

High Volume Fly Ash used for Torrance Medical Center

SAN ANTONIO, TX – February 28, 2003 – Boral Material Technologies’s Class F fly ash from Mohave Generating Station in Laughlin, Nevada was used in a recent High Volume Fly Ash (HVFA) job at the Torrance Medical Center in Torrance, California. The new West Campus Tower’s mat footing required nearly 2000 cubic yards of concrete and the mat thickness ranged from 3 to 4 feet. The design and construction team required a final strength of 5000psi, but wanted to minimize heat, in order to prevent thermal cracking.

The hydration of portland cement generates approximately 80 calories per gram of cement. The resulting increased concrete temperature greatly increases the possibility of cracks forming in the structure. Class F fly ash has been shown to significantly decrease heat generation as the concrete strengthens.

After extensive testing with Catalina Pacific Concrete, the project contractor McCarthy Brothers decided that a HVFA concrete mix would be the best way to achieve the required strength and avoid thermal cracking. The mix contained 376lbs of cement, 376lbs of Boral Class F fly ash, along with a Type A water reducer. The HVFA concrete mix was more economical, and more effective, than other means of heat reduction, such as use of ice or chilled water.

During the placement of the concrete, two of the largest boom pumps in the United States were utilized to provide rapid placement of the concrete. Temperature rise within the core of the mat footing was recorded over a 10-day period. The HVFA concrete was placed, finished and cured with minimal heat related issues. According to Griff Sparks of Catalina Pacific Concrete “We were extremely pleased with the pumping and placement characteristics of the HVFA concrete.”



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