

Spuyten Duyvil Bridge

- Engineer Hardesty & Hanover
- General Contractor – Weeks Marine
- Chemical Admixture - Hydration Stabilizer

Spuyten Duyvil Bridge

Location is Manhattan / Bronx border

Objective – 1. Batch concrete in Bergen

County, NJ

2. Deliver Concrete to Jersey
shoreline

3. Transport concrete across
Hudson River in buckets for piles

Hydration Stabilizer

- One of its functions is to retard the set of concrete. Within the normal dosage range, it will generally extend the working and setting times of concrete approximately one hour to five hours compared to normal portland cement concrete.
- Offsets the effect of slump loss during extended delays between mixing and placing
- Economical for transporting long distances
- ASTM C 494 Type B and D admixture

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Use of SCC Concrete for New Jersey DOT

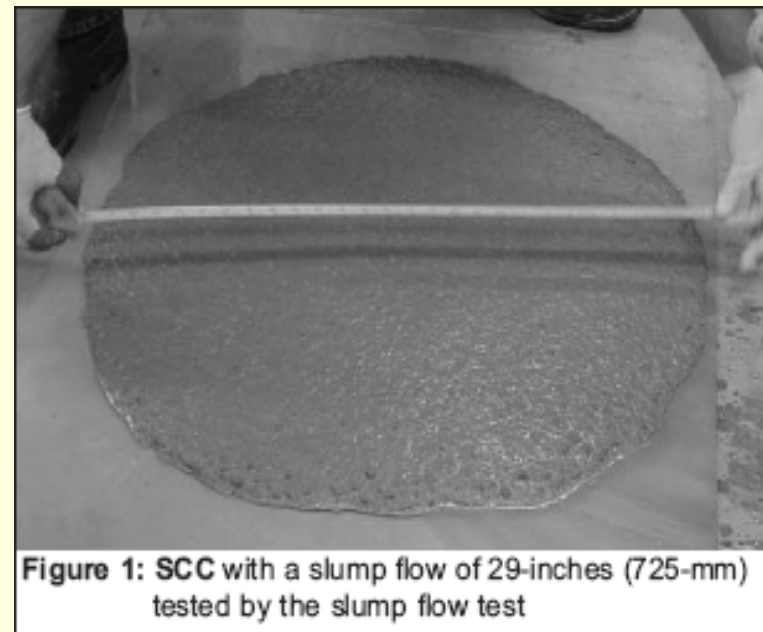
Location was GSP and Rte 280 intersection

Contractor: McKinney Drilling

What is SCC ?

Also known as self-consolidating concrete, “is a highly flowable, non-segregating concrete that can spread into place, fill the form work and encapsulate the reinforcement without any mechanical consolidation”.

- The flowability of SCC is measured in terms of spread when using a modified version of the slump test (ASTM C 143). The spread (slump flow) of SCC typically ranges from 18 to 32 inches (455 to 810 mm) depending on the requirements for the project.
- The viscosity, as visually observed by the rate at which concrete spreads, is an important characteristic of plastic SCC and can be controlled when designing the mix to suit the type of application being constructed.



Key performance characteristics of SCC (practical)

- **Fluidity/Filling Ability** - The concrete's ability to flow into the form under gravity effects.
- **Passing Ability** - The ability of SCC to flow through narrow openings without segregation or aggregate blocking
- **Stability/Segregation Resistance** - The ability of SCC to remain homogenous in composition before, during and after placement until the onset of stiffening.



NJ DOT SCC, Rte 280 & GSP,
East Orange, NJ



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Thank you to NJDOT

Questions????