



PHILIP D. MURPHY
Governor

State of New Jersey
DEPARTMENT OF COMMUNITY AFFAIRS
101 SOUTH BROAD STREET
PO Box 802
TRENTON, NJ 08625-0802



LT. GOVERNOR SHEILA Y. OLIVER
Commissioner

BULLETIN 03-5

Issued: November 2003

Revised: September 2022

Subject: Special Inspections

Reference: N.J.A.C. 5:23-2.20(b), 3.14 and 5.3

Chapter 17 of the Building Subcode, entitled “Structural Tests and Special Inspections,” is modified by N.J.A.C. 5:23-3.14. As per N.J.A.C. 5:23-2.20(b), for purposes of this chapter of the Building Subcode, a special inspection is an independent verification by a qualified person (special inspector) rendered to the code official for **Class 1 buildings, mass timber elements of Type IV-A, IV-B, and IV-C construction and a smoke control system in any building**. The special inspector is to be independent so that there is no possible conflict of interest. A summary of the special inspections provisions is included to better explain the requirements of the code.

Chapter 17 of the Building Subcode contains requirements for structural tests and special inspections. Certain special inspections required by Chapter 17 of the Building Subcode were deleted upon adoption because, in New Jersey, they are the responsibility of the construction official.

Approved Special Inspection Agencies: Agencies of this nature are regularly engaged in conducting special tests or inspections. Very often, they specialize in one aspect of the construction industry, due to the complexity of construction. This is why a special inspector who is trained in a specific area may be needed to conduct certain inspections. Special inspectors are independent of the contractor and responsible to the building owner or building owner’s agent. The established and recognized special inspector, or special inspection agency proposed by the permit applicant for each special inspection, must be acceptable to the construction official.

Certified Special Inspectors: As per N.J.A.C. 5:23-5.3, special inspectors are those who will be required to perform field inspections for structural welding, structural steel and bolting, concrete placement, reinforced concrete, prestressed concrete, structural masonry, mass timber construction, soils, spray-applied fireproofing, and exterior insulation finish systems (EIFS).

Building Permits and Reports: The permit applicant is required to submit a statement of the special inspections to be performed at the time of application. The statement is to be prepared by the responsible person in charge of the work.

Structural Systems: Special inspections are required for the following as per the corresponding sections of the Building Subcode.

- *Fabrication of Structural Load-Bearing Members/Assemblies*, Section 1704.2.5: These inspections are normally handled through an in-plant, quality-control process and reports are forwarded to the local construction code office when the elements are delivered.
- *Steel Construction*, Section 1705.2: This section requires the inspection of certain aspects of the on-site erection of structural steel, cold-formed steel deck, open-web steel joists and joist girders, and cold-formed steel trusses spanning 60 feet or greater. These special inspections include welding, high-strength bolting, joint connection, and temporary restraint/bracing and permanent individual truss member restraint/bracing of cold-formed steel trusses. There are specific exceptions listed in the above-referenced code section. Additional quality control and quality assurance information is available in Chapter N of AISC 360, Specification for Structural Steel Buildings, at https://www.aisc.org/globalassets/aisc/publications/standards/a360-16-spec-and-commentary_june-2018.pdf
 - Per N.J.A.C. 5:23-5.3, certified special inspectors are authorized to carry out field inspections for steel construction using the above-referenced section and the following:
 1. Certified Structural Welding Special Inspector -- Inspections in compliance with the applicable AWS standard.
 2. Certified Structural Steel and Bolting Special Inspector -- Inspections are performed to verify compliance with the details shown on the approved construction documents such as bracing, stiffening, member locations, and proper application of joint details at each connection. Inspection of open-web steel joists and joist girders are required to be performed in accordance with Table 1705.2.3. Also, high-strength bolts are to be inspected in accordance with AISC 360 Tables N5.6-1, 6-2 and 6-3.
- *Concrete Construction*, Section 1705.3 This section addresses the placement of structural concrete. Exceptions are listed in the above-referenced section.
 - Per N.J.A.C. 5:23-5.3, certified concrete placement, reinforced concrete and prestressed concrete special inspectors are authorized to carry out field inspections for concrete construction using the above-referenced sections
- *Masonry Construction*, Section 1705.4: This section addresses the placement of structural masonry elements.
 - Per N.J.A.C. 5:23-5.3, certified structural masonry special inspectors are authorized to carry out field inspections of structural masonry and vary based on “occupancy category” as per the above-referenced section.
- *Mass timber construction*, Section 1705.5.3: This section requires inspections of mass timber elements in Types IV-A, IV-B and IV-C construction.
 - Per NJAC 5:23-5.3, certified special inspectors are authorized to carry out continuous and periodic inspections of mass timber construction in accordance with Table 1705.5.3

- *Soils*, Section 1705.6: This section addresses existing site soil conditions, fill placement and load-bearing requirements. A soils report, required as per Section 1803 of the Building Subcode, is used to determine compliance with the placement of load-bearing fill.
→ Per NJAC 5:23-5.3, certified special inspectors are authorized to carry out continuous and periodic inspections of soils in accordance with Table 1705.6.
- *Driven deep (Pile) Foundations*, Sections 1705.7, 1705.8 and 1705.9: These sections require special inspections during the installation of driven, cast-in-place and helical pile foundations. There are no current certification requirements for driven deep foundations special inspectors, however, a licensed design professional is required.

Special Inspections for Seismic Resistance: Special inspections are required for seismic force-resisting systems; designated seismic systems; and architectural, mechanical, and electrical components in Seismic Design Category D, E and F buildings¹. The following components are special inspections related to seismic resistance found in Section 1705.13 of the Building Subcode.

- * Structural Steel
- * Structural Wood
- * Cold-Formed Steel-Light Frame Construction
- * Designated seismic systems
- * Architectural Components
- * Plumbing, Mechanical and Electrical Components
- * Seismic Isolation Systems
- * Storage Racks
- * Cold-Formed Steel Special Bolted Moment Frames

Structural Testing for Seismic Resistance: Prior to construction, all materials and assemblies used for isolation damping systems in Seismic Design Category D, E and F buildings¹ are required to be tested and verified as per Section 1705.14 for seismically isolated structures.

Finishes:

- *Sprayed, Fire-Resistant Materials*, Section 1705.15: Special inspections are required for sprayed, fire-resistant materials applied to floor, roof and wall assemblies and structural members. Details include condition of the substrates, thickness of application, density in pounds per cubic foot, bond strength adhesion/cohesion and condition of the finished application.
→ Per N.J.A.C. 5:23-5.3, certified special inspectors are authorized to carry out field inspections for sprayed, fire-resistant materials using the above-referenced section and are to be based on the fire-resistance design as designated in the approved construction documents.
- *Mastic and Intumescent Fire-Resistant Coatings*, Section 1705.16: Special inspections are required for mastic and intumescent fire-resistant coatings applied to structural elements and decks and are to be based on the fire-resistance design as designated in the approved construction documents.

- *Exterior Insulation and Finish Systems (EIFS)*, Section 1705.17: Special inspections are required for all EIFS applications. *Exceptions*: installations over a water-resistive barrier with a means of draining moisture to the exterior, or when installed over masonry or concrete
→ Per N.J.A.C. 5:23-5.3, certified special inspectors are authorized to carry out field inspections for all EIFS using the above-referenced section.
- *Fire-resistant penetrations and joints*, Section 1705.18: Special inspections are required for through-penetrations, membrane penetration firestops, fire-resistant joint systems and perimeter fire containment systems in high-rise buildings, in buildings assigned to Risk Category III or IV, or in fire areas containing Group R occupancies with an occupant load greater than 250.

Special Inspection for Smoke Control: A special inspector, qualified as per Section 1705.19.2 of the Building Subcode, is required to test smoke control systems. The inspector inspects for leakage testing, recording of device location, pressure difference testing, flow measurements, and detection and control verification.

Special Cases: N.J.A.C. 5:23-2.19(a) authorizes the building subcode official to require special inspections for proposed work that is unusual in nature. Some examples include alternative construction materials and systems, unusual design applications of materials, and materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained or referenced in the Building Subcode.

Examples:

- Any building that meets N.J.A.C. 5:23-4.3A(d)3, Class 1 building → apply applicable special inspections.
- Any Class building of Type IV-A, IV-B, and IV-C construction → apply mass timber special inspection.
- Any Class building of any construction type with a smoke control system → apply smoke control special inspection.

¹ *Seismic Design Categories are determined in accordance with Section 1613 of the building subcode. In order to utilize the equations, figures and tables of this section, one will need the Site Class definition per the ASCE 7, as adopted at Chapter 35 of the building subcode, and the Risk Category per Table 1604.5 of the building subcode.*