

**SECTION 1709
STRUCTURAL OBSERVATIONS**

1709.1 General. Where required by the provisions of Section 1709.2 or 1709.3, the owner shall employ a registered design professional to perform structural observations as defined in Section 1702.

The owner or owner's representative shall coordinate and call a preconstruction meeting between the engineer or architect responsible for the structural design, structural observer, contractor, affected subcontractors and deputy inspectors. The structural observer shall preside over the meeting. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first report submitted to the Superintendent of Building.

Observed deficiencies shall be reported in writing to the owner's representative, Registered Deputy Inspector, contractor and the Superintendent of Building. Upon the form prescribed by the Superintendent of Building, the structural observer shall submit to the Superintendent of Building a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies, which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer, which states that all observed deficiencies have been resolved, is required before acceptance of the work by the Superintendent of Building.

At the conclusion of the work included in the permit, the structural observer shall submit to the Superintendent of Building a written statement that the site visits have been made and shall identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.

1709.2 Structural observations for seismic resistance. Structural observations shall be provided for those structures included in Seismic Design Category D, E or F, as determined in Section 1613, where one or more of the following conditions exist:

1. The structure is classified as Occupancy Category III or IV in accordance with Section 1604.5.
2. The height of the structure is greater than 75 feet (22 860 mm) above the base.
3. The structure is assigned to Seismic Design Category E, is classified as Occupancy Category I or II in accordance with Section 1604.5 and is greater than two stories in height.
4. When so designated by the registered design professional in responsible charge of the design.
5. When such observation is specifically required by the building official.

1709.3 Structural observations for wind requirements. Structural observations shall be provided for those structures sited where the basic wind speed exceeds 110 mph (49 m/s), determined from Figure 1609, where one or more of the following conditions exist:

1. The structure is classified as Occupancy Category III or IV in accordance with Table 1604.5.
2. The building height is greater than 75 feet (22 860 mm).
3. When so designated by the registered design professional in responsible charge of the design.
4. When such observation is specifically required by the building official.

**SECTION 1710
DESIGN STRENGTHS OF MATERIALS**

1710.1 Conformance to standards. The design strengths and permissible stresses of any structural material that are identified by a manufacturer's designation as to manufacture and grade by mill tests, or the strength and stress grade is otherwise confirmed to the satisfaction of the building official, shall conform to the specifications and methods of design of accepted engineering practice or the approved rules in the absence of applicable standards.

1710.2 New materials. For materials that are not specifically provided for in this code, the design strengths and permissible stresses shall be established by tests as provided for in Section 1711.

**SECTION 1711
ALTERNATIVE TEST PROCEDURE**

1711.1 General. In the absence of approved rules or other approved standards pertaining to new materials or assemblies, the Superintendent of Building shall make, or cause to be made, any necessary tests and investigations; or the Superintendent of Building shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.6 of this Code. The cost of all tests and other investigations required under the provisions of this Code shall be borne by the permit applicant.

**SECTION 1712
TEST SAFE LOAD**

1712.1 Where required. Where proposed construction is not capable of being designed by approved engineering analysis, or where proposed construction design method does not comply with the applicable material design standard, the system of construction or the structural unit and the connections shall be subjected to the tests prescribed in Section 1714. The building official shall accept certified reports of such tests conducted by an approved testing agency, provided that such tests meet the requirements of this code and approved procedures.

**SECTION 1713
IN-SITU LOAD TESTS**

1713.1 General. Whenever there is a reasonable doubt as to the stability or load-bearing capacity of a completed building, structure or portion thereof for the expected loads, an engineering assessment shall be required. The engineering assessment