

ADMINISTRATIVE BULLETIN

- NO. AB-046** :
- DATE** : September 18, 2002 (Updated 01/01/08 for code references.)
- SUBJECT** : Permit Process; Inspection
- TITLE** : **Special Inspection and Structural Observation Procedures**
- PURPOSE** : The purpose of this Administrative Bulletin is to describe the procedures to be used in the administration and enforcement of special inspection and structural observation requirements of the San Francisco Building Code. It is intended as an aid for design professionals in their preparation of inspection and observation programs. It provides information for building owners, architects and engineers, contractors, and special inspection agencies about their responsibilities regarding special inspection and structural observation and includes standardized forms and formats applicable to these functions.
- REFERENCE** : 2007 San Francisco Building Code
- Section 108A.4 Inspections, General
- Chapter 17, Structural Tests and Inspections

DISCUSSION :

I DEFINITION AND PURPOSE

A. Special Inspection

Special Inspection is the monitoring of the materials and workmanship that are critical to the integrity of the building structure or public safety. Special inspection is the review of the work of the contractors and their employees to assure that the approved plans and specifications are being followed and that relevant codes and ordinances are being observed. The special inspection process is in *addition* to the regular inspections conducted by Department of Building Inspection building inspectors and by the engineer or architect of record as part of periodic structural observation. The special inspectors furnish continuous or periodic inspection as required by the San Francisco Building Code (SFBC).

Good communication between the special inspector and the designers, contractor, and building department is essential to project quality assurance.

B. Structural Observation

Structural Observation means the visual observation of the structural system, for general conformance to the approved plans and specifications, at significant construction stages and at completion of the structural system. Structural observation does not include or waive the responsibility for the inspections required by Section 108A, 1704, or other sections of this code. [SFBC Sec. 202]

II DUTIES AND RESPONSIBILITIES OF THE PARTIES RESPONSIBLE FOR SPECIAL INSPECTION PROGRAM AND STRUCTURAL OBSERVATION PROGRAM

A. Duties and Responsibilities of the Project Owner

The project owner, or the engineer or architect of record acting as the owner's agent, is responsible for funding special inspection services.

B. Duties and Responsibilities of the Engineer of Record

The engineer or architect of record has many duties and responsibilities related to special inspection and structural observation activities. These include the following:

1. Identify the need for special inspection and structural observation services

The project plans and/or specifications which are submitted to the building official need to clearly indicate the design parameters and material selection. The engineer or architect of record is the development team member who analyzes the critical elements of the design and determines where special inspection and structural observation is required in accordance with 2007 SFBC Sections 1704 and 1709. See Exhibit No. 1, *Special Inspection and Structural Observation*. The engineer is responsible to submit the special inspection and structural observation form (minimum size 11" x 17") into the structural plan sets. Also one separate copy shall be submitted to DBI plan checker for office copy.

2. Respond to field discrepancies

Material and design discrepancies which are not resolved in a timely manner or are about to be incorporated in the work must be brought to the attention of the engineer or architect of record and the building official. Uncorrected field deficiencies observed by the special inspector must be brought to their attention. The engineer or architect of record is instrumental in effecting the remedial process of deficiency correction. The engineer or architect of record is responsible for any design changes in addition to acknowledgment and approval of shop drawings which may detail structural information, and for submission of such changes to the building department for approval.

3. Submit final compliance report

The engineer of record shall submit an overall final compliance report to DBI stating that all items requiring special inspection and structural observation were performed in accordance with the approved plans, specifications, and applicable workmanship provisions of the SFBC. See Exhibit No. 2, *Special Inspection Final Compliance Report* and Exhibit No. 3, *Structural Observation Final Compliance Report*.

C. Duties and responsibilities of the engineer responsible for the structural observation program

The owner shall employ the engineer or architect responsible for the structural design, or another engineer or architect designated by the engineer or architect responsible for the structural design, to perform structural observation as defined in SFBC Section 202. Observed deficiencies shall be reported in writing to the owner's representative, special inspector, contractor and the Director. The structural observer shall submit to the Director a written statement declaring that the site visits have been made and identifying any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved. See Exhibit No. 3 - *Special Observation Final Compliance Report*.

D. Duties and Responsibilities of the Special Inspector

The special inspectors are individuals with highly developed, specialized skills who observe those critical building or structural features which they are qualified to inspect. Duties of the special inspectors and/or inspection agencies include the following:

1. Observe all work for which they are responsible

Special inspectors shall inspect all work for conformance with the Department of Building Inspection approved drawings and specifications and applicable provisions of the code.

2. Provide timely reports

The special inspector should complete written inspection reports for each inspection visit and provide the reports in a timely manner. The special inspector or inspection agency shall furnish these reports directly to the building official, engineer or architect of record and to the general contractor. Special inspectors shall bring all non-conforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is about to be incorporated in the work, the engineer or architect of record and the building official shall be notified immediately. See Exhibit Nos. 5 to 8.

3. Submit a final signed report

Special inspectors or inspection agencies shall submit a final report (signed by the registered engineer or licensed architect who is responsible for the special inspection) to the Department of Building Inspection stating that all items requiring special inspection and testing were constructed, to the best of their knowledge, in conformance with the approved design drawings, specifications, approved change order and the applicable provisions of the code. See Exhibit No. 2 - *Special Inspection Final Compliance Report*.

E. Duties and Responsibilities of the Director

1. Review and examine plans, specifications and contract documents for compliance with special inspection and structural observation requirements

The Director is charged with the legal authority to review the plans and specifications for compliance with the code requirements.

2. Monitor the special inspection and structural observation activities

The Director shall monitor the job site to see that special inspection and structural observation is being performed and that an adequate number of special inspection staff is present depending upon the extent and complexity of the project.

3. Review inspection reports

The Director receives, reviews and makes the inspection reports part of the inspection records.

4. Review the final report

The Certificate of Occupancy shall not be issued until the final report has been received and approved by the Director.

F. Duties and Responsibilities of the Contractor

The contractor's duties include the following:

1. Notify the special inspector

The contractor is responsible for notifying the special inspector or agency regarding special inspections required by the Department of Building Inspection. Adequate notice shall be provided so that the special inspector has time to become familiar with the project.

2. Provide access to approved plans

The contractor is responsible for providing the special inspector with access to approved plans at the job site.

3. Retain special inspection records

The contractor is responsible for retaining at the job site all special inspection records submitted by the special inspector, and providing these records for review by the Department of Building Inspection inspector upon request.

III SPECIAL INSPECTOR QUALIFICATIONS: [SFBC Sec. 1704]

Special Inspectors shall be one of the following:

- A. A qualified person employed by an approved inspection and testing agency conforming insofar as applicable to the requirements of ASTM E329.

Except for testing of materials and reporting of numerical results therefrom, the inspector shall work under the general supervision of a registered civil engineer, and all reports and certification of compliance must be signed by the engineer.

B. A registered civil engineer or licensed architect who can demonstrate to the satisfaction of the Director that he or she has the experience and expertise to qualify as a special inspector for the specific type of inspection work, and has appropriate equipment to conduct such inspections and tests.

Note: The above applies to any engineer or architect who is not the engineer or architect of record for the project. Qualifications must be approved by the Director.

C. For life-safety provisions required by SFBC Section 403, construction review and validation testing shall be performed by, or under the supervision of a registered electrical or mechanical engineer responsible for those areas of work involving his or her design. All reports on construction review and testing, and certification of compliance and full operational status, shall be signed by the engineer and endorsed by the design professional of record for the building. The design professional of record shall bear overall responsibility for the proper installation and testing of the life-safety system. When approved by the Director this responsibility may be borne by an approved independent testing agency.

D. The design engineer or architect of record.

Note: The engineer who prepared the soil report may be considered the engineer of record for the geotechnical work requiring special inspection.

E. For plant fabrication of precast concrete elements, a registered civil engineer who supervises all phases of quality control work. The registered civil engineer shall be subject to the approval of the Director.

IV SPECIAL INSPECTION AND STRUCTURAL OBSERVATION OPERATIONAL PROCEDURE WITHIN DEPARTMENT OF BUILDING INSPECTION

A. Plan Review Services (PRS) - Plan Check Engineers/Inspectors

1. Review the special inspection and structural observation form. Usually the engineer/architect of record should be the one who prepares the form. See Exhibit No. 1, *Special Inspection and Structural Observation Form*. Verify special inspection and structural observation items. The engineer or architect of record shall specify all special inspection and structural observation items. The special inspection and structural observation form shall be prepared and signed by the professional of record and submitted together with the structural drawings (minimum size 11x17). Also one separate copy shall be submitted to DBI plan checker for office copy. See Exhibit No. 1, *Special Inspection and Structural Observation*.

2. Plan checker affixes the "SPECIAL INSPECTION" stamp on the back of the application when signing that permit is approved for issuance. The plan checker makes one copy of the Special Inspection and attaches it to the applicant's copy of the permit application, then gives the original to the Plan Review Services (PRS) clerical staff.

3. PRS clerical staff set up the special inspection file and enter the types of special inspection and structural observation required for the project in the computer record for the permit application.

4. During construction, PRS clerical staff distribute special inspection progress reports to assigned plan checkers. If reports indicate problems which need to be brought to the attention of the district building inspector, plan checker forwards a copy of the report to the appropriate district building inspector. District building inspector will notify the contractor who in turn shall notify the engineer of record to resolve the field problems. Resolution reports shall be submitted to PRS for review and file. See Exhibit No. 4, *Special Inspection/Structural Observation Transmittal Letter*.

5. Before final building inspection, the owner submits to the plan checker final compliance reports covering each item requiring special inspection and structural observation. Final reports shall be wet signed and stamped by the responsible engineer of the special inspection agency, geotechnical firm, engineer or architect of record - as appropriate to the type(s) of special inspection. See Exhibit No. 2, *Special Inspection Final Compliance Report* and Exhibit No. 3, *Structural Observation Final Compliance Report*.

6. When final reports are submitted, PRS clerical staff pull the appropriate file containing progress reports and distribute to assigned plan checkers for final compliance review. If documentation is not sufficient, plan checker calls engineer of record regarding what items are missing. If compliance has been verified, plan checker signs and dates Special Inspection and Structural Observation Program form.

7. PRS clerical staff enter final compliance approval in computer by entering the approval date and the plan checker's name for each item requiring special inspection.

8. PRS clerical staff send completed special inspection and structural observation files quarterly to DBI storage.

9. For permits issued **over the counter** when special inspection is required, staff make copy of the Special Inspection and distribute as follows:

- a. One copy to applicant,
- b. Original to PRS clerical staff with the approval date.

B. Central Permit Bureau (CPB)

Staff give one copy of the approved Special Inspection to applicant together with the approved drawings.

C. Building Inspection Division (BID)

1. For projects requiring special inspection, district building inspectors deliver a Notice of Special Inspection Requirements to the job site and discuss the requirements with the person in charge of the work. Special Inspector shall be identified to District Building Inspector prior to start of the work for which special inspection is required. See Exhibit No. 10, *Notice - Special Inspection Requirements and Structural Observation Requirements*.

2. District building inspectors monitor the special inspection activities at the project site. In the event that district building inspectors discover that required special inspection is not being performed, or not in compliance with the approved plans, they are authorized to suspend or stop the progress of the work.

Approved by the Building Inspection Commission on September 18, 2002

Originally signed by:
Frank Y. Chiu, Director
October 3, 2002

Attachments:

1. Special Inspection and Structural Observation Requirements
2. Special Inspection Final Compliance Report
3. Structural Observation Final Compliance Report
4. Special Inspection/Structural Observation Transmittal Letter
5. Special Inspection Record
6. Special Inspection Daily Report
7. Special Inspection Weekly Report
8. Special Inspection Discrepancy Notice



DEPARTMENT OF BUILDING INSPECTION
City & County of San Francisco
1660 Mission Street, San Francisco, California 94103-2414

Exhibit No. 1
(Required Format)

**SPECIAL INSPECTION AND STRUCTURAL
OBSERVATION**

NOTICE

SPECIAL INSPECTION REQUIREMENTS

Please note the Special Inspections shown on the approved plan and checked on the special inspections form issued with the permit are required for this project. The employment of special inspectors is the direct responsibility of the owner or the engineer/architect of record acting as the owner's representative.

These special inspections are required *in addition to* the called inspections performed by the Department of Building Inspection. The name of special inspector shall be furnished to district building inspector prior to start of work for which special inspection is required.

For questions regarding the details or extent of required inspection or tests, please call the Plan Checker assigned to this project or 415-558-6133. If there are any field problems regarding special inspection, please call your District Building Inspector or 415-558-6096.

Before final building inspection is scheduled, documentation of special inspection compliance must be submitted to and approved by the Plan Review Services. To avoid delays in this process, the project owner should request final compliance reports from the architect or engineer of record and/or special inspection agency soon after the conclusion of work requiring special inspection. ***The permit will not be finalized without compliance with the special inspection requirements.***

Structural Observation Requirements

Structural observation shall be provided as required per Section 1709. **The building permit will not be finalized without the compliance of the structural observation requirements.**

Exhibit No. 1 (continued)

A COPY OF THIS DOCUMENT SHALL BE KEPT WITH THE APPROVED STRUCTURAL DRAWING SET

JOB ADDRESS _____ APPLICATION NO. _____ ADDENDUM NO. _____

OWNER NAME _____ OWNER PHONE NO. (____) _____

Employment of Special Inspection is the direct responsibility of the OWNER, or the engineer/architect of record acting as the owner's representative. Special inspector shall be one of those as prescribed in Sec.1704. Name of special inspector shall be furnished to DBI District Inspector prior to start of the work for which the Special Inspection is required. Structural observation shall be performed as provided by Section 1709. A preconstruction conference is recommended for owner/builder or designer/builder projects, complex and highrise projects, and for projects utilizing new processes or materials.

In accordance with Sec. 1704; 1707; 1708 (2007 SFBC), Special Inspection and/or testing is required for the following work:

- | | | |
|---|--|--|
| <p>1. <input type="checkbox"/> Concrete (Placement & sampling)</p> <p>2. <input type="checkbox"/> Bolts installed in concrete</p> <p>3. <input type="checkbox"/> Special moment - Resisting concrete frame</p> <p>4. <input type="checkbox"/> Reinforcing steel and prestressing tendons</p> <p>5. Structural welding:
 Periodic visual inspection
 <input type="checkbox"/> Single pass fillet welds <5/16"
 <input type="checkbox"/> Steel deck
 <input type="checkbox"/> Welded studs
 <input type="checkbox"/> Cold formed studs and joists
 <input type="checkbox"/> Stair and railing systems
 <input type="checkbox"/> Reinforcing steel</p> <p>Continuous visual inspection and NDT
 <input type="checkbox"/> All other welding (NDT exception: Fillet weld)
 <input type="checkbox"/> Reinforcing steel; and <input type="checkbox"/> NDT required</p> <p><input type="checkbox"/> Moment-resisting frames
 <input type="checkbox"/> Others _____

 _____</p> | <p>6. <input type="checkbox"/> High-strength bolting</p> <p>7. <input type="checkbox"/> Structural masonry</p> <p>8. <input type="checkbox"/> Reinforced gypsum concrete</p> <p>9. <input type="checkbox"/> Insulating concrete fill</p> <p>10. <input type="checkbox"/> Sprayed-on fireproofing</p> <p>11. <input type="checkbox"/> Piling, drilled piers and caissons</p> <p>12. <input type="checkbox"/> Shotcrete</p> <p>13. <input type="checkbox"/> Special grading, excavation and filing (Geo. Engineered)</p> <p>14. <input type="checkbox"/> Smoke-control system</p> <p>15. <input type="checkbox"/> Demolition</p> <p>16. <input type="checkbox"/> Exterior Facing</p> <p>17. Retrofit of unreinforced masonry buildings:
 <input type="checkbox"/> Testing of mortar quality and shear tests
 <input type="checkbox"/> Inspection of repointing operations
 <input type="checkbox"/> Installation inspection of new shear bolts
 <input type="checkbox"/> Pre-installation inspection for embedded bolts</p> <p><input type="checkbox"/> Pull/torque tests per SFBC Sec. 1607C & 1615C</p> | <p>18. Bolts Installed in existing concrete or masonry:
 <input type="checkbox"/> Concrete
 <input type="checkbox"/> Masonry
 <input type="checkbox"/> Pull/torque tests per SFBC Sec.1607C & 1615C</p> <p>19. <input type="checkbox"/> Shear walls and floor systems used as shear diaphragms</p> <p>20. <input type="checkbox"/> Holdowns</p> <p>21. Special cases:
 <input type="checkbox"/> Shoring
 <input type="checkbox"/> Underpinning
 <input type="checkbox"/> Others:</p> <p>22. <input type="checkbox"/> Crane safety (Apply to the operation of tower cranes on highrise building) (Section 1704.19)</p> <p>23. <input type="checkbox"/> Others: "As recommended by professional of record"</p> |
|---|--|--|

Structural observation for the following: Foundations Steel framing
 Concrete construction Masonry construction Wood framing
 Other:

Certification is required for: [] Glu-lam components

Prepared by: _____ Phone: (_____)
Engineer/Architect of Record

Review by: _____ Phone: (415) 558-
DBI Engineer or Plan Checker

APPROVAL (Based on submitted reports.)

DATE DBI Engineer or Plan Checker

QUESTIONS ABOUT SPECIAL INSPECTION AND STRUCTURAL OBSERVATION SHOULD BE DIRECTED IN THE ORDER OF:

- 1) Plan Check Engineer/Inspector: (415) 558-6133. 2) District Building Inspector: (415) 558-6096

**Exhibit No. 3
(Required Format)**

STRUCTURAL OBSERVATION FINAL COMPLIANCE REPORT

[Date]

[Special Inspection Coordinator]
City and County of San Francisco
Department of Building Inspection
1660 Mission Street, 2nd Floor
San Francisco, CA 94103

Re: Project Address:
Permit Application No.

In accordance with Section 1709 of the 2007 San Francisco Building Code, we have provided structural observation for the following items:

Based upon inspections performed and my substantiating reports, it is my professional judgment that, to the best of my knowledge, the observed structural work was performed in accordance with the approved plans, specifications, and applicable workmanship provisions of the San Francisco Building Code.

Signed: _____

[Stamp of Engineer/Architect of Record performing structural observation]

Print full name: _____

cc: Client/Project Owner



DEPARTMENT OF BUILDING INSPECTION
City & County of San Francisco
1660 Mission Street, San Francisco, California 94103-2414

Exhibit No. 4
(Required Format)

Special Inspection/Structural Observation
Transmittal Letter

From: _____
DBI Engineer or Plan Checker

415-558-_____
Phone

To: _____
DBI District Building Inspector

Address of Project: _____
Application Number: _____

þ The attached special inspection/structural observation report(s) show(s) discrepancies:

þ Contact plan checker for discussion on proposed action

þ Issue correction notice to resolve discrepancy(s)

þ Stop work in the area(s) of discrepancy(s)

**þ Stop all work. Conference with Chief building Inspector and Plan Check Manager
Required**

þ Other _____

þ All final reports were received and are acceptable. Final building inspection may be scheduled.

**Exhibit No. 6
(Recommended for Format Purpose only)**

SPECIAL INSPECTION DAILY REPORT

Permit Application No. _____ **Date** _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____
 ☐ Continuous **☐ Periodic; frequency:** _____

Inspections made, including locations: _____

Tests performed: _____

Items requiring 1) Correction, 2) Correction of previously listed items, and 3) Previously listed uncorrected items:

Changes to approved plans authorized by engineer or architect of record: _____

Comments: _____

To the best of my knowledge, work inspected was in accordance with the building department approved plans, specifications, and applicable workmanship provisions of the SFBC except as noted above.

Special Inspector: _____ **Inspection Agency:** _____

**Exhibit No. 7
(Recommended for Format Purpose only)**

SPECIAL INSPECTION WEEKLY REPORT

Permit Application No. _____ **Date** _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

Continuous Periodic; frequency: _____

Total inspection time each day:

Date						
Hours						
Inspector						

Inspections made, including locations: _____

Tests performed: _____

Items requiring 1) Correction, 2) Correction of previously listed items, and 3) Previously listed uncorrected items:

Changes to approved plans authorized by engineer or architect of record: _____

Comments: _____

To the best of my knowledge, work inspected was in accordance with the building department approved plans, specifications, and applicable workmanship provisions of the SFBC except as noted above.

**cc: Building Department
Engineer/Architect**

Exhibit No. 8

(Recommended for Format Purpose only)

SPECIAL INSPECTION DISCREPANCY NOTICE

Permit Application No. _____ **Date** _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

Notice delivered to: **Contractor** **Engineer/Architect** **Building Department**

The following discrepancies require correction and inspection approval prior to proceeding with this phase of the work:

Signed: _____

Print full name: _____

DO NOT REMOVE THIS NOTICE
Post with building permit inspection record card

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