



# SPEAKING IN CODE

The Low Down on Testing and Special Inspection Topics

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## What Are Special Inspections?

### *Back to Basics*

Special inspections is defined by the current International Building Code (IBC) as the “inspection of construction requiring the expertise of an approved special inspector in order to ensure compliance with the code and the approved construction documents”. Special inspections includes both testing and inspection of the materials, installation, fabrication, erection or placement of components and connections to ensure compliance with the code, referenced standards adopted by the code and approved construction documents.

While Chapter 17 of the IBC code is entitled “Special Inspections and Tests” and is known as the special inspections chapter of the code, it is important to note that Chapter 17 depends on “referenced standards” such as ACI 318 “Building Code Requirements for Structural Concrete”, AISC 360 “Specification for Structural Steel Buildings”, TMS 402 “Building Code Requirements for Masonry Structures”, TMS 602 “Specification for Masonry Structures” and other standards to completely denote REQUIRED special inspections and tests. Chapter 35 of the IBC code lists the multiple reference standards that are adopted and incorporated into the IBC code. There are hundreds of these incorporated standards listed in Chapter 35 and the fact that they are incorporated into the IBC code means that they become enforceable part of the code.

Ouch, right? Let’s break it down a little.

### **What Special Inspections Are Required for My Project?**

Section 1704 and 1705 of the IBC code and the adopted referenced standards cited therein outline what special inspections are required on the various types of construction and construction materials (soil, concrete, masonry, reinforcing steel, structural steel, sprayed fire-resistant materials, foundations, etc.). These sections of the IBC code and the referenced standards in TANDEM with Table 1604.5 “Risk Category of Buildings and Other Structures” clarify special inspections required by the code and the degree and extent of the special inspections that should be provided (periodic and/or continuous).

Bottom Line? **Practically all engineered building projects require special inspections** save those exceptions listed in section 1704.2 of IBC:

1. The building official can waive special inspections for construction of a minor nature.
2. Group U projects do not require special inspections and these projects are agricultural in nature and include barns, stables, greenhouses, and accessories to a residential occupancy.
3. Special inspections are not required for conventional residential light-frame construction (wood or cold-formed steel).

### Special Inspections Required:



Welding  
(full penetration welds)



Micropile Deep Foundation

## Who Determines What Special Inspections Are Needed?

A statement of special inspections is required by the code (section 1704.3 of IBC) and this document lists all of special inspections required on the project. The code requires that this document be prepared by the Registered Design Professional (RDP) in responsible charge and is most often prepared by the Structural Engineer of Record (SER). The statement of special inspections is supposed to be filed with the building official PRIOR to the issuance of a building permit for the project. The statement of special inspections should be accompanied by construction documents, shop drawings, geotechnical report, etc. according to the CODE.



*"Sounds like the first two pigs should have gotten special inspections"*

## Who Employs the Special Inspector?

The code, in section 1704.2 of IBC 2012, requires that the owner or the registered design professional in responsible charge (acting as the owner's agent) employ the special inspector or approved agency. The code is pretty clear in that it wants the special inspector (approved agency) to be **independent** from the contractor responsible for the work being inspected and states this in section 1703.1.1 of IBC 2012. The IBC 2015 code (in exception #4) does allow the contractor to employ the special inspector when the contractor is also the OWNER.

## Who Is Responsible for Making Sure that Special Inspections Are Performed?

The building official representing the jurisdiction where the project is being built is responsible for making certain that all special inspections required by the building code are performed. Having said this, the registered design professional (RDP) and the structural engineer of record (SER) are also responsible for making sure that the required special inspections are done.

The approved agency providing the special inspections for the project is responsible for providing the special inspections required by the code and the approved agency must provide the REQUIRED special inspections in order to process the FINAL SPECIAL INSPECTIONS REPORT required by the code which basically summarizes that the required special inspections have been performed and that all discrepancies involved in the project have been resolved or not resolved.

A pre-construction conference should be held prior to construction to discuss the special inspections and quality assurance program for the project. This conference should be attended by Building Official, Registered Design Professional(s), Prime Contractor, Subcontractors, Suppliers, Inspectors and Testing Agencies. This meeting should help clarify the roles and responsibilities of the attendees.

### A Little History...

Special inspections is not a new term to the building code. The International Conference of Building Officials (ICBO) and the Uniform Building Code (UBC) has had special inspection requirements in the code since the 1961 edition. The ICBO and BOCA codes had slightly different philosophies and emphasis which resulted in very different implementation approaches in their respective jurisdictions

Special inspections was the centerpiece of the BOCA National Building Code in their 1993 and 1996 code manuals which Virginia adopted early on along with several other states. When the International Code Council's (ICC) International Building Code (IBC) was first issued in 2000, it merged the ICBO and BOCA special inspection requirements into its Chapter 17, titled *Structural Tests and Special Inspections* just as the BOCA manual had done. Special Inspections really took off as a public safety concept and would soon become a mandated quality assurance program across the entire United States.

*Troubles Deciphering the Code?*

**Call the Experts at F&R!**

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