1 July 2011

Committee E05 on Fire Standards
Subcommittee E05.11 on Fire Resistance

Research Report: E05-1013

Interlaboratory Study to Establish Precision Statements for ASTM E119-11, Test Methods for Fire Tests of Building Construction and Materials

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1. Introduction:

Interlaboratory Study 591 was conducted to establish a precision statement for E0119, Test Methods for Fire Tests of Building Construction and Materials.

2. Test Method:

The Test Method used for this ILS is E119-11. To obtain a copy of E119, 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:

Forest Products Laboratory
University of California
Berkeley, CA
94720
US

Gold Bond Building Products
Research Center
1650 Military Road
Buffalo, NY
14217
US

Portland Cement Association
5400 Old Orchard Road
Skokie, IL
60077
US

Southwest Research Institute
6220 Culebra Rd
San Antonio, TX
78284
US

Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL
60062
US

Underwriters Laboratories of Canada
7 Crouse Road
Scarborough, ON
M1R 3A9
CA

Warnock Hersey International, Inc.
1101 Loveridge Rd
Pittsburg, CA
94565
US

Warnock Hersey Professional Services Ltd
211 Schoolhouse Street
Coquitlam, B.C
V3K 4X9
CA

4. Description of Samples:

There was 1 sample used for this study. Each sample was supplied, prepared and distributed by R. E. Whitcome of Celotex Corporation.

1. Non-loadbearing steel stud gypsum wall

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 E119, Standard Test Methods for Fire Tests of Building Construction and Materials, conducted in 2010. Eight laboratories participated in this study. Each lab reported a single fire resistance test result for a non-loadbearing steel stud gypsum wall. Every "test result" reported represents an individual determination. Except for the testing of replicates, Practice E 691 was followed for the design and analysis of the data; the details are given in ASTM Research Report No. E05-1013.[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.

9.1.1.1 Without replicate data, repeatability limits cannot be estimated.

9.1.2 *Reproducibility limit (R)* - Two test results 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

[1] The equipment listed was used to develop a precision statement for E119-11. This listing is not an endorsement or certification by ASTM International.