

TTL Engineering to Conduct Special Inspections of Music City Center

On May 1, 2007, the Department of Codes and Building Safety began enforcing the provisions of the 2006 International Building Code (IBC). In the past our enforcement of Chapter 17, Structural Tests and Special Inspections, was primarily limited to applying the requirements of this chapter to special or unique construction work and not routine work. That is no longer the case. Now Chapter 17 is being fully enforced as intended.

The provisions of Chapter 17 are now applied to all projects which require the services of Architects and Engineers licensed by the State of Tennessee.

At the time an application for a building permit is made and the stamped A/E plans and specifications are submitted to the department for review, it will be required that the responsible design professional (RDP) shall include with his plan submission their Statement of Special Inspections as required by 1704 and 1705 of the 2006 IBC. In this statement the RDP would identify the special inspections to be done on this particular project and the agencies, individuals or companies that the RDP has selected to make the special inspections and the reports and frequency of reports to be provided by the Special Inspections during construction.

TTL, an Engineering firm specializing in geotechnical, analytical, materials, and environmental services has been selected to perform special inspections on the concrete and steel being used in the construction of the Music City Center. Geo Sciences Design Group was a Nashville based company that merged with TTL in 2007. the company has over 15 years of experience providing engineering services in Nashville.

Daniel D. Terranova, P.E., a vice President with TTL, described the special inspection process his company would be using to evaluate the concrete and steel on this project. "The special inspections are required by the code, but they also provide a means for the client to verify the quality and accuracy of the ma-

terials he's receiving." TTL has conducted over 3,000 tests on the concrete being used on the building project. This represents roughly one-third of the concrete required for the project.

"Our tests insure the concrete meets the requirements for strength and is of the proper consistency as called for on the plans," Terranova said. "For each pour, five concrete cylinders are made and are housed in a special room that keeps the samples at 100% humidity. The samples are then subjected to pressure tests at 3, 7 and 28 day intervals."

According to Mr. Terranova, there have been very few issues as a result of the inspection process. If a sample fails to pass at the 28 day mark, a fifth sample is tested at 56 days. "If that sample fails, we would have to go on-site to obtain another sample to determine the cause and recommend a course of action if necessary."

As part of the inspection process, the Special Inspectors provide reports to the department as specified in the RDP's Statement of Special Inspections and is accepted by the plans examination section. Upon completion of the project, the department requires that the RDP provide a Certificate of Compliance as per Chapter 17.

TTL expects take over 6,000 additional samples as part of their special Inspections of the concrete at the Music City Center. After the concrete work is done, the company will begin its inspections of the steel that will be used on the project.

"We have already begun preparation work for this phase of the project. We have visited the production facility where the steel is being fabricated to evaluate their process and we will continue monitor the production of the steel and will conduct tests of the steel, the welds and fasteners once it arrives and is erected on-site," Terranova said. TTL will continue to have inspectors on-site full time once the steel work begins.



Daniel D. Terranova, P.E., Vice President with TTL, holds a sample that has successfully passed the pressure stress test.



An array of concrete cylinders that are concrete samples awaiting testing. Five cylinders are created for each section of concrete. These are tested over a series of days to verify the concrete's strength and conformity with the design specifications.



Once the samples have been poured, the concrete cylinders are placed in a special room that maintains the samples at 100% humidity.



This machine subjects each sample to a pressure stress test to determine the strength of the sample.