

**CEEN 3320 – Behavior & Properties of Engineering Materials**  
**Group Lab Report 2 – Spring 2011**  
**Concrete Aggregates, Quickcrete Mortar Cubes and Concrete Cylinders**  
**Due in lab during the week of March 28<sup>th</sup>**

Your team must prepare a lab report which provides a discussion of tests and pertinent results obtained during Labs 4 – 6. At a minimum, the following items should be included:

**Lab 4 - Aggregates**

Gradations for the Crushed Gravel and Natural Sand  
Specific Gravities for the Crushed Gravel and Natural Sand  
Absorption Capacities for the Crushed Gravel and Natural Sand  
Other Crushed Gravel and Natural Sand properties specifically related to Concrete Proportioning

**Lab 5 – Quickcrete Mortars**

Compressive strength versus calculated w/cm ratio (not the target w/cm ratio) for the plain mortar cubes (mixes 1 – 8) with clear indications of the 1, 3 and 7 day strength trends.  
Compressive strength versus % Fly Ash for the rich mortar cubes (mixes 9 – 12) with clear indications of the 1, 3 and 7 day strength trends.  
The effects of mixing water on the compressive strength of the different mortar cubes (mixes 13v4, 14v7, 15v9, and 16v12).

**Lab 6 – Quickcrete Cylinders**

Compressive strength versus calculated w/cm ratio for the plain Quickcrete cylinders (mixes 1 – 8) with clear indications of the 3 and 7 day strength trends.  
Compressive strength versus % Fly Ash for the rich Quickcrete cylinders (mixes 9 – 12) with clear indications of the 3 and 7 day strength trends.  
The effects of mixing water on the 3 and 7 day compressive strengths of the different Quickcrete cylinders (mixes 13v4, 14v7, 15v9, and 16v12).

Considering all results obtained, provide an estimate of the 28-day compressive strength for the Quickcrete cylinders utilizing Mixes 4, 7, 9, 12, 13, 14, 15, 16.

In your discussion of results, you must also provide a statement of the lessons learned during the conduct and analysis of these 3 lab sessions.