

Gavin Newsom, Mayor Vivian L. Day, C.B.O., Director

## DRAFT #7 ADMINISTRATIVE BULLETIN

NO. AB-046

**DATE:** January 11, 2010

**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.

**REFERENCES** 2010 San Francisco Building Code:

Section 108A.4. Inspections, General

Chapter 17. Structural Tests and Special Inspections

ASTM E329-07. Standard Specification for Agencies Engaged in

Construction Inspection and/or Testing

Technical Services Division
1660 Mission Street – San Francisco CA 94103
Office (415) 558-6088 – FAX (415) 558-6686 – www.sfdbi.org

#### I. DEFINITIONS

#### A. Special Inspection

Special Inspection is the monitoring of materials and workmanship that are critical to the integrity of building structures or are otherwise required for public safety. Special inspection is intended to ensure 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 the periodic structural observation by the engineer or architect of record. 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 an essential part of project quality assurance.

#### B. Structural Observation

Structural Observation is 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, as required by SFBC Section 1710. 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

- 1. The project owner, or the owner's agent, is responsible for funding special inspection services.
- 2. The owner, or the owner's agent, 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.
- 3. Before final building inspection, the owner, or the owner's agent, shall submit to DBI 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 of report. See Exhibit No. 2, Special Inspection Final Compliance Report and Exhibit No. 3, Structural Observation Final Compliance Report.

#### B. Duties and Responsibilities of the Engineer of Record

The Engineer of Record (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 that are submitted to the Building Official shall clearly indicate the design parameters and material selection. The Engineer of Record shall analyze the critical elements of the design and determine where special inspection and structural observation are required, in accordance with 2010 SFBC Sections 1704 and 1710. The Engineer of Record shall submit the *Special Inspection and Structural Observation Form* (Exhibit No. 1) to DBI. The Engineer of Record shall also indicate the required special inspection and structural observation requirements on the submitted drawings. This may be accomplished by including a copy of the form on the drawings, or by including the same information on the drawings in another manner.

#### 2. Respond to field discrepancies

The Engineer of Record is instrumental in the 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 DBI for approval.

#### 3. Prepare final compliance report

The Engineer of Record prepare an overall final compliance report for submittal 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

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 - Structural 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. Respond to field discrepancies

Material and design discrepancies shall brought to the attention of the Engineer of Record and the Building Official.

#### 4. 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 for compliance.

The Director is charged with the legal authority to review the plans for compliance with the code requirements, including special inspection and structural observation requirements

#### 2. Monitor the special inspection and structural observation activities

The Director shall monitor the jobsite 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 DBI. 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]

The San Francisco Department of Building Inspection will accept special inspection and testing agencies working on projects in San Francisco who are recognized by the Special Inspection Joint Review Committee of participating Bay Area jurisdictions, which reviews the qualifications of inspection and testing agencies including conformance with ASTM E329 and inspector certification and experience criteria. The current list of the Joint Review Committee's Recognized Special Inspection and Testing Agencies is available from DBI.

Alternatively, 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 from such tests, 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 Engineer (or Architect) of Record.

Note: The engineer who prepared the geotechnical 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
  - Review the Special Inspection and Structural Observation Form. Usually the engineer or architect of record prepares the form. See Exhibit No. 1, Special Inspection and Structural Observation Form. Verify special inspection and structural observation items.
  - 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 Structural Observation Form* and attaches it to the applicant's copy of the permit application, then gives the original to the Special Inspection Services staff.
  - 3. Special Inspection Services 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, DBI Special Inspection Services Staff distribute special inspection progress reports to assigned staff. If reports indicate problems that need to be brought to the attention of the district building inspector, Special Inspection Services Staff 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. When final reports are submitted, DBI staff will review for final compliance. If documentation is not sufficient, DBI staff will notify the Engineer of Record regarding missing items. If compliance has been verified, DBI staff signs and dates Special Inspection and Structural Observation Program form.

- 6. DBI staff enters final compliance approval in the computer by entering the approval date and their name for each item requiring special inspection.
- 7. DBI staff sends completed special inspection and structural observation files quarterly to DBI storage.
- 8. For permits issued **over the counter** when special inspection is required, DBI staff will make copy of the Special Inspection form and distribute as follows:
  - a. One copy to applicant
  - b. Original to DBI staff with the approval date.
- B. Central Permit Bureau (CPB)

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

- C. Building Inspection Division (BID)
  - Special Inspector shall be identified to the District Building Inspector prior to start of the work for which special inspection is required. See Exhibit No. 1, Notice - Special Inspection Requirements and Structural Observation Requirements.
  - 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 is not in compliance with the approved plans, they are authorized to suspend or stop the progress of the work.

Vivian L. Day, C.B.O. Date Director Department of Building Inspection		
Department of Building Inspection	Director	Date
	Department of Building Inspection	

#### Attachments (Exhibits):

- 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
- 9. Sample matrix
- 10. Agency Summary and Letter of Agreement
- 11. Waiver Agreement
- 12. Responsible Engineer's Statement of Agreement



Exhibit No. 1

### **NOTICE**

#### SPECIAL INSPECTION REQUIREMENTS

Please note that the Special Inspections shown on the approved plans 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 the special inspector shall be furnished to the 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 **415-558-6132**. If there are any <u>field</u> problems regarding special inspection, please call your District Building Inspector or 415-558-6570.

Before final building inspection is scheduled, documentation of special inspection compliance must be submitted to and approved by the Special Inspection Services staff. 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 1710. **The building** permit will not be finalized without compliance with the structural observation requirements.

### **Special Inspection Services Contact Information**

1. Telephone: (415) 558-6132 2. Fax: (415) 558-6474

Email: <a href="mailto:dbi.specialinspections@sfgov.org">dbi.specialinspections@sfgov.org</a>
 In person: 3<sup>rd</sup> floor at 1660 Mission Street

Note: We are moving towards a 'paperless' mode of operation. All special inspection submittals, including final letters, may be emailed (preferred) or faxed. We will also be shifting to a paperless fax receipt mode.

#### SPECIAL INSPECTION AND STRUCTURAL OBSERVATION

#### 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	. ()
as the owner's representative. Spe inspector shall be furnished to DBI required. Structural observation sh	cial inspector shall be one of those as District Inspector prior to start of the wo all be performed as provided by Sectio	R, or the engineer/architect of record acting prescribed in Sec.1704. Name of special ork for which the Special Inspection is n 1710. A preconstruction conference is highrise projects, and for projects utilizing
In accordance with Sec. 1701;1703 following work:	;1704 (2010 SFBC), Special Inspection	n and/or testing is required for the
1. [] Concrete (Placement & sampling) 2. [] Bolts installed in concrete 3. [] Special moment -     Resisting concrete frame 4. [] Reinforcing steel and prestressing tendons 5. Structural welding:     A. Periodic visual inspection [] Single pass fillet welds 5/16" or smaller [] Steel deck [] Welded studs [] Cold formed studs and joists [] Stair and railing systems [] Reinforcing steel B. Continuous visual inspection and NDT     (Section 1704) [] All other welding (NDT exception: Fillet wel [] Reinforcing steel; and [] NDT required [] Moment-resisting frames [] Others	11. [] Piling, drilled piers and caissons 12. [] Shotcrete 13. [] Special grading, excavation and filling (Geo. Engineered) 14. [] Smoke-control system 15. [] Demolition 16. [] Exterior Facing 17. Retrofit of unreinforced masonry buildings: [] Testing of mortar quality and shear tests [] Inspection of repointing operations d) [] Installation inspection of new shear bolts [] Pre-installation inspection for embedded bolts [] Pull/torque tests per SFBC Sec.1607C & 1619  O SFBC) for the following: [] Foundations onstruction [] Wood framing	
25. Certification is required for: [ ] Glu-lam comp Prepared by: Engineer/Architect of Record		
Required information: FAX: ()	Email:	
Review by:  DBI Engineer or Plant ************************************	Phone: (415	) 558-

QUESTIONS ABOUT SPECIAL INSPECTION AND STRUCTURAL OBSERVATION SHOULD BE DIRECTED TO: Special Inspection Services (415) 558-6132; or, <a href="mailto:dbi.specialinspections@sfgov.org">dbi.specialinspections@sfgov.org</a>; or FAX (415) 558-6474

DBI Engineer or Plan Checker / Special Inspection Services Staff

DATE

# Exhibit No. 2 (Required Format)

### SPECIAL INSPECTION FINAL COMPLIANCE REPORT

[Date]	
[Special Inspection Coordinator] City and County of San Francisco Department of Building Inspection 1660 Mission Street, 3rd Floor San Francisco, CA 94103	
Re: Project Address: Permit Application No.	
In accordance with Section 1704 of the 2010 San Fr for the following items:	rancisco Building Code, we have provided special inspection
that, to the best of our (my) knowledge, the inspe	substantiating reports, it is our (my) professional judgment ected work was performed in accordance with the approved hip provisions of the San Francisco Building Code.
Signed:	Inspection Agency:
Print full name:	[Agency Responsible Engineer's stamp]
cc: Client/Project Owner	

# 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, 3rd Floor San Francisco, CA 94103	
Re: Project Address: Permit Application No.	
In accordance with Section 1710 of the 2010 San Francisco Build following items:	ling Code, I have provided structural observation for the
Based upon inspections performed and my substantiating rep my knowledge, the observed structural work was performed in and applicable workmanship provisions of the San Francisco E	n accordance with the approved plans, specifications,
Signed:	[Stamp of Engineer/Architect of Record
Print full name:	performing structural observation]
cc: Client/Project Owner	

# Exhibit No. 4 (Required Format)

## **Special Inspection/Structural Observation Transmittal Letter**

From:		(415-558-
	DBI Engineer or Plan Checker	Phone
То:	DBI District Building Inspector	
Address	s of Project:	
Applicat	ion Number:	
	attached special inspection/structural observation in epancies:	report(s) show(s)
۵	Contact plan checker for discussion on proposed acti	on.
	Issue correction notice to resolve discrepancy(s)	
	Stop work in the area(s) of discrepancy(s)	
	Stop all work. Conference with Chief building Inspect Required	or and Plan Check Managei
	Other	
	nal reports were received and are acceptable. Fina	l building inspection may

# Exhibit No. 5 (Recommended for Format Purposes only)

### **SPECIAL INSPECTION RECORD**

Project Address: \_\_\_\_\_\_Permit Application No.:

NOTE: Each special inspector shall complete for	When attached to the job
for each day's inspection. Post this card	inspection record card,
adjacent to building permit inspection	this card becomes a part of the
record card. Weekly reports to be submitted	inspection record.
by each special inspector/inspection agency	
agency to the building department.	

INSPECTION	SPECIAL	ID	D.4.T.E.	NOTES	TIME	
TYPE	INSPECTOR	NO.	DATE		ARR	LEFT

# Exhibit No. 6 (Recommended for Format Purposes only)

### **SPECIAL INSPECTION DAILY REPORT**

Permit Application No		Date
Project Name/Address:		
Inspection Type(s)/Coverag	je:	
	☐ Continuous	☐ Periodic; frequency:
Inspections made, including	g locations:	
Tests performed:		
Itama manusinina a 1) Camaati	2) Campatian of	manianah liatad itama and 2) Branianah liatad masawatad
items requiring 1) Correction items:	on, 2) Correction of	previously listed items, and 3) Previously listed uncorrected
01		
Changes to approved plans	autnorized by eng	ineer or architect of record:
Comments:		
•	· ·	was in accordance with the building department approved plans
specifications, and applical	ole workmanship p	rovisions of the SFBC except as noted above.
Special Inspector:		Inspection Agency:

# Exhibit No. 7 (Recommended for Format Purposes only)

### **SPECIAL INSPECTION WEEKLY REPORT**

Permit Application No			Date					
Pro	oject Name/A	ddress:						
			Inspection	Type(s)/Cover	age:			
		I	☐ Continuous	☐ Periodic; fr	equency:			
To	tal inspection	time each day	:					
	Date							
	Hours							
	Inspector							
Ins	pections mad	e, including lo	cations:	<u> </u>	<u>.</u>	<u>.</u>		
Tests performed:  Items requiring 1) Correction, 2) Correction of previously listed items, and 3) Previously listed uncorrected items:								
Ch	anges to appr	oved plans au	thorized by en	gineer or arch	litect of record	l:		
Co	mments:							
			work inspected workmanship					ved plans,
CC:	Building Dep Engineer/Arc							

# Exhibit No. 8 (Recommended for Format Purposes only)

### SPECIAL INSPECTION DISCREPANCY NOTICE

Permit Application No			Date
Project Name/Address:			
Inspection Type(s)/Covera	age:		
	☐ Continuous	□ Periodic; frequer	ncy:
Notice delivered to:	☐ Contractor	☐ Engineer/Architect	☐ Building Department
work:			prior to proceeding with this phase of the
Signed:		Inspection	Agency:
Print full name:		ID Number	

DO NOT REMOVE THIS NOTICE

Post with building permit inspection record card

# **Exhibit No. 9** (Recommended for Format Purposes only)

### SAMPLE MATRIX

#### INSPECTOR QUALIFICATION MATRIX

Inspector Name	Date of Hire	ACI Grade- 1	RC *	SM	PC	HSB	sw	NDT	swc	FP	URM
Inspector A	5/4/99	Х	Х	X	I-T	I-T					
Inspector B	7/31/98	Х	Х	Х				Х	Х	Χ	Х
Inspector C	10/1/00	Х	Х		Х	Х	Х	Х			
Inspector D	10/1/00	Х	Х	Х	I-T	I-T	Х		Х	Х	Х
Inspector E	10/1/00				I-T				Χ	Χ	Х

#### Legend:

RC= Reinforced Concrete

SM= Structural Masonry

FP= Fireproofing PC=Prestressed Concrete

te HSB = High-strength Bolting SW = Steel Welding

SWC = Structural Wood Construction

NDT = Nondestructive Testing

URM = Unreinforced Masonry Push/Torque Test Only

I-T= In training as lacking certification and/or experience

X= Meets experience and certain certification criteria

\*= American Concrete Institute (ACI) Grade 1 - is required

#### Exhibit No. 10: SPECIAL INSPECTION AGENCY SUMMARY AND LETTER OF AGREEMENT

Company Name	
Company Address	
Telephone Number	
Responsible Engineer	
Name and Address of Testing Laboratory (if different from the info. above)	<del></del>
60 days, in writing, to the participating jurisd changes may result in forfeiture of the partici	SM () SSW () URM () FP () For required categorical information must be reported within ittions. I further understand that failure to report these ipating jurisdiction's qualification of this agency. This agency with a report of any changes to the information submitted.
Responsible Engineer (print name)	
Responsible Engineer (signature)	
	Affix Stamp Here

## Exhibit No. 11: Waiver Agreement

Company Name:  Company Address:		
agency performance, appeals, and any pending com application may be shared and retained by all partic	may share information including, but not limited to plaints or disciplinary hearing information. Our cipating jurisdictions.  t mandatory. Each participating jurisdiction will mak	
Responsible Engineer (print name)		
Responsible Engineer (signature)		
Date	Affix Stamp Here	

#### Exhibit No.12: RESPONSIBLE ENGINEER'S STATEMENT OF AGREEMENT

- A. I am the "full time employee" responsible for the supervision of technical staff and that all qualification requirements and the local building code requirements are followed by the agency and its employees.
- B. I certify that Special Inspectors will perform in accordance with CBC Chapter 17. Each Special Inspector will be identified, and qualified issued ID cards according with certification requirements set forth in ASTM E 329 Appendix X1.1.
- C. I assure that Testing and Inspection Services will be performed in compliance with procedures specified in ASTM E 329, in particular, paragraph 10.1: "It shall be the responsibility of the agency to ensure that its employees perform only tests and inspections, or both, for which it is adequately equipped and staffed, and that its employees perform only tests and inspections, or both, for which they are adequately trained."

Responsible Engineer (print name)	
Responsible Engineer (signature)	
 Date	Affix Stamp Here