

CHAPTER 3 SPECIAL INSPECTIONS CLASSIFICATIONS

SICC-301 GENERAL

SICC-301.1 Required by NCSBC. The NCSBC requires special inspections for certain building elements and components. A statement of special inspections is required as part of the construction documents.

NCSBC-1704.1 General. Where application is made for construction as described in this section, the **Owner** or the **RDP** in responsible charge acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704 per Section 1704.1.2. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. These inspections are in addition to the inspections specified in Section 107 of the NC Administrative Code and Policies.

NCSBC-1704.1.1 Building permit requirement. The permit applicant shall submit a statement of special inspections prepared by the registered design professional in responsible charge as a condition for permit issuance. This statement shall include a complete list of materials and work requiring special inspections by this section, the inspections to be performed and a list of the individuals, approved agencies or firms intended to be retained for conducting such inspections.

SICC-301.2 Elective by Owner. Owners of buildings may elect to follow the Special Inspections Program on projects that otherwise do not fall under the above criteria. In such cases, the **Owner** shall notify the **CCBSD** of this intent prior to issuance of the building permit. **Owners** electing to follow the Special Inspections Program shall follow all applicable requirements of this SIC-2007.

SICC-302 SPECIAL INSPECTIONS REQUIREMENT

Special Inspections per Section 1704.1.2 are required for buildings, building components or other structures per the following:

1. Buildings or other structures listed in Table 1604.5 in category II if:
 - a. Building height exceeds 45 feet or three stories, or
 - b. The building is an Underground buildings per 405.1
2. Buildings or other structures listed in table 1604.5 in categories III or IV;
3. Piles, piers and special foundations;
4. Retaining walls exceeding 5 feet in height per 1806;
5. Smoke control and smoke exhaust systems;
6. Sprayed fire-resistant materials; or
7. Special case described in NCSBC 1704.13.

The following shall be subject to special inspections:

SICC-302.1 Fabricators.

For fabricated items requiring special inspection, the **SIER** shall conduct special inspection of the fabricator's shop facilities.

NCSBC-1704.2 Inspection of fabricators. Where fabrication of structural load bearing members and

assemblies is being performed on the premises of a fabricator's shop, special inspection of the fabricated items shall be required by this section and as required elsewhere in the NCSBC.

NCSBC -1704.2.1 Fabrication and implementation procedures. The special inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to approved construction documents and referenced standards. The special inspector shall review the procedures for completeness and adequacy relative to the code requirements for the fabricator's scope of work.

Exception: Special inspections as required by Section 1704.2 shall not be required where the fabricator is approved in accordance with Section 1704.2.2.

NCSBC -1704.2.2 Fabricator approval. Special inspections required by this code are not required where the work is done on the premises of a fabricator registered and approved to perform such work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

SICC-302.2 Structural steel (See SIC-2007 Chapter 6).

a. Steel fabricators. Special inspections of the fabrication process are required, for all steel fabricated assemblies that are themselves subject to special inspections, except as exempted in NCSBC-1704.3.

NCSBC -1704.3 Exceptions:

1. Special inspection of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, grade and mill test reports for the main stress carrying elements are capable of being determined.
2. The special inspector need not be continuously present during welding of the following items, provided the materials, welding procedures and qualifications of welders are verified prior to the start of the work; periodic inspections are made of the work in progress; and a visual inspection of all welds is made prior to completion or prior to shipment of shop welding.
 - 2.1. Single pass fillet welds not exceeding $\frac{5}{16}$ inch (7.9 mm) in size.
 - 2.2. Floor and roof deck welding.
 - 2.3. Welded studs when used for structural diaphragm.
 - 2.4. Welded sheet steel for cold formed steel framing members such as studs and joists.
 - 2.5. Welding of stairs and railing systems.

b. The SIER shall inspect steel elements, welding material, and high strength bolts for conformance with NCSBC Table 1704.3 to include the Seismic-force resisting-systems identified in the Quality Assurance Plan.

SICC-302.3 Cast-in-place concrete (See SIC-2007 Chapter 7).

a. Components. All structural elements of cast-in-place concrete, including reinforced, prestressed, or post-tensioned concrete elements, and concrete topping on stay-in-place steel decking, both composite

and non composite, except as exempted by NCSBC-1704.4 Exception. To qualify for the exception, the construction shall be on undisturbed, stable, non-problem soil or rock, or as specified by the **SER** or **GER**, as appropriate. See also SICC-302.6 and SICC-302.7 for foundations and walls.

NCSBC -1704.4 Exception: Special inspections shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less in height that are fully supported on earth or rock.
2. Continuous concrete footings supporting walls of buildings three stories or less in height that are fully supported on earth or rock where:
 - 2.1. The footings support walls of light frame construction;
 - 2.2. The footings are designed in accordance with Table 1805.4.2; or
 - 2.3. The structural design is based on a f'_c no greater than 2,500 pounds per square inch (17.2 MPa).
3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 pounds per square inch (1.03 MPa).
4. Concrete foundation walls constructed in accordance with Table 1805.5(1), 1805.5(2), 1805.5(3) or 1805.5(4).
5. Concrete patios, driveways and sidewalks, on grade.

b. Seismic-force-resisting systems. (Seismic Design Category C, D, E, or F): Testing of reinforcing steel and prestressing steel as required by NCSBC-1708.3.

SICC-302.4 Precast concrete (See SICC-2007 Chapter 8).

a. Precast concrete fabricators. Special inspections of the fabrication process are required, for all precast concrete elements that are themselves subject to special inspections.

b. Off-site precast components. All architectural and/or structural precast concrete building elements manufactured off-site, usually at a precast concrete plant, with the exception of miscellaneous cast stone items such as sills, coping, pavers, etc., or as otherwise approved.

c. Site-cast precast components. All site-cast, precast concrete elements, including tilt-up concrete wall panels.

d. Seismic-force-resisting systems. (Seismic Design Category C, D, E, or F): Welding of connections as required by NCSBC-1707.2.

SICC-302.5 Masonry (See SICC-2007 Chapter 9).

a. Elements. Masonry elements, depending on the masonry design, classification of the building or type of occupancy (see NCSBC -Table 1604.5 and NCSBC -Table 1617.6).

NCSBC-1704.5 Exception: Special inspections shall not be required for:

1. Empirically designed masonry, glass unit masonry, or masonry veneer designed by Section 2109, 2110, or ACI 530/ASCE 5/TMS 402 Chapters 5, 6 or 7 when they are part of nonessential buildings (see Tables 1604.5 and 1617.6).
2. Masonry foundation walls constructed in accordance with Table 1805.5(1), 1805.5(2), 1805.5(3) or 1805.5(4).

b. Seismic-force-resisting systems. (Seismic Design Category C, D, E, or F) as required by NCSBC - 1708.1.

SICC-302.6 Wood (See SICC-2007 Chapter 10).

a. Wood fabricators. Special inspections of the fabrication process are required.

b. Seismic-force-resisting systems. (Seismic Design Category C, D, E or F): as required by NCSBC - 1707.3.

SICC-302.7 Soils and foundations (See SICCC-2007 Chapter 11).

a. Shallow footings and foundations. Soils and building foundation elements when either of the following conditions exist:

- Problem Soils. The building footprint is located on soils that have been determined by the GER/SER as a problem soils area, as indicated by the approved geotechnical report due to inadequate soil bearing capacities.
- Structural Fill. The bearing material under the building footprint consists of compacted structural fill.

NCSBC-1704.7 Exception: Special inspections not required during placement of fill less than 12 inches (305 mm) deep.

b. Deep foundations. Building foundation elements for the following systems:

- Pile foundations of all buildings.
- Pier foundations of all buildings, assigned to Seismic Design Category C, D, E or F. The Statement of Special Inspections shall specifically include the special inspections required for the seismic-resisting elements.

SICC-302.8 Earth retention systems (See SICCC-2007 Chapter 12 and NCSBC Section 1806.2).

All earth retention systems providing a cumulative vertical relief greater than 5 feet in height within a horizontal distance of 50 feet or less of unbalanced fill, including, but not limited to:

- Building foundation walls.
- Retaining walls.
- Soldier piles and lagging.
- Soil nailing systems.
- Sheet piling.
- Braced or shored walls.
- Tied-back walls.

SICC-302.10 Sprayed fire-resistant materials. (See SICCC-2007 Chapter 13.)

All sprayed fire-resistant materials applications.

SICC-302.9 Exterior Insulation and Finish Systems (EIFS) (See SICCC-2007 Chapter 14).

All EIFS applications, except those installed over a water resistive barrier with a means of draining moisture to the exterior, or those installed over masonry or concrete walls.

SICC-302.11 Smoke control. (See SICCC-2007 Chapter 15.)

All smoke control systems.

SICC-302.12 Architectural, Mechanical, Electrical Components. (See SICCC-2007 Ch 16.)

Seismic Design Category C, D, E or F, as required by NCSBC-1707.7 (see NCSBC-1621).

SICC-303 STATEMENT OF SPECIAL INSPECTIONS (SSI)

SICC-303.1 Content. The SSI shall identify the scope of the special inspections services applicable to the project and shall include the names of the **RDPs**, including the **SIER** and **GER**, and the inspection and testing agencies providing those services. The **SIER** and the inspection and testing agencies are subject to **CCBSD** approval.

SICC-303.2 Submittal, review and approval. The SSI shall be incorporated into the construction documents (see SIC-301.1 and NCSBC-1704.1.1) and shall be submitted by the permit applicant to the **CCBSD**. **The CCBSD shall review and approve the SSI prior to scheduling the preconstruction meeting (see Chapter 4).**

SICC-303.3 SSI Form. A blank copy of a three page SSI Form is provided in Appendix A. The forms are to be prepared by the **Registered Design Professional in Responsible Charge**, and the **Engineers of Record** for the project.

Page two of the form, identifies the types of work needing special inspection services as well as the Special Inspections Engineer of Record and Testing Labs responsible for the services. Normally these services are provided by one engineering firm or Registered Design Professional however the form can be used by multiple inspection agents.

Page three of the form is the Quality Assurance plan and provides the seismic and wind systems and components requiring special inspections prepared by the **Structural Engineer of Record**. Page three also provides a list of contractors responsible for the construction or fabrication of a systems and components identified in the Quality Assurance Plan. Copies of these forms as well as Daily Field Report and Weekly Engineers Summary Report can be found in Appendix A.