection for cracks has been added for cut surfaces of galvanized main members, and for exposed corners of galvanized HSS members. The inspection is to occur after galvanizing.
1705.4 – Masonry

CBC Section **1705.4 Masonry construction** was not modified other than to reflect the name change for The Masonry Society’s “Building Code Requirements for Masonry Construction” (Code) and “Specification for Masonry Structures” (Specification). However, these two documents, which contain the actual special inspection and testing requirements, made major changes to the way the requirements are presented in the quality assurance sections (3.1 in the Code, 1.6 in the Specifications).

Although changes in presentation in the quality assurance sections were major, actual changes to the inspection and testing provisions are minor, and subtle. These will be discussed after a brief summary of the exceptions to special inspections and tests, and the triggers for the different “Levels” of inspection.

The CBC itself includes an exception from special inspection for empirically designed masonry, glass unit masonry, and masonry veneer in Risk Categories I, II, and III, as well as all prescriptively designed masonry foundations walls, and masonry fireplaces, heaters, and chimneys.

Three levels of quality assurance (that is, special inspection and testing) are then mapped in the Code to combinations of Risk Category and the design procedure used by the Engineer. Code Table 3.1, annotated in italics, is reproduced below. Levels 1, 2, and 3 were previously A, B, and C.

**Table 3.1 Minimum Quality Assurance Level**

<table>
<thead>
<tr>
<th>Designed in accordance with</th>
<th>Risk Category 1, II, or III</th>
<th>Risk Category IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 3 (<em>engineered</em>) or Appendix B (<em>infills</em>) or Appendix C (<em>limit design method</em>)</td>
<td>Level 2</td>
<td>Level 3</td>
</tr>
<tr>
<td>Part 4 (<em>prescriptive design of veneer, glass masonry, and partitions</em>)</td>
<td>Level 1</td>
<td>Level 2</td>
</tr>
<tr>
<td>Appendix A (<em>empirical design</em>)</td>
<td>Level 1</td>
<td>Not permitted</td>
</tr>
</tbody>
</table>

The rest of the information is now in the Specification, which now has a separate table for “verification” (generally meaning “testing”, such as slump flow, or the unit, grout and/or prism testing needed to verify $f'_{m}$.)

Level 1 literally includes only a requirement for pre-construction verification of “compliance with submittals”. There are no inspections associated with Level 1, and due to the exceptions in the CBC, Level 1 is not actually applicable to any work with the possible exception of partitions.

The inspection tasks are then listed in Table 4 of the Specification (reproduced at the end of this commentary). There are four sections: “As masonry construction begins…”; “Prior to grouting…”; “Verify compliance…during construction”; and “Observe preparation of…specimens…” Most of the requirements, including the inspection frequency (continuous or periodic) are unchanged.

Changes are discussed below.

1. Level 3 (formerly Level C), did not include the separation into sections associated with the stages of construction outlined above, and some items were described slightly differently for Level 2 (formerly Level B). Now each item is the same, and the higher level of scrutiny associated with Level 3 inspections is only reflected in whether the inspection is continuous or periodic.

2. There is one new inspection item: “Sample panel construction”. The inspection is periodic for Level 2 and continuous for Level 3. Sample panels, minimum 4 feet square, are a quality assurance requirement of the Specification (Section...
1.6D) and appear to only relate to appearance issues. It is not fully clear whether the CBC actually intends to mandate the quality assurance requirements of the Code and the Specification, other than the testing and inspection items. The sample panel is not the same as the “grout demonstration panel” (Specification Section 1.6E) which is required if grouting procedures (lift or pour height, grout space, etc.) do not meet the Code and Specification parameters.

3. Inspection of the placement of masonry units is now explicitly required for Level 2. The inspection is periodic for both Level 2 and Level 3 (where it has always been required).

4. Level 2 previously included a requirement to verify “location of reinforcement”. This periodic inspection was in the section “As masonry construction begins”, implying that in-process inspection previously for the placement of reinforcing steel was required. This language has been removed. There was also (and still is) a requirement in the section “Prior to grouting” to inspect the placement of reinforcement. This inspection is periodic for Level 2, but continuous for Level 3. It appears that the intent is for the inspector to verify that the correct type, size and grade of reinforcing steel is on site at the beginning of the masonry work (see Item 1c in Table 4) for both Level 2 and Level 3, but that for Level 2, no other reinforcement inspection is required until prior to grouting. For Level 3, where the requirement is continuous inspection, the inspector should be on site whenever reinforcing steel is being placed.

5. For Level 3, inspection frequency for the placement of prestressing tendons has been changed from continuous to periodic.
Table 4 — Minimum Special Inspection Requirements

<table>
<thead>
<tr>
<th>Inspection Task</th>
<th>Frequency (a)</th>
<th>Reference for Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level 1</td>
<td>Level 2</td>
</tr>
<tr>
<td>1. As masonry construction begins, verify that the following are in compliance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Proportions of site-prepared mortar</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>b. Grade and size of prestressing tendons and anchorages</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>c. Grade, type and size of reinforcement, connectors, anchor bolts, and prestressing tendons and anchorages</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>d. Prestressing technique</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>e. Properties of thin-bed mortar for AAC masonry</td>
<td>NR</td>
<td>C&lt;sup&gt;(c)&lt;/sup&gt;</td>
</tr>
<tr>
<td>f. Sample panel construction</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>2. Prior to grouting, verify that the following are in compliance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Grout space</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>b. Placement of prestressing tendons and anchorages</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>c. Placement of reinforcement, connectors, and anchor bolts</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>d. Proportions of site-prepared grout and prestressing grout for bonded tendons</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>3. Verify compliance of the following during construction:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Materials and procedures with the approved submittals</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>b. Placement of masonry units and mortar joint construction</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>c. Size and location of structural members</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>d. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, finances, or other construction</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>e. Welding of reinforcement</td>
<td>NR</td>
<td>C</td>
</tr>
<tr>
<td>f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°C)) or hot weather (temperature above 90°F (32.2°C))</td>
<td>NR</td>
<td>P</td>
</tr>
<tr>
<td>g. Application and measurement of prestressing force</td>
<td>NR</td>
<td>C</td>
</tr>
<tr>
<td>h. Placement of grout and prestressing grout for bonded tendons is in compliance</td>
<td>NR</td>
<td>C</td>
</tr>
<tr>
<td>i. Placement of AAC masonry units and construction of thin-bed mortar joints</td>
<td>NR</td>
<td>C&lt;sup&gt;(c)&lt;/sup&gt;</td>
</tr>
<tr>
<td>4. Observe preparation of grout specimens, mortar specimens, and/or prisms</td>
<td>NR</td>
<td>P</td>
</tr>
</tbody>
</table>

(a) Frequency refers to the frequency of inspection, which may be continuous during the listed task or periodically during the listed task, as defined in the table.

(b) Required for the first 5000 square feet (465 square meters) of AAC masonry.

(c) Required after the first 5000 square feet (465 square meters) of AAC masonry.
1705.11.1 Structural Wood for Wind Resistance

1705.11.1 Structural wood. Continuous special inspection is required during field gluing operation of elements of the main windforce-resisting system. Periodic special inspection is required for nailing, bolting, anchoring and other fastening of elements of the main windforce-resisting system, including wood shear walls, wood diaphragms, drag struts, braces and hold-downs.

   Exception: Special inspections are not required for wood shear walls, shear panels and diaphragms, including nailing, bolting, anchoring and other fastening to other elements of the main windforce-resisting system, where the specified fastener spacing of the sheathing at panel edges is more than 4 inches (102 mm) on center.

There are two changes in the exception to special inspection for wind resisting systems. The first was intended to avoid triggering inspections when the actual installed nail spacing is less than 4 inches even if the specified nail spacing was more than 4 inches.

   If the installed nail spacing is 3 inches or less it may be appropriate for the inspector to inspect for split framing members regardless of the specified spacing.

The second change is just intended to emphasize that the nailing that triggers the exception is the edge nailing and not the field nailing.

   It is interesting to note that the exception to special inspection for seismic resistance (1705.12.2) uses almost identical language, but was not changed in coordination with this change to the wind requirement.
1705.12.1.1 – Steel Construction – Exceptions for Structural Steel Inspection

This section references AISC 341 for the special inspection requirements for those parts of the structural steel frame in the seismic-force-resisting system. The inspection requirements are in Chapter J of AISC 341, and are discussed in detail in the Guidelines.

Previously, the single exception exempted buildings and structures in Seismic Design Categories B and C from special inspection if they are not detailed for seismic resistance and use an $R$ of 3 or less.

Now there are two exceptions:

**Exceptions:**

1. **In buildings and structures assigned to Seismic Design Category B or C, special inspections are not required for structural steel seismic force-resisting systems where the response modification coefficient, $R$, designated for “Steel systems not specifically detailed for seismic resistance, excluding cantilever column systems” in ASCE 7, Table 12.2-1, has been used for design and detailing.**

2. **In structures assigned to Seismic Design Category D, E, or F, special inspections are not required for structural steel seismic force-resisting systems where design and detailing in accordance with AISC 360 is permitted by ASCE 7, Table 15.4-1.**

Exception 1 has been clarified to explicitly limit the exemption for SDC B and C structures listed under “H” in ASCE 7, Table 12.2-1. There is no substantive change here.

Exception 2 has been added. This exempts non-building structures in SDC D, E, and F where design and detailing per AISC 360 are permitted by ASCE 7 Table 15.4-1 (“Seismic Coefficients for Nonbuilding Structures Similar to Buildings” – see Page 10). This exemption would only be applicable to ordinary moment frames and ordinary concentrically braced frames where the design uses the very low $R$ values permitted by Table 15.4-1. Even with this exemption, the special inspections of CBC Section 1705.2.1 (non-seismic) would still be required.

**NOTE:**

Testing during construction is covered separately from special inspection in Chapter 17 of the CBC. Section 1705.13.1.1, under 1705.13.1 **Testing for seismic resistance**, uses language identical to that in the discussion above for the exceptions for testing of structural steel seismic force-resisting systems.
1705.12.1.2 – Steel Construction – Exceptions for Structural Steel Elements Inspection

This section also references AISC 341 for the special inspections for structural steel elements, which are treated separately from structural steel. The Guidelines has an in-depth discussion of this distinction.

The modifications to the exceptions are similar to those of Section 1705.12.1.1 discussed above.

Exceptions:

1. **In buildings and structures assigned to Seismic Design Category B or C** special inspections of structural steel elements are not required in seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B or C with a response modification coefficient, $R$, less than 3.

2. **In structures assigned to Seismic Design Category D, E, or F** special inspections of structural steel elements are not required for seismic force resisting systems where design and detailing other than AISC 341 is permitted by ASCE 7 Table 15.4-1. Special inspection shall be in accordance with the applicable referenced standard listed in ASCE 7 Table 15.4-1.

Exception 1 attempts to parallel Exception 1 of Section 1705.12.1.1, but since ASCE 7 Table 12.2-1 does not apply to “structural steel elements” the exception is defined in terms of the $R$ factor. The change in this exception is editorial only.

Exception 2 is also new, similar to Exception 2 of Section 1705.12.1.1, but now instead of exempting those systems that comply with AISI 360 detailing this exception exempts systems where the detailing is not required to comply with AISC 341. The last sentence is a key change – it makes it clear that the design standard that provides the detailing requirements determines what the special inspections would be. AISC 360 and AISI S100 are the only other steel design standards specifically listed ASCE 7 Table 15.4-1, although the Rack Manufacturer’s standards (ANSI/RMI 16.1 and 16.3) are indirectly cited by a reference to Section 15.5.3.2 in ASCE 7.

Exception 2 then would only be applicable to steel elements used in conjunction with ordinary moment frames and ordinary concentrically braced frames where the design uses the very low $R$ values permitted by Table 15.4-1 (see Page 10) and with ordinary moment frames (cross-aisle) used in steel storage racks where $R=1$. As it appears that neither AISI S100 or RMI 16.1 and 16.3 include any special inspection requirements, the inspection would default to the typical non-seismic welding and bolting inspection in accordance with AISC 360.

**NOTE:**

Testing during construction is covered separately from special inspection. Section 1705.13.1.2, under **1705.13.1 Testing for seismic resistance**, uses language identical to that in the discussion above for the exceptions for testing of structural steel elements used in the seismic force-resisting system.
### ASCE 7-16 Table 15.4-1

**Seismic Coefficients for Nonbuilding Structures Similar to Buildings**

<table>
<thead>
<tr>
<th>Nonbuilding Structure Type</th>
<th>Detailing Requirements</th>
<th>$R$</th>
<th>$C_p$</th>
<th>$C_s$</th>
<th>B</th>
<th>C</th>
<th>D$^a$</th>
<th>E$^b$</th>
<th>F$^c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel storage racks</td>
<td>Sec. 15.3.3.1</td>
<td>4</td>
<td>2</td>
<td>3.5</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Steel cantilever storage racks hot-rolled steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordinary moment frame (cross-aisle)</td>
<td>15.3.3.2 and AISC 360</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Ordinary moment frame (cross-aisle)$^d$</td>
<td>15.3.3.2 and AISC 341</td>
<td>2.5</td>
<td>2</td>
<td>2.5</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Ordinary braced frame (cross-aisle)</td>
<td>15.3.3.2 and AISC 360</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Ordinary braced frame (cross-aisle)$^d$</td>
<td>15.3.3.2 and AISC 341</td>
<td>2.5</td>
<td>2</td>
<td>2.5</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Steel cantilever storage racks cold-formed steel</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ordinary moment frame (cross-aisle)</td>
<td>15.3.3.2 and AISI S100</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Ordinary moment frame (cross-aisle)</td>
<td>15.3.3.2 and AISI S100</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
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<tr>
<td>Ordinary braced frame (cross-aisle)</td>
<td>15.3.3.2 and AISI S100</td>
<td>3</td>
<td>3</td>
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<td>NL</td>
<td>NL</td>
<td>NP</td>
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<tr>
<td>Building frame systems:</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Steel special concentrically braced frames</td>
<td>AISC 341</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>NL</td>
<td>NL</td>
<td>160</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td>Steel ordinary concentrically braced frame</td>
<td>AISC 341</td>
<td>3.5</td>
<td>2</td>
<td>3.5</td>
<td>NL</td>
<td>NL</td>
<td>35$^e$</td>
<td>35$^e$</td>
<td>NP$^d$</td>
</tr>
<tr>
<td>With permitted height increase</td>
<td>AISC 341</td>
<td>2.5</td>
<td>2</td>
<td>2.5</td>
<td>NL</td>
<td>NL</td>
<td>160</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td>With unlimited height</td>
<td>AISC 360</td>
<td>1.5</td>
<td>1</td>
<td>1.5</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Moment-resisting frame systems:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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$^a$ NL = no limit and NP = net permitted.

$^b$ See Section 12.2.5.4 for a description of seismic force-resisting systems limited to structures with a structural height, \( h_s \), of 240 ft (73.2 m) or less.

$^c$ The column-to-base connection shall be designed to the lesser of \( M_\varepsilon \) of the column or the factored moment at the base of the column for the seismic load case using the overstrength factor.

$^d$ Cold-formed sections that meet the requirements of AISC 341, Table D.1.1, are permitted to be designed in accordance with AISC 341.

$^e$ Steel ordinary braced frames are permitted in pipe racks up to 65 ft (20 m).

$^f$ Ordinary moment frames and intermediate moment frames are permitted in pipe racks up to 35 ft (11 m).
1705.12.6.6 - Fire Sprinkler System Clearance

New to the Code in the section for inspections related to seismic for MEP systems is the requirement that for buildings in Seismic Design Categories (SDC) C, D, E, or F with automatic sprinkler systems, the installation of mechanical and electrical equipment, ducts, piping and their supports is subject to special inspection to confirm that the required minimum clearance from fire sprinkler drops and sprigs (see sketch below) is provided.

The added section also includes inspection for the fire sprinkler system itself to confirm that the drops and sprigs are 3” clear from structural members as well as from other piping ducts and equipment.

If flexible sprinkler hoses are used, the inspections are not required.

We note that special inspection for plumbing, mechanical, and electrical components is only required for certain more critical or hazardous usages. Fire sprinkler systems however, which are designated seismic systems ($I_p > 1$), always require special inspection for anchorage in SDC C, D, E, or F.
1705.13.1 - Steel Construction – Seismic Testing per AISC 341

The CBC language in this section that invokes AISC 341 for the special inspection and non-destructive testing requirements has not changed. However there is one significant change in AISC 341-16 Chapter J, compared to the 2010 version, with respect to non-destructive testing:

• The exception to the required non-destructive testing (UT and MT) for groove welds in ordinary moment frames is now only applicable to structures in Risk Categories I and II (J6.2a).

NOTE:

See the discussion under 1705.12.1.1 and 1705.12.1.2 for other modifications to the requirements for testing for seismic resistance.