

SOUTHWEST RESEARCH INSTITUTE®

6220 CULEBRA RD. 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 684-5111 • WWW.SWRI.ORG
CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
FIRE TECHNOLOGY DEPARTMENT
WWW.FIRE.SWRI.ORG
FAX (210) 522-3377



FIRE PERFORMANCE EVALUATION OF THE NON-LOAD BEARING 3/4-IN. SUPRESS® SOUND ENGINEERED DRYWALL™ (SED) PANEL STEEL STUD WALL ASSEMBLY IN ACCORDANCE WITH ASTM E 119-07A, STANDARD TEST METHODS FOR FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS

FINAL REPORT
Consisting of 13 Pages

SwRI® Project No. 01.13946.01.001 [2]
Test Dates: March 5 and April 17, 2008
Report Date: July 11, 2008

Prepared for:

Supress Products, LLC
100 Smith Ranch Road, Suite 306
San Rafael, CA 94903

Prepared by:

JMS

A handwritten signature in blue ink, appearing to read 'Barry Badders'.

Barry L. Badders, M.E., P.E.
Group Leader
Fire Resistance Section

Reviewed and Approved by:

A handwritten signature in blue ink, appearing to read 'Marc L. Janssens'.

Marc L. Janssens, Ph.D.
Director
Fire Technology Department

This report is for the information of the client. It may be used in its entirety for the purpose of securing product acceptance from duly constituted approval authorities. This report shall not be reproduced except in full, without the written approval of SwRI. Neither this report nor the name of the Institute shall be used in publicity or advertising.



HOUSTON, TEXAS (713) 977-1377 • WASHINGTON, DC (301) 881-0226

OBJECTIVE

The ASTM E 119 test method is intended to evaluate the duration for which a building element will contain a fire, or retain its structural integrity, or display both properties dependent upon the type of building element involved, during a predetermined fire exposure time. The test exposes a specimen to a standard fire controlled to achieve specified temperatures throughout a specified time period. When required, the fire exposure is followed by the application of a specified standard fire hose stream applied in accordance with ASTM E 2226.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled laboratory conditions, but does not by itself incorporate all factors required for fire hazard or fire risk assessment of the materials, products, or assemblies under actual fire conditions.

This report describes the test results obtained for a non-load bearing wall assembly. The performance of the assembly is expressed in terms of the transmission of heat and hot gases during the standard fire exposure and penetration of water to the unexposed side of the assembly during the hose stream test. The results presented in this report apply specifically to the materials tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

Per the Client's request, this final report was revised to correct the product name and company address (Revision 1, May 2, 2008). Revision 2 was issued to add Paragraph 1 under Sample Description below.

TEST ASSEMBLY

Materials:

- 3/4-in. Supress[®] SED panels
- 20-ga, 3-5/8-in. steel studs 16 in. on center
- R-13 Kraft paper faced fiberglass batt insulation
- Type "S" 1-5/8-in. drywall screws
- Paper tape and joint compound complying with ASTM C 474 and ASTM C 475

Provided By:

Client

SwRI
SwRI
SwRI
SwRI

Received On:

February 27, 2008,
and March 28, 2008

Sample Description:

The sample tested was a restrained, symmetrical wall with construction similar to the 1-h rated nonbearing wall design No. U404, No. U432, and No. U465 as described in Volume 1 of the UL Fire Resistance Directory.

SwRI constructed the 9 × 12-ft base wall assembly consisting of 20-ga, 3-5/8-in. steel studs 16 in. on center, with one layer of 3/4-in. Supress[®] SED panels on each side. The 3/4-in. Supress[®] SED panels were attached with Type "S" 1-5/8-in. drywall screws spaced 8 in. on center along the perimeter and joints, and 12 in. on center in the field. The joints were taped and treated with paper tape and joint compound complying with ASTM C 474 and ASTM C 475. The fastener heads were covered with the same joint compound. The cavities between the studs were filled with R-13 Kraft paper faced fiberglass batts after installation of the 3/4-in. Supress[®] SED panels on the exposed side of the assembly. The Kraft paper facing was on the furnace side.

TEST RESULTS

Test Dates:

March 5 and April 17, 2008 (hose stream test)

Test Witnesses:

No Client witness

Ambient Temperature:	67 °F for the fire test and 74 °F for the hose stream test
Relative Humidity:	26% for the fire test and 54% for the hose stream test
Instrumentation:	The unexposed side of the sample was instrumented with nine thermocouples (TCs) designed in accordance with ASTM E 119. One approximately at the center of the wall, one at approximately the center of each quarter section, and one approximately placed intermediately between each quarter section (see Figure B-4).
Load:	None
Observations:	<ul style="list-style-type: none"> • Fire test conducted on March 5, 2008. <ul style="list-style-type: none"> 00:00 – Start of test. 05:00 – No change. 50:00 – Screw heads showing as dark spots from heat transmission. 52:00 – Crack on seam in center of wall. 60:00 – End of test, no flames visible. • Hose stream test conducted on April 17, 2008. <ul style="list-style-type: none"> 00:00 – Start of furnace exposure. 15:00 – No change. 30:00 – End of furnace exposure. 32:00 – Start of hose stream application. 33:05 – End of hose stream application, no passage of water.
Hose Stream Test:	Yes
Rating Obtained:	60 min
Results:	The acquired data is located in Appendix A in graphical form.
Deviations:	None

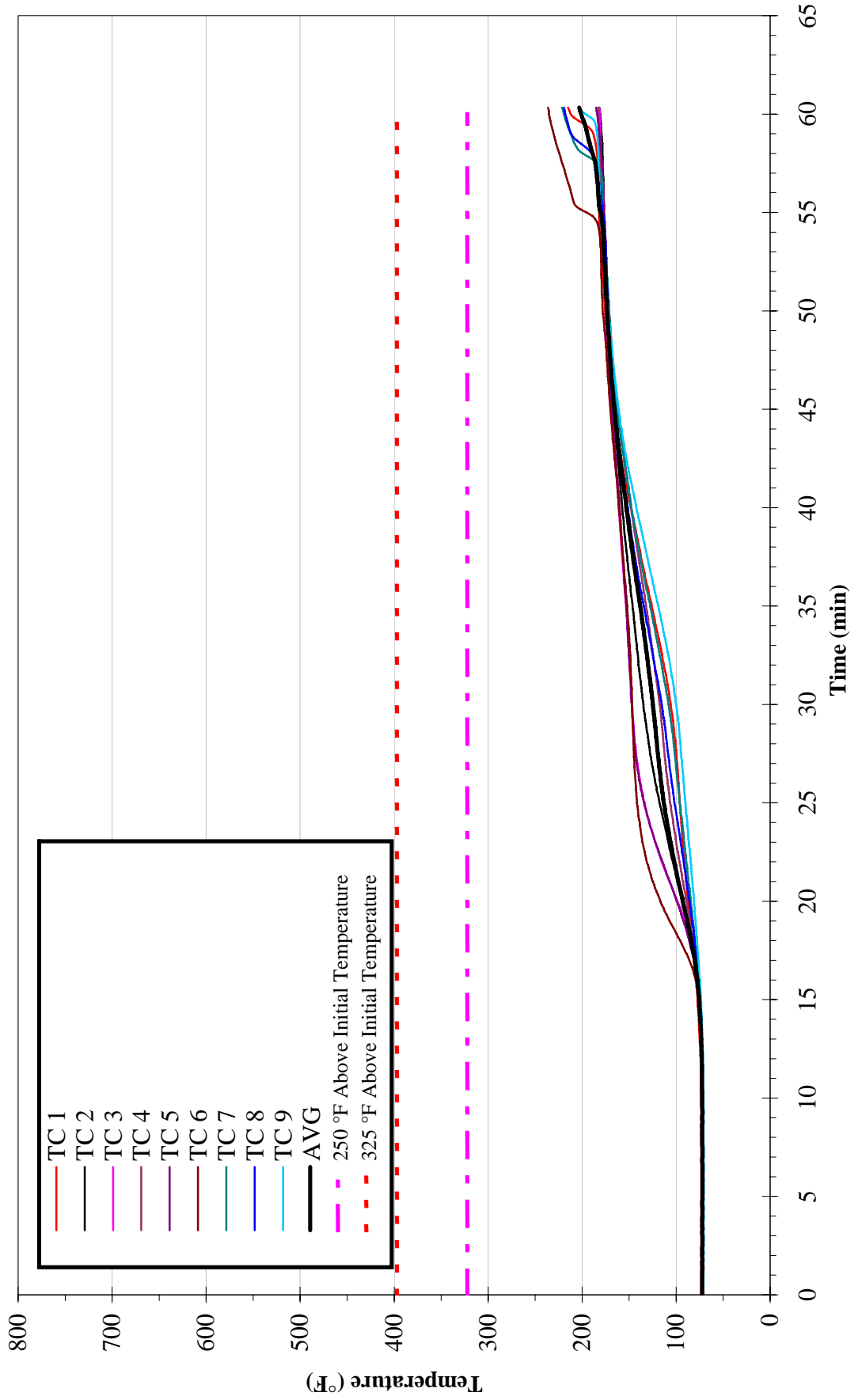
CONCLUSION

Based on the test results, the wall assembly achieved a fire resistance rating of 60 min, when tested in accordance with ASTM E 119.

APPENDIX A
GRAPHICAL DATA
(CONSISTING OF 3 PAGES)

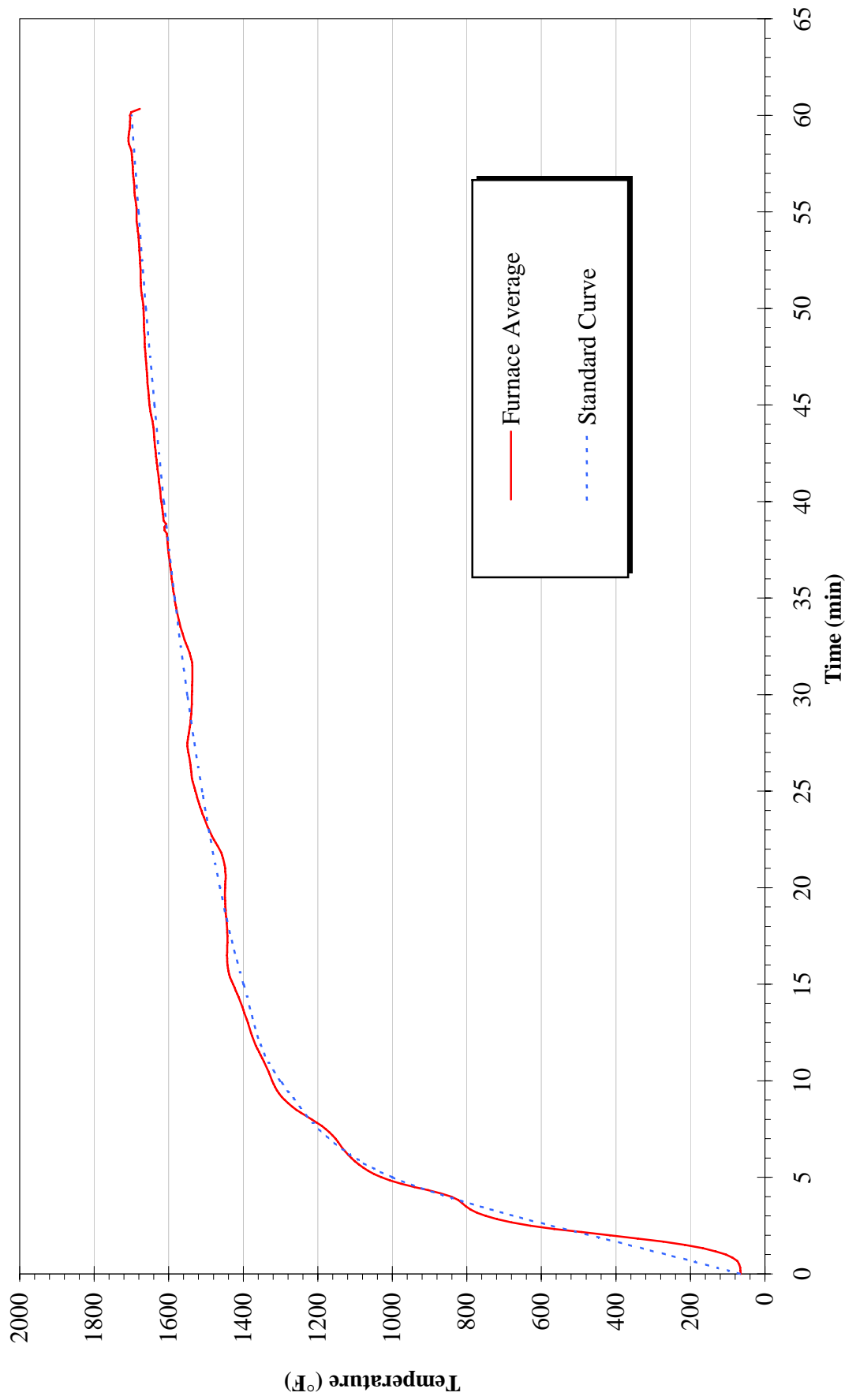
CLIENT: SUPRESS PRODUCTS, LLC
SwRI PROJECT NO.: 01.13946.01.001 [2]
TEST DATE: MARCH 5, 2008
TEST ID: 08-065SUP1.CSV

3/4-in. SED ON BOTH SIDES, UNEXPOSED FACE THERMOCOUPLES TEMPERATURES VS. TIME



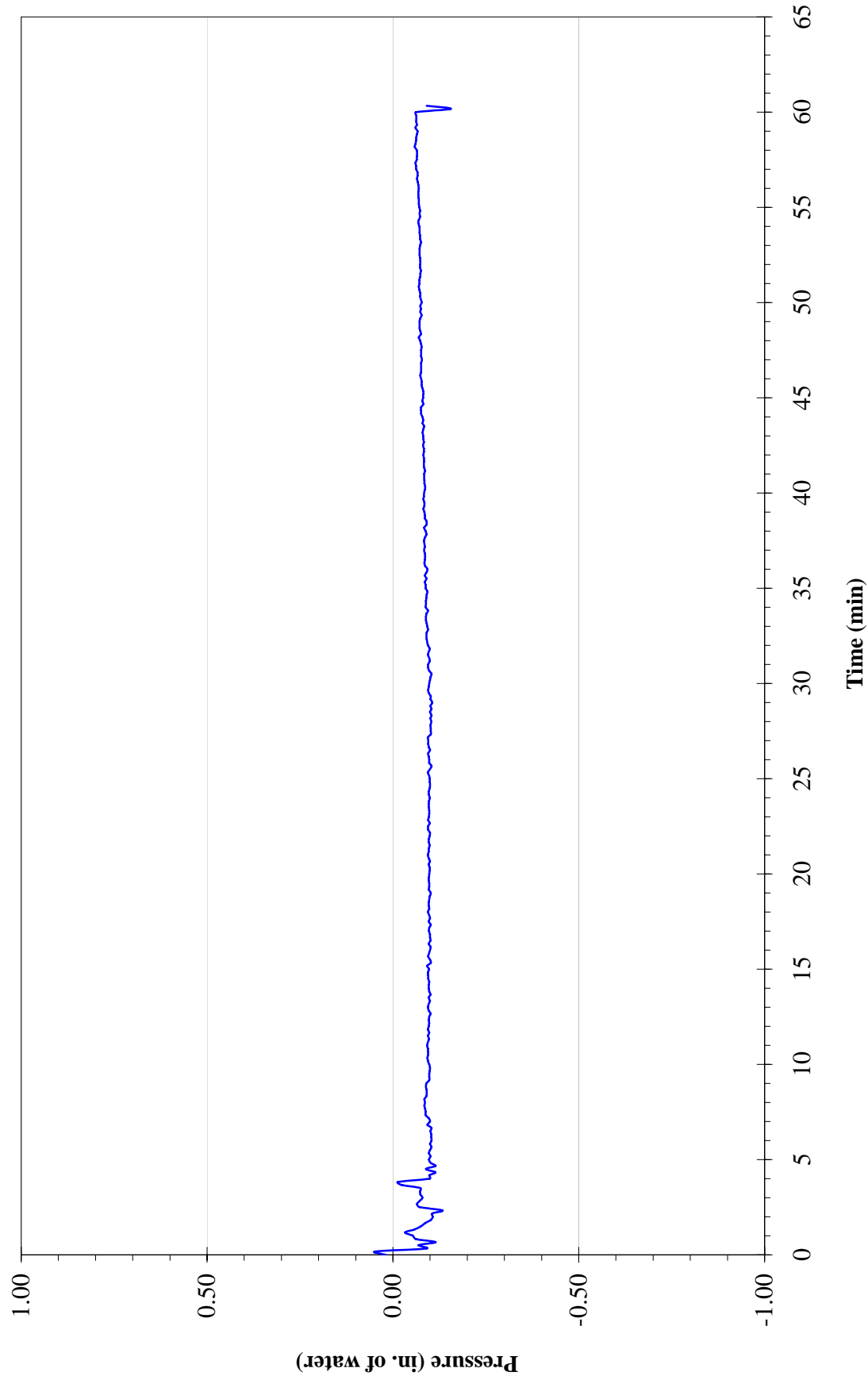
CLIENT: SUPRESS PRODUCTS, LLC
SwRI PROJECT NO.: 01.13946.01.001 [2]
TEST DATE: MARCH 5, 2008
TEST ID: 08-065SUP1.CSV

**3/4-in. SED ON BOTH SIDES,
FURNACE AVERAGE
TEMPERATURE VS. TIME**



CLIENT: SUPRESS PRODUCTS, LLC
SwRI PROJECT NO.: 01.13946.01.001 [2]
TEST DATE: MARCH 5, 2008
TEST ID: 08-065SUP1.CSV

**3/4-in. SED ON BOTH SIDES,
FURNACE PRESSURE VS. TIME**



APPENDIX B
PHOTOGRAPHIC DOCUMENTATION
(CONSISTING OF 5 PAGES)



Figure B- 1. Received Material.



Figure B- 2. Test Wall during Construction.

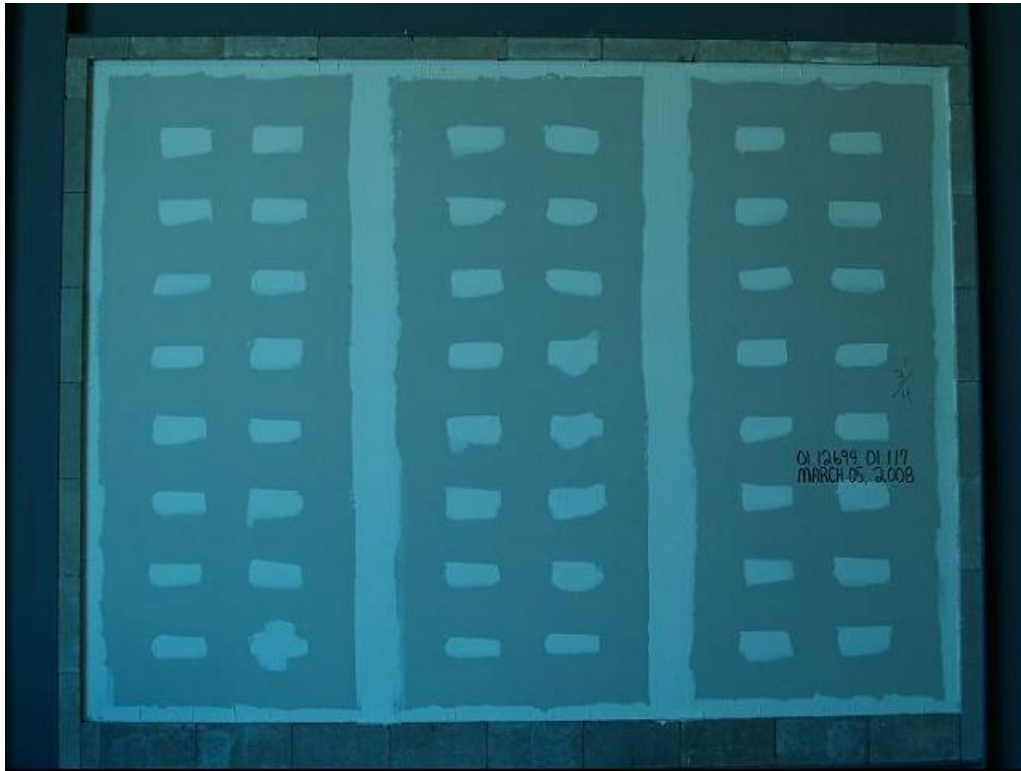


Figure B- 3. Exposed Face of Fire Test Wall prior to Furnace Exposure.

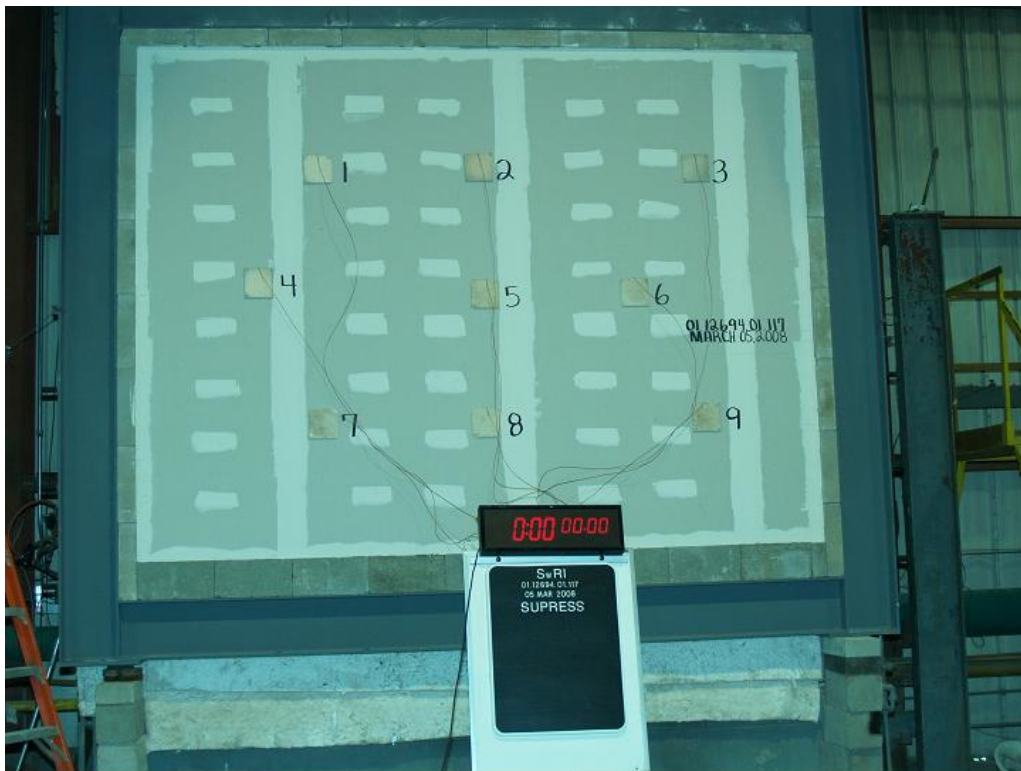


Figure B- 4. Unexposed Face of Fire Test Wall prior to Start of Furnace Exposure.

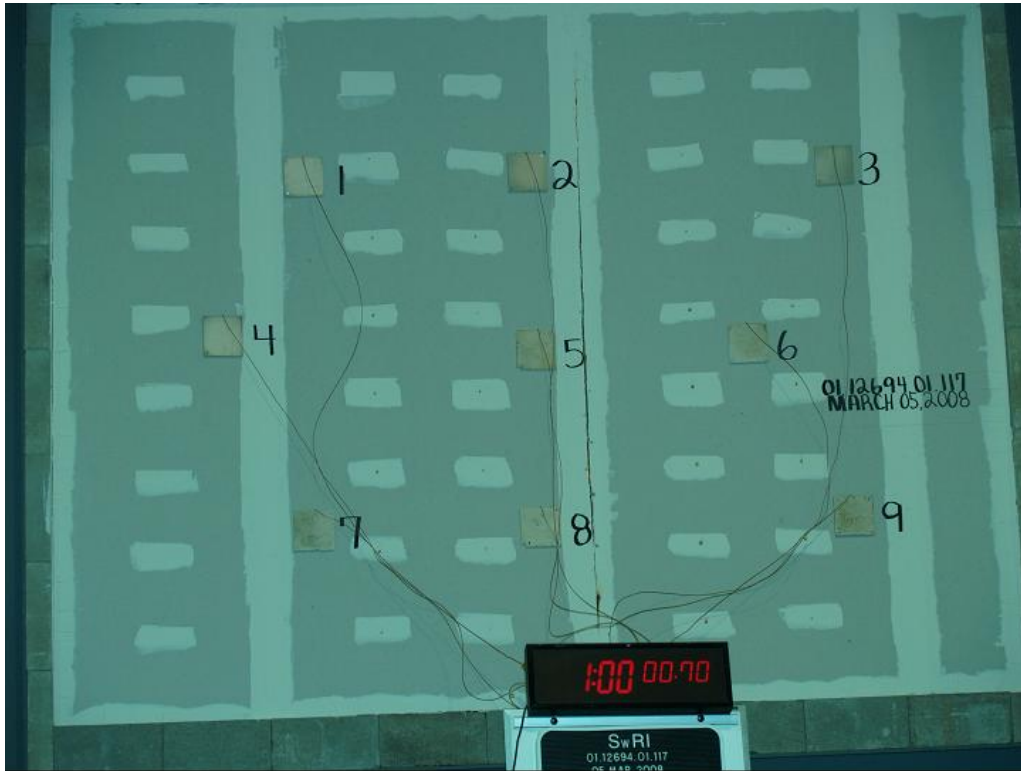


Figure B- 5. Unexposed Face of Fire Test Wall at end of Furnace Exposure.



Figure B- 6. Exposed Face of Fire Test Wall at end of Furnace Exposure.

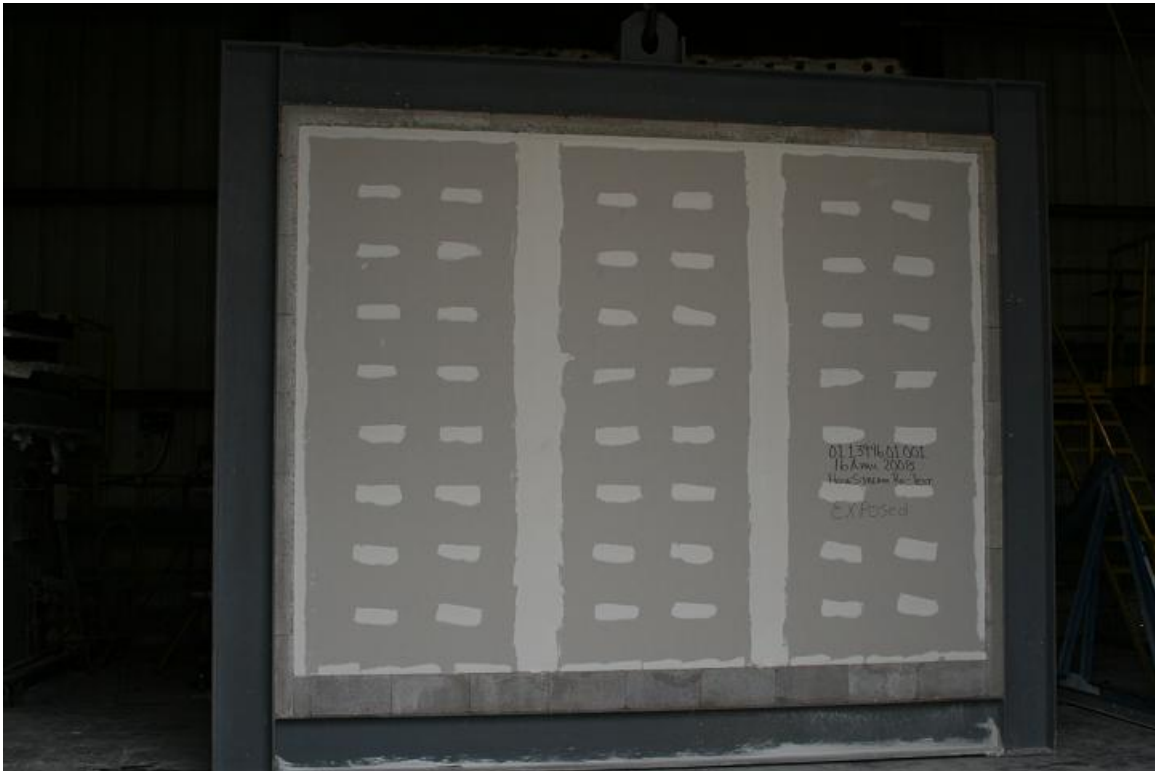


Figure B- 7. Exposed Face of Hose Stream Test Wall prior to Furnace Exposure.



Figure B- 8. Unexposed Face of Hose Stream Test Wall prior to Furnace Exposure.



Figure B- 9. Exposed Face at Start of the Hose Stream Test.



Figure B- 10. Unexposed Face after the Hose Stream Test.