

14 MAJOR CATEGORIES REQUIRING SPECIAL INSPECTIONS

- 1. Inspection of fabricators**—when fabrication of structural load-bearing members and assemblies are being performed on the premises of the fabricator. Note the exception for approved fabricators.
See Section 1704.2.
- 2. Steel construction**—See Table 1704.3 for detailed information regarding inspections, IBC references and other referenced standards.

Sub-areas under steel construction are:

- Material verification of high-strength bolts, nuts and washers
- Inspection of high-strength bolting
- Material verification of structural steel
- Material verification of weld filler materials
- Inspection of welding for both structural steel and reinforcing steel
- Inspection of steel frame joint details for compliance with approved construction documents.

Note Exceptions 1 and 2 listed in Section 1704.3 discussing steel fabrication without heating operations of any kind and continuous and periodic inspection of certain welding operations.

- 3. Concrete construction**—See Table 1704.4 for detailed information regarding inspections.

Sub-areas under concrete construction (see Section 1704.4) are:

- Reinforcing steel, including prestressing tendons and placement
- Bolts to be installed in concrete prior to and during placement of concrete
- Verifying use of required design mix
- Sampling fresh concrete and performing slump, air content and fresh concrete temperature at time of making specimens for strength tests
- Proper application techniques for concrete and shotcrete placement
- Maintaining specified curing temperature and techniques

- Prestressed concrete, including application of prestressing forces and grouting of bonded prestressing tendons
- Erection of precast concrete members
- Verifying insitu concrete strength prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs

Note Exceptions 1,2,3,4 and 5 in Section 1704 discussing footings for buildings three stories or less, nonstructural slabs, foundations and certain exterior concrete features when placed on grade. Be aware of criteria allowing use of these exceptions.

- 4. Masonry construction-** Tables 1704.5.1 and 1704.5.3 show detailed information regarding Level 1 and Level 2 special inspections for masonry construction and whether continuous or period inspection is required.

Sub-area under masonry construction (see Section 1704.5) are:

- Verification of site-prepared mortar, construction of mortar joints and locations of reinforcement and connectors
- Verification of size and location of structural elements, type, size and location of anchors including details of anchorage of masonry to structural members, frames or other construction
- Verification of specified size, grade and type of reinforcement
- Verifying welding of reinforcing bars
- Verifying protection of masonry during cold or hot weather
- Verifying prior to grouting to ensure grout space is clean and proportions of site-prepared grout
- Verifying grout placement is in compliance with code and construction document provisions
- Preparation of any grout specimens, mortar specimens and/or prisms
- Verification of compliance with required inspection provisions of the construction documents and the approved submittals

Note Exceptions 1 and 2 that discuss glass block users and masonry foundation walls.

5. **Wood construction**- inspection of the fabrication of wood structural elements and assemblies both prefabricated and field assembled or site built. See Section 1704.6.

Sub-areas for wood construction when high-load diaphragms are constructed (see Section 1704.6.1):

- Verification of structural wood panel sheathing for grade and thickness
 - Verification of nominal size of framing members
 - Verification of diameter and length of fasteners and spacing of fasteners in the line of structural members and at panel edges
6. **Soils**- Inspection site for existing conditions, verification of site preparation prior to placement of prepared fill, verification of fill material and maximum lift thicknesses and verification that in-place densities meet the requirements of the approved soils report. See Section 1704.7.
7. **Pile foundations**- Inspection of installation and testing of pile foundations and record installation, load tests and cutoff and tip elevation of each pile. See Section 1704.8
8. **Pier foundations**- Inspection of pier foundations in accordance with Section 1616.3 for buildings located in Seismic Design Categories, C,D,E or F. See Section 1704.9.
9. **Wall panels and veneers**- Inspection of exterior and interior architectural wall panels and the anchoring of veneers for buildings assigned to Seismic Design Categories E and F. Inspections of veneers shall meet requirements of Section 1704.5. See Section 1704.10.
10. **Sprayed fire-resistant materials**- Inspection of fire-resistive material applied to structural elements and decks in accordance with Sections 1704.11.1 through 1704.11.5. These tasks would apply to cementitious, fibrous and intumescent products.

Sub-areas for inspection of sprayed fire-resistant materials are:

- Verification of structural member surface conditions
 - Verification of the application of materials per manufacturer's instructions
 - Verification of the thickness and density of applied materials
 - Verification of the bond strength of applied materials
11. **Exterior insulation and finish systems (EIFS)**- See Section 1704.12 for exceptions to inspection when EIFS is applied over water-resistive barriers with a means for draining excess water and EIFS installed on masonry or concrete.
12. **Special cases**-Inspections, in the opinion of the building official, that are needed because of the use of alternate materials, unusual design or use of materials not

having building code approval or needing to meet special manufacturer requirements. See Section 1704.13 for examples where the building official has discretion to require special inspection.

- 13. Smoke control-** Inspections involving testing of ductwork during erection, prior to concealment and prior to occupancy for pressure difference, flow measurements and detection and control verification. See Section 1704.14.

- 14. Special inspection for seismic resistance and wind requirements-** Section 1707 describes special inspection requirements for seismic resistance required in the following construction systems: structural steel framing, structural wood framing, cold-formed steel framing, storage racks and access floors, architectural components, mechanical and electrical components and seismic isolation systems. See Section 1706, 1707, 1708 and 1709 for specific information regarding quality assurance plans, special inspections and testing requirements.