TEST RESULTS FOR FIELD CONCRETE MIXTURES CONTAINING FIBROUS RESIDUALS FROM PULP AND PAPER MILLS

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ABSTRACT

Field Concrete Mixtures at a Commercial Plant

Based on the mixture proportions developed at the UWM Center for By-Products Utilization laboratory, pilot-scale (three cubic yards) concrete mixtures were produced at the County Concrete, Inc. ready-mixed concrete plant for two sources of residuals (C1 and BR). Incompatibility between the specific HRWRA supplied by the ready-mixed concrete plant and the residuals was noted in the form of high air content (5.3 to 15%) of concrete. Chemical composition of this proprietary HRWRA is not known. By reverting to the HRWRA that had been used in the laboratory, this problem was eliminated for the construction demonstration.

Field Concrete Mixture for Construction Demonstration

Construction demonstration with concrete containing one source of residual (C1) was conducted at the County Concrete ready-mixed concrete plant. The concrete showed a low air content (3%), good workability (8.25 in. slump), and excellent strength (28-day compressive strength of 7510 psi).