

CHAPTER 17A
SPECIAL INSPECTIONS AND TESTS

Adopt and/or codify chapter as amended below:

PROPOSED ADOPTION	DSA-SS	DSA-SS/CC	Comments
Adopt entire chapter without amendments			
Adopt entire chapter as amended	X	X	
Adopt only those sections listed below			

(All existing California amendments that are not revised below shall continue without change)

SECTION 1701A
GENERAL

1701A_1 Scope. The provisions of this chapter shall govern the quality, workmanship and requirements for materials covered. Materials of construction and tests shall conform to the applicable standards listed in this code.

1701A.1.1 Application. *The scope of application of Chapter 17A is as follows:*

1. **[DSA-SS & DSA-SS/CC]** *Structures regulated by the Division of the State Architect-Structural Safety, which include those applications listed in Sections 1.9.2.1 (DSA-SS), and 1.9.2.2 (DSA-SS/CC). These applications include public elementary and secondary schools, community colleges and state-owned or state leased essential services buildings*
2. **[Reserved for OSHPD]**

Exception: **[Reserved for OSHPD]**

1701A.1.2 Amendments in this chapter. DSA-SS adopts this chapter and all amendments.

Exception: Amendments adopted by only one agency appear in this chapter preceded with the appropriate acronym of the adopting agency, as follows:

1. Division of the State Architect - Structural Safety:

[DSA-SS] For applications listed in Section

1.9.2.1.

[DSA-SS/CC] For applications listed in Section

1.9.2.2.

2. **[Reserved for OSHPD]**

1701A.1.3 Reference to other chapters.

1701A.1.3.1 [DSA-SS/CC] Where reference within this chapter is made to sections in Chapters 16A, 19A, 21A, and 22A, ~~and 34A~~, the provisions in Chapters 16, 19, 21, and 22, ~~and 34~~ respectively, shall apply instead.

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1701A.3 ~~1701A.4~~ Special inspectors inspections and tests. [Reserved for OSHPD]

1701A.4 ~~1701A.5~~ Special inspectors inspections and tests. [DSA-SS & DSA-SS/CC] In addition to the project inspector required by the California Administrative Code (CCR, Title 24, Part 1), Section 4-333, the owner shall employ one or more approved agencies special inspectors to provide special inspections and tests as required by the enforcement agency during construction on the types of work listed under Chapters 17A, 18A, 19A, 20, 21A, 22A, 23, and 25 ~~and 34~~ of the California Existing Building Code and noted in the special test,

inspection and observation plan required by Section 4-335 of the California Administrative Code.

SECTION 1702A DEFINITIONS

1702A.1 Definitions. The following terms are defined in Chapter 2 *except those defined below which shall, for the purposes of this ~~section~~ chapter, have the meanings shown herein.*

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PROJECT INSPECTOR. [DSA-SS, DSA-SS/CC] *The person approved to provide inspection in accordance with the California Administrative Code, Section 4-333(b). The term “project inspector” is synonymous with “inspector of record.”*

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Quality Assurance (QA). *Special inspections and testing provided by an approved agency employed by the Owner. Project specific testing required by approved construction documents shall be performed by the approved agency responsible for Quality Assurance (QA), unless approved otherwise by the building official.*

Quality Control (QC). *Inspections and materials/functionality testing provided by the fabricator, erector, manufacturer or other responsible contractor as applicable.*

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SPECIAL INSPECTION.

Continuous special inspection. *The full-time observation of work requiring special inspection by a special inspector who is present in the area where the work is being*

performed.

Periodic special inspection. *The part-time or intermittent observation of work requiring special inspection by a special inspector who is present in the area where the work has been or is being performed and at the completion of the work.*

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**SECTION 1704A
SPECIAL INSPECTIONS, AND TESTS,
CONTRACTOR RESPONSIBILITY AND
STRUCTURAL OBSERVATION**

...

1704A.2 Special inspections and tests. Where application is made to the building official for construction as specified in Section 105, the owner ~~or the owners authorized agent, other than contractor,~~ shall employ one or more *approved agencies* to provide special inspections and tests during construction on the types of work specified in Section 1705A and identify the approved agencies to the building official. These special inspections and tests are in addition to the inspections by the building official that are identified in Section 110.

Exceptions:

1. *Special inspections* and tests are not required for construction of a minor nature or as warranted by conditions in the jurisdiction as *approved* by the *building official*.
2. *[DSA-SS, DSA-SS/CC] Reference to Section 105 and Section 110 shall be to the California Administrative Code instead.*
- ~~2. Unless otherwise required by the building official, special inspections are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.~~

- ~~3. Special inspections are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.7 or the conventional light-frame construction provisions of Section 2308.~~
- ~~4. The contractor is permitted to employ the approved agencies where the contractor is also the owner.~~

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1704A.2.3 Statement of special inspections. The applicant shall submit a statement of *special inspections prepared by the registered design professional in responsible charge* in accordance with Section 107.1 as a condition for ~~permit issuance~~ *construction documents review*. This statement shall be in accordance with Section 1704A.3.

[DSA-SS, DSA-SS/CC] Reference to Section 107.1 shall be to the California Administrative Code instead.

Exception: ~~A statement of special inspections is not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.7 or the conventional light-frame construction provisions of Section 2308.~~

1704A.2.4 Report requirement. ~~The inspector(s) of record and A-approved agencies shall keep records of special inspections and tests. The inspector of record and approved agency shall submit reports of special inspections and tests to the building official, and to the registered design professional in responsible charge as required by the California Administrative Code. Reports shall indicate that work inspected or tested was or was not completed in conformance to approved construction documents as required by the California Administrative Code and this code. Title 24 Parts 1 and 2.~~ Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests, shall be submitted at a

point in time agreed upon prior to the start of work by the owner or owner's authorized agent to the building official.

1704A.2.5 Special inspection of fabricated items. Where fabrication of structural, load-bearing or lateral load resisting members or assemblies is being conducted on the premises of a fabricator's shop, *special inspection* of the fabricated items shall be performed during fabrication.

Exceptions: (Reserved for OSHPD)

- 1) ~~Special inspections during fabrication are not required where the fabricator maintains approved detailed fabrication and quality control procedures that provide a basis for control of the workmanship and the fabricator's ability to conform to approved construction documents and this code. Approval shall be based upon review of fabrication and quality control procedures and periodic inspection of fabrication practices by the building official.~~
- 2) ~~Special inspections are not required where fabricator is registered and approved in accordance with Section 1704.2.5.1.~~

1704.2.5.1 Fabricator approval. ~~Special inspections during fabrication are not required where the work is done on the premises of a fabricator registered and approved to perform such work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved agency. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the owner or owner's authorized agent for submittal to the building official as specified in Section 1704.5 stating that the work was performed in accordance with the approved construction documents.~~

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1704A.3.2 Seismic requirements in the statement of special inspections. Where Section 1705A.12 or 1705A.13 specifies *special inspections* or tests for seismic resistance, the statement of special inspections shall identify the *equipment/components that require special seismic certification* ~~designated seismic systems~~ and seismic force resisting systems that are subject to *special inspections* or tests.

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1704A.4 Contractor responsibility. Each contractor responsible for the construction of a main wind- or seismic force resisting system, *installation of equipment/components requiring special seismic certification* ~~designated seismic system~~ or a wind- or seismic-resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the *building official* and the owner or the Owner's authorized agent prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain acknowledgement of awareness of the special requirements contained in the statement of *special inspections*.

1704A.5 Submittal to the Building official. In addition to the submittal of reports of *special inspections* and tests in accordance with Section 1704A.2.4, reports and certificates shall be submitted by the owner or owner's authorized agent to the building official for each of the following:

1. **(Reserved for OSHPD)** ~~Certificate of Compliance~~ for the fabrication of structural, load-bearing or lateral load-resisting members or assemblies on the premises of a registered and approved fabricator in accordance with Section 1704.2.5.1.
2. *Certificate of compliance* for the seismic qualification *manufacturer's certification* of non-structural components, supports and attachments in Section 1705A.13.2.
3. *Certificate of compliance* for the ~~designated seismic system~~ *equipment/components requiring special seismic certification* in accordance with Section 1705A.13.3.

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1704A.6 Structural observations. Where required by the provisions of Section 1704.6.1 or 1704.6.2, † The owner or the owner's authorized agent shall employ a *registered design professional* to perform structural observations. Structural observation does not include or waive the responsibility for inspection in Section 110 or the special inspections in Section 1705A 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.

[DSA-SS, DSA-SS/CC] Reference to Section 110 shall be to the California Administrative Code instead.

~~**1704.6.1 Structural observations for seismic resistance.** Structural observations shall be provided for those structures assigned to *Seismic Design Category D, E or F* where one or more of the following conditions exist:~~

- ~~1. The structure is classified as *Risk Category III or IV*.~~
- ~~2. The height of the structure is greater than 75 feet (22 860 mm) above the base as defined in ASCE 7.~~
- ~~3. The structure is assigned to *Seismic Design Category E*, is classified as *Risk Category I or II*, and is greater than two stories above grade plane.~~
- ~~4. When so designated by the *registered design professional* responsible for the structural design.~~
- ~~5. When such observation is specifically required by the *building official*.~~

~~**1704.6.2 Structural observations for wind requirements.** Structural observations shall be provided for those~~

structures sited where ~~Vasd~~ as determined in accordance with Section 1609.3.1 exceeds 110 mph (49 m/sec), where one or more of the following conditions exist:

- ~~1. The structure is classified as Risk Category III or IV.~~
- ~~2. The building height is greater than 75 feet (22 860 mm).~~
- ~~3. When so designated by the registered design professional responsible for the structural design.~~
- ~~4. When such observation is specifically required by the building official.~~

SECTION 1705A REQUIRED SPECIAL INSPECTIONS AND TESTS

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1705A.2.1 Structural steel. *Special inspections* and nondestructive testing of structural steel elements in buildings, structures and portions thereof shall be in accordance with the quality assurance inspection requirements of AISC 360 of this section, ~~and Chapter 22A~~ and quality control requirements of AISC 360, AISC 341 and AISC 358.

Exception: *Special inspection* of railing systems composed of structural steel elements shall be limited to welding inspection of welds at the base of cantilevered rail post.

AISC 360, Chapter N and AISC 341, Chapter J are adopted, except as noted below:

The following provisions of AISC 360, Chapter N are not adopted:

1. N4., Item 2. (Quality Assurance Inspector Qualifications)
2. N5., Item 2. (Quality Assurance)
3. **[DSA-SS, DSA-SS/CC]** N5., Item 3. (Coordinated Inspection)
4. **[DSA-SS, DSA-SS/CC]** N5., Item 4. (Inspection of Welding)
5. **[DSA-SS, DSA-SS/CC]** N7 (Approved Fabricators and Erectors)
6. **[DSA-SS, DSA-SS/CC]** N8 (Nonconforming Material and

Workmanship)

In addition to the quality assurance inspection requirements contained in AISC 360, Section N5 ~~Item 6 (Inspection of High Strength Bolting)~~ (Minimum Requirements for Inspection of Structural Steel Buildings), the requirements of Table 1705A.2.1 of the California Building Code shall apply.

In addition to the quality assurance requirements contained in AISC 360, Section N6 (Minimum Requirements for Inspection of Composite Construction), the requirements of Table 1705A.2.1 of the California Building Code shall apply.

In addition to the quality assurance requirements contained in AISC 341, Chapter J, Section J5 (Inspection Tasks), the requirements of Section 1704A.3 and Table 1705A.2.1 of the California Building Code shall apply.

TABLE 1705A.2.1 REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD^a	CBC REFERENCE
<i>1. Material verification of high-strength bolts, nuts and washers:</i>				
<i>a. Identification markings to conform to ASTM standards specified in the approved construction documents.</i>	-	X	AISC 360, Section A3.3 and applicable ASTM material standards	-
<i>b. Manufacturer's certificate of compliance required.</i>	-	X	-	-
<i>2. Inspection of high-strength bolting:</i>				
<i>a. Snug-tight joints.</i>	-	X	AISC 360,	-

<i>b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation.</i>	-	X	Section M2.5	
<i>c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.</i>	X	-		
3. Material verification of structural steel and cold-formed steel deck:				
<i>a. For structural steel, identification markings to conform to AISC 360.</i>	-	X	AISC 360, Section A3.1	2203A.1
<i>b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.</i>	-	X	Applicable ASTM material standards	
<i>c. Manufacturer's certified test reports.</i>	-	X		
4. Material verification of weld filler materials:				
<i>a. Identification markings to conform to AWS specification in the approved construction documents.</i>	-	X	AISC 360, Section A3.5 and applicable AWS A5 documents	-
<i>b. Manufacturer's certificate of compliance required.</i>	-	X	-	-
5. Inspection of welding:				
a. Structural steel and cold-formed steel deck:				
<i>1) Complete and partial joint penetration groove welds.</i>	X	-	AWS D1.1	1705A.2.1

2) Multipass fillet welds.	X	-		
3) Single-pass fillet welds $> 5/16"$	X	-		
4) Plug and slot welds.	X	-		
5) Single-pass fillet welds $\leq 5/16"$	-	X		
6) Floor and roof deck welds.	-	X	AWS D1.3	

TABLE 1705A.2.1- continued

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD^a	CBC REFERENCE
<i>b. Reinforcing steel:</i>				
1) Verification of weldability of reinforcing steel other than ASTM A 706.	-	X		
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	-	AWS D1.4 ACI 318: Sections <u>26.6.4.1</u> , <u>18.2.8</u> , <u>25.5.7.4</u> 3-5.2	-
3) Shear reinforcement.	X	-		
4) Other reinforcing steel.	-	X		
6. Inspection of steel frame joint details for compliance:				
<i>a. Details such as bracing and stiffening.</i>	-	X	-	<u>1705A.2.1</u> 1705A.2.2
<i>b. Member locations.</i>	-	X		

c. Application of joint details at each connection.	-	X		
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For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section ~~1705A.11~~ 1705A.12, Special inspection for seismic resistance

1705A.2.2 Cold-formed steel deck. ~~Special inspections and qualification of welding special inspectors~~ for cold formed steel floor and roof deck shall be in accordance with the quality assurance inspection requirements of SDI QA/QC.

Deck weld special inspection shall also satisfy requirements in Table 1705A.2.1 and 1705A.2.5.

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1705A.2.3.1 ~~1705A.2.2.3~~ Steel joist and joist girder inspection. Special inspection is required during the manufacture and welding of steel joists or joist girders. The approved agency special inspector shall verify that proper quality control procedures and tests have been employed for all materials and the manufacturing process, and shall perform visual inspection of the finished product. The approved agency special inspector shall place a distinguishing mark, and/or tag with this distinguishing mark, on each inspected joist or joist girder. This mark or tag shall remain on the joist or joist girder throughout the job site receiving and erection process.

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1705A.2.4.1 ~~1705A.2.2.4~~ Light-framed steel truss inspection. The manufacture of cold-formed light framed steel trusses shall be continuously inspected by an approved agency a qualified special inspector approved by the enforcement agency. The approved agency special inspector shall verify conformance of materials and manufacture with approved plans and specifications. The approved agency special inspector shall place a distinguishing mark, and/or tag with this distinguishing mark, on each inspected truss. This

mark or tag shall remain on the truss throughout the job site receiving and erection process.

1705A.2.5 ~~1705A.2.2.5~~ **Inspection of structural welding.** Inspection of all shop and field welding operations shall be made by a qualified welding inspector approved by the enforcement agency. The minimum requirements for a qualified welding inspector shall be as those for an AWS Certified Welding Inspector (CWI), as defined in the provisions of the AWS QC1. ~~All welding inspectors shall be as approved by the enforcement agency.~~

Exception: (reserved for OSHPD)

The welding inspector shall make a systematic daily record of all welds. In addition to other records, this record shall include:

1. Identification marks of welders.
2. List of defective welds.
3. Manner of correction of defects.

The welding inspector shall check the material, details of construction and procedure, as well as workmanship of the welds. The inspector shall verify that the installation of end-welded stud shear connectors is in accordance with the requirements of AWS D1.1 and the approved plans and specifications. ~~The inspector~~ approved agency shall furnish the architect, structural engineer, and the enforcement agency with a verified report, that the ~~welding is proper and has been done in~~ conformance ~~conformity~~ with AWS D1.1, D1.3, D1.8, and the approved construction documents.

1705A.3 Concrete construction. Special inspections and tests of concrete construction shall be performed in accordance with this section and Table 1705A.3.

Exception: Special inspections and tests shall not be required for:

- ~~1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock.~~

2. ~~Continuous concrete footings supporting walls of buildings three stories or less above grade plane that are fully supported on earth or rock where:~~
 - 2.1. ~~The footings support walls of light frame construction;~~
 - 2.2. ~~The footings are designed in accordance with Table 1809.7; or~~
 - 2.3. ~~The structural design of the footing is based on a specified compressive strength, f'_c , no greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the approved *construction documents* or used in the footing construction.~~
3. ~~Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 MPa).~~
4. ~~Concrete foundation walls constructed in accordance with Table 1807.1.6.2.~~
5. ~~Concrete patios, driveways and sidewalks, on grade.~~

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1705A.3.3 ~~1705A.3.2~~ **Batch plant inspection.** *Except as provided under this § section ~~1705A.3.3~~, the quality and quantity of materials used in transit-mixed concrete and in batched aggregates shall be continuously inspected by an approved agency ~~special~~ inspector at the location where materials are measured.*

1705A.3.3.1 ~~1705A.3.3~~ **Waiver of continuous batch plant inspection.** *Continuous batch plant inspection may be waived by the registered design professional, subject to approval by the enforcement agency under either of the following conditions:*

1. *The concrete plant complies fully with the requirements of ASTM C 94, Sections 9.8 and 10.9, and has a current certificate from the National Ready Mixed Concrete Association or another agency acceptable to the enforcement agency. The certification shall indicate that the plant has automatic batching and recording capabilities.*
2. *For single-story light-framed construction (without basement or retaining wall higher than 6' in height measured from bottom of footing to top of wall) ~~–buildings and isolated foundations supporting equipment only, where deep foundation elements are not used.~~*

~~where the specified compressive strength f'_c of the concrete delivered to the jobsite is 3,500 psi (24.13 MPa) and where the f'_c used in design is not greater than 3,000 psi (20.68 MPa).~~

When continuous batch plant inspection is waived, the following ~~periodic inspection~~ requirements shall apply and shall be described in the construction documents:

- ~~1. Qualified technician of the An approved agency testing laboratory shall check the first batch at the start of the day to verify materials and proportions conform to the approved mix design.~~
- ~~2. A Licensed weighmaster shall to positively identify quantity of materials as to quantity and certify to each load by a batch ticket.~~
- ~~3. Batch tickets, including material quantities and weights shall accompany the load, shall be transmitted to the inspector of record by a the truck driver with load identified thereon. The load shall not be placed without a batch ticket identifying the mix. The inspector of record shall will keep a daily record of placements, identifying each truck, its load, and time of receipt at the jobsite, and approximate location of deposit in the structure and shall maintain will transmit a copy of the daily record as required by to the enforcement agency.~~

1705A.3.3.2 Batch plant inspection not required. [DSA-SS, DSA-SS/CC] Batch plant inspection is not required for any of the following conditions, provided they are identified on the approved construction documents and the licensed weighmaster and batch ticket requirements of Section 1705A.3.3.1 are implemented:

1. Site flatwork
2. Unenclosed site structures, including but not limited to lunch or car shelters, bleachers, solar structures, flag or light poles, or retaining walls.
3. Controlled low-strength material backfill
4. Single-story relocatable buildings less than 2,160 square feet.

1705A.3.5 ~~1705A.3.4~~ Inspection of prestressed concrete.

- 1. In addition to the general inspection required for concrete work, all plant fabrication of prestressed concrete members or tensioning of posttensioned members constructed at the site shall be continuously inspected by an inspector specially approved for this purpose by the enforcement agency.*
- 2. The prestressed concrete plant fabrication inspector shall check the materials, equipment, tensioning procedure and construction of the prestressed members and prepare daily written reports. The ~~inspector~~ approved agency shall make a verified report identifying the members by mark and shall include such pertinent data as lot numbers of tendons used, tendon jacking forces, age and strength of concrete at time of tendon release and such other information that may be required.*
- 3. The inspector of prestressed members posttensioned at the site shall check the condition of the prestressing tendons, anchorage assemblies and concrete in the area of the anchorage, the tensioning equipment and the tensioning procedure and prepare daily written reports. The ~~inspector~~ approved agency shall make a verified report of the prestressing operation identifying the members or tendons by mark and including such pertinent data as the initial cable slack, net elongation of tendons, jacking force developed, and such other information as may be required.*
- 4. The verified reports of construction shall show that of the inspector's own personal knowledge, the work covered by the report has been performed and materials used and installed in every material respect in compliance with the duly approved plans and specifications for plant fabrication inspection. The verified report shall be accompanied by test reports required for materials used. For site posttensioning inspections the verified report shall be accompanied by copies of calibration charts, certified by an approved testing laboratory, showing the relationship between gage readings and force applied by the jacks used in the prestressing procedure.*

1705A.3.6 ~~1705A.3.5~~ Concrete pre-placement inspection. Concrete shall not be placed until the forms and reinforcement have been inspected, all preparations for the placement have been completed, and the preparations have been checked by the inspector of Record.

1705A.3.7 ~~1705A.3.6~~ *Placing record.* A record shall be kept on the site of the time and date of placing the concrete in each portion of the structure. Such record shall be kept until the completion of the structure and shall be open to the inspection of the enforcement agency.

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**TABLE 1705A.3
REQUIRED SPECIAL INSPECTION AND TESTS
OF CONCRETE CONSTRUCTION**

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCE STANDARDS	CBC REFERENCE
...				
4. Inspect anchors post installed in hardened concrete members. ^{b,c} a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. b. Mechanical anchors and adhesive anchors not defined in 4.a.	X		ACI 318: 17.8.2.4	
		X	ACI 318: 17.8.2	
...				
...				
13. Inspection of adhesive anchors in horizontal and upwardly inclined positions.⁶		X	ACI318: D.9.2.2	==

...

c. Installation of all adhesive anchors in horizontal and upwardly inclined positions shall be performed by an ACI/CRSI Certified Adhesive Anchor Installer.

1705A.4 Masonry construction. *Special inspections* and tests of masonry construction shall be performed in accordance with the quality assurance program requirements of TMS 402/ACI 530/ASCE 5, as set forth in Table 3.1.3 Level C requirements, and TMS 602/ACI 530.1/ASCE 6. ~~, as set forth in Table 1.19.3 Level C requirements.~~ *Special inspection and testing of post-installed anchors in masonry shall be required in accordance with requirements for concrete in Chapters 17A and 19A.*

Exception: ~~Special inspections and tests shall not be required for:~~

- ~~1. Empirically designed masonry, glass unit masonry or masonry veneer designed in accordance with Section 2109, 2110 or Chapter 14, respectively, where they are part of structures classified as Risk Category I, II or III.~~
- ~~2. Masonry foundation walls constructed in accordance with Table 1807.1.6.3(1), 1807.1.6.3(2), 1807.1.6.3(3) or 1807.1.6.3(4).~~
- ~~3. Masonry fireplaces, masonry heaters or masonry chimneys installed or constructed in accordance with Section 2111, 2112 or 2113, respectively.~~

1705A.4.1 Empirically designed masonry, g Glass unit masonry and masonry veneer in Risk Category Categories II, III or IV. *Special inspections* and tests for empirically designed masonry, glass unit masonry or masonry veneer designed by Section 2109, 2110A or Chapter 14, respectively, in structures classified as *Risk Category Categories II, III or IV*, shall be performed in accordance with TMS 402/ACI 530/ASCE 5 Level B Quality Assurance.

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1705A.5 Wood construction. *Special inspections* of prefabricated wood structural elements and assemblies shall be in accordance with Section 1704A.2.5 *except as modified in this section.* *Special inspections* of site-built assemblies shall be in accordance with this section.

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1705A.5.3 Wood structural elements and assemblies. Special inspection of wood structural elements and assemblies is required, as specified in this section, to ensure conformance with approved drawings and specifications, and applicable standards.

The approved agency ~~special inspector~~ shall furnish a verified report to the design professional in general responsible charge of construction observation, the structural engineer, and the enforcement agency, in accordance with the California Administrative code and this chapter. The verified report shall list all inspected members or trusses, and shall indicate whether or not the inspected members or trusses conform with applicable standards and the approved drawings and specifications. Any non-conforming items shall be indicated on the verified report.

1705A.5.4 Structural glued laminated timber. Manufacture of all structural glued laminated timber shall be continuously inspected by an approved agency ~~a qualified special inspector approved by the enforcement agency~~.

The approved agency ~~special inspector~~ shall verify that proper quality control procedures and tests have been employed for all materials and the manufacturing process, and shall perform visual inspection of the finished product. Each inspected member shall be stamped by the approved agency ~~special inspector~~ with an identification mark.

Exception: Special Inspection is not required for non-custom members of 5-1/8 inch maximum width and 18 inch maximum depth, and with a maximum clear span of 32 feet, manufactured and marked in accordance with ANSI/AITC A 190.1 Section 6.1.1 for non-custom members.

1705A.5.5 Manufactured open web trusses. The manufacture of open web trusses shall be continuously inspected by an approved agency ~~a qualified special inspector approved by the enforcement agency~~.

The approved agency ~~special inspector~~ shall verify that proper quality control procedures and tests have been employed for all materials and the manufacturing process, and shall perform visual inspection of the finished product. Each inspected truss shall be stamped with an identification mark by the ~~special inspector~~ approved agency.

1705A.5.6 Timber connectors. *The installation of all split ring and shear plate timber connectors, and timber rivets shall be continuously inspected by an approved agency a ~~qualified inspector approved by the enforcement agency~~. The approved agency inspector shall furnish the architect, structural engineer and the enforcement agency with a report verifying ~~duly verified by him~~ that the materials, timber connectors and workmanship conform to the approved ~~plans and specifications~~ construction documents.*

...

1705A.6.1 Soil fill. *All fills used to support the foundations of any building or structure shall be continuously inspected by the geotechnical engineer or his or her qualified representative. It shall be the responsibility of the geotechnical engineer to verify that fills meet the requirements of the approved construction documents and to coordinate all fill inspection and testing during the construction involving such fills.*

The duties of the geotechnical engineer or his or her qualified representative shall include, but need not be limited to, the inspection of cleared areas and benches prepared to receive fill; inspection of the removal of all unsuitable soils and other materials; the approval of soils to be used as fill material; the inspection of placement and compaction of fill materials; the testing of the completed fills; the inspection or review of geotechnical drainage devices, buttress fills or other similar protective measures in accordance with the approved construction documents.

A verified report shall be submitted by the geotechnical engineer as required by the California Administrative Code. The report shall indicate that all tests and inspection required by the approved construction documents were completed and that the tested materials and/or inspected work meet the requirements of the approved construction documents.

...

1705A.7.1 Driven deep foundations observation. *The installation of driven deep foundations shall be continuously inspected by a qualified representative of the geotechnical engineer responsible for that portion of the project.*

The representative of the geotechnical engineer shall make a report of the deep foundation pile-driving operation giving such pertinent data as the physical characteristics of the deep foundation pile-driving equipment, identifying marks for each deep foundation pile, the total depth of embedment for each deep foundation; and when the allowable deep foundation pile loads are determined by a dynamic load formula, the design formula used, and the permanent penetration under the last 10 blows. One copy of the report shall be sent to the enforcement agency.

...

1705A.11.1 Structural wood. Continuous special inspection is required during field gluing operations 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 components of the main windforce-resisting system, where the fastener spacing of the sheathing is more than 4 inches (102 mm) on center.~~

1705A.11.2 Cold-formed steel light-frame construction. Periodic special inspection is required for welding operations of elements of the main windforce-resisting system. Periodic special inspection is required for screw attachment, bolting, anchoring and other fastening of elements of the main windforce-resisting system, including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.

Exception: ~~Special inspections are not required for cold formed steel light frame shear walls and diaphragms, including screwing, bolting, anchoring and other fastening to components of the windforce resisting system, where either of the following apply:~~

- ~~1. The sheathing is gypsum board or fiberboard.~~
- ~~2. The sheathing is wood structural panel or steel sheets on only one side of the shear wall, shear panel or diaphragm assembly and the fastener spacing of the sheathing is more than 4 inches (102 mm) on center (o.c.).~~

...

1705A.12 Special inspections for seismic resistance. *Special inspections* for seismic resistance shall be required as specified in Sections 1705A.12.1 through 1705A.12.9, unless exempted by the exceptions of Section 1704A.2.

Exception: ~~The special inspections specified in Sections 1705.12.1 through 1705.12.9 are not required for structures designed and constructed in accordance with one of the following:~~

- ~~1. The structure consists of light frame construction; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.3.4, does not exceed 0.5; and the building height of the structure does not exceed 35 feet (10 668 mm).~~
- ~~2. The seismic force resisting system of the structure consists of reinforced masonry or reinforced concrete; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.3.4, does not exceed 0.5; and the building height of the structure does not exceed 25 feet (7620 mm).~~
- ~~3. The structure is a detached one- or two-family dwelling not exceeding two stories above grade plane and does not have any of the following horizontal or vertical irregularities in accordance with Section 12.3 of ASCE 7:~~
 - ~~3.1. Torsional or extreme torsional irregularity.~~
 - ~~3.2. Nonparallel systems irregularity.~~
 - ~~3.3. Stiffness soft story or stiffness extreme soft story irregularity.~~
 - ~~3.4. Discontinuity in lateral strength weak story irregularity.~~

1705A.12.1 Structural steel. *Special inspections* for structural steel shall be in accordance with Section 1705A.12.1.1 or 1705A.12.1.2, as applicable.

1705A.12.1.1 Seismic Force-Resisting Systems. *Special inspections* of structural steel in the seismic force resisting systems of buildings and structures assigned to *Seismic Design Category B, C, D, E or F* shall be performed in accordance with quality assurance requirements of AISC 341 *as modified by Section 1705A.2.1 of this code.*

~~**Exception:** *Special inspections* the seismic force-resisting systems of buildings and structures assigned to *Seismic Design Category B or C* that are not specifically detailed for seismic resistance, with a response modification coefficient, *R*, of 3 or less, excluding cantilever column systems.~~

1705A.12.1.2 Structural Steel Elements. *Special inspections of structural steel elements* in the seismic force resisting systems of buildings and structures assigned to *Seismic Design Category B, C, D, E or F*, other than those covered in Section 1705A.12.1.1, including struts, collectors, chords, and foundation elements, shall be performed in accordance with quality assurance requirements of AISC 341 *as modified by Section 1705A.2.1 of this code.*

~~**Exception:** *Special inspections of structural steel element* are not required in the seismic force-resisting systems of buildings and structures assigned to *Seismic Design Category B or C* with a response modification coefficient, *R*, of 3 or less.~~

1705A.12.2 Structural wood. For the seismic force-resisting system of structures assigned to *Seismic Design Category C, D, E or F*:

...

~~**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 seismic force-resisting system, where the fastener spacing of the sheathing is more than 4 inches (102 mm) on center.~~

1705A.12.3 Cold-formed steel light-frame construction. For the seismic force-resisting system of structures assigned to *Seismic Design Category* C, D, E or F, periodic special inspection shall be required:

...

Exception: ~~Special inspections are not required for cold formed steel light-frame shear walls and diaphragms, including screw installation, bolting, anchoring and other fastening to components of the seismic force-resisting system, where either of the following applies:~~

- ~~1. The sheathing is gypsum board or fiberboard.~~
- ~~2. The sheathing is wood structural panel or steel sheets on only one side of the shear wall, shear panel or diaphragm assembly and the fastener spacing of the sheathing is more than 4 inches (102 mm) on center.~~

...

1705A.12.4 Special Inspection for Special Seismic Certification. Designated seismic systems. For structures assigned to *Seismic Design Category* C, D, E or F, the special inspector shall examine *equipment and components* ~~designated seismic systems~~ requiring *special seismic certification* ~~qualification~~ in accordance with *Section 1705A.13.3 or* ASCE 7 Section 13.2.2 and verify that the *label*, anchorage and mounting conforms to the *certificate of compliance*.

1705A.12.5 Architectural components. *Periodic special inspection* is required for the erection and fastening of exterior cladding, interior and exterior nonbearing walls, *ceilings*, and interior and exterior veneer in structures assigned to *Seismic Design Category* D, E or F.

Exceptions: ~~Periodic special inspection~~ is not required for the following:

- ~~1. Exterior cladding, interior and exterior nonbearing walls and interior and exterior veneer 30 feet (9144 mm) or less in height above grade or walking surface.~~
- ~~2. Exterior cladding and interior and exterior veneer weighing 5 psf (24.5 N/m²) or less.~~
- ~~3. Interior nonbearing walls weighing 15 psf (73.5 N/m²) or less.~~

...

1705A.12.6 Plumbing, mechanical and electrical components. *Periodic special inspection* of plumbing, mechanical and electrical components shall be required for the following:

1. Anchorage of electrical equipment for emergency or standby power systems in structures assigned to *Seismic Design Category C, D, E or F*.
2. Anchorage of other electrical equipment in structures assigned to *Seismic Design Category D, E or F*.
3. Installation and anchorage of piping systems designed to carry hazardous materials and their associated mechanical units in structures assigned to *Seismic Design Category C, D, E or F*.
4. Installation and anchorage of ductwork designed to carry hazardous materials in structures assigned to *Seismic Design Category C, D, E or F*.
5. Installation and anchorage of vibration isolation systems in structures assigned to *Seismic Design Category C, D, E or F* where the approved *construction documents* require a nominal clearance of 1/4 inch (6.4 mm) or less between the equipment support frame and restraint.

...

1705A.12.8 Seismic isolation and damping systems. Periodic special inspection shall be provided for seismic isolation *and damping* system in ~~seismically isolated~~ structures assigned to assigned to Seismic Design Category ~~B, C~~, D, E or F during the fabrication and installation

of isolator units and energy dissipation devices. *Continuous special inspection is required for prototype and production testing of isolator units and damping devices.*

~~**1705.12.9 Cold-formed steel special bolted moment frames.** Periodic special inspection shall be provided for the installation of cold-formed steel special bolted moment frames in the seismic force-resisting systems of structures assigned to Seismic Design Category D, E or F.~~

1705A.13 Testing for seismic resistance. Testing for seismic resistance shall be required as specified in Sections 1705A.13.1.1 through 1705A.13.4, unless exempted from special inspections by exceptions of Section 1704A.2.

1705A.13.1 Structural Steel. Nondestructive testing for seismic resistance shall be in accordance with Section 1705A.13.1.1 or 1705A.13.1.2, as applicable.

1705A.13.1.1 Seismic Force-Resisting Systems. Nondestructive testing of structural steel in the seismic force resisting systems of buildings and structures assigned to Seismic Design Category B, C, D, E or F shall be performed in accordance with the quality assurance requirements of AISC 341.

~~**Exception:** Nondestructive testing is not required in the seismic force-resisting systems of buildings and structures assigned to *Seismic Design Category B or C* that are not specifically detailed for seismic resistance, with a response modification coefficient, R , of 3 or less, excluding cantilever column systems.~~

1705A.13.1.2 Structural Steel Elements. Nondestructive testing of *structural steel elements* in the seismic force resisting systems of buildings and structures assigned to *Seismic design Category B, C, D, E or F*, other than those covered in Section 1705A.13.1.1, including struts, collectors, chords, and foundation elements, shall be performed in accordance with quality assurance requirements of AISC 341.

Exception: ~~Nondestructive testing of structural steel element is not required in the seismic force-resisting systems of buildings and structures assigned to Seismic Design Category B or C with a response modification coefficient, R , of 3 or less.~~

1705A.13.2 Nonstructural Components. For structures assigned to *Seismic design Category B, C, D, E or F*, where requirements of Section 13.2.1 of ASCE 7 for non-structural components, supports, or attachments are met by *manufacturer's certification seismic qualification* as specified in Item 2 therein, the *registered design professional* shall specify on the *approved construction documents* the requirements for seismic certification ~~qualification~~ by analysis, or testing, ~~or experience data~~. ~~Certificates of compliance~~ for the seismic ~~qualification~~ *manufacturer's certification* shall be submitted to the building official as specified in Section 1704A.5.

Seismic sway braces satisfying requirements of FM 1950 shall be deemed to satisfy the requirements of this Section. Component tests shall be supplemented by assembly tests, when required by the building official.

1705A.13.3 Special Seismic Certification. Designated Seismic System. For structures assigned to *Seismic design Category C, D, E or F₁* and with ~~designated seismic systems equipment and components~~ that are subject to the requirements of Section 13.2.2 of ASCE 7 for special seismic certification, the *registered design professional* shall specify on the *approved construction documents* the requirements to be met by analysis, or testing ~~or experience data~~ as specified therein. *Certificate of compliance* documenting that the requirements are met shall be submitted to the building official as specified in Section 1704A.5.

Active or energized equipment and components shall be certified exclusively on the basis of approved shake table testing in accordance with ICC-ES AC 156. Minimum of two equipment/components shall be tested for a product line with similar structural configuration. Where a range of products are tested, the two equipment/components shall be either the largest and a small unit, or approved alternative representative equipment/components.

Exception: When a single product (and not a product line with more than one product with variations) is certified and manufacturing process is ISO 9001 certified, one test shall be permitted.

For a multi-component system, where active or energized components are certified by tests, connecting elements, attachments, and supports can be justified by supporting analysis.

1705A.13.3.1 ~~1705A.12.4.1~~ [Reserved for OSHPD]

1705A.13.4 Seismic isolation and damping systems. Seismic isolation and damping systems in ~~seismically isolated~~ structures assigned to Seismic Design Category B, C, D, E or F shall be tested in accordance with Section 17.8 and 18.9 of ASCE 7.

Prototype and production testing and associated acceptance criteria for isolator units and damping devices shall be subject to preapproval by the building official. Testing exemption for similar units shall require approval by the building official.

...

1705A.19 ~~1705A.18~~ Shotcrete. All shotcrete work shall be continuously inspected during placing by an approved agency ~~inspector specially approved for that purpose by the enforcement agency~~. The special shotcrete inspector shall check the materials, placing equipment, details of construction and construction procedure. ~~The inspector~~ an approved agency shall furnish a verified report that of his or her own personal knowledge the work covered by the report has been performed and materials used and installed in every material respect in compliance with the duly approved plans and specifications.

1705A.19.1 ~~1705A.18.1~~ Visual examination for structural soundness of in-place shotcrete. Completed shotcrete work shall be checked visually for reinforcing bar embedment, voids, rock pockets, sand streaks and similar deficiencies by examining a minimum of three 3-inch (76 mm) cores taken from three areas chosen by the design engineer which represent the worst congestion of reinforcing bars occurring in the

project. Extra reinforcing bars may be added to noncongested areas and cores may be taken from these areas. The cores shall be examined by the special inspector and a report submitted to the enforcement agency prior to final approval of the shotcrete.

Exception: *Shotcrete work fully supported on earth, minor repairs, and when, in the opinion of the enforcement agency, no special hazard exists.*

...

(All existing amendments that are not revised above shall continue without any change)

Notation:

Authority: Health and Safety Code Section 129850

Reference: Health and Safety Code Sections 1275, 129850 and 129790