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Committee C09 on Concrete and Concrete Aggregates
Subcommittee C09.21 on Lightweight Aggregates and Concrete

Research Report: C09-1044

Interlaboratory Study to Establish Precision Statements for ASTM C567-14, Test Method for Determining Density of Structural Lightweight Concrete

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1. Introduction:

Interlaboratory Study 749 was conducted to establish a precision statement for C0567, Test Method for Determining Density of Structural Lightweight Concrete.

2. Test Method:

The Test Method used for this ILS is C567-14. To obtain a copy of C0567, go to ASTM's website, www.astm.org, or contact ASTM Customer Service by phone at 610-832-9585 (8:30 a.m. - 4:30 p.m. Eastern U.S. Standard Time, Monday through Friday) or by email at service@astm.org.

3. Participating Laboratories:

The following laboratories participated in this interlaboratory study:

TEC Services
Shawn McCormick
Lab Manager
235 Buford Drive; Lawrenceville, GA 30046
smccormick@tecsvcs.com

Carolina Stalite/Johnson Concrete
Jody Wall
QC Manager
16815 Old Beatty Ford Road
Gold Hill, NC 28071
jwall@stalite.com

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Carolina Stalite / Hedrick Industries
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Materials and Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607
bhunter@ncdot.gov

PSI
Greg Williams
5021 West WT Harris Blvd, Charlotte, NC 28269

Thomas Concrete
John Cook
Director Technical Services
2500 Cumberland Parkway Suite 200, Atlanta, GA 30339

4. Description of Samples:

There were 2 samples of varying targeted results used for this study. Each sample was prepared and distributed by Jody Wall, Michael Robinson, Charles Freeman, Brett Lord and Michael Hammill of Carolina Stalite Company Below is a list of the samples with the corresponding supplier:

1. Sample 4x8
   Provided by Carolina Stalite Company in conjunction with the ESCSI

2. Sample 6x12
   Provided by Carolina Stalite Company in conjunction with the ESCSI

5. Interlaboratory Study Instructions

Laboratory participants were emailed the test program instructions. For a copy of the instructions, please see Annex A.

6. Description of Equipment/Apparatus[1]:

For information on the equipment/apparatus used by each laboratory, please see Annex B.

7. Data Report Forms:

Each laboratory was provided with a data report form for the collection of data. A copy of the data is provided in Annex C.

Please note: The laboratories have been randomly coded and cannot be identified herein.

8. Statistical Data Summary:

A summary of the statistics calculated from the data returned by the participating laboratories is provided in Annex D.

9. Precision and Bias Statement:

9.1 The precision of this test method is based on an interlaboratory study of ASTM C567, Standard Test Method for Determining Density of Structural Lightweight Concrete, conducted in 2011. A total of eight laboratories participated in this study, testing two different concrete materials. Each "test result" reported represents an individual determination, and all participants were asked to report duplicate test results for each mixture. The details are given in ASTM Research Report No. C09-1044.[i]

9.1.1 *Repeatability limit (r)* - Two test results obtained within one laboratory shall be judged not equivalent if they differ by more than the "*r*" value for that material; "*r*" is the interval representing the critical difference between two test results for the same material, obtained by the same operator using the same equipment on the same day in the same laboratory.

[1] The equipment listed was used to develop a precision statement for C567-14. This listing is not an endorsement or certification by ASTM International.