ASTM C1581 RESTRAINED SHRINKAGE

APPLICATIONS

Evaluation of Shrinkage Reducing Admixtures
Mixture Designs For:

- Bridge Decks
- Stitch Pores
- Warehouse Floors
- Low Cracking Requirements
- Repair Materials

KEY PERSONNEL

Neal Berke, Vice President – Research

EXAMPLE PROJECTS

Gordie-Howe Bridge-Stitches & Deck

FHWA-Lightweight Sand Bridge Decks

Premiere-Admixture Development

WMU-MDOT-Deck Performance

Numerous Other Research Projects

AASHTO ACCREDITED

TCG is an AASHTO-Accredited Laboratory

Rings in testing with ring on top left cracked due to drying shrinkage.

TCG has extensive experience in evaluating the effects of shrinkage and creep on mortars and concretes. The ASTM C1581 Restrained Drying Shrinkage evaluates how the shrinkage, creep and strength development interact in determining the early-age cracking resistance of a concrete mixture due to volume change.

Large aspect ratios of concrete placement and mix designs with high cementitious contents are of particular risk of cracking. Cracking can compromise the durability of the concrete element.

TCG has over 24 shrinkage ring setups which allows for the evaluation of several variables efficiently.

The testing is essential in evaluating shrinkage-reducing admixtures. TCG has conducted the tests to prequalify mixtures for use in major projects.

In addition to restrained drying shrinkage, TCG conducts ASTM C157 drying shrinkage, ASTM C1698 autogenous shrinkage, ASTM 1579 plastic shrinkage and ASTM C512 creep.

TCG can modify the curing procedures to reflect curing conditions in the field including the application of curing compounds and sealers.

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