

# Technical Bulletin

FROM SPEIGHT, MARSHALL & FRANCIS, P.C.

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 VI)

### Concrete Construction (BOCA 1705.4) Specification Section 03300

#### **Introduction:**

In this bulletin we will outline the process of evaluating concrete construction pursuant to the Schedule of Special Inspections and Construction Documents. The Special Inspection team is referred to as Agent No. 1, the Special Inspector (typically the Structural Engineer) and Agent No. 2, the Testing Laboratory (typically the Geotechnical Engineer).

#### **Pre-Construction - Agent No. 1:**

- Review mix design submittals for each design strength required for the project.
- Review submittals for proprietary concrete products:
  - T Admixtures.
  - T Curing compounds.
  - T Reinforcement.
  - T Miscellaneous accessories.



#### **Inspections Prior to Concreting:**

- Evaluate foundation subgrade for consistency with Geotechnical Report (Agent No. 2).
- Inspect concrete reinforcing and details for compliance with Construction Documents (Agent No. 1).
- When applicable, inspect formwork for compliance with ACI 318 and the approved Construction Documents (Agent No. 1).

## **Inspections During Concreting Operations** **(BOCA Table 1705.4.4):**

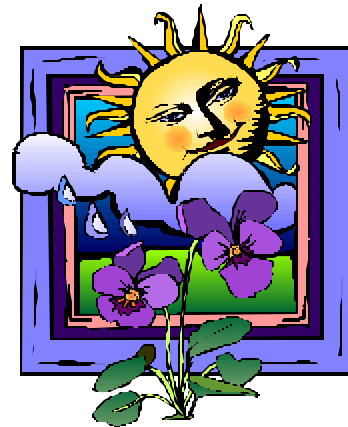
- Test and evaluate concrete strength (Agent No. 2).
  - T Batch time.
  - T Slump.
  - T Compressive strength test specimens.
  - T Temperature, etc.
- Inspect placement procedures and application techniques (Agents No. 1 & 2).
  - T Consolidation.
  - T Conveying.
  - T Cold joints, etc.
- Inspect for proper mix techniques and mix proportions (Agent No. 1).
- Inspect maintenance and curing procedures (Agent No. 1).
  - T Moisture cure.
  - T Curing compounds.
  - T Control joints.

### **Conclusion:**

The Special Inspections team works together to achieve an accurate indication of concrete strength for a project.

Agent No. 2 will provide the actual testing of materials and shall, without delay, report any deviations from the Construction Documents to the General Contractor and Agent No. 1. Agent No. 1 has the responsibility of evaluating any discrepancies and channeling design issues to the Structural Engineer of Record for review. It should be noted that Agent No. 2's function is to record and report the condition of materials during concreting, not to manage the operation of placing concrete.

It is the responsibility of the General Contractor to ensure the correct materials are being used and placed in accordance with the Construction Documents. Concrete strength can not be determined or evaluated with a single test; it is the culmination of test data and averages. The Special Inspection team's work is done when all the test data is complete and satisfies the requirements of the Construction Documents.



**Happy Summer!**

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