BUILDING DEPARTMENT

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Statement of Special Inspection Requirements

California Building Code Chapter 17

Construction plans shall include a statement of special inspection in accordance with CBC chapter 17. The statement of special inspection shall include the following:

1- *The materials, systems, components and work required to have special inspections or tests by the Building Code or by the registered design professional responsible for each portion of work.*

2- *The type and extent of each special inspection or test.*

3- *Additional requirements for special inspections or tests for seismic or wind resistance as specified in Sections 1705.11, 1705.12 and 1705.13*

4- *For each type of special inspection, identification whether it will be continuous or periodic, or performed in accordance with the reference standard where the inspections are defined.*

TABLE 1705.2.3
REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]
1. Installation of open-web steel joists and joist girders.			
a. End connections – welding or bolted.	—	X	SJI specifications listed in Section 2207.1.
b. Bridging – horizontal or diagonal.	—		
1. Standard bridging.	—	X	SJI specifications listed in Section 2207.1.
2. Bridging that differs from the SJI specifications listed in Section 2207.1.		X	

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1705.12, Special inspections for seismic resistance.

MASONRY CONSTRUCTION (ASCE 5 Table 3.1.2)

Minimum Tests				
Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with ASCE 6 Article 1.5 B.1.b.3 for self-consolidating grout				
Verification of f'm and f'_{AAC} in accordance with ASCE 6 Article 1.4 B prior to construction, unless specifically exempted by this Code				
Special Inspection Task	**Continuous**	**Periodic**	**ASCE 5**	**ASCE 6**
1. Verify compliance with the approved submittals		X		Art. 1.5
2. As masonry construction begins, verify that the following are in compliance:				
a. Proportions of site-prepared mortar		X		Art. 2.1, 2.6A
b. Construction of mortar joints		X		Art. 3.3B
c. Grade and size of prestressing tendons and anchorages		X		Art. 2.4B, 2.4H
d. Location of reinforcement, connectors, and prestressing tendons and anchorages		X		Art. 3.4, 3.6A
e. Prestressing technique		X		Ad. 3.6B
f. Properties of thin-bed mortar for AAC masonry	X[(a)]	X[(b)]		Art. 2.1C
3. Prior to grouting, verify that the following are in compliance:				
a. Grout space		X		Art. 3.2D, 3.2F
b. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages		X	Sec.6.1	Art. 2.4, 3.4
c. Placement of reinforcement, connectors, and prestressing tendons and anchorages		X	Sec. 6.1, 6.2.1, 6.2.6, 6.2.7	Art. 3.2E, 3.4, 3.6A
d. Proportions of site-prepared grout and prestressing grout for bonded tendons		X		Art. 2.6B, 2.4G.1.b
e. Construction of mortar joints		X		Art. 3.3B
4. Verify during construction:				
a. Size and location of structural elements		X		Art. 3.3F
b. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction		X	Sec. 1.2.1(e), 6.1.4.3, 6.2.1	
c. Welding of reinforcement	X		Sec. 8.1.6.7.2, 9.3.3.4(c), 11.3.3.4(b)	
d. Preparation, construction, and protection of masonry during cold weather (temperature below 40° F or hot weather (temperature above 90° F)		X		Art. 1.8C, 1.8D
e. Application and measurement of prestressing force	X			Art. 3.6B
f. Placement of grout and prestressing grout for bonded tendons is in compliance	X			Art. 3.5, 3.6C
g. Placement of AAC masonry units and construction of thin-bed mortar joints	X[(a)]	X[(b)]		Art. 3.3B.9, 3.3F.1.b
5. Observe preparation of grout specimens, mortar specimens, and/or prisms.		X		Art. 1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3, 1.4B.3, 1.4B.4

a) Required for the first 5,000 square feet of AAC masonry.
b) Required after the first 5,000 square feet of AAC masonry.

The requirements above correspond with Level B Quality Assurance as prescribed by ASCE 5 Section 3.1. ASCE 5 contains alternate provisions for masonry structures designed using empirical or prescriptive design methods. For Risk Category IV structures, see ASCE 5.

TABLE 1705.3

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. Inspect reinforcement, including prestressing tendons, and verify placement.	—	X	ACI 318 Ch. 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4
2. Reinforcing bar welding: a. Verify weldability of reinforcing bars other than ASTM A706; b. Inspect single-pass fillet welds, maximum 5/16"; and c. Inspect all other welds.	— X	X X	AWS D1.4 ACI 318: 26.5.4	—
3. Inspect anchors cast in concrete.	—	X	ACI 318: 17.8.2	—
4. Inspect anchors post-installed in hardened concrete members.[b] 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	X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	—
5. Verify use of required design mix.	—	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	—	ASTM C172 ASTM C31 ACI 318: 26.4.5, 26.12	1908.10
7. Inspect concrete and shotcrete placement for proper application techniques.	X	—	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.	—	X	ACI 318: 26.4.7-26.4.9	1908.9
9. Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing	X X	—	ACI 318: 26.9.2.1	—
10. Inspect erection of precast concrete members.	—	X	ACI 318: Ch. 26.8	—
11. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	—	X	ACI 318: 26.10.2	—
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	—	X	ACI 318: 26.10.1(b)	—

For SI: 1 inch = 25.4 mm.

a) Where applicable, see also Section 1705.12, Special inspections for seismic resistance.

b) Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

TABLE 1705.6

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	—	X
2. Verify excavations are extended to proper depth and have reached proper material.	—	X
3. Perform classification and testing of compacted fill materials.	—	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	—
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	—	X

TABLE 1705.7

REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATION ELEMENTS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Verify element materials, sizes and lengths comply with the requirements.	X	—
2. Determine capacities of test elements and conduct additional load tests, as required.	X	—
3. Inspect driving operations and maintain complete and accurate records for each element.	X	—
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	X	—
5. For steel elements, perform additional special inspections in accordance with Section 1705.2.	—	—
6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance with Section 1705.3.	—	—
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	—	—

TABLE 1705.8

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Inspect drilling operations and maintain complete and accurate records for each element.	X	—
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	X	—
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3.	—	—

TABLE 1705A.2.1
REQUIRED VERIFICATION INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	CBC REFERENCE
1. Material verification of high-strength bolts, nuts and washers:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	AISC 360, Section A3.3 and applicable ASTM material standards	—
b. Manufacturer's certificate of compliance required.	—	X	—	—
2. Inspection of high-strength bolting:				
a. Snug-tight joints.	—	X	AISC 360, Section M2.5	—
b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation	—	X		—
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X	—		—
3. Material verification of structural steel and cold-formed steel deck:				
a. For structural steel, identification markings to conform to AISC 360.	—	X	AISC 360, Section A3.1	2203A.1
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	Applicable ASTM material standards	
c. Manufacturer's certified test reports.	—	X	—	—
4. Material verification of weld filler materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.	—	X	AISC 360, Section A3.5 and applicable AWS A5 documents	—
b. Manufacturer's certificate of compliance required.	—	X	—	—
5. Inspection of welding:				
a. Structural steel and cold-formed steel deck:				
1. Complete and partial joint penetration groove welds	X	—	AWS D1.1 AWS D1.8	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 ≤ 5 /16"	—	X		
6. Floor and roof deck welds.	—	X	AWS D1.3	—
b. Reinforcing steel:				
1. Verification of weldability of reinforcing steel other than ASTM A706.	—	X	AWS D1.4, ACI 318: Sections 26.6.4.1, 18.2.8, 25.5.7.4	—
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	—		—
3. Shear reinforcement.	X			—
4. Other reinforcing steel.	—	X		—
6. Inspection of steel frame joint details for compliance:				
a. Details such as bracing and stiffening.	—	X	—	1705A.2.1
b. Member locations.	—	X	—	
c. Application of joint details at each connection.	—	X	—	

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1705A.12, Special inspections for seismic resistance.