

SPECIAL INSPECTIONS CATAWBA COUNTY

(SICC-2009)

2009 Edition

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Administered by

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CHAPTER 16 ARCHITECTURAL, MECHANICAL, ELECTRICAL COMPONENTS

SICC-1601 GENERAL

For buildings assigned to Seismic Design Category C, D, E, or F, architectural, mechanical, electrical and plumbing components shall be specially inspected and tested, in accordance with NCBC-1705.3, NCBC-1707.1, 1707.6, 1707.7, 1707.8, NCBC-1708.2, and 1708.5.

NCBC-1705.3 Seismic resistance. The statement of special inspections shall include seismic requirements for the following cases:

1. The seismic-force resisting systems in structures assigned to Seismic Design Category C, D, E or F in accordance with Section 1613.
2. Designated seismic systems in structures assigned to Seismic Design Category D, E, or F.
3. The following additional systems and components in structures assigned to Seismic Design Category C:
 - 3.1. HVAC ductwork containing hazardous materials, and anchorage of such ductwork
 - 3.2. Piping systems and mechanical units containing flammable, combustible or highly toxic materials
 - 3.3. Anchorage of electrical equipment used for emergency or standby power systems.
4. The following additional systems in structures assigned to Seismic Design Category D:
 - 4.1 Systems required for Seismic Design Category C.
 - 4.2 Exterior Wall panels and their anchorage.
 - 4.3 Suspended Ceiling systems and their anchorage.
 - 4.4 Access Floors and their anchorage.
 - 4.5 Steel storage racks & anchorage, where the importance factor is equal to 1.5 in accordance with Section 15.5.3 of ASCE 7.
5. The following additional systems & components in structures assigned to Seismic Design Category E or F:
 - 5.1 Systems required for Seismic Design Categories C and D.
 - 5.2 Electrical equipment.

Exception: Seismic requirements are permitted to be excluded from the statement of special inspections for structures designed and constructed in accordance with the following:

1. The structure consists of light frame construction; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.5.4 does not exceed 0.5g, and the height of the structure does not exceed 35 feet above grade plane.
2. The structure is constructed using a reinforced masonry structural system or reinforced concrete structural system; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.5.4 does not exceed 0.5g; and the height of the structure does not exceed 25 feet above grade plane.

SICC-1602 INSPECTIONS AND TESTS

NCBC-1707.1 Special inspections for seismic resistance. Special inspection as specified in this section is required for the following, where required in Section 1704.1. Special inspections itemized in Sections 1707.2 through 1707.10 are required for the following:

3. Architectural, mechanical and electrical components in structures assigned to Seismic Design Category C, D, E or F that are required in Sections 1707.6, 1707.7, 1707.8 and 1707.10.

NCBC-1707.65 Storage racks and access floors. Periodic special inspection during the anchorage of access floors & storage racks 8 feet or greater in height in structures assigned to Seismic Design Category D, E, or F.

NCBC-1707.7 Architectural components. Periodic Special inspection during the erection and fastening of exterior cladding, interior and exterior nonbearing walls and interior and exterior veneer in structures assigned to Seismic Design Category D, E, or F.

Exceptions:

1. Special inspection is not required for architectural components in structures 30 feet or less in height.
2. Special inspection is not required for cladding and veneer weighing 5 psf or less.
3. Special inspection is not required for interior nonbearing walls weighing 15 psf or less.

NCBC-1707.8 Mechanical and electrical components. Special inspection for mechanical and electrical equipment shall be as follows:

1. Periodic special inspection is required during the anchorage of electrical equipment for emergency or standby power systems in structures assigned to Seismic Design Category C, D, E or F;
2. Periodic special inspection is required during the installation of anchorage of other electrical equipment in structures assigned to Seismic Design Category E or F;
3. Periodic special inspection is required during installation of piping systems intended to carry flammable, combustible, or highly toxic contents and their associated mechanical units in structures assigned to Seismic Design Category C, D, E or F;
4. Periodic special inspection is required during the installation of HVAC ductwork that will contain hazardous materials in structures assigned to Seismic Design Category C, D, E or F;
5. Periodic special inspection is required during the installation of vibration isolation system in structures assigned to Seismic Design Category C, D, E or F where the construction documents require a nominal clearance of 0.25 inches or less between the equipment support frame and restraint.

NCBC-1708.2 Testing for seismic resistance. The tests specified in Sections 1708.3 through 1708.6 are required for the following:

2. Designated seismic systems in structures assigned to Seismic Design Category D, E or F.
3. Architectural, mechanical and electrical components in structures assigned to Seismic Design Category C, D, E or F that are required in Section 1708.5.

NCBC-1708.5 Seismic qualification of mechanical and electrical equipment. The registered design professional in responsible charge shall state the applicable seismic qualification requirements for designated seismic systems or the construction documents. Each manufacturer of designated seismic system components shall test or analyze the component and its mounting system or anchorage and shall submit a certificate of compliance for review and acceptance by the registered design professional in responsible charge of the design of the designated seismic system and for approval by the building official. Qualification shall be by actual test on a shake table, by three-dimensional shock tests, by an analytical method using dynamic characteristics and forces, by the use of experience data (i.e., historical data demonstrating acceptable seismic performance), or by a more rigorous analysis providing for equivalent safety.

SICC-1603 COMPLETION OF ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS

Upon completion, the **SIER** shall submit a completion letter to **CCBSD**. The **SIER** shall also indicate the date of completion on the final report of special inspections for architectural, mechanical, and electrical components.