

# Technical Bulletin

FROM SPEIGHT, MARSHALL & FRANCIS,  
P.C.

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Structural Engineers  
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On a regular basis, we plan to distribute these informational leaflets about crucial - but often ambiguous - structural engineering topics. With the knowledge our featured subjects, our goal is to help our clients improve their profitability while reducing their liability. We suggest distributing a copy of our technical bulletins throughout your office and keeping them on hand for quick reference.

## SPECIAL INSPECTIONS (PART IX)

### Steel Construction (BOCA 1705.3) Specification Section 05120

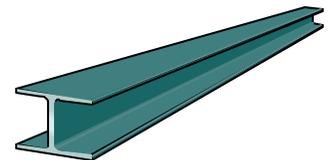
#### **Introduction:**

In this bulletin we will outline the process of evaluating steel construction in accordance with BOCA pursuant to the Schedule of Special Inspections and Construction Documents. The Special Inspection team members are referred to as Agent 1, the Special Inspector (typically the Structural Engineer of Record) and Agent 2, the Testing Laboratory. Prior to initial inspections the inspector(s) must review the Schedule of Special Inspections and project specifications to understand their responsibilities and requirements.

#### **Inspection of Steel Fabricator:**

**T Shop Inspection** - When welding, thermal cutting or heating operations are part of the fabrication of structural load bearing members on premises.

- Verify fabrication and quality control procedures.
- Review fabricator's ability to conform to approved drawings, project specifications and referenced standards.
- Review procedures for completeness and adequacy related to the code requirements.



*The Steel Fabricator is exempt from a shop inspection when it maintains an in-plant inspection agreement with an approved independent inspector or Quality Control agency.*

## Inspection For Materials:

### T Bolts, Nuts and Washers

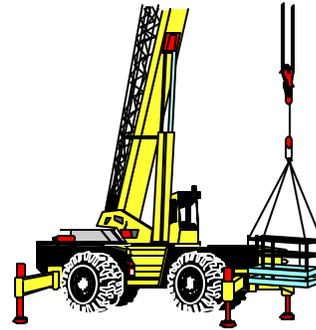
- Review identification marks.
- Confirm conformance to specified ASTM standards.
- Review manufacturer's Certificate of Compliance.

### T Structural Steel

- Review identification marks.
- Confirm conformance to specified ASTM standards.

### T Weld Fillers

- Confirm conformance to AWS as specified.
- Review manufacturer's Certificate of Compliance.



## Steel Erection:

### T High Strength Bolts

- Perform physical and visual inspection in accordance with Section 9 of the RCSC Specification.

### T Welds

- Perform visual inspection for compliance with Section 6 of AWS D1.1.
  - < Structural seismic - resisting systems for performance categories 21C, D or E in accordance with BOCA 1610.1.7.
  - < Column splice welds - see BOCA 1705.33.2.2.
  - < Base metal - see BOCA 1705.33.2.3.

## Structural Steel Details:

### T Steel Frame

- Visually inspect steel frame for conformance with the approved Construction Documents, i.e. bracing, stiffening, joint details and member location.

## Conclusion:

The Special Inspections team works together to assure proper fabrication and erection of structural members in compliance with the approved Construction Documents.

Agent 1 reviews all material submittals, Certificates of Compliance, and inspects the structural details. Agent 1 also reviews all reports generated by Agent 2 then reports any discrepancies to the Structural Engineer of Record for corrective action. Agent 1 should perform inspections and/or site visits to facilitate corrective measures issued by the Engineer.

Agent 2 performs visual and physical inspections of materials and reports, without delay, deviations from the Construction Documents to the General Contractor and Agent 1. It should be noted that Agent 2's function is to record and report the condition of materials during fabrication and construction, not to manage the operation of steel construction. Cooperation and communication between the Special Inspections team and the General Contractor is essential to quality steel construction.



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