

SEMINAR

Concrete Pavement Containing High Volumes of Recycled Materials

ABSTRACT

Concrete production uses a considerable amount of non-renewable natural resources and generates a significant amount of greenhouse gases. To obtain a more sustainable solution requires examining the two main components of concrete – aggregates and cement. Recycling concrete as aggregate for new concrete reduces construction waste, diverts material from already over-burdened landfills, and lowers demand for virgin aggregate. Using supplementary cementitious materials – such as fly ash, blast furnace slag, and glass powder – also diverts material from landfills and reduces the carbon footprint of concrete.

To date, no studies have examined combining high volumes of recycled concrete aggregate and supplementary cementitious materials in concrete. The main objective of this research study was to produce concrete for conventional pavement construction that incorporates at least 50% recycled materials (both recycled concrete aggregate and supplementary cementitious materials) without compromising performance or service life.

The primary deliverable from this research project will be a set of guidelines for material selection and mixture optimization for using high volumes of recycled materials in concrete pavement. These guidelines will be used to create either prescriptive- or performance-based specifications for incorporation into standard specifications or job-specific provisions.

BIO

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12:30 - 1:30 pm

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107 Fulton Hall

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