The Role of Active Carbon Particles in Fly Ash and the Use of Foam Index Analysis as a Predictive Method

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ABSTRACT

Currently ASTM C618 and AASHTO M295 evaluate and specify the limit for the amount of carbon present in fly ash by loss on ignition. However, the activity level of the carbon particles present in the fly ash has just as much affect on the ability of the ready mix producer to be able to entrain air in concrete. Since there has not been a standard method accepted by CCP governing bodies for evaluating the carbon activity level, CCP industries have developed their own test methods for a qualitative procedure that evaluates plant specific carbon activity levels.

This paper presents the method utilized by ISG Resources in predicting the effect a particular fly ash will have with air entrainment agents when used in ready mix concrete. The importance of this technique in measuring the carbon particle's activity is becoming increasingly important as the introduction of activated carbon for emission controls, and subsequent deposit in fly ash, gathers acceptance as one method of achieving emission limits.

Due to the desire of Canadian Industries Recycling Coal (CIRCA) in developing a standard test method, ISG Resources is participating with CIRCA to generate a proposed foam index method for adoption by CSA.