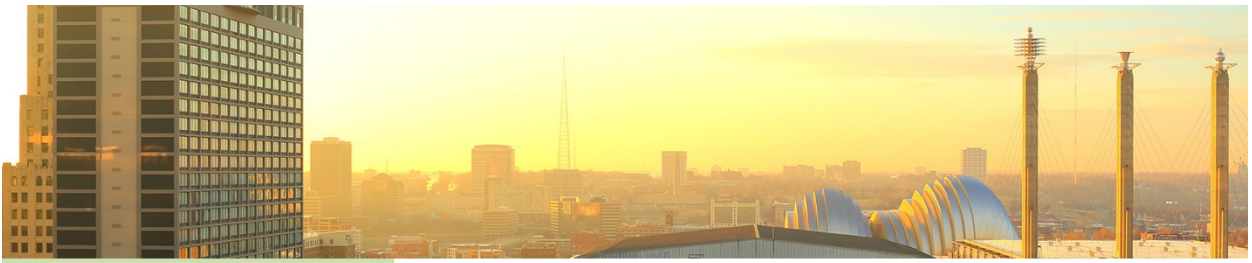


# ***SPECIAL INSPECTIONS MANUAL***



**CITY PLANNING & DEVELOPMENT  
DEVELOPMENT SERVICES**

**City of Kansas City, Missouri**  
***2018 International Building Code***  
**April 1st, 2021**



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## CHAPTER 1 - INTRODUCTION

Special inspections (SI) are a requirement of the Kansas City, Missouri, Building and Rehabilitation Code (KCBRC). Special inspections are defined as the periodic or continuous observation of work, including the performance of tests in order to verify substantial conformance with the reviewed plans and specifications. Project plans and specifications shall be developed and sealed by the architect and/or structural Engineer of Record (EOR) and reviewed by City Planning & Development-Development Services (CPD-DS). Special inspections will be required as specified in Section 1705 of the 2018 International Building Code (IBC), the Special Inspection Manual, and the Building Official.

The purpose of this manual is to outline the CPD-DS Special Inspections Program. This manual clarifies what work requires special inspections and the procedure for inspecting and reporting that work. It defines the duties and responsibilities of the project owner, Registered Design Professional of record, special inspector and general contractor. The SI Manual can be found on-line under <https://www.kcmo.gov/city-hall/departments/city-planning-development/inspections-division>

The Special Inspections Manual in no way relieves any participant from the proper performance of work according to contracts, plans and specifications and applicable building codes.

Any questions or correspondence regarding special inspections should be directed to:

Ray Rhodes, P.E. Supervisor of Special Inspections/Plans Review  
414 E. 12<sup>th</sup> Street, 5<sup>th</sup> Floor  
Kansas City, Missouri 64106  
Telephone: 816-513-1549  
Email: [SpecialInspections@kcmo.org](mailto:SpecialInspections@kcmo.org)

If Mr. Rhodes is not available, please contact any of the following Special Inspection engineers at the same location:

Derek Weaver (816) 513-1455 Email: [Derek.Weaver@kcmo.org](mailto:Derek.Weaver@kcmo.org)

If the Special Inspection staff is not available, the following individual may be contacted at (816) 513-1500:

Jeff Lee, P.E., M.C.P., Division Manager of Plans Review

## **CHAPTER 2 - CLASSIFICATION OF WORK REQUIRING SPECIAL INSPECTIONS**

The requirement for special inspections outlined in this manual shall apply to the following types of work.

Exceptions:

1. Work of a minor nature as approved by the building official.
2. Group R3 occupancies, or Group U occupancies accessory to a R3 occupancy, unless the work is of an unusual or complex nature.

### **1. EXCAVATION AND FILL**

**Excavation.** All excavation with slopes exceeding those permitted in IBC Section 3304.1.1.

**Fill.** All fill with slopes exceeding those permitted in IBC Section 3304.1.1 and Section J107.6. All fill greater than 1 foot in depth within the footprint of a structure. Benching of existing slopes exceeding 5:1 to receive fill in excess of 5 feet in depth in accordance with IBC Section J107.3

### **2. SOILS AND FOUNDATION**

**Deep foundations.** All cast in place and driven deep foundations 1705.7 thru 1705.9.

**Shallow footings and foundations.** All shallow footings and foundations except: (a) Light frame buildings or structures of three stories or less in height involving only continuous or spread footings that meet the requirements of IBC Section 1705.3; (b) Concrete foundation walls constructed in accordance with IBC Table 1807.1.6.2.

**Soils Verification(1705.6).** In addition to the foundations specified above, verification of soil conditions for structures with design soil bearing values in excess of 2000 pounds per square foot or where the structure bears on fill material.

### **3. EARTH RETAINING STRUCTURE**

**Retaining structure for deep excavation.** Any slope retention system (permanent or temporary) for excavations over 12 feet deep.

**Retaining walls.** Any retaining wall, which is: (a) over 6 feet in height measured from grade on the low side of the wall; or, (b) supporting surcharge or impounding flammable liquids.

### **4. DETENTION BASIN**

**All detention basins(above ground, below ground, bio-retention, etc),** except where constructed and inspected under a permit issued by the Land Development Division (LDD), City Planning & Development Department. This includes any basin that has a volumetric requirement that needs to be verified, other than underground systems that are built out of tanks/pipes. (Typically a LDD permit is required for detention basins serving, or located on, more than one parcel.)

### **5. CONCRETE CONSTRUCTION**

All reinforced concrete, including prestressed concrete and post-tension slabs except for a slab-on-grade with effective prestress of less than 150 psi. IBC Section 1705.3, Chapter 19, and ACI 318-14.

6. STEEL CONSTRUCTION

All structural steel, including open web joists, bracing and stiffening members, and connections of high strength bolts or welds (structural, metal deck, shear stud, and metal stud), or any other Structural Steel connections. IBC Section 1705.2, Chapter 22, and AISC360-16 16.1 N.

7. MASONRY CONSTRUCTION

All masonry construction. IBC Section 1705.4, 1704.5, and TMC 402-16 /TMC 602-16

8. SPRAYED FIRE-RESISTANT MATERIAL; MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS

All spray-applied fire resistant material, and other fire-resistant mastic, intumescent paint, or other similar material, for the protection of steel, wood, or other building materials IBC Section 1705.14 and 1705.15

9. EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

All EIFS applications except for applications over drainable systems or over masonry walls or concrete walls. IBC Section 1705.16

10. FIRE-RESISTANT PENETRATIONS AND JOINTS

Through-penetration firestop systems, membrane penetration firestop systems, fire-resistant joint systems, and perimeter fire barrier systems in high-rise buildings or in buildings assigned to Risk Category III or IV in accordance with section 1604.5. IBC Section 1705.17.

11. SMOKE CONTROL

All smoke control systems subject to the requirements of IBC Sections 909. IBC Section 1705.18

12. SEISMIC RESISTANCE AND STRUCTURAL OBSERVATIONS

For Seismic Design Category of 'C' or higher, special inspections shall be provided, in addition to those specified herein, for portions of the seismic resistance systems in accordance with the requirements of IBC Section 1704.6.2 and additional requirements of Section 1705.12.

13. INSPECTION OF FABRICATORS

All fabrication of structural load-bearing members and assemblies, including wood trusses, metal buildings, precast concrete, bar joists, and structural steel, shall have special inspections during fabrication except where the work is done on the premises of a certified plant which is reviewed by the building official to perform such work without special inspection. IBC Section 1705.2.

14. WOOD CONSTRUCTION

The fabrication process of prefabricated wood structural elements and assemblies shall be in accordance with Section 1705.5. Special inspections of site-built high-load diaphragms designed in accordance with Table 2306.2 shall be in accordance with Section 1705.5.1 Metal plate-connected wood trusses spanning 60 feet or greater shall have special inspections for temporary and permanent bracing.

15. POST-INSTALLED ANCHORS

Special Inspection, periodic or continuous, of post-installed anchors shall be provided as required by the ICC-ES evaluation report or other product listing, and/or as

specified by the Design Professional of Record. This item includes expansion, adhesive, and screw anchors.

#### 16. STRUCTURAL OBSERVATION

Structural observation as required by the code section 1704.6.1.

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.

For Risk Category IV, high rise buildings, or by the Registered Design Professional or the Building Official.

#### 17. SPECIAL CASES

Special cases or construction that, in the opinion of the Building Official, involves unusual hazards or conditions. IBC Section 1705.1.1.

## **CHAPTER 3 - SUBMITTAL OF REQUIRED DOCUMENTS**

### Project Submittal

At the time of submittal of application for a permit, the Registered Design Professional of Record shall complete and submit the **Required Special Inspections Form** or the required special inspections may be noted on the **Checklist for Building Permit Plans Submittal - Information Bulletin No. 110** (available at the following link):

<http://www.kcmo.gov/ib>

All special inspections required by this Manual or the IBC, or as otherwise recommended by the designer of record, shall be identified on this form.

### Special Inspections Agency

When special inspections are required, the project owner shall retain the services of a qualified special inspections agency to inspect and test the applicable work. Under no circumstances shall these services be provided by an agency retained or engaged by the general contractor or any of their subcontractors. No individual or agency under the direct employment of or affiliated with the contractor(s) is allowed to serve as the special inspector. The construction permit applicant is not allowed to serve as the special inspector. A qualified special inspection agency is one that has been approved by the CPD-DS as outlined in Chapter 4 of this manual.

Prior to the preconstruction meeting, each approved agency shall submit a letter to the CPD-DS Special Inspections Branch that:

1. States the project name, address and CPD-DS Plan number.
2. Identifies the work for which they have formally been retained, by the project owner, to inspect and/or test.
3. Is signed and sealed by the professional engineer or architect registered in the State of Missouri who is responsible for overseeing and reporting the work, hereinafter referred to as the special inspector of record.

If the approved SI agency intends to subcontract any SI activity to another SI agency, that intent shall be identified in the letter and both agencies shall fill out Subcontracted Special Inspection Agency request for approval form in Appendix B for subcontracting. The subcontracted agency and field inspectors shall be approved by the SI branch prior to the preconstruction meeting. The Special Inspector of Record remains responsible for compliance of all SI activities.

### Approved Fabricators

When work is being performed on the premises of a facility/plant that is approved by CPD-DS, shop inspections are not required. The approved fabricator shall submit the following items to the CPD-DS Special Inspections Branch.

1. A copy of their current certification.
2. A letter stating the name, address, CPD-DS Plan number of the project, and fabricator's file number. It shall state that they are the fabricator for the project. This shall be received prior to installation of the product at the job site.
3. Upon completion of the fabrication, a Certificate of Compliance shall be submitted stating that the fabrication work was performed in accordance with the City reviewed plans, EOR-reviewed shop drawings and specifications.

The approved fabricator will receive the Certificate of Compliance form after the above items #1 and 2 are submitted. No Certificate of Occupancy (Full or Temporary) will be issued until this form has been completed and returned to the CPD-DS. The organizations that have been approved by the CPD-DS to certify fabricators are listed in Chapter 9 and Chapter 11 of this manual.

### Supplemental Plan Submission

When a project's base building plans do not provide the special inspector with the details and/or information necessary to perform a proper inspection of the work, supplemental documents shall be submitted. The contractor shall provide one (1) set of the project EOR-reviewed shop drawings and/or erection plans to the SI agency, and an additional set of EOR-reviewed shop drawings at the job site for the special inspector's use. All shop drawings shall bear the seal of the Missouri-registered design professional responsible for that scope of work. The shop drawings shall be marked as reviewed and accepted by the project Registered Design Professional of Record.

Supplemental drawings shall not contradict the City-stamped plans, or expand the scope of work beyond that included in the City-stamped plans. When the scope or content of the base building plans are revised, those changes shall be submitted for review.



## **CHAPTER 4 - APPROVAL OF SPECIAL INSPECTIONS AGENCIES**

### Qualifications

Any inspection/testing agencies retained to provide special inspections shall be approved by the CPD-DS Special Inspections Branch. As a minimum, an acceptable special inspection agency shall have the following qualifications:

1. Be under the direct, full-time supervision of a professional engineer or architect registered in the State of Missouri.
2. All laboratory facilities must meet the requirements of ASTM specification E-329 and/or ASTM specification D-3740, as applicable.
3. Except for individuals who are professional engineers or architects registered in the State of Missouri, all testing technicians, inspectors, and engineers performing special inspections shall meet the qualifications outlined in Chapter 5 and be approved by the CPD-DS.

### Approval Review

Each agency seeking approval shall submit the following information to the CPD-DS Special Inspections Branch.

1. Description of the agency, including complete legal name, address and brief history.
2. The names and positions of the principal owners, officers, and directors.
3. Functional description of the agency's organizational structure, including all major divisions, departments, sections, and their operational activities. Organizational charts may portray this.
4. List of the proposed special inspection items the agency may wish to provide and the names of the personnel who are qualified to perform the inspection of those items. Each special inspector identified shall be approved by the CPD-DS prior to being assigned to any project.

After the information is submitted, it will be reviewed by the CPD-DS Special Inspections Branch. Once approved, the agency will be placed on the CPD-DS Approved Special Inspections Agency List.

## Supervision of Special Inspection Agencies

If it is determined that an agency is negligent in the performance of the duties required in this manual, then that agency is subject to removal from the approved list in accordance with the following procedures.

**First Nonconforming Act:** The special inspections agency shall receive a CPD-DS Notice of Violation for the first nonconforming act. This notice shall be cleared or resolved within three (3) working days.

**Second Nonconforming Act:** A second CPD-DS Notice of Violation within a six- (6) month period will require that the special inspections agency attend a disciplinary meeting with CPD-DS to discuss the areas of nonconformance. This issue of this notice shall be cleared or resolved within three (3) working days.

**Third Nonconforming Act:** A third CPD-DS Notice of Violation within a six- (6) month period may result in a suspension of the special inspections agency for a period of six (6) months.

**Suspension:** During the suspension period, the special inspections agency will be removed from the CPD-DS approved list and not be allowed to act as the special inspector on any new projects.

**Reinstatement:** At the end of a suspension, the special inspections agency can apply for reinstatement by making a written request to the CPD-DS Special Inspections Branch.

**Probation:** Upon reinstatement, the special inspection agency will be placed on probation for a period of one (1) year. If the special inspection agency receives a Notice of Violation during that time, it will result in a suspension for a period of one (1) year.

**Examples of Nonconforming Acts:** The following are examples of nonconforming acts that would cause a Notice of Violation to be issued:

1. Failure to assign only trained, experienced CPD-DS approved special inspectors to projects.
2. Failure to complete an accurate Special Inspector's Daily Report after each inspection is made. This includes submitting a final report once all items and discrepancies have been resolved.
3. Failure to submit timely and acceptable Special Inspections Reports to the CPD-DS.
4. Failure to perform the necessary special inspections for conformance with the CPD-DS reviewed plans and specifications and EOR reviewed shop drawings.
5. Become engaged in a conflict of interest.

## **CHAPTER 5 - QUALIFICATION OF SPECIAL INSPECTORS**

Any individual employed by an approved Special Inspections Agency to perform the inspection and/or testing of work requiring special inspections shall be approved by CPD-DS. The special inspections agency shall submit a request for approval to CPD-DS Special Inspections Branch for all qualified personnel. The professional engineer or architect responsible for supervising the special inspector's work shall make submittals on the appropriate CPD-DS form. This form is located in Appendix B of this manual. Each form shall be accompanied by a resume showing dates of the inspector's experience and a copy of all required certifications.

Special inspectors shall meet the following minimum criteria of certification and/or documented experience. Work experience shall be related to the field for which the inspector is being qualified and may be obtained by working either for an inspection/testing agency or engineering firm as a technician, inspector or engineer. The scope of work performed by State-licensed individuals shall be in accordance with all requirements of the State license.

Excavation and Filling -- IBC Sections 1705.6, 1804 and 3304; Table 1705.6; Appendix J

- Current NICET Level II certification in geotechnical engineering technology/construction, or
- Current ICC Soils Special Inspector with one year related experience, or
- Registered Geologist, or
- Engineer Intern with one year related experience, or
- Geologist-in-Training with one year related experience, or
- Registered professional engineer or architect.

Verification of Soils -- IBC Sections 1804 and 1805

- Current NICET Level II certification in geotechnical engineering technology/construction, or
- Current ICC Soils Special Inspector with one year related experience, or
- Registered Geologist, or
- Engineer Intern with one year related experience, or
- Geologist-in-training with one year related experience, or
- Registered professional engineer or architect.

Driven, Cast, and Helical Deep Foundations -- IBC Sections 1705.7, 1705.8, 1705.9, 1808, and 18102; Tables 1705.7 and 1705.8

- Current NICET Level II certification in geotechnical engineering technology/construction, or
- Current ICC Soils Special Inspector with one year related experience, or
- Registered Geologist, or
- Engineer Intern with one year related experience, or
- Geologist-in-Training with one year related experience, or
- Registered professional engineer or architect.

Earth Retaining Structures -- IBC Section IBC Sections 1610 and 1705.1.1

- Current NICET Level II certification in geotechnical engineering technology/construction, or
- Current ICC Soils Special Inspector with one year related experience
- Registered Geologist, or
- Engineer Intern with one year related experience, or
- Geologist-in-training with one year related experience, or
- Registered professional engineer or architect.

Earth Detention Basin -- IBC 1705.1.1

- Professional Land Surveyor, or
- Professional engineer.

Reinforced Concrete -- IBC Sections 1705.3, and 1807; Shotcrete -- IBC 1908

- Current ACI Grade 1 is required for Concrete Testing.
- Current ICC Reinforced Concrete Certificate with 1 year related experience, or
- ACI Concrete Construction Special Inspector Certificate, or
- ACI Concrete Construction Special Inspector in Training with 1 year related experience, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Precast Concrete Erection -- IBC Table 1705.3, Item 10

- Certification as required for welding, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Prestressed Concrete -- IBC Table 1705.3 Item 9

- ICC Prestressed Concrete Certification with one year related experience, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Post-Tension Slab -- IBC Section 1805.8.2; Table 1705.3 Items 1 and 11

- Current Post-Tensioning Institute (PTI) Level II, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Masonry -- IBC Section 1705.4 TMC 402-16 /TMC 602-16

- Current ICC Structural Masonry certificate with one year related experience, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Welding -- IBC Sections 1705.2, Chapter 22, AISC 360-16 16N, A; Tables 1705.2.3

- Current AWS Certified Welding Inspector, or
- Current Canadian Welding Bureau Certified Welding Inspector, or
- Current ICC Structural Steel and Welding Certificate with one year of related experience, or
- Current NDT Level II or III (provided they have previously been certified for NDT Level II), or
- Registered professional engineer or architect.

High Strength Bolting -- IBC Section 1705.2.3, AISC 360-10 16N

- Current ICC Structural Steel and Bolting certificate with 1 year related experience, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Steel Frame Inspection -- IBC Table 1705.2.3 and AISC 360-10 16N

- Current ICC Structural Steel and Bolting Certificate with one year of related experience, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Inspection of Fabricators -- IBC 1704.2.5

- Precast: See Prestressed Concrete requirements.
- Bar Joist: See Welding requirements.
- Metal Building: See Welding requirements.
- Structural Steel: See Welding requirements.

Sprayed Fire-Resistant Materials or Mastic and Intumescent Fire Resistive Coatings -- IBC Section 1705.14 and 1705.15

- Current ICC Spray-Applied Fire Proofing Certificate, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Exterior Insulation and Finish System (EIFS) -- IBC Section 1705.16

- Engineer in training with one year related experience, or
- Registered professional engineer or architect.

Wood Construction -- IBC Section 1705.5, 1705.10,1705.11.1,and 1705.12.2

- Engineer Intern with one year related experience. or
- Registered professional engineer or architect.

Smoke Control -- IBC Sections 909, 1705.18

- Engineer of record for the smoke control registered in the State of Missouri, utilizing certified air balancers, or
- Registered Design Professional in the State of Missouri with expertise in fire protection engineering and mechanical engineering, utilizing certified air balancers.

Seismic Resistance -- IBC Sections 1704.3 through 1704.5. #2, 1705.12 and 1705.13

- Registered Engineer in the State of Missouri with expertise with the materials, systems, components and work required to have SI.

Post-Installed Anchors

- As required for the associated Reinforced Concrete, Masonry or Steel Frame scope of work until January 1<sup>st</sup>, 2022, at that time the inspector shall have obtained a certification from ACI for post install anchor inspector or other equivalent certification

Fire-Resistant Penetrations and Joints – IBC Sections 1705.17,

- Certified by Firestop Manufacturer, or
- Current ICC Spray-Applied Fire Proofing Certificate, or
- Engineer Intern with one year related experience, or
- Registered professional engineer or architect.

Special Cases -- IBC Section 1705.1

- Approval on a case-by-case basis.

An acceptance review of individual special inspectors will be conducted and the submitting agency informed of the results. Special inspectors will be placed on the CPD-DS approved list for the particular special inspection items for which they are qualified. All new personnel to an agency must be evaluated, approved and listed by the CPD-DS before being assigned to any project.

## **CHAPTER 6 - PRECONSTRUCTION MEETING**

Prior to the issuance of a permit, a preconstruction meeting shall be held for the purpose of reviewing the special inspection requirements for that project. Those required to attend the meeting are the owner or an individual acting as an agent for the owner, the general contractor and the special inspector of record. For smoke control projects, the preconstruction meeting may be deferred to prior to the issuance of the mechanical permit upon request.

Preconstruction meetings can be scheduled only after CPD-DS has received the required special inspections information detailed in Chapter 3. It shall be the permit applicant's responsibility to schedule the meeting with the Supervisor of Special Inspections, and notify the appropriate parties. The preconstruction meeting will be held at the CPD-DS office located at 414 E. 12th Street, 5th Floor.

CPD-DS will develop a Special Inspections Project Manual, which will identify the specific special inspection requirements for that project and include the applicable directives from the Special Inspections Manual. The project manual will form the basis for the preconstruction meeting and become part of the construction documents with the issuance of permits. The information in the Special Inspections Project Manual will be reviewed to verify that all parties have a clear understanding of the special inspection provisions and the individual duties and responsibilities of each party. The representatives of the project owner, general contractor and special inspector of record will sign the log-in-sheet documenting their presence at the meeting. A copy of the Special Inspections Project Manual will be given to all present. The general contractor's copy shall be available on the job site during construction.

If necessary, modifications to the project manual may be made with the consent and approval of CPD-DS. The design professional of record shall notify CPD-DS Special Inspection Branch of all proposed changes to the scope of the manual. Upon approval, the modifications will be incorporated into the approved Special Inspections Project Manual. Updated copies will be provided to the applicant and to each affected Special Inspection Agency. It is the applicant's responsibility to ensure that the approved modifications are available on the job site.

## **CHAPTER 7 - PROCEDURAL REQUIREMENTS**

1. The general contractor shall ensure that copies of the City reviewed plans and specifications, and the EOR-reviewed shop drawings, are provided to the special inspector prior to the start of the affected work.
2. It is the special inspector's responsibility to review the City reviewed plans thoroughly and sufficiently in advance of construction to establish that adequate information is available to conduct the required inspections and tests. All errors and/or omissions in the reviewed plans that create any form of uncertainty or ambiguity shall be resolved through the Registered Design Professional of Record.
3. The contractor is responsible for notifying the special inspections agency when the work is ready for inspection. A minimum of 24-hours' notice shall be provided so that the special inspector has time to inspect the work prior to concealment. The contractor shall provide access to and means for safe and proper inspection of the work. It is the contractor's responsibility to verify that all work requiring special inspection is inspected and/or tested prior to concealment.
4. A CPD-DS approved special inspector shall perform inspections and/or tests of the work for conformance with the City reviewed plans and specifications, EOR-reviewed shop drawings, and applicable provisions of the International Building Code. (See Appendix C for plan stamps that will appear on City reviewed plans.)
5. If the City reviewed construction documents are not available at the site, the special inspector may proceed with an inspection. It shall be documented on the applicable reports that the CPD-DS reviewed plans were not available for the inspection. It is the special inspector's responsibility to verify and report, at the first opportunity, whether the work inspected was in accordance with the CPD-DS reviewed construction documents. If the CPD-DS reviewed plans are not available at two consecutive inspection visits, the special inspector shall contact CPD-DS Special Inspection branch by phone immediately. CPD-DS staff will investigate.
6. After each inspection, the special inspector shall give the contractor an inspection report on the Daily Report form located in Appendix B. The form shall be completed in detail and shall be signed by an approved CPD-DS special inspector. Any non-conforming items shall be brought to the immediate attention of the general contractor and noted on the Daily Report form.
7. The Daily Report shall indicate 'Discrepancies' if the item remains unresolved by the Design Professional of Record, or shall indicate 'Changes' if the resolution by the Design Professional of Record has been submitted to the City.
8. The general contractor shall create a file (3- ring binder) for the special inspector's daily and biweekly reports and the SI Project Manual. Digital Files are allowed if at the time the City Special Inspector visits the site the files are available. If the files are digital the dailies shall be sent by close of business to the contractor. This file shall be located in a conspicuous place in the project trailer/office to allow review by CPD-DS inspectors. The file shall be kept up-to-date.

9. The special inspector of record shall submit a Biweekly Report to the CPD-DS Special Inspections Branch, the Registered Design Professional of Record, and the general contractor until all work requiring special inspections is complete. A report is required for each biweekly period in which special inspection activity occurs, and shall be submitted on the CPD-DS Special Inspections Report form located in Appendix B. The Biweekly Report shall include the following:
  - A brief summary of the work performed during the reporting time frame.
  - A copy of the daily reports documenting special inspections performed during the reporting time frame.
  - Discrepancies which were resolved or corrected. Discrepancies resolved by the Registered Design Professional of Record shall do so with a signed and sealed document.
  - A list of nonconforming items requiring resolution which includes changes and/or discrepancies with the CPD-DS reviewed drawings or specifications that were observed during the reporting period.
  - All applicable test results.
10. When the work requiring special inspections is completed and all nonconforming items have been resolved, the general contractor shall notify the Special Inspection Agency, and the Special Inspection Agency shall submit, a Final Special Inspections Report to CPD-DS, the Design Professional of Record, and the general contractor. This form is located in Appendix B of this manual. **It is the responsibility of the Special Inspection Agency to verify that all construction under the assigned responsibility of the Agency has been inspected and approved prior to completing the final report.** A Certificate of Occupancy will not be issued until the final report has been reviewed and approved by the CPD-DS and all Certificates of Compliance have been received.



**CHAPTER 8 -  
CONCRETE CONSTRUCTION  
PRESTRESSED, POST-TENSION, SELF-CONSOLIDATING AND SHOTCRETE  
PLACEMENT, TESTING, BOLTS, REINFORCING STEEL)**

Placement of Reinforced Concrete - IBC Section 1705.3, Chapter 19, and ACI 318-14 1.3.

A special inspector shall be on-site during the placement of reinforced concrete. The inspector shall provide a continuous inspection of the conveying, depositing, and consolidation of concrete, for conformance with the City reviewed plans and specifications and Chapter 19 of the IBC. The special inspector shall observe placement procedures for evidence of segregation, possible cold joints, displacement of reinforcing or forms, and proper support of embedded items, anchor bolts, etc. When the point of deposit of concrete cannot be observed by the individual monitoring, the discharge from trucks or the batch plant additional personnel shall be provided.

Concrete delivery tickets shall be checked to verify that the class of concrete ordered is being delivered and conforms to project plans and specifications and/or code requirements.

Testing of Reinforced Concrete - IBC Table 1705.3 (Item 6), Chapter 19, and 26.12 of the ACI

For each class of concrete placed each day, the special inspector shall obtain a sample for strength tests at the frequency stated in Section 26.12 of the ACI or City reviewed specifications. A strength test shall be the average of the strengths of two cylinders, made from the same sample of concrete, laboratory cured, and tested at 28 days. Additional cylinders shall be cast if any changes in the mix consistency are noted or when directed by the Registered Design Professional of Record.

Concrete test cylinders shall be cast, stored and tested in accordance with Chapter 19 of the IBC. If the strength test of cylinders falls below the specified value of  $f'_c$  by more than 500 psi, the special inspections agency shall notify the general contractor immediately so remedial action can be taken in accordance with Section 26.12 of the ACI.

Slump, air-content, and temperature tests shall be conducted when strength specimens are made or at the option of the inspector as often as necessary for control checks. All other concrete testing shall be conducted as stated in the project specification and per ASTM Standards.

Placement of Reinforcing Steel - IBC Table 1705.3 (Item 1); Chapter 19, and Sections 3.5, 26.6 of the ACI

Prior to the closing of forms or the delivery of concrete to the job site, the special inspector shall verify that the reinforcing steel is in conformance with the City reviewed plans and specifications, shop drawings reviewed by Engineer of Record, and Chapter 19 of the IBC. The special inspector shall confirm the reinforcing steel is of correct size and grade and ensure that the proper spacing, clearances, splice lengths and embedded items have been provided. All reinforcing steel shall be in place prior to the placement of concrete and be secured against displacement

### Prestressed Concrete [Prestressing and Post Tension Tendons] - IBC Table 1705.3 (Item 9)

Prior to the placement of concrete, the special inspector shall verify that the prestressing tendon has the proper chair heights, tendon profiles, clearances, and steel anchorage as detailed in the City reviewed plans and specifications and the EOR-reviewed shop drawings.

The special inspector shall be present during the entire stressing and grouting operation. The tendons shall be stressed, with a calibrated stressing ram, at the specified strength, using the procedure approved by the Engineer of Record. The special inspector shall calibrate or review current calibration data on the proposed stressing equipment and verify that the concrete meets the minimum required compressive strength prior to post-tensioning.

### Post-Tension Slab-on-Ground Foundations - IBC Table 1705.3, Section 1808.6.2

Slab-on-ground, mat or raft foundations on expansive soils shall be in accordance with WRI/CRSI Design of Slab-on-Ground Foundations or PTI Design and Construction of Post-Tensioned Slabs-On-Ground.

### Bolts Installed in Concrete - IBC Table 1705.3 (Item 3) and Section 1901.3

An inspection is required prior to and during the placement of concrete around bolts. The special inspector shall verify that the bolt size, location and embedment length are in conformance with the City reviewed plans and specifications.

### Post-Installed Anchors – IBC 1705.1.1 and ACI 26.13

The special inspector shall verify the anchor installation in accordance with the city-stamped plans, and in accordance with the manufacturer's instructions and the product's evaluation report or listing. Continuous inspections may be needed on anchors that have a permanent load scenario ACI 26.13.3.2

### Shotcrete - IBC Section 1908

The special inspector shall verify compliance to IBC 1908, and to the design documents.

### Self-Consolidating Concrete - IBC Section 1705.1.1

The use of this product requires advance approval by the Design Professional of Record and CPD-DS. The Design Professional of Record shall submit written procedures to be used by the special inspector to verify compliance.

**CHAPTER 9 -  
PRECAST CONCRETE  
(FABRICATION AND ERECTION OF PRECAST)**

Inspection of Fabricator - IBC 1704.2.5

1. Approved Precast Fabricator

Inspection of fabrication is not required for work performed in the shop of an approved fabricator (see Chapter 3 of this Manual). The following programs are currently approved by the CPD-DS to provide certification of fabricators:

- International Accreditation Service, Inc. (IAS)
- Precast/Prestressed Concrete Institute (PCI)
- Architectural Precast Association (APA)

2. Precast Fabricator Not Approved

When precast concrete is fabricated in a plant which is not certified by a nationally recognized organization, in-plant inspection is required as follows:

- The special inspector shall provide in-plant inspections during the fabrication of precast for compliance with the City reviewed plans and specifications and EOR-reviewed shop drawings. Each precast member shall be inspected for proper form dimension, reinforcing steel, prestressing tendons, embeds and lifting devices prior to concrete placement. It is the fabricator's responsibility to notify the special inspections agency prior to concrete placement and to have the required plans on-site for the inspection.
- The special inspector shall monitor the placement of concrete during casting and obtain samples for strength tests as required by project specifications. Concrete compressive strength results and stressing data shall be recorded for each member and submitted with the Special Inspections Report.
- The inspection approving the fabrication shall be received by CPD-DS SI branch prior to erection of the product at the job site.

Erection of Precast Concrete or Tilt-Up-Panel - IBC Table 1705.3 (Item 10)

Erected concrete members shall be inspected for compliance with the City reviewed plans and the erection drawings. The special inspector shall verify proper member location and that no cracking, chipping or marring has occurred during the shipment and erection. Any modifications or damage to the members shall be reported as a discrepancy and brought to the attention of the precast design Engineer of Record and project Registered Design Professional of record.

Connections shall be inspected for conformance with the City reviewed plans and the erection drawings. Connections, which deviate from the plans due to field modifications or misalignment, shall be reported as a discrepancy and addressed by the precast design Engineer of Record. and the Registered Design Professional of Record

**CHAPTER 10 -  
SOILS, EXCAVATION, FILLING, DEEP FOUNDATIONS, RETAINING WALLS AND  
DETENTION BASIN**

Verification of Soils - IBC Section 1705.6 and Chapter 18

The subgrade supporting the footings of buildings or structures shall be inspected prior to the placement of reinforced concrete. The special inspector shall observe and test all footing excavations to verify conformance with City reviewed plans and geotechnical engineer's report. The foundation shall be of proper size and depth and free of any loose, deleterious or foreign material.

Where unsuitable bearing conditions are observed, the Geotechnical Engineer of Record and project Engineer of Record shall be notified immediately so that remedial procedures can be established.

Excavation and Filling - IBC Sections 1705.6, 1804, 3304 and Appendix J

When a project contains excavations or fills whose slope limits exceed Chapter 33/Appendix J, and/or structural fill greater than one foot under the footprint of a future structure, a special inspector shall monitor the operations for conformance with the City reviewed plans, geotechnical engineer's report and Appendix J.

During the placement of engineered structural fill, the special inspector shall provide sufficient periodic observation to verify that the preparation of the natural ground is being performed in accordance with the geotechnical engineer's recommendations, and shall provide continuous observation during placement of compacted fill under future buildings in accordance with Table 1705.6 and is being performed in accordance with the geotechnical engineer's recommendations. The special inspector shall monitor the placement of each lift of engineered structural fill supporting the foundation of any structure.

The special inspector shall monitor and test all fill to determine whether the type of material, moisture content and degree of compaction are within the recommended limits set forth by the Geotechnical Engineer of Record or J107.5. Where fill exceeding 5 feet in depth is to be placed on an existing slope in excess of 5:1, the special inspector shall verify that the existing slope is benched in accordance with Section J107.3.

The special inspector shall verify that final contours are in substantial conformance with the City reviewed plans.

Deep Foundations - IBC Sections & Tables 1705.7, 1705.8, 1808 and 1810.

A special inspector shall be on-site during the construction of all piers and piles. Work shall be in accordance with the City reviewed drawings and as specified by the geotechnical engineer of record. Specialty Piers/piles shall have additional inspections as determined by the registered design professional in responsible charge. This includes helical, push piers, rammed aggregate piers, etc.

Earth Retaining Structures - IBC Sections 1610, 1705.1.1, 1803, 1807.2, 2304.12.5, and Appendix Sections J106, and J107

The special inspector shall perform the necessary inspections and tests to ensure the system is installed per the City reviewed plans and specifications.

Earth retaining structures (modular, stacked stone, gabion etc.) shall be installed in accordance with plans and specifications prepared by a registered design professional in accordance with the geotechnical exploration and results of the global stability analysis. For modular retaining walls, each lift of backfill and each grid shall be inspected. For concrete or shotcrete retaining wall systems, see Chapter 8 of this manual.

After a temporary earth-retaining structure is installed, a biweekly inspection shall be made throughout the life of the project to verify the system is performing as intended and no changes have occurred.

Detention Basin - IBC Section 1705.1.1

A storm water detention basin shall be inspected for conformance with the City reviewed plans. The special inspector shall survey the basin to verify the basin location and the proper finish grade elevations. The special inspector shall also verify that the outlet (size, type material, and elevation), orifice plates, pipe screens or erosion control systems are installed per the reviewed plans.

**CHAPTER 11 -  
STEEL CONSTRUCTION  
(WELDING, HIGH STRENGTH BOLTING, STEEL FRAME, INSPECTION OF  
FABRICATOR, SPRAYED FIRE RESISTANT MATERIAL AND MASTIC AND  
INTUMESCENT FIRE RESISTIVE COATINGS**

Field Welding of Structural Steel - IBC Sections 1705.2, 2204.1, AISC 360-16 16N

Special inspections are required for the welding of structural members or connections for compliance with the City reviewed plans, shop drawings reviewed by the design professional of record, specifications and Chapter 22 of the IBC. The special inspector shall inspect the equipment, material and technique being employed and verify that the welding is performed by certified welders qualified in the procedure being used. A visual inspection of the completed work shall be made to ensure proper type, size, length and quality of the welds.

The special inspector shall provide visual and NDT inspections per AISC 360-16 and per Engineer of Record recommendations.

For periodic inspection, the special inspector shall check qualifications of welders at the start of work and then make inspections of the work in progress and a visual final inspection of all welds for compliance.

Field Bolting of Structural Steel - IBC Sections 1705.2, 2204.2, and AISC 360 16N

Structural steel joints using A325 high-strength bolts, A490 heat-treated high-strength bolts or equivalent fasteners shall have special inspections. The special inspector shall monitor the prequalification, installation and tightening of bolted connections in accordance with the City reviewed plans, shop drawings reviewed by the Design Professional of Record, and Table AISC 360 16N

When bolted connections require full pretension, the special inspector shall prequalify the pretensioning method and verify that the specified procedure was used to achieve the design tension. A tension calibrator shall be provided, at the job site, to verify fastener assemblies, train installation crews, and calibrate wrenches (if calibrated wrench method is used). CPD-DS recommends a meeting between the special inspector and the steel erector to establish the procedures to be used is required prior to any erection especially when full pretension is specified.

Bolts in connections identified as not being slip critical nor subject to direct tension need not be inspected for bolt tension. The special inspector does not need to be present during the entire installation and tightening operation provided that the bolts are installed in properly aligned holes and tightened to the snug-tight condition. Bolts required to be tightened only to a snug-tight condition shall be clearly identified on the reviewed drawings.

Steel Frame Inspection - IBC Section 1705.2, Table 1705.2.2, Chapter 22 and AISC 360 16N

The special inspector shall perform an inspection of the structural steel frame to verify compliance with the details shown on the City reviewed plans and the shop drawings reviewed by the Design Professional of Record, such as bracing, stiffening, member size and location, and proper application of joint details at each connection.

## Inspection of Steel Fabricator - IBC Section 1704.2.5 and Chapter 22.

### 1. Approved Steel Fabricator

Inspection of fabrication is not required for work performed in the shop of an approved fabricator (see Chapter 3 of this Manual). The following organizations are approved by the CPD-DS to certify fabricators:

- American Institute of Steel Construction (AISC),
- International Accreditation Service, Inc. (IAS)
- Canadian Welding Bureau (CWB),
- Steel Joist Institute (SJI).

### 2. Steel Fabricator Not Approved

Structural steel, bar joists and metal buildings fabricated on the premises of a facility/plant not certified by a nationally recognized organization shall have in-plant special inspections as follows:

- The special inspector shall inspect the work, during fabrication, for compliance with the City reviewed plans and specifications, shop drawings reviewed by the Design Professional of Record, and Chapter 22 of the IBC.
- Each member shall be inspected and approved by the special inspector prior to shipment.
- It is the responsibility of the fabricator to notify the special inspections agency and have the reviewed plans on-site for the inspection.
- The general contractor shall coordinate this inspection.
- Daily reports indicating the members inspected shall be submitted to the CPD-DS with the Biweekly Special Inspections Report.

The inspection approving the fabrication shall be received by CPD-DS SI branch prior to erection of the product at the job site.

## Sprayed Fire Resistant Materials - IBC Section 1705.14, 403.2.4

When sprayed fire resistant materials are provided for the fire-resistive protection of structural steel members, special inspections are required for conformance to the manufacturer's instructions.

Surface conditions shall be inspected prior to the application per 1705.14.2. Minimum substrate ambient temperature shall be verified before and after application per 1705.14.3.

The special inspector shall inspect the fireproofing in accordance with IBC 1705.4 and the City reviewed plans and specifications. The thickness and density of the fireproofing shall not be less than the requirements of the listing of the fire-resistive assembly. The cohesive/adhesive bond strength shall be tested to the following minimums [IBC 403.2.4]:

- High-rise buildings with building height up to 420 feet 430 pounds per square foot
- High-rise buildings with building height > 420 feet 1000 pounds per square foot
- All other buildings 150 pounds per square foot

Just prior to concealment, a complete visual inspection of the fireproofed members shall be conducted. The special inspector shall verify that the sprayed fire resistant material has no voids, spalls, and delamination or that no material has been scraped or knocked off during construction.

### Mastic and Intumescent Fire Resistive Coatings - IBC Section 1705.15

When mastic and intumescent fire resistive coatings are provided for fire-resistive protection of structural steel members, special inspections are required for conformance to the manufacturer's instructions and city reviewed plans and specifications. Inspection shall include examination of the substrates for compliance with the coating application requirements, and conditions affecting coating performance, in accordance with the product listing. The coating thickness shall be verified in accordance with the product listing.



## CHAPTER 12 - MASONRY CONSTRUCTION

The special inspector shall provide the inspection and testing of masonry construction for conformance with the City reviewed plans and specifications and Section 1704.5 and 1708.1 of the IBC.

The special inspector shall inspect the handling, storage, preparation and placement of all elements involved in masonry construction. During cold and hot weather construction, the special inspector shall verify that the provisions of IBC Section 2104.1, TMS 602, or TMS 604 respectively are being observed.

The quality assurance program shall comply with the Level defined in TMS 402 Table 3.1 based on the Risk Category Defined by the 2018 IBC. The quality assurance program shall itemize the requirements for verifying conformance of material composition, quality, storage, handling, preparation, and placement with the requirements of TMS 602, and shall comply with the minimum requirements of TMS 602, Tables 3 and 4 for the required Level.

Empirical Design of Masonry is Not Permitted in Risk Category IV (essential facilities) per TMS 402 Table 3.1

Mortar and grout shall be properly mixed using the specified material proportions per the mix design. The method of measuring shall be such that the material proportions are controlled.

Designed in accordance with	Risk Category I, II, III	Risk Category IV
Part 3 or App B or App C	Level 2	Level 3
Part 4	Level 1	Level 2
App A	Level 1	Not permitted

Minimum Verification	Required for Quality Assurance <sup>(a)</sup>			Reference for Criteria
	Lev 1	Lev 2	Lev 3	TMC 602
Prior to construction, verification of compliance of submittals	R	R	R	1.5
Prior to construction, verification of $f'_m$ and $f'_{aac}$ , except where specifically exempted by the code.	NR	R	R	1.4 B
During construction, verification of Slump flow and Visual stability Index (VSI) when self-consolidating grout is delivered to the project site.	NR	R	R	1.5 & 1.6.3
During construction, Verification of $f'_m$ and $f'_{aac}$ for every 5000 sq. ft	NR	NR	R	1.4 B
During Construction, verification of proportions of materials as delivered to the project site for premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout.	NR	NR	R	1.4 B

Table 4-TMS 602 --Minimum Special Inspections

Inspection Task	Frequency			Reference for Criteria	
	Lev 1	Lev 2	Lev 3	TMS 402	TMS 602
1. As masonry construction begins, verify that the following are in compliance:					
a. Proportions of site-prepared mortar.	NR	P	P		2.1,2.6A, 2.6C
b. Grade and size of restressing tendons and anchorages	NR	P	P		2.4B & 2.4H
c. Grade, type and size of reinforcement, connectors, anchor bolts, and prestressing tendons and anchorages.	NR	P	P		3.4&3.6A
d. Prestressing technique	NR	P	P		3.6 B
e. Properties of thin-bed mortar for AAC masonry.	NR	C <sup>(b)</sup> /P <sup>(c)</sup>	C		2.1 C.1
f. Sample panel construction	NR	P	C		1.6 D
2. Prior to grouting, verify that the following are in compliance:					
a. Grout Space	NR	P	C		3.2 D & 3.2 F
b. Placement of prestressing tendons and anchorages.	NR	P	P	10.8 & 10.9	2.4 & 3.6
c. Placement of reinforcement, connectors, and anchor bolts	NR	P	C	6.1,6.3.1, 6.3.6, 6.3.7	3.2 E & 3.4
d. Proportions of site-prepared grout, and prestressing grout for bonded tendons	NR	P	P		2.6 B & 2.5 G.1.b
3. Verify compliance of the following during construction:					
a. Materials and procedures with the approved submittals	NR	P	P		1.5
b. Placement of masonry units and mortar joint construction	NR	P	P		3.3 B
c. Size and location of structural members	NR	P	P		3.3 F
d. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	NR	P	C	1.2.1(e), 6.3.1, & 6.3.1	
e. Welding of reinforcement	NR	C	C	6.1.6.1.2	
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40 F or hot weather (above 90 F)	NR	P	P		1.8 C & 1.8 D
g. Application and measurement of prestressing force.	NR	C	C		3.6 B
h. Placement of grout and prestressing grout for bonded tendons is in compliance	NR	C	C		3.5 & 3.6 C
i. Placement of AAC masonry units and construction of thin-bed mortar joints.	NR	C <sup>(b)</sup> /P <sup>(c)</sup>	C		3.3 B.9 & 3.3 F.1.b
4. Observe preparation of grout specimens, mortar specimens, and/or prisms.	NR	P	C		1.4 B.2.a.3, 1.4 B.2.b.3, 1.b B .2.c.3, 1.4 B.3, & 1.4 B.4

## **CHAPTER 13 - SEISMIC RESISTANCE AND STRUCTURAL OBSERVATIONS**

The special inspections for seismic resistance are in addition to those required in Section 1704. This special inspection is only required for structures in Seismic Design Categories C, D, E or F and only when required in Sections 1704 and 1705.12. The Engineer of Record shall identify the seismic-force-resisting systems and other designated seismic systems in the structure.

- Steel. Special inspection of welding in accordance with Section 1705.2 and AISC 341 is required for steel.
- Structural wood. Special inspections in accordance with Section 1705.12.2 to ensure continuity of load path within the seismic-force-resisting system.
  - **Exception:** Fastening of wood sheathing used for wood shear walls, shear panels and diaphragms where the fastener spacing is more than 4” on center.
- Cold-formed steel framing. Special inspections in accordance with Section 1705.12.3 to ensure continuity of load path within the seismic-force-resisting system.
- Storage racks and access floors. Special inspections in accordance with Section 1705.12.7 required during the anchorage of access floors and storage racks 8’ or greater in height in Seismic Design Categories D, E or F.
- Architectural components. Special inspection in accordance with Section 1705.11.5 of architectural components in Seismic Design Categories D, E or F.
- Plumbing, Mechanical and electrical components. Special inspection in accordance with Section 1705.12.6 for components that must function in post earthquake conditions such as emergency electrical systems or for anchorage of mechanical equipment, piping, and ducting using or caring flammable or hazardous material.
- Designated seismic system verifications. Special inspection shall be in accordance with Section 1705.12.4.
- Seismic isolation system. Periodic special inspections shall be in accordance with Section 1705.12.8

Structural Testing for Seismic Resistance; IBC Section 1705.13

- Masonry. Special Inspection of the materials and assemblies prior to construction shall comply with AISC 530.
- Testing for seismic resistance. Special inspection in accordance with Section 1705.13.2 for testing of seismic resistance may include reinforcing and prestressing steel, structural steel, mechanical and electrical equipment and seismically isolated structures.

**CHAPTER 14 -  
EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)**

Special inspection for EIFS systems shall be based on manufacturer's installation instructions. Critical areas necessary for adequate EIFS performance are proper installation of waterproofing membrane and installation of flashings at windows, doors, joints, eaves, corners and penetrations [IBC Section 1705.16].

## **CHAPTER 15 - SMOKE CONTROL SYSTEMS**

### Special Inspection of smoke-control systems - IBC Section 1705.18, Section 909.3

Smoke control systems installed for the following purposes are subject to the requirements of IBC Section 909 and require special inspection:

- Covered mall building - IBC 402.7.2
- Atrium - IBC 404.5
- Underground building - IBC 405.5
- Group I-3 windowless building - IBC 408.9
- Smoke proof enclosure - IBC 403.5.4, 405.7.2, 1023.11, 909.20
- Stage - IBC 410.2.5
- Smoke-protected assembly seating - IBC 1029.6.2.1
- Elevator shaft pressurization – IBC 3006.3 #4, 909.21

The special inspector shall verify compliance to the appropriate sections noted above, IBC 909, and to the design documents.

- The test procedures shall be approved by the Engineer of Record for the smoke control system, and then submitted to CPD-DS Special Inspection Branch for approval.
- Upon approval of the test procedures and the rational analysis for the smoke control system, a smoke control preconstruction meeting will be conducted to discuss the approved detailed procedures. No mechanical permit will be issued until this has occurred.

The test scope shall be in accordance with IBC Section 1705.18 as follows:

- During erection of ductwork and prior to concealment for the purpose of leakage testing and recording of device location.
- Prior to occupancy and after sufficient completion for the purposes of pressure difference testing, flow measurements and detection and control verification.

The final performance test of the smoke control system shall be coordinated with the final occupancy inspection and also witnessed by the CPD-DS Special Inspection Staff.

**CHAPTER 16 -  
WOOD CONSTRUCTION**

Fabricated Wood Structural Elements and Assemblies; IBC 1705.5

Fabricated wood structural elements and assemblies of wood construction, such as wood trusses, shall be by an approved fabricator, or shall have special inspection monitoring.

All fabrication and installation of high-load diaphragms using values from IBC Table 2306. 2 shall have special inspection monitoring in accordance with IBC 1705.5.1

**CHAPTER 17 –  
FIRE-RESISTANT PENETRATIONS AND JOINTS**

Fire-resistant penetrations and joints—1705.17

In high-rise buildings or buildings assigned to Risk Category III or IV special inspections are required for through-penetration firestop systems, membrane penetration firestop systems, fire-resistant joint systems, and perimeter fire barrier systems. The inspections shall be per ASTM E2174 and ASTM E2393.



**CHAPTER 18 –  
Special Cases – Not covered elsewhere in this manual**

Special Cases--- 1705.1.1

This section will be used for items of special nature that aren't specifically covered in the other areas of the SI manual.

Examples:

1. Erection of curtain wall assemblies.
2. Erection of SIPS panels and instillation of SIPS panels including hold downs.
3. Other similar items

**APPENDIX A -  
STANDARD DEFINITIONS AND ACRONYMS**

**DEFINITIONS**

**Certificate of Occupancy.** A document issued by the Building Official prior to a building or structure being used or occupied.

**High-rise Building.** A building with an occupied floor located more than 75 feet above the lowest level of fire department access.

**Residential Building.** A building, which accommodates residential occupancies, classified as R-3, which is used for human habitation for living, sleeping, cooking or any combination thereof.

**Reviewed Plans.** Plans submitted to and reviewed by the CPD-DS Plans Review Division in conjunction with the issuance of a building permit and stamped by CPD-DS “Reviewed for Code Compliance”.

**Special Inspections Agency.** Agency retained by the owner and approved by CPD-DS to perform special inspections as required by IBC Section 1704.

**Special Inspections Manual.** The manual that outlines the CPD-DS Special Inspections Program.

**Special Inspections Project Manual.** A manual developed by the CPD-DS that identifies the special inspections requirements for a specific project.

**Special Inspector.** A qualified individual who is employed by a Special Inspections Agency and approved by CPD-DS to perform the inspection and/or testing of work requiring special inspections.

**Special Inspector of Record.** The professional engineer or architect registered in the State of Missouri, who is responsible for overseeing and reporting the special inspections on a specific project.

## **ACRONYMS**

**AISC** American Institute of Steel Construction

**AOR** Architect of record

**APA** Architectural Precast Association

**ASTM** American Society for Testing and Materials

**CPD-DS** City Planning & Development-Development Services

**CWB** Canadian Welding Bureau

**EIFS** Exterior Insulation & Finish System

**EOR** Engineer of record

**IAS** International Accreditation Service, Inc.

**ICC** International Code Council.

**ICC-ES** International Code Council Evaluation Service

**KCBRC** Kansas City Missouri Building and Rehabilitation Code

**PCI** Precast/Prestressed Concrete Institute

**SI** Special Inspections

**SJI** Steel Joist Institute.

**APPENDIX B -  
SPECIAL INSPECTIONS FORMS  
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**KCMO SPECIAL INSPECTOR REQUEST FOR APPROVAL**

Special Inspector Name: \_\_\_\_\_  
Last First Middle

Special Inspector Signature: \_\_\_\_\_  
(As it will appear on reports)

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The professional engineer or architect who is responsible for supervising the special inspector's work shall complete the information below. Include a resume showing the special inspector's work experience as required by this Manual and a copy of all certifications.

Indicate the items the individual is qualified to inspect (See Chapter 5) for the minimum requirements):

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Testing of Concrete       | <input type="checkbox"/> Detention Basin        |  |
| <input type="checkbox"/> Placement of Concrete     | <input type="checkbox"/> High Strength Bolting  | <input type="checkbox"/> EIFS Inspection     |
| <input type="checkbox"/> Placement of Shotcrete    | <input type="checkbox"/> Structural Welding     | <input type="checkbox"/> Smoke Control       |
| <input type="checkbox"/> Placement of Rebar        | <input type="checkbox"/> Steel Frame Inspection | <input type="checkbox"/> Seismic Resistance  |
| <input type="checkbox"/> Prestressing Concrete     | <input type="checkbox"/> Structural Masonry     | <input type="checkbox"/> Firestop Inspection |
| <input type="checkbox"/> Excavation and Filling    | <input type="checkbox"/> Erection of Precast    |  |
| <input type="checkbox"/> Piles and or Piers        | <input type="checkbox"/> Precast                |  |
| <input type="checkbox"/> Verification of Soils     | <input type="checkbox"/> Sprayed Fireproofing   |  |
| <input type="checkbox"/> Earth Retaining Structure |   |  |

Indicate the current certifications and/or professional licenses retained by the individual:

- |   |  |
|---|--|
| <input type="checkbox"/> Current ICC Soils Special Inspector with one year related experience | <input type="checkbox"/> AWS Certified Welding Inspector |
| <input type="checkbox"/> ACI Concrete Field Testing Technician Level 1                        | <input type="checkbox"/> CWB Certified Welding Inspector |
| <input type="checkbox"/> ACI Concrete Construction SI Certificate                             | <input type="checkbox"/> NDT Level II                    |
| <input type="checkbox"/> ICC Reinforced Concrete  | <input type="checkbox"/> NDT Level III                   |
| <input type="checkbox"/> ICC Prestressed Concrete   | <input type="checkbox"/> Professional Land Surveyor      |
| <input type="checkbox"/> ICC Structural Steel and Welding                                     | <input type="checkbox"/> Professional Engineer           |
| <input type="checkbox"/> ICC Structural Steel and Bolting                                     | <input type="checkbox"/> Registered Architect            |
| <input type="checkbox"/> ICC Structural Masonry   | <input type="checkbox"/> Registered Geologist            |
| <input type="checkbox"/> ICC Spray-Applied Fire Proofing                                      | <input type="checkbox"/> Engineer Intern                 |
| <input type="checkbox"/> PTI Level II   | <input type="checkbox"/> Geologist-in-Training           |
| <input type="checkbox"/> NICET Level II   | <input type="checkbox"/> Firestop Certification          |

---

I hereby certify that in my judgment the individual is qualified to inspect and/or test the items indicated above.

Special Inspections Agency: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Submit To: Ray Rhodes  
City Planning & Development - Development Services  
Special Inspection Branch  
414 E. 12th Street, 5th Floor Kansas City, Missouri 64106

Seal:

**KCMO SPECIAL INSPECTOR DAILY REPORT**

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Address: \_\_\_\_\_ Control #: \_\_\_\_\_

Indicate the items inspected and/or tested:

**REINFORCED CONCRETE**

- Placement of Concrete
- Placement of Shotcrete
- Testing of Concrete
- Reinforcing Steel Placement
- Bolts Installed in Concrete
- Prestressing Concrete

**SOILS AND FOUNDATIONS**

- Verification of Soils
- Excavation
- Structural Fill
- Piles and/or Piers
- Detention Basin
- Earth Retaining Structure

**STRUCTURAL MASONRY**

- Inspection of Rebar Placement/Grouting
- Mortar and Grout Testing
- Wall Prisms

**SPECIAL:**

- Post-Installed Anchors     Smoke Control
- Firestop                       EIFS
- Seismic Resistance         Wood Construction
- OTHER: \_\_\_\_\_

**STRUCTURAL STEEL**

- High Strength Bolting
- Welding of Structural Steel
- Metal Deck Welding
- Shear Stud Welding
- Welding of Reinforcing Steel
- Steel Frame Inspection

**SPRAYED FIRE RESISTANT MATERIALS OR MASTIC AND INTUMESCENT FIRE RESISTIVE COATINGS**

- Placement Inspection     Bond Strength
- Density Tests     Substrate Temperature
- Thickness Tests

**PRECAST CONCRETE**

- Inspection of Erected Panels
- Welding of Panel Connections

**INSPECTION OF FABRICATORS**

- Metal Building     Structural Steel
- Wood Const.     Precast Concrete

List locations of inspections/test made: \_\_\_\_\_

- 1. Were there any discrepancies with the reviewed plans?                       Yes     No
- 2. Were there any changes to the reviewed plans?                                 Yes     No
- 3. Were any previously listed items corrected or resolved                       Yes     No
- 4. Are the signed/sealed resolutions by EOR/AOR attached                       Yes     No

If yes, on items 1, 2, or 3 describe:

\_\_\_\_\_

Special Inspections Agency: \_\_\_\_\_

Inspector: \_\_\_\_\_ Signature: \_\_\_\_\_  
(Print)

Time Beginning Inspection: \_\_\_\_\_ Time Ending Inspection: \_\_\_\_\_

**Submit To: Ray Rhodes  
City Planning & Development - Development Services  
Special Inspections Branch  
414 E. 12th Street, 5th Floor - Kansas City, Missouri 64106**

**KCMO BIWEEKLY SPECIAL INSPECTIONS REPORT**

Project Address: \_\_\_\_\_ Plan #: \_\_\_\_\_

Project Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

This report covers work done between \_\_\_\_\_ and \_\_\_\_\_

This is to certify that I, or a qualified individual working under my direction, inspected and/or tested the following items in accordance with Chapter 17 Of the 2018 International Building Code: (Check appropriate items)

- |   |  |
|---|--|
| <input type="checkbox"/> Placement of Reinforced Concrete | <input type="checkbox"/> None - No Inspections Made  |
| <input type="checkbox"/> Placement of Shotcrete           | <input type="checkbox"/> Erection of Precast Concrete  |
| <input type="checkbox"/> Testing of Reinforced Concrete   | <input type="checkbox"/> Steel Frame Inspection  |
| <input type="checkbox"/> Placement of Reinforcing Steel   | <input type="checkbox"/> High Strength Bolting   |
| <input type="checkbox"/> Placement of Prestressing Steel  | <input type="checkbox"/> Structural Welding  |
| <input type="checkbox"/> Bolts Installed in Concrete      | <input type="checkbox"/> Sprayed Fire Resistant Materials or<br>Mastic and Intumescent Fire Resistive<br>Coating |
| <input type="checkbox"/> Post-Installed Anchors           | <input type="checkbox"/> Structural Masonry  |
| <input type="checkbox"/> Verification of Soils            | <input type="checkbox"/> Wood Construction   |
| <input type="checkbox"/> Excavation and Filling           | <input type="checkbox"/> Seismic Resistance  |
| <input type="checkbox"/> Deep Foundations                 | <input type="checkbox"/> Firestop  |
| <input type="checkbox"/> Earth-Retaining Structure        | INSPECTION OF FABRICATORS  |
| <input type="checkbox"/> Detention Basin                  | <input type="checkbox"/> Metal Building <input type="checkbox"/> Structural Steel                                |
| <input type="checkbox"/> EIFS                             | <input type="checkbox"/> Wood Const. <input type="checkbox"/> Precast Concrete                                   |
| <input type="checkbox"/> Smoke Control                    | Other: _____   |
| <input type="checkbox"/> Shotcrete                        |  |

Except where noted in the attached report, the work was found to be in substantial compliance with the City reviewed plans, specifications, and applicable provisions of the Kansas City, Missouri, Building & Rehabilitation Code. All daily reports and EOR/AOR resolutions are attached.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Submit To: Ray Rhodes  
City Planning & Development  
Development Services  
Special Inspections Branch  
414 E. 12th Street, 5th Floor  
Kansas City, Missouri 64106**

**SEAL**

cc: Engineer or Architect of Record and the General Contractor

**KCMO FINAL SPECIAL INSPECTIONS FORM**

PARTIAL FINAL FOR THE AREA OF \_\_\_\_\_

FINAL SPECIAL INSPECTIONS REPORT

Project Address: \_\_\_\_\_ Control #: \_\_\_\_\_

Project Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Special Inspector of Record: \_\_\_\_\_

This is to certify that I or qualified individuals working under my direction inspected and/or tested the following items in accordance with Section 1705 of the 2018 International Building Code:

- |   |  |
|---|--|
| <input type="checkbox"/> Placement of Reinforced Concrete | <input type="checkbox"/> EIFS Insulation/Finish System   |
| <input type="checkbox"/> Placement of Shotcrete           | <input type="checkbox"/> Smoke Control   |
| <input type="checkbox"/> Testing of Reinforced Concrete   | <input type="checkbox"/> Erection of Precast Concrete  |
| <input type="checkbox"/> Placement of Reinforcing Steel   | <input type="checkbox"/> Steel Frame Inspection  |
| <input type="checkbox"/> Prestressing Concrete            | <input type="checkbox"/> High Strength Bolting   |
| <input type="checkbox"/> Post-Tension Slab                | <input type="checkbox"/> Structural Welding  |
| <input type="checkbox"/> Bolts installed in Concrete      | <input type="checkbox"/> Sprayed Fire Resistant Materials or<br>Mastic and Intumescent Fire Resistive<br>Coating |
| <input type="checkbox"/> Post-Installed Anchors           | <input type="checkbox"/> Structural Masonry  |
| <input type="checkbox"/> Verification of Soils            | <input type="checkbox"/> Wood Construction   |
| <input type="checkbox"/> Excavation and Filling           | <input type="checkbox"/> Seismic Resistance  |
| <input type="checkbox"/> Deep Foundations                 | <input type="checkbox"/> Firestop  |
| <input type="checkbox"/> Earth Retaining Structure        | INSPECTION OF FABRICATORS  |
| <input type="checkbox"/> Detention Basin                  | <input type="checkbox"/> Metal Building <input type="checkbox"/> Structural Steel                                |
| <input type="checkbox"/> Other: _____                     | <input type="checkbox"/> Wood Const. <input type="checkbox"/> Precast Concrete                                   |

The entire scope of work for the items checked above is complete and was inspected by this Agency, and to the best of my knowledge was found to be in substantial compliance with the City reviewed plans and specifications and applicable provisions of the Kansas City, Missouri, Building & Rehabilitation Code.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Submit to: Special Inspections Branch  
SEAL



**KCMO REQUIRED SPECIAL INSPECTIONS**

*By*  
*Registered Design Professional of Record*

Project Name: \_\_\_\_\_ Project Address: \_\_\_\_\_

Per IBC Section 1705 of the 2018 International Building Code and Chapter Two of the Special Inspections Manual, I recommend that the following items be considered for Special Inspections.

- |   |   |
|---|---|
| <input type="checkbox"/> Placement of Reinforced Concrete | <input type="checkbox"/> Erection of Precast Concrete   |
| <input type="checkbox"/> Placement of Shotcrete           | <input type="checkbox"/> Structural Welding   |
| <input type="checkbox"/> Testing of Reinforced Concrete   | <input type="checkbox"/> High Strength Bolting  |
| <input type="checkbox"/> Placement Reinforcing Steel      | <input type="checkbox"/> Steel Frame Inspection   |
| <input type="checkbox"/> Prestressing Concrete            | <input type="checkbox"/> Sprayed Fire Resistant Materials or<br>Mastic and Intumescent Fire Resistive<br>Coating  |
| <input type="checkbox"/> Bolts installed in Concrete      | <input type="checkbox"/> Structural Masonry   |
| <input type="checkbox"/> Post Installed Anchors           | <input type="checkbox"/> EIFS Insulation/Finish System  |
| <input type="checkbox"/> Verification of Soils            | <input type="checkbox"/> Seismic Resistance   |
| <input type="checkbox"/> Excavation and Filling           | <input type="checkbox"/> Shotcrete  |
| <input type="checkbox"/> Deep Foundations                 | <input type="checkbox"/> Firestopping   |
| <input type="checkbox"/> Earth Retaining Structure        | <input type="checkbox"/> Smoke Control System   |
| <input type="checkbox"/> Detention Basin                  | INSPECTION OF FABRICATORS   |
| <input type="checkbox"/> Inspection of Precast Fabricator | <input type="checkbox"/> Metal Building <input type="checkbox"/> Structural Steel<br><input type="checkbox"/> Wood Const. <input type="checkbox"/> Precast Concrete |

Other: \_\_\_\_\_

**Registered Design Professional of Record:**

\_\_\_\_\_ **Date** \_\_\_\_\_

**Submit to: Ray Rhodes**  
**City Planning & Development**  
**Development Services**  
**Special Inspections Branch**  
**414 E. 12th Street, 5th Floor - Kansas City, Missouri 64106**

**KCMO SUBCONTRACTED SPECIAL INSPECTION AGENCY REQUEST FOR APPROVAL**

Project #: \_\_\_\_\_

Project Name: \_\_\_\_\_

Special Inspection Agency Name: \_\_\_\_\_

---

I hereby certify that I am accepting responsibility to follow all the guidelines of the City of Kansas City Missouri's Special Inspections manual as a subcontractor to the main Special Inspection agency for this project.

Special Inspections Agency: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Submit To: Ray Rhodes  
City Planning & Development - Development Services  
Special Inspection Branch  
414 E 12<sup>th</sup> ST 5th Floor Kansas City, Missouri 64106**

**SEAL**

## APPENDIX C - CPD-DS Plan Stamps

### CITY PLANNING & DEVELOPMENT – DEVELOPMENT SERVICES PLAN STAMPS

**BUILDING PERMIT STAMPS:**

**REVIEWED FOR CODE COMPLIANCE**  
City Planning & Development  
Development Services  
City of Kansas City, Missouri

  
Greg Franzen, P.E. M.C.P.  
Building Official

Date: \_\_\_\_\_  
By: \_\_\_\_\_

CHANGES REVIEWED FOR CODE COMPLIANCE  
To Building Permit # \_\_\_\_\_

**SPECIAL INSPECTION REQUIRED AS  
PREVIOUSLY SPECIFIED**

City Planning & Development  
Development Services  
City of Kansas City, Missouri  
Building Official

Date: \_\_\_\_\_  
By: \_\_\_\_\_

LAND DEVELOPMENT STAMPS (only applicable to private development building permits where "Private Grading" is checked or where referencing a permit number beginning with 'CPB'):

**REVIEWED FOR CODE  
COMPLIANCE**

City Planning and  
Development  
Development Services  
Land Development  
Division

Land Disturbance   
Private Grading   
Public Grading   
Street Design   
Sanitary Sewers   
Storm Drainage

BY: \_\_\_\_\_  
REVIEWER

DATE: \_\_\_\_\_

DEPARTMENT OF CITY  
PLANNING & DEVELOPMENT  
KANSAS CITY, MISSOURI

CONSTRUCTION PERMIT  
MUST BE SECURED  
WITHIN ONE YEAR  
OF REVIEW

CHANGES REVIEWED FOR CODE COMPLIANCE

City Planning and Development  
Development Services  
Land Development Division

To Permit # \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_