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Sultan, M. A.; Lougheed, G. D.; Denham, M.; Monette, R. C.; MacLaurin, J. W.

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by M.A. Sultan, G.D. Lougheed, E.M.A. Denham, R.C. Monette and J.W. MacLaurin

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- Roxul Inc.
- Cellulose Insulation Manufacturers Association of Canada
- Gypsum Manufacturers of Canada
- Forintek Canada Corporation
- Canadian Sheet Steel Building Institute
- Institute for Research in Construction

TEMPERATURE MEASUREMENTS IN FULL-SCALE FIRE RESISTANCE TESTS ON NON-INSULATED REGULAR GYPSUM BOARD WALL ASSEMBLIES

ABSTRACT

This report presents the temperature measurements from (7) full-scale fire resistance tests conducted at the National Fire Laboratory on non-insulated, loaded and non-loaded, regular gypsum board wall protected assemblies. Assemblies were 1x1 (one layer of gypsum board on both the exposed and unexposed sides) using wood studs and 2x2 (two layers of board on both the exposed and unexposed sides) using lightweight steel and wood studs. Three regular gypsum boards with different masses per unit area were evaluated: 7.82 kg/m^2 with no glass fibre in the gypsum core, 7.35 kg/m^2 with glass fibre in the gypsum core and 7.27 kg/m^2 with no glass fibre in the gypsum core. Tests were conducted to determine the fire resistance rating of the assemblies. The temperatures measured on the gypsum board surfaces and on the studs are presented.

TEMPERATURE MEASUREMENTS IN FULL-SCALE FIRE RESISTANCE TESTS ON NON-INSULATED REGULAR GYPSUM BOARD WALL ASSEMBLIES

1.0 INTRODUCTION

Changes included in the 1990 edition of the National Building Code of Canada (NBCC) [1] increased the sound transmission classification between dwelling units from STC 45 to STC 50. As well, changes included in the 1991 CAN/CSA-A82.27-M91 Standard [2]"Gypsum Board-Building Materials and Products" removed minimum density requirements for gypsum board. Either or both of these changes may have an impact on the fire resistance of both wall and floor assemblies referenced in Parts 3 and 9 of the NBCC, as well as the calculation methods in Chapter 2 of the Supplement to the NBCC.

As a result of these changes, a Joint Research Project involving the Institute for Research in Construction (IRC), the National Research Council Canada (NRCC) and 8 industry partners was conducted. The primary objective of the project was to determine the impact of the changes to the Code and Standard on the fire resistance ratings of insulated and non-insulated gypsum board wall assemblies. To evaluate these possible effects, a number of full-scale (22) and small-scale fire resistance tests (49) were conducted.

This report presents the results of 7 full-scale fire resistance tests conducted at the National Fire Laboratory, IRC, NRCC, as part of the Joint Research Project. These tests investigated the effects of glass fibre in the gypsum core (loadbearing), gypsum board mass per unit area (non-loadbearing) and stud types (non-loadbearing) on the fire resistance performance of regular lightweight gypsum board wall assemblies . This report presents the results for each full-scale test including the temperatures measured on the gypsum board surfaces and on the studs as well as deflection results for loaded assemblies.

2.0 DESCRIPTION OF TEST ASSEMBLIES

The full-scale test assembly furnace is shown in Figure 1.

2.1 Dimensions

Seven full-scale assemblies were constructed, 3048 mm high by 3658 mm wide with various depths depending on the number of layers of gypsum board. The specific dimensions of each assembly are given in Figures 2 to 8.

2.2 Materials

Materials used in the assemblies were as shown in the following sections:

2.2.1 Gypsum Board

Regular gypsum board conforming to the requirements of CAN/CSA-A82.27-M91 [1] was used. Three 12.7 mm thick regular gypsum boards with different masses per unit area were investigated: 7.82 kg/m^2 (approximately 1.6 lb/ft^2) with no glass fibre in the gypsum core, 7.35 kg/m^2 (approximately 1.5 lb/ft^2) with glass fibre in the gypsum core and 7.27 kg/m^2 (approximately 1.5 lb/ft^2) with no glass fibre in the gypsum core.

2.2.3 Framing Materials

The steel studs used were light C sections 90 mm wide by 30 mm deep by 0.6 mm thick, manufactured in accordance with CAN/CGSB-7.1-M86 [2]. The wood studs used were nominal 2x4's (38 mm thick by 89 mm deep) and conformed to CSA 0141-1970 [3].

2.3 Fabrication

The full-scale assemblies were constructed in accordance with CAN/CSA-A82.31-M91 [4]. Three tests were non-loadbearing and four tests were loadbearing. Details on these assemblies are presented in Table 1.

2.3.1 Wood Stud Assemblies

The wood studs used were 38 mm by 89 mm (SPF No. 1 and No. 2, S-Dry, QLMA Mill Grade 149), spaced at 600 mm O.C. only in assembly F-04 and at 400 mm O.C. in all other wood stud assemblies.

In single layer assemblies (1x1) with wood studs spaced at 400 mm O.C., one layer of 12.7 mm thick regular gypsum board was attached vertically to the wood studs with Type S drywall screws, 41 mm long, and spaced at 400 mm O.C. along the edges and in the field of the board. Screw locations and gypsum board joints are shown in Figures 14 and 15 [4]. The screw heads on both the exposed and unexposed faces were covered with joint compound. Gypsum board joints were finished with fibre tape and covered with joint compound.

In double layered assemblies (2x2) with wood studs spaced at 400 mm O.C., two layers of 12.7 mm thick regular gypsum board were applied vertically: base and face layers. The base layer was attached to wood studs with Type S drywall screws, 41 mm long, spaced at 600 mm O.C. in the field of the board and along the edges. The face layer was attached to both the base layer and the studs with Type S drywall screws, 51 mm long, spaced at 400 mm O.C. along the edges and in the field of the board. Screw locations and gypsum board joints are shown in Figures 16 to 19. Screw heads on both the exposed and unexposed faces were covered with joint compound. Gypsum board joints were finished with fibre tape and joint compound.

In double layered assemblies (2x2) with wood studs spaced at 600 mm O.C., two layers of 12.7 mm thick regular gypsum board were applied vertically: base and face layers. The base layer was attached to wood studs with Type S drywall screws, 41 mm long, spaced at 600 mm O.C. in the field of the board and along the edges. The face layer was attached to both the base layer and the studs with Type S drywall screws, 51 mm long, spaced at 300 mm O.C. along the edges and in the field of the board. Screw locations and gypsum board joints are shown in Figures 20 to 23 [4]. Screw heads on both the exposed and unexposed faces were covered with joint compound. Gypsum board joints were finished with fibre tape and joint compound.

2.3.2 Steel Stud Assemblies

The steel studs used were light C sections 90 mm by 30 mm by 0.46 mm and were spaced at 600 mm O.C.

In double layered assemblies (2x2) with steel studs spaced at 600 mm O.C., two layers of 12.7 mm thick regular gypsum board were applied vertically: base and face layers. The base layer was attached to the steel studs with Type S drywall screws, 25 mm

long, and spaced at 300 mm O.C. along the edges and at 600 mm O.C. in the field of the board. The face layer was attached to both the base layer and the studs with Type S drywall screws, 41 mm long, spaced at 300 mm O.C. along the edges and in the field of the board. Screw heads on both the exposed and unexposed faces were covered with joint compound. Gypsum board joints were finished with fibre tape and joint compound. Gypsum board joints and screw locations are shown in Figures 19 to 22.

2.4 Instrumentation

Type K (20 gauge) chromel-alumel thermocouples, with a thickness of 0.91 mm, were used for measuring temperatures at a number of locations throughout an assembly. Inside the cavities, the thermocouples were attached to 6 wire hangers installed midway between the studs and at mid-depth of the studs at distances of 1/4 and 3/4 of the height of the wall. By providing tension to the hanger wire, the thermocouples were positioned flush with the surface of the gypsum board. Thermocouple locations for each assembly are shown in Figures 2 to 8.

The unexposed surface temperatures were measured by nine Type K-20 gauge thermocouples as shown in Figure 23, installed under insulated pads in compliance with the requirements in CAN4-S101-M89 [5].

The deflection at the unexposed surface was measured at different locations as shown in Figures 24 to 27 using the electro-mechanical method described in Reference [6].

2.5 Loadbearing

The loading device used in this study is illustrated in Figure 1. Details on this device are presented in Reference [7]. This loading system uses two steel frames, located at the top and bottom of the assembly. There are 8 hydraulic jacks fitted at the top of the assembly to simulate a vertical structural load to the assembly. The loads used in this study are given in Table 1. These loads were calculated by the Canadian Wood Council in consultation with other partners. The loads used in Tests F-01 and F-02 were selected by the NRC.

3.0 TEST APPARATUS

The tests were carried out by exposing the assemblies to heat in a propane-fired, vertical furnace as shown in Figure 1. The furnace was lined with fire brick covered with a 25.4 mm ceramic fibre blanket. The assemblies were sealed at the edges against the furnace with ceramic fibre blanket. The furnace temperature was measured by nine (20 gauge) shielded thermocouples in accordance with CAN/ULC-S101-M89 [5]. The average of the nine thermocouple temperatures was used to control the furnace temperature.

4.0 TEST CONDITIONS AND PROCEDURES

4.1 Fire Exposure

The ambient temperature at the start of each test was approximately 22°C. During the test, the wall assembly was exposed to heating on the exposed side, in such a way that the average temperature in the furnace followed as closely as possible the CAN/ULC-S101-M89 [5] standard temperature-time curve.

4.2 Failure Criteria

The failure criteria for the full-scale tests were from CAN/ULC-S101-M89 [5]. An assembly was considered to have failed if a single point thermocouple temperature reading on the unexposed face rose above 180°C above the ambient temperature or the average temperature of the 9 thermocouple readings under the insulated pads on the unexposed face rose 140°C above the ambient temperature or there was passage of flame or gases hot enough to ignite cotton waste.

4.3 Recording of Results

The furnace and wall assembly temperatures were recorded at 1 minute intervals.

5.0 RESULTS AND DISCUSSION

The results of the 7 full-scale fire tests are summarized in Table 1 in which the single point and average failure times are given for each assembly.

Tabular data for each test are presented in the following:

Test	Single Location Temperature Tables	Average Surface Temperature Tables	Deflection Measurement Tables
F-01	2	3	16
F-01B	4	5	17
F-02	6	7	18
F-02B	8	9	19
F-03	10	11	20
F-04	12	13	21
F-05	14	15	22

The average temperatures measured on gypsum board surfaces and on the studs are plotted in Figures 28 to 34. Detailed temperatures for all nine thermocouples under the insulation pads on the unexposed surface are also plotted in the Figures.

The deflections measured at the unexposed surface are plotted in Figures 35 and 36.

5.1 Effects of Glass Fibre in the Gypsum Core of Loadbearing Regular Lightweight Gypsum Board Wall Assemblies

Two gypsum board assemblies arrangements were studied: (1x1) one layer of gypsum board on each of the exposed and unexposed sides and (2x2) two layers of gypsum board on each of the exposed and unexposed sides.

Single Gypsum Board Layer (1x1) Assemblies (Figure 37)

Tests F-01 and F-01B were carried out to investigate the effect of the presence of glass fibre in the gypsum core on the fire resistance rating of 1x1 gypsum board assemblies using a lightweight regular gypsum board (7.35 kg/m^2). The structural failure and flame penetration criteria were reached at 33 min for Test F-01 (with glass fibre in the gypsum

core) and at 26 min for Test F-01B (without glass fibre in the gypsum core). These results showed that, Assembly F-01 provided a 27% increase in fire resistance compare to Assembly F-01B. Therefore, the presence of glass fibre in regular lightweight gypsum board core did have an effect on the fire resistance performance of (1x1) regular gypsum board wall assemblies.

Double Gypsum Layer (2x2) Assemblies (Figure 38)

Tests F-02 and F-02B were conducted to investigate the effect of the presence of glass fibre in the gypsum board core on the fire resistance ratings of (2x2) gypsum board wall assemblies using a lightweight regular gypsum board (7.35 kg/m^2). The structural failure and flame penetration criteria were reached at 53 min for Test F-02 (with glass fibre in the gypsum core) and at 49 min for Test F-02B (without glass fibre in the gypsum core). These results showed that, Assembly F-02 provided a slight increase (8%) in fire resistance performance compared to Assembly F-02B. Therefore, the presence of glass fibre in regular lightweight gypsum board did not play a significant role in the fire resistance rating of double layer (2x2) assemblies.

5.2 Effects of Different Masses per Unit Area of Regular Gypsum Board Assemblies (Figure 39)

Test F-03 (lightweight regular gypsum board with glass fibre in the gypsum core, 7.35 kg/m^2) and Test F-05 (heavy regular gypsum with no glass fibre in the gypsum core, 7.82 kg/m^2) were conducted to investigate whether the reduction in the mass per unit area of gypsum board has an effect on the fire resistance ratings of 2x2 assemblies. The temperature failure criterion was reached at 63 min for Test F-03 and at 69 min for Test F-05. These results showed that, in double layer assemblies (2x2), using heavier gypsum board provided a 10% increase in fire resistance performance compared to using lightweight regular gypsum board.

5.3 Effects of Different Stud Types in Non-Loadbearing Regular Lightweight Gypsum Board Wall Assemblies (Figure 40)

Test F-03 and Test F-04 were conducted to investigate the effect of stud type (wood and steel) on the fire resistance ratings of double layer (2x2) gypsum board wall assemblies using a lightweight regular (7.35 kg/m^2) gypsum board with glass fibre in the gypsum wallboard core. The temperature failure criterion was reached at 63 min for Test F-03 (steel studs) and at 65 min for Test F-04 (wood studs). The difference in the fire resistance rating is considered within the error for the test procedure. These results showed that, in double layer lightweight regular gypsum board assemblies, non-loadbearing, the type of stud was insignificant.

6.0 CONCLUSIONS

1. The presence of glass fibre in regular lightweight gypsum board affects the fire resistance performance of (1x1) lightweight regular gypsum board loaded wall assemblies but does not substantially affect the fire resistance rating of (2x2) lightweight regular gypsum board non-loaded wall assemblies.
2. In (2x2) regular gypsum board non-loaded wall assemblies, heavy weight gypsum board provided a better fire resistance rating than lightweight gypsum board.
3. In (2x2) regular gypsum board non-loaded wall assemblies, the type of stud was insignificant.

7.0 REFERENCES

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Table 2. Temperatures Measured in Full Scale Assembly F-01, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
0	21.9	21.0	23.3	21.8	22.5	21.8	21.3	22.9	22.0	21.6	22.3	21.4	23.4	21.5	22.6	21.9	21.2	23.1	22.6
1	31.5	22.0	23.3	21.8	23.4	23.0	22.8	23.0	22.2	21.8	23.4	22.9	23.4	21.3	23.7	22.7	22.1	23.1	22.6
2	205.2	79.7	33.9	53.0	80.0	77.9	77.4	57.6	51.9	52.0	85.6	80.9	31.9	55.0	97.9	99.1	95.6	58.1	62.5
3	439.5	81.2	32.1	47.5	77.5	76.2	73.3	65.6	61.1	56.4	83.6	83.9	31.0	48.6	92.9	95.4	95.8	43.7	48.6
4	445.5	73.9	30.3	44.0	72.9	71.8	70.2	62.1	57.3	53.7	76.1	76.4	33.0	41.7	84.4	88.8	88.8	38.7	42.9
5	471.3	75.7	33.1	44.7	80.5	80.7	79.2	61.3	56.2	53.5	81.5	76.3	32.5	51.1	89.2	96.5	92.5	45.9	51.4
6	613.4	87.7	35.6	41.1	93.7	93.6	92.0	69.7	64.4	61.4	88.6	89.6	33.7	48.4	93.9	96.6	101.3	45.3	46.0
7	574.7	84.7	35.8	48.6	102.2	102.4	99.3	69.7	66.0	63.1	90.9	90.9	39.8	44.8	91.4	92.6	103.6	43.1	45.0
8	635.2	87.5	38.8	44.0	106.7	105.7	104.0	72.1	68.2	65.7	96.6	97.1	40.0	54.6	96.2	98.9	111.2	47.8	46.6
9	661.9	89.5	42.2	43.7	112.0	111.3	108.7	75.5	71.1	70.6	106.6	103.2	42.1	57.7	102.5	107.4	122.6	51.1	49.0
10	707.1	98.6	47.7	46.9	116.4	115.3	112.3	78.8	73.1	73.6	110.7	107.4	43.7	65.6	113.2	118.1	137.3	59.2	57.4
11	710.9	107.9	56.4	62.3	120.9	121.2	119.2	81.4	75.5	76.7	113.9	112.4	46.2	70.3	126.2	137.2	167.6	67.5	66.5
12	726.4	114.6	57.2	59.4	130.7	132.3	127.7	84.1	77.4	79.7	121.6	119.5	50.9	72.3	163.1	175.6	220.5	71.9	71.3
13	731.7	124.7	56.2	56.6	156.4	169.7	155.8	89.3	78.4	85.6	130.1	128.1	54.3	75.0	227.4	234.7	280.3	74.3	74.8
14	745.4	136.4	58.1	59.9	207.0	213.8	201.5	103.0	80.6	97.6	166.1	146.4	62.4	76.6	312.1	290.8	346.9	74.8	75.4
15	755.7	184.6	59.1	60.8	242.9	249.9	233.1	124.1	88.5	114.2	206.8	190.4	67.4	77.6	378.6	350.7	399.4	75.1	75.4
16	764.5	221.1	60.4	68.0	283.4	286.0	266.5	154.2	127.5	138.8	241.4	224.6	74.4	79.9	426.1	381.9	414.3	78.6	79.0
17	771.6	252.7	73.7	78.9	312.9	323.4	308.9	179.3	168.7	170.9	273.0	260.6	71.8	93.7	456.2	422.2	407.7	81.4	81.2
18	777.7	286.7	75.1	81.3	336.0	349.4	338.2	194.5	185.2	192.1	304.7	302.9	75.9	92.5	487.6	502.9	414.2	81.9	79.4
19	783.7	314.6	73.3	81.8	344.0	355.4	346.7	202.6	193.8	205.5	336.5	339.4	80.5	91.4	568.1	588.7	391.3	82.7	80.5
20	789.6	346.2	72.2	81.3	359.3	371.5	354.5	219.0	211.0	214.5	378.0	369.7	80.7	105.2	616.0	640.4	468.3	84.0	84.7
21	796.9	370.9	79.6	81.5	377.8	381.8	356.2	239.3	225.6	226.6	407.2	400.6	81.0	125.4	682.6	680.2	414.2	84.5	85.3
22	801.5	394.9	86.4	82.2	396.6	390.4	361.2	261.6	241.0	237.9	427.5	426.0	82.2	142.7	726.5	709.7	433.7	85.0	86.2
23	807.9	410.3	89.2	83.1	422.0	400.5	373.9	284.7	257.7	250.4	447.5	453.0	82.7	155.2	750.5	721.6	464.0	86.2	88.9
24	814.2	432.3	91.8	84.4	443.1	409.1	385.8	307.1	275.2	265.3	464.6	476.4	83.6	165.5	769.8	732.5	546.9	88.7	90.6
25	818.4	460.6	93.1	87.0	449.2	423.9	400.2	322.6	290.3	286.0	479.9	494.7	85.0	172.3	780.6	728.6	570.7	93.5	95.7
26	823.2	474.0	94.2	93.2	466.6	435.6	406.9	347.4	307.0	297.6	494.9	506.4	88.4	184.2	781.8	693.5	577.2	100.1	101.2
27	827.3	482.4	97.1	107.1	474.7	446.0	428.1	367.3	324.4	313.9	504.6	521.0	92.4	198.8	769.9	665.3	589.1	106.6	109.0
28	832.6	492.5	101.3	135.1	486.9	456.5	442.2	383.2	342.4	331.4	520.3	532.0	96.0	204.7	730.6	659.7	602.9	112.6	122.6
29	837.0	489.5	124.5	180.0	697.6	474.2	449.3	646.4	367.9	349.1	542.5	537.4	100.1	215.4	680.7	657.6	607.8	116.5	141.9
30	844.6	460.7	280.0	206.5	752.1	562.0	446.2	735.0	410.1	365.0	621.7	541.8	131.8	209.4	763.7	697.7	623.6	139.7	168.6
31	847.2	513.4	680.2	226.1	813.2	799.9	476.6	825.3	450.9	391.1	814.4	550.5	560.2	282.0	851.0	703.5	619.7	531.0	345.8
32	848.6	547.9	806.1	250.3	853.8	835.4	493.2	857.6	505.8	426.4	852.9	559.0	754.8	323.7	850.2	749.7	611.7	751.6	605.4

Table 2. Temperatures Measured in Full Scale Assembly F-01, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)																		
(min)	(°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
0	21.9	22.4	22.2	20.8	23.0	21.5	22.2	21.6	20.9	23.2	18.0	21.6	22.1	21.8	20.5	22.5	22.0	21.1	22.5
1	31.5	22.3	23.1	21.6	23.1	21.6	22.7	22.1	21.4	23.2	17.8	21.5	22.1	21.9	20.6	22.5	22.0	21.1	23.3
2	205.2	22.4	85.0	78.0	65.6	54.4	99.3	99.5	99.8	23.6	11.5	22.8	69.1	68.0	59.5	66.2	65.0	60.7	82.8
3	439.5	24.2	80.6	74.0	69.0	58.8	94.5	95.7	95.5	24.2	12.4	23.2	72.0	69.6	62.1	70.4	68.1	61.4	82.5
4	445.5	27.4	74.0	66.9	64.3	55.4	86.9	87.4	89.0	25.2	12.3	23.7	65.7	63.8	56.7	65.2	63.2	56.9	74.2
5	471.3	29.9	83.1	78.7	64.0	55.1	89.7	95.0	96.0	27.1	11.1	24.7	65.4	63.4	57.1	64.1	62.6	58.4	76.4
6	613.4	30.6	97.8	93.4	73.0	63.2	95.1	96.6	96.6	29.3	9.8	26.0	73.9	72.7	65.4	72.8	71.0	65.6	85.7
7	574.7	31.6	107.1	101.9	72.7	64.2	91.3	93.0	92.4	31.2	9.4	27.2	72.7	71.9	65.4	72.0	69.4	65.4	85.5
8	635.2	32.2	112.1	106.9	76.0	66.7	95.5	96.4	97.2	33.9	7.8	28.7	74.5	74.0	68.2	74.1	72.5	68.3	92.3
9	661.9	33.1	118.1	112.7	81.2	69.9	95.8	97.8	98.8	36.6	6.2	30.5	77.4	76.6	71.1	77.2	75.8	71.6	98.4
10	707.1	34.0	123.0	118.1	83.8	72.2	103.7	110.5	106.9	39.9	2.6	32.9	79.7	78.4	73.3	78.8	77.6	73.9	104.4
11	710.9	34.6	131.9	126.4	86.7	74.3	127.3	138.8	135.9	44.0	***	35.6	81.0	80.6	75.8	80.6	79.8	76.3	109.5
12	726.4	35.4	148.4	138.0	92.0	76.3	184.6	178.0	151.6	49.2	***	39.4	81.2	82.3	78.4	81.3	81.3	77.5	115.5
13	731.7	37.5	204.0	178.3	107.5	78.5	294.1	244.9	163.1	55.1	***	42.9	83.1	85.5	83.4	81.9	85.3	80.3	124.5
14	745.4	39.0	249.6	219.4	131.9	82.0	369.8	327.4	199.3	60.0	***	49.7	92.8	105.4	91.9	86.4	116.0	86.0	144.1
15	755.7	39.9	287.4	253.7	162.5	95.8	390.8	375.9	242.2	63.9	***	60.2	105.6	156.0	101.5	119.6	146.2	113.2	188.2
16	764.5	40.8	318.3	287.2	190.9	129.2	419.8	394.2	306.6	69.1	***	70.2	146.8	193.1	114.4	159.9	181.7	152.5	222.3
17	771.8	43.0	345.1	324.2	209.5	167.1	494.3	401.2	332.1	68.6	***	60.4	188.4	213.8	175.4	188.5	211.7	189.8	253.5
18	777.7	44.9	362.2	344.7	225.3	184.1	590.1	512.5	445.3	64.4	***	66.7	209.7	233.8	199.9	206.6	234.1	208.0	286.8
19	783.7	47.2	369.9	353.8	238.9	191.1	626.1	611.1	512.4	64.5	***	68.9	228.7	253.8	223.1	228.2	253.3	226.7	313.8
20	789.6	49.0	364.9	361.6	252.2	205.9	749.1	641.9	471.6	67.0	***	72.8	239.2	271.7	242.3	311.6	269.6	242.2	364.1
21	796.9	49.9	381.1	371.2	270.2	219.0	772.6	643.0	436.9	71.2	***	73.9	257.4	288.9	252.6	429.2	293.1	261.1	407.6
22	801.5	51.4	387.8	384.5	279.7	234.0	777.1	639.7	435.5	77.2	***	75.0	276.4	308.0	263.1	467.1	315.8	277.1	450.2
23	807.9	52.9	387.1	396.3	295.7	249.7	782.3	614.9	452.5	81.4	***	76.0	290.4	329.4	275.3	498.8	331.9	292.4	495.1
24	814.2	54.2	404.0	410.7	308.2	267.5	785.3	583.6	465.4	83.5	***	77.1	306.9	351.5	285.0	528.0	349.8	311.9	499.9
25	818.4	55.1	421.0	431.6	324.5	290.2	780.8	571.7	474.1	84.8	***	78.7	325.6	374.4	303.5	533.2	370.4	331.0	540.5
26	823.2	56.6	437.3	443.8	337.7	307.5	746.6	582.2	456.9	86.1	***	80.0	341.6	394.9	322.6	541.8	387.1	344.1	582.4
27	827.3	57.5	451.4	463.4	362.1	334.8	777.6	593.4	461.2	87.7	***	81.8	364.5	488.6	332.7	570.5	413.4	359.4	625.9
28	832.6	57.6	487.7	500.2	417.5	375.4	674.1	673.1	476.3	89.9	***	84.1	406.6	691.1	389.3	605.9	455.2	382.0	647.9
29	837.0	59.0	700.9	561.8	572.5	453.1	800.5	764.6	525.9	529.3	***	85.3	570.8	772.6	527.0	783.7	551.9	402.0	891.4
30	844.6	60.4	893.1	890.4	862.6	827.2	865.0	941.1	729.5	834.7	***	91.4	853.2	932.3	746.1	875.8	911.6	502.4	861.5
31	847.2	61.3	807.0	829.8	811.2	820.4	817.8	908.5	905.4	813.6	***	330.6	807.3	867.5	777.5	801.7	865.2	615.9	812.6
32	848.6	62.1	835.4	810.1	842.1	824.0	850.1	884.9	874.2	845.2	***	738.6	844.4	862.6	784.9	832.8	861.6	717.1	845.6

Table 2. Temperatures Measured in Full Scale Assembly F-01, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	21.9	22.5	23.3	21.9	21.6	23.1	17.0	22.5	21.6	22.4	23.1	23.0	21.8	23.3	22.1	23.8	21.8	23.7	23.1
1	31.5	22.5	23.3	21.9	21.7	23.1	16.7	22.5	21.6	22.4	23.0	23.0	21.8	23.3	22.2	23.8	21.8	23.8	23.2
2	205.2	22.6	23.4	22.0	21.7	23.1	16.5	22.5	21.6	22.4	23.1	22.9	21.8	23.4	22.2	23.9	21.7	23.8	23.2
3	439.5	24.7	26.2	23.7	23.3	25.8	16.4	24.5	22.6	23.8	23.6	23.4	22.2	23.7	24.4	24.2	22.4	24.7	25.0
4	445.5	31.1	35.0	29.4	28.1	33.8	16.8	31.2	26.1	28.4	25.2	24.6	23.1	25.1	27.6	25.3	23.8	27.1	29.0
5	471.3	36.9	42.0	34.8	33.1	40.7	16.7	37.0	29.9	32.9	26.9	26.5	24.3	26.6	29.6	27.1	25.6	28.5	31.3
6	613.4	41.0	46.8	38.8	37.0	45.3	16.6	41.1	33.2	36.4	28.7	28.1	25.3	27.8	31.1	28.5	27.2	30.3	32.6
7	574.7	45.4	52.4	43.2	41.0	50.4	16.6	45.7	36.7	40.2	30.2	29.2	26.4	29.3	32.4	30.4	28.6	31.7	34.1
8	635.2	49.5	56.7	47.2	45.0	54.8	16.4	49.8	40.6	44.1	31.4	30.3	27.3	30.5	32.8	31.4	29.3	32.8	35.0
9	661.9	52.9	60.0	50.6	48.6	58.1	16.6	52.9	44.2	47.5	32.6	31.9	28.6	31.7	33.6	33.6	30.8	33.9	35.9
10	707.1	56.1	62.9	53.9	52.0	61.4	***	56.0	47.9	50.9	34.0	32.8	29.9	32.8	34.3	35.1	32.4	35.1	36.7
11	710.9	58.9	65.3	56.7	55.3	64.2	16.3	58.9	51.2	54.2	35.2	33.6	30.9	34.7	35.7	36.6	34.1	36.7	38.2
12	726.4	61.4	67.2	59.3	58.2	66.3	17.9	61.4	54.0	57.0	36.2	34.8	32.3	35.9	38.9	37.9	36.0	38.2	39.6
13	731.7	63.1	68.2	61.4	60.9	67.8	17.1	63.5	56.8	58.8	37.8	36.8	34.0	36.7	40.9	39.5	37.9	39.4	41.7
14	745.4	65.3	69.3	63.3	63.8	69.5	17.4	65.4	59.4	59.9	38.6	39.6	35.9	37.5	40.8	40.4	40.2	40.6	44.0
15	755.7	67.0	70.1	65.4	66.6	71.0	17.6	67.3	62.3	39.4	39.2	41.1	38.3	38.1	41.6	41.8	40.9	41.0	45.2
16	764.5	68.6	71.0	67.2	69.1	72.6	17.2	69.0	65.1	20.5	40.1	42.8	41.0	38.4	43.2	43.2	43.3	41.2	45.9
17	771.8	70.2	72.2	68.9	71.8	75.6	17.3	70.6	67.1	20.3	40.9	44.8	43.7	39.9	44.0	44.5	44.9	42.5	46.9
18	777.7	74.0	76.0	72.3	76.1	78.9	17.0	74.7	70.2	21.4	42.1	44.8	43.7	41.2	45.8	46.9	46.7	43.9	49.1
19	783.7	78.5	81.9	78.4	78.1	80.5	17.1	80.2	77.8	18.5	44.4	47.1	44.8	42.5	47.8	49.0	48.2	45.1	50.2
20	789.6	81.5	85.6	82.4	73.6	81.8	18.3	83.2	83.1	80.5	45.2	48.6	47.0	43.7	48.7	50.6	50.3	46.8	51.3
21	796.9	85.0	89.8	86.4	73.4	83.7	18.1	86.3	86.3	81.7	48.1	49.1	47.9	44.4	49.0	52.0	51.4	47.3	52.1
22	801.5	88.8	94.1	90.3	78.8	86.4	18.0	89.9	90.2	82.7	49.9	50.3	48.9	45.8	49.4	53.2	52.9	49.6	54.1
23	807.9	92.6	98.5	94.1	83.5	89.6	18.0	93.8	93.9	84.3	52.0	50.6	49.1	47.7	50.4	54.9	54.3	50.4	54.5
24	814.2	96.2	102.5	97.6	85.5	92.9	18.1	97.5	97.4	86.6	52.1	51.4	50.0	49.5	50.7	56.3	54.8	51.9	54.7
25	818.4	99.5	106.0	100.7	88.6	96.3	18.0	101.1	100.6	89.8	51.4	53.0	51.1	51.2	50.9	57.8	55.9	52.4	56.4
26	823.2	102.4	108.8	103.3	96.9	99.6	18.1	104.3	103.2	93.1	52.9	54.7	52.5	52.1	51.6	58.7	57.1	54.4	56.8
27	827.3	104.9	111.5	105.4	96.9	102.4	18.3	107.0	105.2	96.6	53.8	55.5	52.6	53.0	52.4	59.6	58.1	57.2	58.0
28	832.6	106.8	115.1	107.1	100.7	105.0	18.1	109.3	106.8	100.2	54.5	55.5	54.3	54.6	52.8	61.9	58.6	57.9	58.8
29	837.0	108.3	119.2	108.7	104.7	107.4	17.9	111.4	108.2	104.1	55.0	57.8	55.6	54.5	53.9	62.2	59.2	59.5	61.0
30	844.6	109.7	122.4	110.5	105.6	109.9	18.0	113.5	109.4	108.1	59.0	59.6	57.5	55.4	55.0	63.4	60.4	59.3	61.0
31	847.2	111.3	126.1	112.4	106.5	112.5	18.2	115.4	110.7	113.1	58.8	60.9	60.3	57.5	57.4	63.6	60.0	60.9	61.9
32	848.6	113.1	134.3	114.5	111.0	116.6	18.3	117.4	112.3	118.9	58.0	63.9	62.6	56.0	58.3	64.1	61.0	62.6	63.3

Table 1. Full-Scale Assembly Parameters and Fire Test Results

Assembly Number	Stud Type	Stud Size (mm)	Stud Rows	Stud Spacing (mm)	Gypsum Board Layers (Exp/Unexp.)	Gypsum Board Thickness (mm)	Gypsum Board Type	Total Load (kN)	Load	Fire Rating (min)	Mode Of Failure
F-01	Wood	89	1	400	1x1	12.7	RL	74.76	Yes	33	Flame
F-1B	Wood	89	1	400	1x1	12.7	RL*	68.83	Yes	26	Flame
F-02	Wood	89	1	400	2x2	12.7	RL	74.76	Yes	53	Struct.
F-2B	Wood	89	1	400	2x2	12.7	RL*	67.22	Yes	49	Flame
F-03	Steel	90	1	600	2x2	12.7	RL	***	No	63	Temp.
F-04	Wood	89	1	600	2x2	12.7	RL	***	No	65	Temp.
F-05	Steel	90	1	600	2x2	12.7	RH	***	No	69	Temp.

RH - Low density regular gypsum board, no glass fibre in gypsum core (7.80 kg/m^2)
RL - Low density regular gypsum board, with glass fibre in the gypsum core (7.35 kg/m^2)
RL* - Low density regular gypsum board no glass fibre in the gypsum core (7.27 kg/m^2)
*** - Null value

Table 2. Temperatures Measured in Full Scale Assembly F-01, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	55	56	57	58	59	60	61	62	63	64	65
0	21.9	21.6	22.5	22.0	21.2	22.4	22.3	21.1	23.0	21.6	22.8	21.3
1	31.5	21.6	22.7	22.1	21.3	22.6	22.5	21.2	24.3	22.6	23.0	21.4
2	205.2	55.2	63.1	64.1	60.5	67.2	67.3	49.0	80.2	78.1	56.5	53.3
3	439.5	40.5	69.8	67.6	62.9	71.5	66.6	57.7	78.6	73.3	67.2	56.9
4	445.5	37.3	63.3	61.4	57.6	65.1	62.1	55.0	73.8	70.3	62.8	53.6
5	471.3	39.6	61.9	61.6	56.9	65.4	62.6	55.3	81.3	78.6	62.3	55.7
6	613.4	37.3	69.9	69.7	66.0	73.8	71.0	64.4	94.4	91.6	71.6	63.1
7	574.7	37.7	69.5	69.3	65.9	72.1	69.6	63.8	102.7	99.4	71.5	62.7
8	635.2	37.2	71.5	71.3	68.0	75.7	72.3	65.8	107.6	104.5	74.5	66.6
9	661.9	37.8	74.9	74.1	71.4	78.5	75.0	69.1	112.5	109.3	78.2	69.9
10	707.1	40.3	76.7	76.2	73.8	79.8	76.7	71.1	116.2	113.2	78.1	72.5
11	710.9	46.0	78.5	77.8	75.8	81.4	79.1	73.3	122.4	117.4	79.6	74.4
12	726.4	53.0	80.2	79.1	77.5	81.7	79.7	75.1	131.8	124.3	80.3	76.5
13	731.7	54.6	82.2	82.6	80.3	81.1	80.2	76.7	149.1	133.9	80.5	83.2
14	745.4	57.8	87.0	101.1	85.7	82.3	81.2	78.2	192.3	164.3	80.2	89.3
15	755.7	59.2	96.7	132.6	101.1	104.2	93.7	79.9	228.6	208.2	86.4	100.3
16	764.5	68.7	131.5	162.7	134.6	147.0	147.0	87.3	262.4	244.0	112.7	117.0
17	771.8	63.3	164.7	195.3	165.2	179.2	179.8	101.0	296.0	276.4	167.9	135.9
18	777.7	74.4	187.7	213.5	181.0	200.1	202.8	129.6	320.9	303.8	193.7	156.5
19	783.7	73.4	209.5	228.0	206.5	216.2	221.4	149.2	346.3	331.8	210.3	175.5
20	789.6	69.5	228.1	245.6	225.2	236.2	239.2	170.1	361.4	351.3	227.8	194.1
21	796.9	78.0	243.1	263.9	237.9	268.8	261.2	185.2	374.0	364.4	233.4	202.8
22	801.5	81.8	259.2	278.7	253.1	279.1	277.3	200.1	360.9	371.0	249.0	209.0
23	807.9	83.6	277.8	296.5	269.1	310.9	301.3	214.7	393.6	377.0	269.5	218.6
24	814.2	84.9	299.2	316.3	284.7	343.2	321.7	231.9	408.8	392.5	298.2	235.0
25	818.4	86.4	318.3	338.8	304.4	370.3	334.9	247.0	432.3	401.4	329.2	244.6
26	823.2	86.1	336.6	355.6	321.9	418.2	342.6	264.2	482.1	416.3	376.6	256.9
27	827.3	86.7	357.7	381.2	342.3	534.8	373.9	285.6	546.5	433.6	459.7	274.2
28	832.6	89.1	380.4	404.8	361.0	551.8	410.8	309.2	602.3	445.0	534.7	285.7
29	837.0	91.1	404.5	426.1	377.2	564.3	481.0	326.1	621.7	457.8	558.8	303.3
30	844.6	92.3	443.7	448.3	399.1	733.3	625.2	349.4	746.0	470.0	717.8	320.2
31	847.2	93.9	686.6	513.7	428.6	840.5	724.5	380.9	827.9	475.4	833.1	344.5
32	848.6	96.2	798.6	676.2	454.8	861.7	801.3	423.0	878.2	496.1	855.1	360.0

Table 3. Average Temperatures Measured in Full Scale Assembly F-01, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/WStd. (Exp.) Av(24,25,26,36,37, 46,47,50,51,52)	BL/Cav. (Exp.) Av(20,21,40,41,42,62,63)	Mid WStd. Av(30,31,32,33,34,35, 56,57,58,59,60,61)	BL/WStd. (UnExp.) Av(27,28,29,38,39, 48,49,53,54,55)	BL/Cav. (UnExp.) Av(22,23,43,44,45,64,65)	UnExp. Av(1,2,3,4,5,6,7,8,9)
0	21.9	21.8	21.9	21.8	22.0	22.2	21.8
1	31.5	22.6	23.0	21.9	22.0	22.3	21.7
2	205.2	92.0	79.5	63.3	40.7	55.9	21.7
3	439.5	90.1	76.2	66.6	35.2	62.1	23.5
4	445.5	82.6	71.4	61.3	32.9	58.4	28.9
5	471.3	86.9	80.3	61.2	36.1	58.3	33.8
6	613.4	93.2	93.8	69.7	35.2	66.7	37.4
7	574.7	91.6	102.1	68.9	36.2	67.1	41.3
8	635.2	97.1	106.8	71.3	38.0	70.0	44.9
9	661.9	102.3	112.1	74.4	39.7	73.8	47.9
10	707.1	111.1	116.4	76.3	43.6	76.0	49.0
11	710.9	127.7	122.8	78.3	49.5	78.4	53.4
12	726.4	154.4	133.3	79.6	52.4	81.2	55.8
13	731.7	195.2	163.9	81.9	54.4	86.1	57.5
14	745.4	243.9	206.8	91.2	57.5	94.9	59.3
15	755.7	290.8	243.4	112.5	59.9	110.2	58.5
16	764.5	325.2	278.3	146.6	64.8	138.6	57.8
17	771.8	355.3	312.4	179.4	67.3	171.3	59.3
18	777.7	413.4	336.4	200.6	69.1	190.2	62.3
19	783.7	460.2	349.7	220.4	69.7	202.5	65.7
20	789.6	504.5	360.7	243.4	71.7	217.8	74.4
21	796.9	521.6	372.4	270.2	76.0	231.0	76.7
22	801.5	542.1	378.9	287.9	79.9	244.6	79.9
23	807.9	559.2	392.9	307.4	82.6	260.9	83.1
24	814.2	575.7	407.7	327.5	85.0	279.5	86.0
25	818.4	588.2	422.8	346.0	87.7	298.2	89.0
26	823.2	589.6	441.2	364.3	91.4	318.7	92.2
27	827.3	599.0	463.4	400.4	96.7	348.1	94.3
28	832.6	600.9	488.7	445.7	103.5	381.5	96.6
29	837.0	649.8	566.2	515.6	158.4	464.4	98.9
30	844.6	710.6	680.0	651.7	215.4	605.4	100.8
31	847.2	749.7	718.5	692.5	386.3	639.5	102.9
32	848.6	762.6	743.2	743.2	517.2	667.3	106.3

Table 4. Temperatures Measured in Full Scale Assembly F-01B, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly

Time	T(Fav)	Temperature at Thermocouple Number																			
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	30.3	27.7	28.7	25.5	26.8	28.7	28.7	27.5	24.5	27.6	28.5	28.6	26.2	28.5	26.6	27.5	28.3	25.6	28.2	25.6	28.3
1	41.1	27.7	28.6	25.5	26.8	28.6	28.8	27.4	24.5	27.5	28.4	28.5	26.1	28.4	26.4	27.4	28.7	25.8	28.6	25.8	28.5
2	209.7	27.7	28.5	25.5	27.0	28.6	28.8	27.4	24.6	27.5	28.4	28.4	26.0	28.3	26.3	27.4	78.5	64.2	71.7	62.7	68.9
3	421.9	31.3	31.1	27.8	31.0	32.7	32.8	30.0	25.9	29.7	31.4	28.9	26.2	31.6	26.7	29.7	81.5	67.0	76.1	66.3	73.9
4	428.8	38.5	39.3	34.2	38.0	42.4	41.6	35.6	30.3	36.0	38.5	31.4	27.7	37.3	28.5	35.8	74.7	62.1	70.8	61.7	68.8
5	469.5	43.9	45.8	39.6	42.8	49.4	48.0	39.9	34.8	41.5	43.1	34.1	29.4	40.6	30.4	39.0	73.8	62.0	70.2	61.7	68.4
6	611.2	47.6	49.9	43.6	46.2	53.3	52.0	43.0	38.6	45.1	45.2	36.0	30.8	42.5	31.3	39.9	81.9	71.2	79.3	70.8	75.9
7	582.7	52.0	54.3	47.9	50.4	57.7	56.8	46.8	42.7	49.1	47.4	38.0	32.0	44.7	32.2	42.2	81.0	71.7	78.1	70.9	75.0
8	639.3	55.6	57.7	51.6	53.7	61.0	60.3	50.4	46.9	52.7	49.6	40.0	33.6	46.5	33.5	43.2	82.4	73.6	79.8	73.3	76.6
9	661.6	58.4	60.1	54.7	56.7	63.3	62.8	53.5	50.5	55.6	51.1	41.7	35.0	48.3	34.2	43.8	85.0	76.3	83.0	76.5	79.6
10	704.6	61.1	62.1	57.4	59.6	65.5	65.2	56.5	53.9	58.2	52.3	43.0	36.2	50.4	34.9	44.6	87.1	78.8	84.8	78.4	81.3
11	710.8	63.3	63.7	59.8	62.0	67.1	67.0	59.3	56.9	60.6	53.8	44.4	37.5	52.0	36.4	45.3	89.2	80.4	86.8	80.5	82.4
12	726.8	65.3	65.0	61.9	64.2	68.4	68.4	61.8	59.5	62.6	54.7	45.8	38.8	53.2	38.1	46.4	92.6	80.9	89.1	82.6	83.4
13	733.7	67.2	65.8	63.4	65.8	69.3	69.1	63.8	61.7	64.3	55.4	47.1	39.8	54.7	41.1	46.5	103.9	81.1	95.3	87.4	84.4
14	746.8	68.6	66.2	64.8	67.3	69.7	69.4	65.4	63.8	65.7	55.7	48.3	40.6	56.0	43.8	46.6	130.5	84.2	120.3	99.2	98.8
15	754.4	69.9	66.3	66.0	68.7	69.8	69.0	66.6	65.8	67.0	56.0	48.8	41.7	56.5	45.4	46.9	164.7	107.2	156.2	121.8	132.0
16	767.1	76.2	66.1	66.9	70.7	71.4	73.1	67.8	67.2	69.2	57.5	49.1	42.6	57.0	46.6	47.3	202.2	145.8	190.1	155.8	164.2
17	770.4	81.2	65.7	68.3	75.4	76.7	80.4	68.9	71.5	73.9	61.3	50.3	43.6	57.8	47.1	47.3	227.7	173.9	211.2	184.5	187.1
18	779.1	85.2	67.7	73.9	80.8	81.4	84.7	71.0	78.6	78.2	64.7	52.3	45.2	59.0	48.4	49.1	263.6	198.5	285.2	212.6	210.2
19	787.3	88.7	73.4	80.9	84.2	87.7	88.2	75.0	82.9	80.7	67.7	55.3	48.1	60.1	49.6	53.5	682.3	253.8	302.4	239.1	236.1
20	790.4	92.5	80.1	86.3	88.5	91.8	91.8	79.2	87.0	83.6	69.2	57.5	49.6	61.9	50.6	58.0	792.9	716.9	332.8	264.3	262.7
21	798.0	96.4	84.8	90.6	90.8	97.2	95.4	81.9	90.9	87.1	69.7	60.4	51.7	63.9	51.6	58.8	822.8	809.8	373.5	290.2	303.0
22	802.4	100.1	88.6	94.6	95.0	104.2	99.0	83.2	94.7	91.3	71.1	62.9	53.7	65.9	52.3	60.7	833.8	821.7	458.6	322.8	348.7
23	821.8	103.4	92.4	98.4	104.0	109.7	102.1	85.0	99.1	95.2	75.9	64.4	57.8	67.8	54.9	62.2	935.0	821.0	901.2	790.0	891.8
24	815.0	107.7	96.3	102.4	114.2	117.0	106.1	87.5	102.7	99.6	88.1	68.7	61.2	73.3	58.7	64.7	911.4	854.0	890.5	815.7	906.9
25	820.2	114.5	99.8	105.2	123.2	128.3	111.1	90.4	105.7	104.1	100.1	69.8	62.5	74.4	61.0	67.6	902.5	869.9	889.8	846.1	915.1
26	821.2	122.4	103.0	107.8	132.8	165.1	117.3	93.3	108.7	110.5	103.5	72.4	63.6	74.0	62.2	69.2	810.3	830.2	817.2	824.6	839.9

Table 4. Temperatures Measured in Full Scale Assembly F-01B, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	Temperature at Thermocouple Number																			
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
0	30.3	25.6	28.3	25.9	28.8	26.1	29.4	26.2	28.8	26.6	28.4	26.1	28.4	25.9	28.3	25.9	29.4	26.8	29.4	27.0	29.1
1	41.1	25.8	28.6	26.2	30.1	27.2	32.2	28.0	30.9	28.5	28.5	26.1	28.5	25.9	28.4	25.9	31.7	28.9	31.8	29.1	30.7
2	209.7	49.4	68.0	64.7	100.1	100.6	93.2	82.4	84.6	83.9	30.3	26.5	51.8	51.0	31.2	28.1	87.4	81.6	79.6	72.6	84.1
3	421.9	59.2	76.6	67.4	96.1	96.6	87.6	84.1	84.3	82.2	35.1	27.9	50.2	42.5	40.3	30.3	84.9	77.4	75.6	68.5	80.4
4	428.8	56.7	70.4	61.2	89.4	89.7	78.1	77.7	78.1	76.6	38.0	29.1	48.1	41.7	43.3	32.1	78.9	72.5	70.3	65.3	75.1
5	469.5	56.6	68.8	62.0	95.1	96.6	85.4	80.6	79.7	77.4	40.3	30.5	49.5	43.0	44.2	33.3	87.2	83.1	80.1	73.8	82.8
6	511.2	64.7	76.8	71.1	97.5	97.2	92.9	92.1	90.9	88.2	43.5	32.4	52.7	45.8	47.9	35.0	99.1	95.7	92.7	83.4	93.6
7	582.7	66.5	76.3	73.6	95.4	94.3	92.9	90.2	94.3	89.2	46.6	34.3	54.0	46.0	51.3	37.2	108.0	103.5	100.0	90.8	101.3
8	639.3	68.8	77.7	78.8	97.9	99.7	98.8	93.1	97.8	92.8	49.3	36.4	57.4	52.5	53.0	39.1	113.5	108.5	104.1	94.8	106.6
9	661.6	72.0	79.5	83.2	105.0	103.5	104.2	97.2	102.5	97.9	51.9	38.5	61.5	61.2	55.4	40.5	118.7	113.7	108.9	100.5	111.6
10	704.6	74.0	81.1	85.5	110.5	108.3	109.2	101.4	108.5	103.8	54.6	40.6	64.6	66.7	57.7	42.7	123.6	117.6	113.5	105.2	115.2
11	710.8	76.5	82.5	88.6	120.6	121.4	113.7	108.3	115.2	110.5	56.9	42.8	67.5	71.9	59.8	45.6	130.9	124.3	119.5	111.5	118.7
12	726.8	78.0	83.5	92.7	139.1	142.3	120.6	114.4	120.8	115.7	61.2	44.8	74.7	76.1	62.1	53.7	137.7	126.5	132.9	119.3	123.5
13	733.7	79.4	85.1	98.6	155.0	157.7	137.5	124.2	128.4	121.6	64.9	46.7	76.8	77.5	64.2	70.3	178.6	145.2	189.1	142.0	131.7
14	746.8	79.9	93.5	108.5	199.3	176.1	183.0	144.7	150.0	130.4	63.5	48.7	76.3	77.2	65.8	70.7	229.8	198.1	238.0	196.2	144.7
15	754.4	91.7	118.2	127.4	252.1	214.9	223.2	189.6	193.4	164.6	63.9	50.6	78.3	79.9	67.4	70.0	278.4	244.9	292.8	247.7	187.2
16	767.1	114.1	146.6	151.9	371.3	256.6	266.6	226.7	230.9	200.7	67.1	52.6	83.5	89.3	69.4	70.1	322.8	291.4	333.4	290.1	223.4
17	770.4	136.3	179.1	185.3	538.1	337.1	305.0	262.1	268.6	229.2	71.9	55.5	89.2	95.7	73.3	73.0	350.4	328.9	354.1	329.6	257.5
18	779.1	160.4	203.7	213.3	720.2	402.7	356.1	278.9	297.6	254.3	78.4	59.1	93.1	98.7	79.1	77.3	375.4	328.4	362.3	338.6	295.4
19	787.3	183.0	226.6	233.3	625.5	460.8	400.3	311.1	333.4	270.6	87.3	63.2	97.0	102.9	86.0	78.8	819.1	383.6	401.0	357.9	325.2
20	790.4	203.1	265.3	262.8	671.1	566.6	439.0	346.4	363.7	290.8	100.4	68.9	103.9	108.2	93.8	78.7	809.0	877.5	427.7	376.3	351.2
21	798.0	223.5	343.2	284.6	718.7	594.4	480.5	369.4	393.9	319.5	132.4	77.2	110.9	113.9	106.8	81.3	833.7	861.2	455.3	387.4	339.0
22	802.4	244.6	391.4	302.1	744.5	615.8	521.6	385.6	431.6	345.5	332.8	84.2	118.8	123.0	122.8	86.5	842.6	843.9	484.9	406.3	359.0
23	821.8	489.8	816.3	698.4	905.1	869.0	937.7	739.8	866.0	719.0	900.1	660.8	843.2	215.8	764.8	217.6	900.2	786.3	898.6	691.6	426.5
24	815.0	641.6	853.1	764.7	879.7	881.0	954.5	803.1	897.3	792.9	867.6	573.8	922.5	333.4	779.1	348.0	880.8	820.8	896.0	866.9	476.3
25	820.2	697.5	862.8	771.8	880.8	891.3	946.9	861.2	910.4	803.4	879.2	708.0	930.0	483.6	821.7	431.0	887.0	843.0	904.2	876.9	500.2
26	821.2	727.6	819.7	797.0	809.7	858.1	829.6	833.8	818.4	808.9	821.1	714.0	835.9	528.0	792.2	507.1	819.3	819.4	826.3	855.6	603.0

Table 4. Temperatures Measured in Full Scale Assembly F-01B, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																			
(min)	(°C)	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
0	30.3	26.5	28.5	26.0	28.5	26.1	28.6	26.0	***	***	***	***	***	***	***	***	***	***	***	***	***
1	41.1	28.5	28.8	26.4	28.8	26.5	28.9	26.4	***	***	***	***	***	***	***	***	***	***	***	***	***
2	209.7	79.9	65.2	62.7	69.3	58.1	71.2	67.9	***	***	***	***	***	***	***	***	***	***	***	***	***
3	421.9	76.1	69.2	64.2	73.4	61.1	73.5	66.9	***	***	***	***	***	***	***	***	***	***	***	***	***
4	428.8	71.3	64.5	60.5	68.8	58.1	67.4	61.0	***	***	***	***	***	***	***	***	***	***	***	***	***
5	469.5	80.0	65.1	61.9	69.4	59.8	68.4	63.5	***	***	***	***	***	***	***	***	***	***	***	***	***
6	611.2	92.4	73.8	70.3	76.9	67.5	76.5	70.8	***	***	***	***	***	***	***	***	***	***	***	***	***
7	582.7	99.8	77.2	70.3	76.3	71.8	75.3	75.3	***	***	***	***	***	***	***	***	***	***	***	***	***
8	639.3	103.5	80.6	74.4	78.1	75.2	77.5	80.8	***	***	***	***	***	***	***	***	***	***	***	***	***
9	661.6	106.5	84.5	79.6	80.5	79.2	85.1	84.1	***	***	***	***	***	***	***	***	***	***	***	***	***
10	704.6	108.9	87.4	82.2	83.1	81.8	87.6	87.2	***	***	***	***	***	***	***	***	***	***	***	***	***
11	710.8	113.0	90.0	85.4	87.7	85.2	89.9	90.3	***	***	***	***	***	***	***	***	***	***	***	***	***
12	726.8	118.3	94.6	88.4	92.1	88.9	92.1	94.3	***	***	***	***	***	***	***	***	***	***	***	***	***
13	733.7	127.1	109.8	95.0	101.7	97.1	94.0	99.6	***	***	***	***	***	***	***	***	***	***	***	***	***
14	746.8	159.2	136.7	112.7	121.9	117.7	98.8	115.5	***	***	***	***	***	***	***	***	***	***	***	***	***
15	754.4	197.8	180.1	144.2	157.0	150.0	116.3	142.0	***	***	***	***	***	***	***	***	***	***	***	***	***
16	767.1	230.4	213.3	179.3	194.9	185.0	140.2	169.4	***	***	***	***	***	***	***	***	***	***	***	***	***
17	770.4	270.1	238.1	206.1	224.2	211.7	171.5	206.0	***	***	***	***	***	***	***	***	***	***	***	***	***
18	779.1	309.1	261.1	227.1	259.1	236.9	202.8	236.7	***	***	***	***	***	***	***	***	***	***	***	***	***
19	787.3	336.1	293.7	311.1	803.6	264.3	221.2	272.6	***	***	***	***	***	***	***	***	***	***	***	***	***
20	790.4	350.8	343.6	795.5	821.5	288.6	244.8	301.2	***	***	***	***	***	***	***	***	***	***	***	***	***
21	798.0	358.5	386.5	832.8	851.9	306.4	277.5	311.0	***	***	***	***	***	***	***	***	***	***	***	***	***
22	802.4	373.1	419.3	831.8	856.3	331.5	302.8	326.1	***	***	***	***	***	***	***	***	***	***	***	***	***
23	821.8	398.7	917.1	737.2	904.7	771.8	369.5	357.1	***	***	***	***	***	***	***	***	***	***	***	***	***
24	815.0	462.6	922.0	808.4	884.6	817.7	417.7	434.3	***	***	***	***	***	***	***	***	***	***	***	***	***
25	820.2	468.9	909.4	827.2	886.7	842.6	450.3	438.2	***	***	***	***	***	***	***	***	***	***	***	***	***
26	821.2	705.0	818.6	817.6	808.7	828.6	580.4	703.5	***	***	***	***	***	***	***	***	***	***	***	***	***

Table 5. Average Temperatures Measured in Full Scale Assembly F-01B, Wood Stud, 1x1 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/WStd. (Exp.) Av(24,25,26, 27,28,29)	BL/Cav. (Exp.) Av(36,37,38, 39,40,41)	Mid WStd. Av(16,17,18,19, 20,21,22,23)	BL/WStd. (UnExp.) Av(30,31,32,33,34,35)	BL/Cav. (UnExp.) Av(42,43,44,45,46,47)	UnExp. Av(1,2,3,4,5,6,7,8,9)
0	30.3	27.6	28.0	27.0	27.2	27.3	27.3
1	41.1	29.5	30.1	27.2	27.2	27.6	27.3
2	209.7	90.8	80.9	66.0	36.5	65.7	27.3
3	421.9	88.5	77.2	71.0	37.7	68.1	30.2
4	428.8	81.6	72.2	65.8	38.7	63.4	37.3
5	469.5	85.8	81.1	65.4	40.1	64.7	42.9
6	611.2	93.2	92.8	73.9	42.9	72.6	46.6
7	582.7	92.7	100.6	74.1	44.9	74.3	50.9
8	639.3	96.7	105.2	76.4	48.0	77.8	54.4
9	661.6	101.7	110.0	79.4	51.5	82.2	57.3
10	704.6	107.0	114.0	81.4	54.5	84.9	60.0
11	710.8	114.9	119.7	83.4	57.4	88.1	62.2
12	726.8	125.5	126.4	85.4	62.1	91.7	64.1
13	733.7	137.4	152.3	89.4	66.8	99.5	65.6
14	746.8	163.9	194.3	101.8	67.0	117.2	66.8
15	754.4	206.3	241.5	127.4	68.3	148.3	67.7
16	767.1	258.8	281.9	158.8	72.0	180.3	69.9
17	770.4	323.3	315.1	185.6	76.4	209.6	73.6
18	779.1	385.0	334.9	218.4	81.0	237.3	77.9
19	787.3	400.3	437.2	294.6	85.9	361.1	82.4
20	790.4	446.3	532.1	387.6	92.3	465.9	86.8
21	798.0	479.4	539.2	431.3	103.8	494.4	90.6
22	802.4	507.4	551.6	465.5	144.7	511.3	94.5
23	821.8	839.4	683.7	792.9	600.4	676.2	98.8
24	815.0	868.1	733.9	829.7	637.4	714.1	103.7
25	820.2	882.4	746.7	844.4	708.9	725.7	109.1
26	821.2	826.4	771.4	808.3	699.7	759.6	117.9

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	24.3	26.0	27.4	24.3	24.2	27.0	27.6	26.2	23.3	25.4	27.2	17.7	27.6	25.0	28.1	25.3	26.3	23.7	***
1	40.1	25.9	27.4	24.2	24.2	26.9	27.5	26.2	23.3	25.4	27.2	17.8	27.6	24.9	28.1	25.3	29.9	26.8	***
2	217.1	25.9	27.4	24.2	24.2	27.0	27.5	26.2	23.3	25.4	27.0	18.2	27.3	24.9	27.9	25.3	84.5	81.8	***
3	416.6	25.9	27.4	24.3	24.2	27.0	27.5	26.2	23.3	25.4	26.7	17.2	27.1	24.8	27.7	25.1	80.6	78.9	***
4	422.7	25.9	27.5	24.3	24.2	27.0	27.6	26.2	23.3	25.3	26.2	15.9	26.5	24.8	27.3	25.0	75.0	73.6	***
5	470.9	25.9	27.6	24.3	24.2	27.0	27.6	26.2	23.3	25.3	25.8	15.4	26.1	24.7	26.9	25.0	80.1	77.2	***
6	622.2	26.0	27.7	24.4	24.3	27.1	27.6	26.1	23.3	25.3	25.8	15.3	26.1	24.7	27.0	25.0	86.9	83.8	***
7	580.1	26.1	27.9	24.4	24.4	27.4	27.8	26.1	23.4	25.4	25.7	15.2	25.8	24.8	26.9	24.9	86.8	83.7	***
8	634.8	26.3	28.2	24.6	24.7	27.8	28.1	26.3	23.5	25.6	26.0	15.1	26.1	24.7	27.1	25.0	88.9	85.6	***
9	659.2	26.6	28.6	24.9	25.1	28.4	28.7	26.5	23.7	25.9	26.1	15.0	26.3	24.9	27.4	25.3	91.6	87.7	***
10	702.5	27.2	29.2	25.2	25.6	29.3	29.5	26.8	23.9	26.3	26.8	15.1	26.8	25.1	28.2	25.5	93.0	88.9	***
11	709.7	27.9	30.0	25.6	26.4	30.4	30.6	27.3	24.3	27.0	27.3	14.6	27.1	25.3	28.7	25.9	95.4	91.1	***
12	725.4	28.8	31.0	26.2	27.3	31.7	32.0	27.9	24.8	27.8	27.6	14.9	27.3	25.7	29.5	26.5	101.3	96.3	***
13	735.4	29.9	32.1	26.9	28.3	33.3	33.6	28.7	25.4	28.7	28.4	15.2	28.0	26.0	30.3	26.9	131.5	119.3	***
14	746.3	31.0	33.3	27.7	29.4	35.0	35.3	29.5	26.1	29.8	28.5	14.9	28.1	26.4	30.8	27.5	181.1	166.6	***
15	757.4	32.3	34.7	28.6	30.6	36.8	37.3	30.5	26.9	31.0	29.0	14.8	28.5	26.9	31.6	28.2	210.6	211.7	***
16	762.9	33.7	36.3	29.7	32.0	38.6	39.2	31.6	27.8	32.3	29.8	14.7	29.3	27.4	32.5	29.0	231.5	233.7	***
17	769.1	35.2	37.9	30.8	33.3	40.5	41.2	32.7	28.7	33.8	30.5	14.7	29.9	28.0	33.2	29.6	260.3	268.5	***
18	776.6	36.9	39.8	32.1	34.7	42.6	43.4	33.9	29.7	35.6	30.8	14.9	30.6	28.8	33.8	30.4	291.5	302.1	***
19	783.6	38.8	41.9	33.5	36.3	45.1	46.0	35.2	30.9	37.7	31.7	15.0	31.8	30.1	34.8	31.3	320.1	332.5	***
20	790.4	41.1	44.5	35.2	38.1	48.0	49.1	36.7	32.3	40.1	32.8	15.1	33.4	31.7	35.8	32.3	344.7	353.6	***
21	799.7	43.8	47.4	37.1	40.3	51.0	52.4	38.5	34.0	43.0	33.9	15.0	35.1	33.6	37.2	33.5	366.8	377.8	***
22	803.1	46.8	50.5	39.5	42.8	54.0	55.6	40.5	36.0	46.0	35.3	14.8	36.6	35.7	38.2	35.1	386.8	403.5	***
23	805.9	49.7	53.5	42.1	45.3	56.8	58.5	42.7	38.3	48.9	36.3	14.9	38.2	37.9	39.1	36.6	412.9	428.4	***
24	811.2	52.5	56.3	44.9	48.0	59.2	60.9	45.1	40.8	51.5	38.4	14.7	39.1	40.0	40.6	38.1	437.2	454.9	***
25	817.6	55.0	58.6	47.7	50.5	61.1	62.8	47.5	43.4	53.9	39.7	14.7	40.3	41.8	41.2	39.4	460.9	478.5	***
26	821.7	57.1	60.5	50.3	52.7	62.6	64.2	49.8	45.9	55.9	40.7	14.9	40.8	43.6	41.1	40.7	483.2	500.4	***
27	827.5	58.9	62.1	52.7	54.8	63.8	65.3	51.8	48.3	57.6	41.8	14.7	41.3	44.6	41.4	41.7	502.4	519.5	***
28	833.1	60.3	63.3	54.8	56.5	64.6	66.1	53.6	50.5	59.0	42.2	14.6	41.2	45.7	41.9	42.7	518.5	536.5	***
29	837.0	61.5	64.3	56.6	58.0	65.3	66.7	55.1	52.4	60.2	42.5	14.6	41.3	46.6	41.4	42.9	534.0	555.1	***
30	839.2	62.5	65.1	58.1	59.2	65.8	67.2	56.4	54.1	61.1	42.9	14.4	41.6	47.3	41.9	43.7	548.0	572.9	***
31	841.8	63.3	65.6	59.4	60.3	66.2	67.6	57.4	55.6	61.9	42.9	14.6	41.1	47.3	42.0	43.7	562.5	589.7	***
32	848.4	64.0	66.1	60.5	61.2	66.5	67.9	58.2	57.0	62.5	43.6	14.7	41.7	47.3	42.1	44.4	580.9	601.1	***
33	850.5	64.6	66.5	61.4	62.0	66.7	68.1	59.0	58.2	63.1	44.0	14.8	41.4	47.6	41.8	44.9	678.7	614.9	***
34	856.0	65.2	66.8	62.2	62.7	66.8	68.3	59.6	59.2	63.9	44.1	14.5	41.1	48.6	41.6	45.5	808.0	754.3	***
35	860.9	65.6	67.1	62.9	63.4	66.8	68.3	60.2	60.2	64.7	44.7	14.3	41.7	49.4	41.9	45.6	844.9	886.3	***
36	862.7	66.1	67.3	63.6	64.0	66.9	68.2	60.9	61.1	65.9	44.3	14.2	41.5	49.9	41.7	45.8	851.1	874.7	***
37	865.6	66.9	67.7	64.1	64.7	67.1	68.1	61.7	62.0	67.7	44.5	14.3	41.4	50.1	41.6	46.3	866.7	889.2	***
38	867.4	68.9	68.2	64.7	65.8	67.6	68.2	62.5	63.0	69.6	44.6	14.3	42.0	50.9	41.7	47.4	846.1	890.3	***
39	871.4	71.1	69.3	65.5	67.8	69.3	68.7	63.7	64.9	71.0	45.3	14.6	42.5	53.4	42.8	49.0	827.1	889.2	***
40	874.5	72.8	70.5	67.0	70.1	71.0	70.1	65.3	67.4	72.2	47.1	14.3	42.9	55.3	43.6	50.9	820.4	897.9	***
41	877.5	74.1	71.6	69.2	72.0	72.5	71.8	66.9	69.6	73.3	46.9	14.2	44.3	56.4	44.4	51.7	826.2	913.4	***
42	884.2	75.1	72.5	71.1	73.6	73.6	73.2	68.4	71.4	74.0	48.6	14.1	44.2	57.7	44.5	51.9	843.9	882.4	***

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
43	885.3	75.6	73.3	72.4	74.7	74.4	73.9	69.6	73.0	75.1	49.1	14.2	45.0	58.8	44.9	52.7	880.5	889.5	***
44	886.0	76.0	74.0	73.6	75.3	75.0	74.3	70.6	74.0	75.8	48.9	14.0	45.1	60.3	45.8	54.3	890.7	893.9	***
45	887.7	76.2	74.9	74.5	75.8	75.2	74.7	71.4	74.8	76.2	49.6	14.1	45.7	60.8	45.7	54.5	908.4	899.8	***
46	893.1	76.0	75.5	75.2	76.0	75.5	74.9	72.0	75.4	76.2	50.0	14.2	45.3	60.4	45.3	54.9	905.7	904.0	***
47	894.7	75.7	75.7	75.4	76.0	75.7	75.0	72.6	75.5	76.3	50.6	14.1	45.9	60.7	45.2	55.0	910.7	901.2	***
48	899.6	75.4	75.7	75.8	75.9	75.8	75.0	73.0	75.5	76.2	50.3	14.0	46.0	60.7	45.4	55.3	876.1	895.3	***
49	901.9	75.5	75.7	76.5	75.6	75.7	75.0	73.5	75.4	75.7	50.5	14.1	45.7	61.5	43.9	55.7	823.8	805.5	***
50	904.4	75.8	75.6	76.9	75.8	75.4	75.2	74.0	75.3	75.4	51.3	13.9	46.2	61.3	44.8	55.7	826.6	755.2	***
51	904.7	76.6	75.6	76.7	76.0	75.8	75.6	74.7	75.1	75.4	51.0	13.9	46.1	61.5	45.0	56.3	873.0	852.0	***
52	908.5	77.5	76.2	76.1	76.1	76.5	76.2	75.8	74.9	76.7	51.1	13.8	44.9	60.6	45.3	55.7	887.4	864.3	***
53	908.9	78.2	77.0	75.8	76.7	77.5	76.8	76.5	74.8	79.4	50.2	13.7	44.8	58.5	44.3	54.7	870.5	847.2	***

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
0	24.3	***	26.8	24.0	27.2	24.5	26.3	23.6	26.4	23.6	26.2	23.3	26.3	23.5	26.2	23.5	26.7	23.9	26.1
1	40.1	***	26.8	24.1	27.2	24.5	30.6	27.1	29.0	25.4	26.2	23.3	26.3	23.4	26.0	23.3	26.7	23.9	28.0
2	217.1	***	34.0	29.0	27.3	24.6	84.4	80.5	79.3	70.5	34.2	30.0	33.1	25.7	27.4	23.4	26.7	23.9	86.2
3	416.6	***	37.4	30.1	27.7	24.7	81.3	77.5	66.1	59.0	35.9	29.6	32.4	28.2	27.5	23.5	26.9	23.9	84.1
4	422.7	***	41.0	34.2	28.8	25.3	75.2	71.5	63.9	58.3	40.2	33.5	36.3	32.1	28.9	23.6	27.3	24.0	79.1
5	470.9	***	48.6	38.6	30.2	25.9	80.8	78.5	62.4	57.6	45.6	37.2	40.2	35.1	31.0	23.8	27.7	24.2	88.2
6	622.2	***	50.7	41.5	32.2	26.9	86.7	86.6	64.3	59.1	49.5	40.6	43.8	38.3	33.2	24.0	28.3	24.5	88.8
7	680.1	***	53.0	45.6	34.5	28.2	88.0	88.3	67.4	62.4	53.8	46.0	47.6	42.0	38.2	24.4	29.2	24.8	86.1
8	634.6	***	55.2	48.6	36.8	29.7	92.4	90.5	69.4	64.1	57.2	48.1	51.0	44.7	41.5	24.9	30.3	25.4	94.4
9	659.2	***	57.6	50.3	39.2	31.5	95.8	93.8	72.0	66.1	60.2	50.9	54.8	47.2	44.9	25.5	31.9	26.1	96.5
10	702.5	***	61.7	53.9	41.6	33.3	98.6	96.3	74.4	68.1	62.7	53.0	57.4	50.3	47.9	26.3	33.6	26.9	98.2
11	709.7	***	63.0	54.8	44.2	35.3	102.9	101.5	76.3	69.6	64.4	55.4	59.7	52.6	47.7	27.5	35.5	27.9	102.4
12	725.4	***	64.8	55.4	46.3	37.2	115.7	111.2	77.6	71.0	65.4	56.6	61.8	54.0	47.2	28.9	37.0	29.1	109.2
13	735.4	***	65.9	57.1	48.2	38.8	151.9	146.8	79.1	72.8	66.2	57.9	63.3	54.9	49.2	29.7	38.3	30.4	140.0
14	746.3	***	67.2	58.1	49.7	40.4	188.7	189.5	80.5	75.3	67.9	58.8	64.4	56.2	57.6	30.0	39.7	31.5	188.7
15	757.4	***	71.5	61.3	51.6	41.9	219.5	231.6	86.8	81.5	73.0	61.2	70.8	60.0	64.9	33.4	42.1	32.2	219.4
16	762.9	***	75.6	65.6	54.2	43.6	236.6	249.2	92.1	85.7	78.7	65.6	76.7	65.5	70.5	44.4	45.8	33.1	246.5
17	769.1	***	79.2	69.4	57.5	46.0	252.8	268.6	94.3	85.9	79.5	69.4	80.5	70.2	75.5	55.2	50.2	35.0	280.7
18	776.8	***	82.0	72.4	61.3	48.9	279.7	288.1	96.7	88.2	82.0	72.3	83.4	73.3	79.2	62.7	55.3	38.2	338.9
19	783.8	***	83.8	75.1	64.8	52.1	327.5	312.7	99.8	92.9	84.0	74.6	85.0	75.5	81.8	67.3	60.3	42.2	397.4
20	790.4	***	85.7	77.2	67.9	55.3	342.9	332.4	104.1	97.4	85.7	77.3	86.4	78.0	84.0	70.7	64.7	46.2	482.7
21	799.7	***	86.7	79.4	70.6	58.4	352.5	351.7	106.7	101.7	86.5	79.3	87.0	80.0	85.2	72.9	68.3	50.0	545.3
22	803.1	***	87.6	81.8	72.8	61.1	364.2	375.4	108.7	104.8	87.2	81.0	88.3	80.7	86.1	74.6	71.1	53.2	575.3
23	805.9	***	88.0	83.6	74.5	63.5	376.1	398.3	110.5	107.6	87.6	82.4	88.6	81.9	86.5	76.3	73.1	56.0	588.2
24	811.2	***	88.6	85.0	76.0	65.6	385.3	419.7	112.8	110.1	88.1	83.3	89.0	82.7	86.8	77.6	74.6	58.4	615.6
25	817.6	***	88.8	86.3	76.8	67.4	395.9	441.9	114.3	111.4	88.2	84.1	89.5	83.7	86.7	77.8	75.7	60.4	631.4
26	821.7	***	89.0	87.6	77.4	68.9	410.7	460.1	114.8	111.6	88.5	85.2	90.2	84.2	86.0	76.5	76.5	62.0	645.3
27	827.5	***	89.4	88.3	77.7	70.2	427.6	467.2	118.4	111.5	88.8	86.3	90.6	84.7	84.0	73.7	76.9	62.8	658.1
28	833.1	***	89.9	89.5	78.0	71.1	441.0	441.5	126.1	112.9	89.2	86.8	91.4	85.3	81.4	70.8	76.8	63.0	676.5
29	837.0	***	90.2	90.7	78.2	72.0	476.6	404.7	141.9	115.2	89.6	87.6	92.0	86.2	81.5	69.1	76.2	63.1	688.9
30	839.2	***	91.0	91.7	78.5	72.7	517.8	370.7	166.6	117.7	90.1	88.3	93.0	87.3	84.5	68.7	76.4	63.7	713.3
31	841.6	***	92.1	93.6	78.5	73.3	544.7	349.8	191.6	120.9	91.1	89.1	94.3	89.1	86.2	69.6	77.4	64.5	747.3
32	846.4	***	94.7	96.6	78.6	73.9	600.5	341.8	211.5	126.5	93.6	91.7	98.6	94.0	86.3	71.4	78.2	66.0	832.5
33	850.5	***	98.9	101.4	78.5	74.5	716.3	341.8	252.6	135.6	102.9	97.0	109.5	104.3	85.8	73.1	78.5	67.3	819.3
34	856.0	***	108.9	109.8	78.3	75.2	760.0	353.5	325.3	144.2	116.1	111.3	125.8	120.9	84.4	74.5	78.3	68.7	827.2
35	860.9	***	128.0	129.8	78.4	75.7	824.3	789.8	490.2	195.2	135.6	130.1	152.0	141.4	83.5	82.0	78.0	69.9	839.0
36	862.7	***	158.7	160.6	78.4	76.5	844.3	825.3	613.9	296.7	168.7	158.1	179.9	164.3	86.4	84.1	77.7	71.6	834.2
37	865.6	***	220.8	205.7	79.4	78.2	843.3	833.1	624.4	360.0	206.6	190.5	199.1	192.6	90.9	86.3	78.3	73.7	838.9
38	867.4	***	284.2	230.0	84.3	82.2	875.7	747.7	745.4	342.6	245.0	213.1	212.3	212.1	88.6	87.6	79.0	76.0	841.4
39	871.4	***	318.4	274.1	85.5	85.4	884.0	751.0	797.7	467.7	338.2	245.0	229.2	236.4	89.6	89.1	82.2	78.6	850.0
40	874.5	***	352.4	297.7	87.0	86.8	887.6	886.0	837.4	516.7	377.2	254.6	248.0	257.1	90.7	89.8	84.6	81.4	850.3
41	877.5	***	379.6	314.1	88.0	88.2	892.1	908.3	851.6	534.8	399.2	272.7	268.4	280.3	92.5	90.8	86.2	83.8	859.5
42	884.2	***	431.3	328.4	88.7	89.4	901.9	919.8	881.6	543.8	408.8	291.6	293.5	302.5	93.8	91.9	86.7	85.9	868.1

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
43	885.3	***	517.5	354.3	90.2	90.6	902.5	919.8	858.0	552.2	481.8	312.9	310.7	324.7	93.9	93.4	87.2	87.4	877.1
44	888.0	***	625.6	378.7	94.2	92.9	907.8	918.7	867.1	565.0	602.4	331.2	329.2	345.4	99.4	94.5	87.9	88.2	878.2
45	887.7	***	574.3	412.5	99.5	95.7	928.7	895.4	853.6	577.1	611.8	361.4	344.4	364.6	104.0	96.1	89.4	89.4	885.8
46	893.1	***	556.3	456.7	102.7	98.1	781.5	858.1	737.1	587.5	572.4	415.5	360.9	385.0	113.7	105.8	90.1	90.5	889.3
47	894.7	***	538.2	535.1	105.8	100.4	809.5	922.9	727.5	699.6	595.8	606.7	381.2	406.9	128.7	660.6	91.0	92.3	894.1
48	899.6	***	618.9	880.4	106.5	100.0	813.1	942.1	776.3	774.2	742.9	758.5	399.2	436.2	233.2	755.1	90.6	94.2	891.6
49	901.9	***	804.8	809.0	109.5	101.7	851.0	848.3	817.8	801.6	805.7	789.5	418.2	614.2	475.6	802.9	91.0	95.8	871.1
50	904.4	***	821.0	757.5	113.3	104.4	852.6	785.3	894.8	818.1	880.3	770.0	452.6	722.8	816.1	829.8	92.5	97.4	828.6
51	904.7	***	872.9	851.8	120.7	111.5	884.1	855.2	911.0	841.0	907.4	852.6	718.8	850.3	882.4	864.2	94.1	99.4	868.4
52	906.5	***	886.8	864.3	134.4	127.0	899.7	872.7	897.6	856.0	890.5	870.2	869.7	864.1	872.6	842.7	98.1	94.0	887.9
53	908.9	***	869.8	838.3	191.7	179.0	879.2	852.2	872.8	864.5	864.8	841.4	860.2	831.9	842.6	838.3	104.4	94.4	872.9

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
0	24.3	23.0	26.2	23.5	26.4	23.8	26.9	24.2	26.2	23.5	***	***	26.7	23.8	27.2	24.3	25.8	22.9	25.8
1	40.1	24.1	26.2	23.5	26.4	23.9	26.9	24.2	29.7	27.3	***	***	26.7	23.8	27.2	24.3	29.3	26.0	25.8
2	217.1	84.1	28.0	24.7	28.5	25.3	26.9	24.2	83.7	82.9	***	***	27.8	24.3	27.2	24.3	81.6	81.8	26.1
3	416.6	86.1	36.6	33.1	27.9	24.7	27.2	24.4	76.4	76.2	***	***	30.1	26.1	27.3	24.3	73.4	73.0	37.4
4	422.7	79.8	44.7	42.2	28.6	25.5	27.4	24.6	71.0	70.2	***	***	35.0	30.3	27.6	24.5	67.9	66.7	49.4
5	470.9	85.9	48.3	46.4	29.9	26.8	27.7	24.8	76.7	73.1	***	***	38.6	33.8	28.1	25.0	76.9	74.6	55.3
6	622.2	89.1	52.9	51.1	29.7	27.4	28.1	25.2	83.6	79.8	***	***	41.7	36.8	29.0	25.7	82.3	79.8	65.0
7	580.1	87.7	58.7	57.2	30.4	29.8	28.4	25.7	85.9	82.5	***	***	46.5	40.6	30.1	26.7	80.4	81.2	69.4
8	634.8	87.3	62.1	60.4	31.0	31.1	28.9	26.5	87.9	84.7	***	***	50.3	43.5	31.7	27.9	84.4	85.6	71.6
9	659.2	87.6	65.9	63.6	32.1	32.5	29.5	27.4	90.3	87.8	***	***	53.0	45.7	33.5	29.4	85.8	89.1	74.4
10	702.5	88.3	69.3	66.6	33.7	33.4	30.4	28.4	91.7	89.9	***	***	57.1	48.0	35.6	31.0	87.1	91.2	75.3
11	709.7	88.8	72.2	69.6	34.4	32.3	31.4	29.4	94.3	92.6	***	***	58.2	50.3	37.9	32.6	87.7	94.2	76.8
12	725.4	88.1	74.4	71.9	36.3	31.8	32.7	30.3	98.5	98.7	***	***	60.3	52.2	40.2	34.3	92.2	98.7	77.5
13	735.4	98.9	75.1	72.9	38.2	32.9	34.2	31.2	112.6	113.3	***	***	62.0	54.0	42.3	36.0	109.6	111.7	78.3
14	746.3	113.3	75.2	72.4	54.8	43.2	35.6	32.2	151.9	152.0	***	***	62.8	55.4	44.3	37.7	137.6	141.7	78.3
15	757.4	148.1	81.5	77.7	66.3	55.0	38.5	34.0	201.0	196.5	***	***	66.3	57.4	46.0	39.3	176.9	178.9	81.7
16	762.9	202.1	85.3	80.6	73.4	61.9	43.3	36.9	226.2	231.6	***	***	71.1	62.3	47.9	40.9	207.7	214.4	84.2
17	769.1	228.6	87.4	82.6	78.0	68.3	49.0	40.6	258.8	273.8	***	***	75.7	66.7	50.8	43.1	215.4	225.9	85.9
18	776.8	256.0	88.6	83.8	81.1	72.4	55.0	44.9	276.8	317.0	***	***	78.7	70.8	54.4	46.1	229.4	241.3	87.4
19	783.8	319.4	90.9	85.9	83.1	75.3	60.5	49.3	306.4	357.8	***	***	81.7	74.0	58.1	49.5	254.4	266.2	88.3
20	790.4	374.2	93.0	89.5	84.5	77.4	65.0	53.5	336.8	366.6	***	***	83.6	76.7	61.6	52.9	280.1	288.1	89.6
21	799.7	423.9	95.8	92.5	85.2	78.7	68.5	57.1	364.1	383.4	***	***	85.5	79.1	64.7	56.2	297.3	306.0	90.9
22	803.1	483.7	97.7	95.0	85.8	80.0	71.2	60.2	387.2	400.1	***	***	86.0	81.3	67.3	59.2	316.3	322.6	93.3
23	805.9	536.9	99.7	97.7	86.0	80.9	73.1	62.8	414.9	427.5	***	***	87.1	82.9	69.4	61.7	335.6	339.8	97.8
24	811.2	607.9	101.9	100.5	85.4	81.6	74.4	65.1	442.5	456.7	***	***	87.0	84.4	70.8	63.8	354.3	359.6	103.3
25	817.6	647.6	104.3	103.4	84.9	81.8	75.7	66.9	468.5	482.8	***	***	87.6	85.9	71.9	65.6	373.1	379.4	107.4
26	821.7	692.2	106.9	106.5	85.0	81.9	76.6	68.3	491.7	506.0	***	***	88.0	86.5	72.7	67.0	390.9	399.4	111.4
27	827.5	722.7	109.4	109.7	85.7	81.2	77.1	69.2	510.4	525.9	***	***	88.6	87.5	73.4	68.3	411.2	421.8	115.7
28	833.1	747.6	112.0	113.0	85.5	79.5	77.6	69.8	525.9	542.9	***	***	89.0	88.4	73.9	69.3	429.9	442.0	121.4
29	837.0	765.2	114.7	116.2	85.3	76.9	77.4	69.9	541.6	559.7	***	***	89.9	89.5	74.4	70.2	449.4	464.3	127.0
30	839.2	784.9	117.6	120.3	85.4	76.7	77.4	69.7	555.9	575.3	***	***	90.7	90.6	74.7	71.0	469.6	486.4	135.5
31	841.6	791.9	122.7	127.9	85.2	80.7	77.6	70.2	569.6	591.9	***	***	91.9	92.6	74.9	71.6	487.7	507.2	162.3
32	848.4	813.0	129.0	133.6	83.9	83.9	77.5	71.6	582.8	620.7	***	***	95.3	94.7	75.0	72.3	505.0	525.2	193.1
33	850.5	861.2	135.9	150.2	82.6	84.9	76.9	72.8	600.3	859.6	***	***	100.7	99.6	75.1	72.9	523.7	536.3	222.0
34	856.0	866.7	156.8	181.8	83.8	84.5	76.9	73.8	612.3	861.7	***	***	113.0	109.6	74.9	73.4	616.0	811.6	256.1
35	860.9	871.8	184.6	207.2	83.7	83.8	76.8	74.4	626.5	866.5	***	***	134.3	135.7	74.8	74.1	852.7	841.5	288.9
36	862.7	875.2	207.5	229.9	84.7	85.0	76.6	74.9	643.3	851.3	***	***	168.0	174.5	74.7	75.1	858.9	870.2	311.5
37	865.6	885.4	228.2	249.0	84.7	85.2	77.0	76.5	661.5	851.4	***	***	197.0	206.8	75.2	77.0	867.9	687.8	333.0
38	867.4	875.5	248.3	265.7	85.1	86.3	79.1	79.5	681.8	846.8	***	***	210.7	221.9	77.3	79.6	897.9	743.8	361.7
39	871.4	872.8	268.7	281.2	87.2	86.6	81.2	81.3	700.6	896.9	***	***	223.4	244.3	80.1	81.9	895.6	775.5	384.8
40	874.5	882.0	287.7	315.3	88.3	88.3	82.3	82.8	721.2	904.3	***	***	237.4	264.7	82.1	84.4	897.6	806.8	411.3
41	877.5	913.0	306.0	372.0	91.2	89.9	83.2	84.4	734.6	911.7	***	***	249.2	286.7	84.2	87.3	910.0	796.4	438.1
42	884.2	920.3	323.2	417.2	94.0	92.6	84.3	85.9	742.7	905.4	***	***	265.3	309.7	86.2	90.7	913.5	761.9	467.4

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
43	885.3	920.8	343.3	450.2	96.6	99.7	85.2	87.0	746.3	910.9	***	***	269.8	330.6	87.9	93.8	918.5	800.8	501.6
44	886.0	923.8	364.2	485.0	99.3	109.0	86.0	87.8	748.4	912.5	***	***	281.8	347.4	89.3	96.4	899.5	806.8	533.0
45	887.7	936.9	383.9	521.2	101.9	125.7	86.5	88.3	749.6	925.5	***	***	293.2	371.0	90.6	98.5	880.5	854.0	553.7
46	893.1	931.1	412.9	552.0	103.9	140.0	87.2	89.1	756.0	916.0	***	***	297.7	384.7	91.6	100.2	914.2	933.8	571.1
47	894.7	938.2	568.1	711.4	108.4	266.5	87.6	90.2	761.6	914.8	***	***	304.0	403.0	92.6	101.7	919.0	929.8	613.8
48	899.6	914.4	746.0	779.4	132.4	565.7	88.1	91.5	769.6	915.2	***	***	313.0	456.1	93.4	103.0	918.4	875.2	705.9
49	901.9	837.9	814.3	809.3	234.4	717.1	88.4	93.0	778.4	852.9	***	***	330.7	672.1	94.2	103.9	903.4	864.5	775.3
50	904.4	815.0	894.1	827.1	732.8	771.4	88.8	94.5	820.1	797.0	***	***	361.0	743.0	95.2	105.0	874.7	844.9	858.5
51	904.7	872.1	909.9	846.9	850.1	817.7	89.0	95.9	874.0	864.9	***	***	758.3	861.4	96.1	106.5	903.2	890.3	892.7
52	906.5	868.3	890.2	864.1	862.8	824.8	89.4	96.5	886.4	877.0	***	***	898.6	860.0	96.9	110.4	905.8	887.9	878.2
53	908.9	856.8	868.3	871.0	832.6	822.2	90.2	98.9	869.5	853.0	***	***	860.1	841.0	98.5	117.4	898.3	874.0	850.8

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
0	24.3	22.7	25.8	22.8	25.9	22.8	26.6	23.7	27.2	24.3	26.2	23.4	***	***	26.7	23.7	27.4	24.4
1	40.1	22.5	25.8	22.9	25.9	22.8	26.5	23.6	27.2	24.3	30.9	25.7	***	***	26.8	23.8	27.4	24.4
2	217.1	22.6	26.5	23.8	27.6	23.8	27.0	24.8	27.2	24.4	75.9	72.2	***	***	34.8	32.1	27.5	24.5
3	416.6	32.2	29.7	26.1	31.3	26.7	26.9	24.4	27.2	24.4	71.2	70.1	***	***	32.3	33.0	27.9	24.8
4	422.7	46.3	35.4	30.8	37.8	31.4	27.3	26.2	27.4	24.6	67.2	64.7	***	***	36.2	34.6	28.5	25.7
5	470.9	52.8	39.7	34.2	41.8	35.3	28.2	28.6	27.5	24.8	72.5	70.3	***	***	39.0	39.9	29.2	26.7
6	622.2	60.4	44.2	38.1	46.4	39.4	28.4	29.3	27.9	25.2	79.7	77.6	***	***	42.0	41.6	30.1	27.7
7	580.1	67.0	49.6	43.1	51.4	43.1	30.0	33.5	28.2	25.8	79.7	79.8	***	***	46.1	43.8	31.3	29.0
8	634.6	70.0	52.0	45.0	54.7	45.6	30.8	35.6	28.8	26.6	82.9	83.2	***	***	49.3	48.1	32.6	30.3
9	659.2	71.8	55.0	48.3	58.5	48.4	31.7	38.4	29.6	27.6	85.7	86.7	***	***	51.9	52.1	34.2	31.8
10	702.5	73.0	57.9	50.6	61.0	51.6	32.3	39.7	30.4	28.7	88.4	90.1	***	***	55.0	54.5	36.0	33.5
11	709.7	75.7	59.9	52.3	62.7	53.6	32.3	35.9	31.3	29.9	91.6	93.4	***	***	58.4	52.8	37.9	35.4
12	725.4	76.4	62.0	54.2	64.0	54.6	34.3	34.7	32.6	30.9	96.1	98.6	***	***	60.0	52.5	40.0	37.0
13	735.4	76.1	62.7	55.0	64.9	55.3	35.2	44.0	34.3	32.0	109.9	113.2	***	***	61.7	54.1	42.1	38.1
14	746.3	74.2	64.0	56.5	66.2	56.8	50.7	53.6	35.7	33.3	144.1	147.4	***	***	63.4	55.6	44.2	39.1
15	757.4	71.2	67.3	58.4	69.5	58.2	64.0	58.6	37.9	35.6	179.0	187.3	***	***	65.4	56.5	46.2	40.3
16	762.9	75.7	72.8	63.5	74.8	63.3	70.6	64.2	41.5	38.4	201.1	214.4	***	***	70.1	60.4	48.2	41.4
17	769.1	80.1	76.7	68.4	79.1	68.9	76.3	69.1	45.9	41.8	235.6	245.6	***	***	74.6	65.6	50.9	42.8
18	776.8	81.9	80.1	72.6	81.3	72.3	79.5	72.8	50.7	45.5	273.1	283.2	***	***	78.4	69.6	54.3	44.8
19	783.8	83.7	82.3	75.8	83.7	75.2	82.1	75.9	55.6	49.4	317.3	342.8	***	***	81.0	72.5	58.0	47.5
20	790.4	84.9	83.8	78.0	84.6	77.0	84.1	78.1	59.9	53.2	344.0	374.3	***	***	83.1	75.5	61.6	50.5
21	799.7	86.1	84.6	79.8	85.8	78.9	85.1	79.6	63.5	56.6	360.8	394.1	***	***	84.7	77.9	64.8	53.7
22	803.1	86.9	85.6	81.2	86.8	80.1	85.8	80.7	66.4	59.5	375.9	400.1	***	***	86.3	79.8	67.4	56.8
23	805.9	88.0	85.6	82.8	86.8	81.0	86.3	81.5	68.5	61.9	398.2	407.9	***	***	87.4	80.9	69.6	59.7
24	811.2	91.9	86.3	84.0	87.2	81.9	86.7	82.4	70.1	63.9	425.4	432.2	***	***	88.4	82.2	71.1	62.0
25	817.6	97.4	86.5	85.1	87.4	83.0	86.7	83.0	71.2	65.4	449.7	460.3	***	***	89.3	84.3	72.3	63.9
26	821.7	102.6	87.1	85.7	87.7	83.5	86.9	83.2	72.1	66.8	471.4	482.4	***	***	91.4	85.5	73.2	65.5
27	827.5	106.8	87.5	86.8	87.8	84.7	86.7	83.5	72.7	67.8	489.2	499.9	***	***	93.1	86.8	73.9	66.8
28	833.1	111.2	87.9	87.6	88.6	85.0	86.6	83.9	73.1	68.7	504.2	513.4	***	***	93.2	87.7	74.4	68.0
29	837.0	117.1	88.6	88.4	88.6	85.5	86.9	84.5	73.5	69.5	518.4	526.6	***	***	95.0	88.6	74.9	68.9
30	839.2	124.0	89.1	89.8	88.8	86.5	87.2	85.1	73.8	70.3	534.2	540.0	***	***	96.2	89.6	75.3	69.7
31	841.6	132.9	90.8	91.5	89.5	87.2	87.5	85.7	74.1	71.0	558.6	555.5	***	***	98.5	90.4	75.6	70.5
32	848.4	171.6	97.4	94.8	91.5	88.1	87.3	86.1	74.2	71.7	598.1	578.9	***	***	102.3	91.7	75.7	71.2
33	850.5	210.7	107.4	99.4	98.7	89.9	86.6	85.8	74.3	72.3	684.0	617.4	***	***	112.0	94.2	75.7	71.8
34	856.0	247.3	123.5	111.8	120.1	95.4	85.1	85.2	74.0	72.5	773.7	842.3	***	***	130.2	98.6	75.8	72.2
35	860.9	284.5	142.7	133.4	150.0	110.3	84.1	85.6	73.4	72.5	823.3	858.9	***	***	156.0	108.8	76.0	72.3
36	862.7	319.8	165.7	176.0	187.8	155.4	85.7	90.7	73.1	72.9	831.7	855.3	***	***	186.6	131.8	76.2	72.7
37	865.8	336.7	187.7	198.1	211.5	199.1	86.8	100.6	73.3	74.3	839.2	857.1	***	***	213.9	162.6	77.9	73.9
38	867.4	361.6	200.2	224.5	237.2	227.9	86.4	102.8	73.8	75.3	830.5	864.2	***	***	228.9	190.9	81.7	75.7
39	871.4	397.5	215.0	241.7	264.2	257.6	87.4	108.9	75.3	78.3	816.3	865.0	***	***	239.0	202.5	83.3	78.7
40	874.5	431.0	228.5	266.8	296.2	285.9	87.5	106.8	77.2	81.0	812.4	863.9	***	***	260.2	222.5	84.7	81.7
41	877.5	455.7	246.5	285.6	349.2	305.5	88.5	107.3	78.7	82.8	867.7	873.8	***	***	292.2	257.7	86.3	83.9
42	884.2	479.7	263.6	300.4	411.5	322.1	89.6	109.9	80.0	84.0	871.4	875.6	***	***	316.1	291.1	88.5	85.3

Table 6. Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
43	885.3	497.1	272.6	315.8	456.4	342.2	93.5	119.5	81.3	85.1	875.3	884.4	***	***	357.5	324.5	90.8	87.3
44	886.0	515.1	283.3	334.6	461.7	370.9	93.9	132.6	82.4	86.2	878.7	884.9	***	***	404.3	363.1	92.9	89.5
45	887.7	529.2	292.9	355.4	477.2	377.1	96.1	145.3	83.4	87.2	896.2	905.1	***	***	468.7	407.6	94.2	91.3
46	893.1	541.6	307.2	373.2	489.3	401.2	98.1	153.2	84.3	88.1	898.9	891.6	***	***	533.6	483.4	95.4	92.8
47	894.7	561.8	360.2	393.4	503.4	418.5	99.7	275.1	85.1	89.3	907.8	892.5	***	***	583.6	620.5	97.5	94.5
48	899.6	624.4	534.2	420.7	523.0	446.9	99.2	578.8	86.5	90.9	913.6	877.7	***	***	635.0	755.6	100.0	96.6
49	901.9	720.2	699.6	605.4	539.2	560.5	101.4	722.3	88.8	92.5	897.8	855.0	***	***	671.2	824.2	103.0	99.2
50	904.4	765.1	839.9	710.3	578.6	674.8	141.7	767.0	91.4	93.1	892.9	815.0	***	***	849.5	815.5	106.0	103.1
51	904.7	816.2	884.6	841.2	772.8	815.2	641.3	822.1	93.5	94.2	906.4	878.7	***	***	896.3	880.9	112.4	107.0
52	906.5	831.4	866.8	854.6	887.0	842.5	862.8	832.6	95.4	95.5	922.9	866.3	***	***	917.0	878.0	127.3	115.6
53	908.9	841.8	838.5	819.1	856.1	811.1	846.5	816.9	97.3	95.8	906.8	849.5	***	***	900.0	874.6	161.5	142.8

Table 7. Average Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,24,25,36,37,44, 44,45,52,53,64,65)	BL/WStd. (Exp.) Av(26,27,38, 39,54,55)	BL/Cav. (Exp.) Av(18,19,46, 47, 66,67)	Mid. WStd. Av(28,29,30,31, ,56,57,58,59)	BL/Cav. (UnExp.) Av(20,21,48, 49,68,69)	BL/WStd. (UnExp.) Av(32,33,40, 41,60,61)	BL/FL (UnExp.) Av(22,23,34,34,42) 43,50,51,62,63,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
0	24.3	24.8	24.7	***	24.6	25.3	22.1	25.7	25.7
1	40.1	28.0	25.4	***	24.6	25.3	24.1	25.7	25.7
2	217.1	81.6	41.9	***	28.1	30.3	48.8	25.7	25.7
3	416.6	77.4	44.1	***	30.0	31.5	70.0	25.9	25.7
4	422.7	71.8	50.8	***	34.7	35.2	73.7	26.3	25.7
5	470.9	77.9	53.8	***	38.6	39.7	81.7	26.8	25.7
6	622.2	83.7	58.8	***	42.5	42.4	99.9	27.6	25.8
7	680.1	84.2	63.7	***	47.1	45.9	98.2	28.5	25.9
8	634.8	87.3	66.3	***	49.8	49.2	105.8	29.6	26.1
9	659.2	89.9	69.0	***	52.9	51.8	110.1	31.0	26.5
10	702.5	91.8	71.1	***	55.6	55.0	116.1	32.4	27.0
11	709.7	94.6	73.4	***	57.6	56.2	119.6	34.1	27.7
12	725.4	100.4	74.8	***	59.1	57.5	121.7	35.6	28.6
13	735.4	121.6	75.7	***	60.0	59.1	125.3	37.2	29.6
14	746.3	158.5	76.0	***	61.3	60.4	129.7	38.6	30.8
15	757.4	196.7	80.1	***	64.8	63.1	136.8	40.5	32.1
16	762.9	224.6	83.9	***	69.9	67.5	143.5	42.9	33.5
17	769.1	251.2	86.0	***	74.1	71.9	147.7	46.1	34.9
18	776.6	281.4	87.8	***	77.2	75.3	152.0	49.9	36.5
19	783.8	321.2	90.2	***	79.5	78.0	157.2	53.9	38.4
20	790.4	351.7	93.1	***	81.3	80.3	162.5	57.7	40.6
21	799.7	377.0	95.6	***	82.7	82.2	166.7	61.0	43.1
22	803.1	399.2	97.7	***	83.9	83.8	170.4	63.8	45.7
23	805.9	422.0	100.2	***	84.6	85.0	173.8	66.1	48.4
24	811.2	449.3	103.4	***	85.3	85.9	177.5	68.0	51.0
25	817.6	472.5	106.4	***	85.9	87.1	181.5	69.4	53.4
26	821.7	494.5	109.0	***	86.5	88.0	185.1	70.6	55.5
27	827.5	513.0	111.9	***	87.1	89.0	188.9	71.4	57.3
28	833.1	526.7	116.1	***	87.7	89.6	192.6	72.0	58.8
29	837.0	540.4	122.0	***	88.3	90.6	196.2	72.4	60.0
30	839.2	555.8	130.3	***	89.1	91.6	200.0	72.8	61.1
31	841.6	571.4	143.1	***	90.3	93.2	204.3	73.3	61.9
32	848.4	598.4	160.9	***	93.7	95.9	212.5	73.8	62.7
33	850.5	654.5	184.5	***	101.1	101.1	222.9	74.2	63.3
34	856.0	740.6	218.6	***	115.6	111.7	244.3	74.5	63.9
35	860.9	827.1	275.1	***	136.9	132.1	281.5	74.7	64.4
36	862.7	834.6	329.9	***	169.5	163.4	296.1	75.0	64.9
37	865.6	826.8	355.2	***	198.2	201.1	309.2	76.2	65.6
38	867.4	828.5	387.6	***	221.5	227.8	322.7	78.6	66.5
39	871.4	835.3	432.9	***	253.4	250.3	335.8	81.0	67.9
40	874.5	852.5	466.6	***	276.8	272.5	348.5	83.0	69.6
41	877.5	867.2	493.0	***	300.9	296.6	364.8	84.7	71.2
42	884.2	867.2	518.8	***	324.2	323.7	379.9	86.3	72.5

Table 7. Average Temperatures Measured in Full Scale Assembly F-02, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,24,25,36,37,44, 44,45,52,53,64,65)	BL/WStd. (Exp.) Av(26,27,38, 39,54,55)	BL/Cav. (Exp.) Av(18,19,46, 47, 66,67)	Mid. WStd. Av(28,29,30,31, ,56,57,58,59)	BL/Cav. (UnExp.) Av(20,21,48, 49,68,69)	BL/WStd. (UnExp.) Av(32,33,40, 41,60,61)	BL/FL (UnExp.) Av(22,23,34,34,42) 43,50,51,62,63,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
43	885.3	877.2	533.7	***	352.1	359.0	392.1	87.8	73.6
44	886.0	878.7	554.9	***	382.3	400.2	401.8	89.5	74.3
45	887.7	889.7	569.8	***	398.1	421.2	411.9	91.2	74.8
46	893.1	881.7	567.0	***	413.1	452.1	429.6	92.5	75.2
47	894.7	891.8	647.0	***	458.3	497.4	471.8	94.0	75.3
48	899.6	883.5	734.4	***	532.7	609.8	505.5	95.1	75.4
49	901.9	849.1	789.8	***	629.0	685.3	539.8	96.7	75.4
50	904.4	825.7	842.9	***	703.7	724.6	556.1	98.7	75.5
51	904.7	876.9	869.6	***	830.4	853.6	613.9	101.7	75.7
52	906.5	885.5	869.6	***	868.2	884.1	636.4	106.7	76.2
53	908.9	869.2	861.6	***	840.4	864.0	631.4	122.7	77.0

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Time (min)	T(Fav) (°C)	Temperature at Thermocouple Number																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	19.9	20.4	21.1	20.3	20.1	21.0	21.0	20.1	19.4	20.4	22.6	23.2	22.5	23.0	21.7	21.9	20.6	19.5	20.5	19.5	***
1	31.9	20.3	21.1	20.3	20.1	20.9	20.9	20.1	19.4	20.4	22.6	23.1	22.3	23.0	21.4	21.9	20.6	19.5	20.5	19.5	***
2	214.1	20.4	21.1	20.2	20.0	21.0	21.0	20.1	19.4	20.4	22.6	23.1	22.3	23.0	21.5	21.8	21.2	19.9	25.5	24.1	***
3	424.2	20.3	21.1	20.2	20.0	20.9	20.9	20.0	19.3	20.4	22.5	23.1	22.3	22.9	21.4	21.8	23.0	21.7	29.6	25.3	***
4	429.8	20.3	21.1	20.2	20.0	20.9	20.9	20.0	19.3	20.4	22.5	23.1	22.2	22.9	21.3	21.7	27.2	25.8	32.7	27.3	***
5	470.2	20.3	21.1	20.2	20.0	21.0	20.9	20.0	19.3	20.4	22.5	23.0	22.3	23.0	21.3	21.7	32.1	29.6	37.5	30.3	***
6	611.3	20.3	21.2	20.1	20.0	21.0	21.0	20.0	19.3	20.4	22.5	22.8	22.1	22.9	21.2	21.6	37.0	33.2	38.4	33.8	***
7	582.7	20.4	21.3	20.2	20.1	21.2	21.1	20.1	19.4	20.5	22.6	22.8	22.2	23.1	21.2	21.6	42.8	38.2	43.1	37.5	***
8	637.5	20.7	21.5	20.3	20.3	21.5	21.4	20.4	19.5	20.7	22.9	22.8	22.2	23.4	21.3	21.8	47.8	42.0	48.1	41.0	***
9	666.0	21.2	21.8	20.4	20.6	21.9	21.9	20.8	19.7	21.1	23.3	22.8	22.2	23.7	21.5	21.9	51.4	45.2	53.9	43.9	***
10	700.9	21.8	22.3	20.6	21.1	22.6	22.6	21.4	20.0	21.6	24.1	23.0	22.5	24.2	21.9	22.4	55.6	48.1	60.0	46.7	***
11	714.4	22.6	22.8	21.0	21.7	23.6	23.6	22.2	20.5	22.4	24.8	23.1	22.6	24.7	22.0	22.8	58.4	50.3	58.5	49.5	***
12	724.0	23.6	23.6	21.4	22.5	24.7	24.9	23.2	21.0	23.2	25.6	23.3	22.7	25.4	22.4	23.3	60.2	51.7	60.2	50.8	***
13	734.3	24.8	24.4	22.0	23.4	26.1	26.3	24.3	21.7	24.2	26.8	23.6	22.8	26.3	22.7	24.1	61.7	53.0	61.8	52.4	***
14	746.3	26.1	25.4	22.6	24.4	27.7	28.0	25.6	22.5	25.4	27.7	23.9	23.2	27.1	23.0	24.7	62.8	54.9	63.4	54.4	***
15	756.8	27.6	26.5	23.3	25.5	29.4	29.9	27.0	23.3	26.6	28.8	24.4	23.6	28.1	23.2	25.4	66.2	56.5	67.5	56.4	***
16	765.1	29.1	27.7	24.2	26.7	31.3	31.8	28.4	24.3	27.9	29.8	24.8	24.0	29.2	24.2	26.5	71.0	62.3	72.5	61.5	***
17	772.2	30.7	29.1	25.1	28.0	33.2	33.9	29.9	25.3	29.4	30.9	25.4	24.5	30.3	24.4	27.0	75.5	66.6	76.7	66.7	***
18	777.3	32.6	30.5	26.1	29.4	35.4	36.2	31.5	26.5	30.9	32.3	26.1	25.0	31.8	25.4	28.2	78.1	69.9	79.1	70.8	***
19	783.3	34.7	32.0	27.1	31.0	37.9	38.9	33.1	27.7	32.8	33.4	26.8	25.6	33.4	25.9	29.2	80.0	73.1	81.4	74.1	***
20	791.4	37.2	33.6	28.4	33.0	40.8	41.9	34.9	29.2	35.0	35.6	27.3	26.2	35.3	26.6	30.1	81.6	75.8	82.7	75.9	***
21	797.8	40.1	35.6	29.9	35.2	43.9	45.3	37.1	31.0	37.5	37.2	28.4	26.7	37.5	27.7	31.5	83.2	78.0	83.6	77.7	***
22	802.9	43.3	37.9	31.8	37.8	47.2	48.8	39.6	33.2	40.3	39.3	29.3	27.0	39.2	28.8	32.7	84.0	79.4	84.2	79.1	***
23	807.8	46.5	40.6	34.0	40.6	50.4	52.1	42.4	35.8	43.1	41.4	30.6	28.3	41.1	30.3	34.4	84.3	80.2	84.8	79.9	***
24	812.1	49.6	43.6	36.6	43.5	53.3	55.0	45.4	38.6	45.9	42.8	31.8	29.7	42.0	31.2	36.4	84.7	81.1	84.9	80.8	***
25	817.4	52.4	46.6	39.3	46.3	55.8	57.5	48.4	41.5	48.4	44.2	33.0	31.4	43.3	32.0	38.2	85.3	81.6	85.3	81.7	***
26	822.7	54.7	49.3	42.1	49.0	57.7	59.3	51.1	44.3	50.6	45.2	34.5	33.7	44.0	33.6	39.2	85.7	82.4	85.9	82.0	***
27	826.7	56.6	51.7	44.7	51.3	59.4	60.7	53.4	46.9	52.5	46.3	35.9	35.6	44.8	34.0	40.3	86.2	83.2	86.4	82.5	***
28	831.7	58.2	53.7	47.1	53.4	60.7	61.7	55.4	49.3	54.1	47.1	36.7	37.1	45.4	34.6	41.4	87.0	84.1	86.9	83.4	***
29	834.7	59.6	55.4	49.2	55.2	61.8	62.4	56.9	51.4	55.5	47.5	38.1	39.2	45.6	35.7	41.8	87.5	85.0	87.5	84.7	***
30	840.1	60.9	56.9	51.0	56.8	62.7	63.0	58.1	53.3	56.7	48.2	39.0	40.7	45.7	35.5	42.0	87.2	86.0	87.0	85.5	***
31	844.7	62.5	58.0	52.8	58.2	63.4	63.4	59.2	54.9	57.8	49.0	40.4	42.0	45.8	36.5	42.3	87.9	88.1	87.6	87.9	***
32	846.8	64.1	58.8	54.3	59.5	64.0	63.7	60.0	56.4	58.7	50.1	41.4	43.4	46.2	36.7	43.5	95.7	103.9	93.6	96.4	***
33	852.2	66.0	59.5	55.4	61.0	64.4	64.0	60.7	57.6	59.6	51.0	42.0	44.8	46.3	37.6	43.4	168.6	144.2	124.5	133.6	***
34	856.2	68.2	59.9	56.5	62.6	64.9	64.3	61.2	58.7	60.6	51.6	42.9	46.3	46.7	38.6	43.6	242.9	181.0	174.7	173.6	***
35	858.3	70.0	60.0	57.7	64.3	66.2	64.8	61.6	60.0	61.8	53.3	43.7	47.7	47.6	39.4	44.4	351.0	211.0	236.6	200.9	***
36	863.0	71.4	60.1	59.5	66.6	68.3	65.3	62.1	61.7	63.2	54.6	45.8	49.6	50.3	40.3	44.5	449.6	238.9	312.8	230.3	***
37	867.6	72.3	60.2	61.7	68.9	70.2	66.2	62.8	63.9	64.9	55.7	46.8	51.9	52.9	42.7	45.2	475.6	263.1	908.9	264.0	***
38	867.9	72.9	60.3	63.9	70.7	72.0	67.7	63.8	66.8	66.5	56.3	49.3	53.9	54.3	43.5	46.6	433.4	293.9	926.5	294.3	***
39	873.5	73.3	60.8	65.8	72.2	73.3	69.2	65.3	69.1	67.9	57.1	52.2	55.7	55.4	44.7	48.0	484.1	323.4	942.1	319.7	***
40	875.9	73.6	62.3	67.5	73.3	74.1	70.3	67.4	70.6	69.1	57.5	54.8	56.5	54.7	45.6	48.7	552.4	359.3	887.8	391.0	***
41	883.8	73.4	64.2	68.8	74.4	74.6	71.1	69.5	71.6	70.2	57.7	57.2	57.7	54.6	47.1	48.2	869.6	507.4	872.8	558.3	***
42	883.7	73.3	66.7	70.1	75.4	75.2	71.9	70.9	72.4	71.2	57.9	59.9	58.7	55.0	47.6	48.6	866.6	670.2	862.0	805.7	***
43	884.4	72.5	68.5	71.1	76.1	75.8	72.3	72.0	73.2	72.2	57.8	61.1	59.5	54.9	48.0	48.6	846.4	824.8	852.7	823.6	***
44	888.4	72.4	69.8	71.9	75.6	76.2	72.3	72.9	73.8	72.7	58.2	61.8	60.7	53.7	48.4	49.4	882.4	912.1	884.5	885.4	***
45	890.0	72.7	71.1	72.2	75.6	76.2	72.3	73.6	74.1	73.0	58.7	62.3	61.4	54.9	48.7	50.0	891.0	848.8	889.7	837.1	***
46	893.5	73.3	72.1	72.4	75.7	75.9	72.5	73.9	74.2	73.1	58.5	63.2	61.8	57.3	48.6	50.1	907.4	855.9	916.6	849.9	***
47	898.2	72.7	72.8	71.9	76.0	78.3	72.8	74.3	74.4	73.0	63.8	62.7	62.2	57.8	49.3	49.4	928.3	873.6	921.4	870.8	***

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																		
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
48	897.9	79.9	73.8	71.8	75.9	84.5	73.2	75.3	73.8	73.5	68.5	62.6	62.7	57.9	50.2	49.1	902.7	839.1	898.0	842.2	***
49	900.4	84.9	74.3	72.1	82.2	87.8	74.0	75.5	73.1	74.6	69.1	61.7	61.7	58.2	53.3	49.2	825.4	843.1	849.9	840.5	***
50	903.4	89.3	73.8	72.8	85.4	91.9	74.1	75.6	73.7	75.6	68.9	57.1	63.0	58.9	57.1	48.8	853.9	821.4	855.3	820.8	***

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																			
(min)	(°C)	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
0	19.9	19.5	20.5	19.5	20.2	19.4	20.0	19.3	20.0	19.3	21.4	20.3	21.1	20.1	21.0	20.1	20.6	19.6	20.2	19.6	20.2
1	31.9	19.6	20.5	19.6	21.0	20.3	20.1	19.3	20.0	19.3	21.4	20.4	21.1	20.1	21.0	20.1	20.6	19.7	20.3	19.6	20.3
2	214.1	19.6	20.9	19.7	76.8	79.5	20.8	20.1	20.4	19.7	21.4	20.5	21.2	20.1	21.0	20.2	22.0	20.4	22.1	20.3	43.1
3	424.2	20.8	22.4	20.8	63.4	75.6	30.1	29.9	33.3	29.5	21.6	20.8	21.4	20.2	21.1	20.6	31.0	27.1	33.5	31.6	38.0
4	429.8	24.9	27.4	23.7	59.8	68.4	40.1	39.9	47.1	40.9	21.8	21.1	21.6	20.4	21.4	20.8	41.8	37.4	43.7	42.2	43.3
5	470.2	28.9	32.5	27.9	57.3	63.4	44.4	44.4	51.8	46.2	22.1	21.5	22.2	20.9	21.9	21.1	47.2	43.0	48.5	46.5	48.1
6	611.3	32.5	36.6	31.7	58.1	62.3	50.4	50.4	58.7	50.8	22.4	21.9	22.8	21.4	22.7	21.5	52.2	47.6	54.6	50.8	54.7
7	582.7	38.1	43.1	35.8	61.2	63.3	57.7	57.0	65.2	55.9	22.9	22.5	23.8	22.5	23.7	22.2	58.3	53.2	60.3	55.1	58.5
8	637.5	41.6	47.4	39.4	63.5	64.0	61.8	60.4	68.5	58.5	23.6	23.3	24.9	23.5	24.9	23.0	61.5	56.2	63.3	57.4	62.1
9	666.0	44.2	52.1	42.4	66.6	66.0	66.4	64.4	72.1	62.0	24.4	24.3	26.1	24.8	26.5	24.0	64.7	59.0	66.5	60.3	65.5
10	700.9	47.4	55.6	46.0	69.4	68.1	70.1	67.6	75.2	65.1	25.3	25.4	27.4	26.2	28.1	25.0	67.8	61.5	68.7	62.4	68.6
11	714.4	49.6	57.8	48.5	71.6	70.1	73.0	70.5	76.5	67.7	26.5	26.6	28.7	27.5	30.0	26.4	69.8	63.4	70.7	64.3	70.2
12	724.0	51.5	60.0	49.5	73.2	71.7	75.2	72.5	77.4	69.5	27.7	27.9	30.1	28.7	32.1	27.8	71.0	64.8	71.5	65.5	71.4
13	734.3	53.2	62.0	50.7	74.7	73.5	77.1	74.2	79.3	72.4	29.0	29.2	31.5	30.1	33.8	29.0	72.0	65.9	72.7	66.5	72.4
14	746.3	55.2	63.4	52.8	75.0	75.0	77.8	75.9	79.6	75.7	30.5	30.6	33.0	32.2	35.3	30.1	72.5	67.0	73.6	67.6	72.9
15	756.8	57.3	64.5	53.6	80.1	79.7	81.9	77.0	78.7	75.3	32.0	32.1	34.4	35.3	37.2	31.0	76.5	69.2	75.7	68.4	72.1
16	765.1	62.2	66.6	55.4	85.5	86.8	86.4	82.7	81.5	77.5	33.7	33.7	36.2	40.0	40.8	32.6	81.3	75.4	81.2	73.5	71.5
17	772.2	67.4	72.3	60.9	86.9	90.2	89.6	88.5	84.2	82.1	35.7	35.8	38.3	45.9	43.9	34.5	84.0	78.7	84.0	79.3	75.7
18	777.3	71.7	76.3	65.5	90.0	92.5	90.4	88.2	86.0	82.5	37.9	38.0	39.5	52.0	49.3	37.8	86.4	81.3	86.1	81.9	80.7
19	783.3	74.9	79.5	69.4	92.2	92.2	90.6	87.9	87.4	83.6	40.2	40.3	41.2	57.0	55.4	42.5	89.0	84.1	88.3	84.5	83.3
20	791.4	77.8	82.2	72.2	93.2	92.9	91.8	89.2	88.4	84.6	42.7	42.2	44.1	60.6	59.9	46.6	94.5	88.0	94.3	87.6	85.4
21	797.8	79.9	83.8	75.7	93.8	94.2	93.5	93.1	89.4	86.0	45.3	44.3	46.9	63.5	62.9	49.6	99.3	94.1	99.3	93.2	88.1
22	802.9	81.7	85.2	78.0	95.4	95.1	93.2	95.1	90.2	87.6	47.9	46.6	49.5	65.6	64.3	51.4	103.3	99.0	103.2	98.9	93.8
23	807.8	82.3	86.2	79.7	95.7	95.0	93.1	95.6	90.7	88.5	50.4	49.0	52.1	67.1	65.8	53.1	106.2	102.6	105.7	102.8	99.5
24	812.1	82.8	87.0	80.8	96.2	95.1	93.5	96.3	91.2	88.6	52.6	51.9	54.3	68.2	67.7	55.3	108.7	105.4	108.2	106.0	103.6
25	817.4	83.6	87.1	81.8	95.8	93.5	93.0	95.3	92.9	92.7	54.7	55.1	57.4	68.7	69.0	57.5	111.0	108.7	110.3	108.6	106.8
26	822.7	84.4	87.3	83.2	95.8	91.6	93.8	96.4	92.7	90.1	56.8	58.1	61.2	67.9	70.2	59.7	112.8	111.0	113.5	110.6	109.4
27	826.7	84.8	87.6	84.0	96.2	92.6	97.7	96.4	97.1	87.6	58.7	60.7	63.2	67.4	71.7	61.9	114.9	113.4	116.6	111.6	112.8
28	831.7	85.7	87.7	85.2	98.1	93.8	102.0	94.2	102.0	88.6	60.5	62.9	66.0	67.4	74.2	65.3	117.1	116.7	120.5	113.0	115.9
29	834.7	86.7	87.6	86.1	111.8	99.9	105.8	94.6	104.0	90.9	62.4	65.0	70.9	68.0	75.7	68.7	119.8	122.1	127.4	116.2	118.6
30	840.1	87.4	87.9	87.3	220.9	118.6	109.5	97.8	109.2	99.4	64.0	66.9	74.8	68.9	76.9	72.1	126.3	130.6	137.4	121.4	121.8
31	844.7	89.0	88.7	89.9	392.6	143.9	115.3	102.6	115.8	122.7	65.4	68.8	76.2	69.8	77.8	75.3	139.5	147.6	152.7	130.0	127.3
32	846.8	91.5	91.2	93.7	668.0	164.3	124.1	110.4	149.8	143.8	66.5	70.7	76.7	70.8	78.3	77.1	173.2	211.6	192.4	150.7	133.4
33	852.2	105.7	98.1	113.2	710.4	210.9	149.8	150.1	197.7	173.4	67.6	72.9	76.3	72.1	78.7	78.3	299.2	276.6	272.4	226.5	137.9
34	856.2	151.4	114.8	149.8	739.3	268.2	213.1	204.0	234.0	212.4	69.0	75.5	75.2	74.1	79.5	80.0	418.2	328.7	331.1	300.8	146.8
35	858.3	181.6	131.7	176.3	795.9	353.7	244.0	255.6	269.1	263.3	71.7	78.8	76.7	77.3	81.5	81.2	463.2	344.2	371.2	344.9	160.7
36	863.0	206.8	152.3	199.0	778.6	440.5	327.8	307.1	375.6	296.3	76.8	82.8	80.1	81.9	84.3	84.4	514.1	363.3	410.0	367.7	182.1
37	867.6	233.1	183.7	218.1	928.2	483.4	425.3	336.9	484.7	323.7	884.9	86.7	88.7	86.9	85.9	87.4	562.3	385.8	434.8	386.5	235.7
38	867.9	261.7	221.4	242.0	910.8	517.9	522.8	369.2	578.1	351.0	825.0	90.5	93.8	92.3	87.9	89.9	567.5	406.2	455.2	407.2	282.2
39	873.5	289.2	271.1	264.6	918.6	556.6	644.1	404.0	745.1	371.2	835.2	94.5	95.7	97.3	92.1	92.7	593.9	427.9	490.8	422.9	311.3
40	875.9	322.9	303.1	288.5	893.5	604.9	656.5	433.4	798.9	389.0	873.2	100.9	98.0	102.2	96.9	96.6	740.6	453.7	538.2	442.6	345.9
41	883.8	411.7	332.4	313.5	898.2	763.7	720.3	475.9	693.9	409.0	913.8	115.7	104.6	109.0	103.0	103.3	874.5	563.7	655.0	509.2	433.5
42	883.7	510.4	913.4	489.2	861.3	912.0	914.8	621.2	913.0	601.7	859.7	192.9	894.3	121.9	913.4	113.4	854.4	698.9	944.6	587.7	439.3
43	884.4	596.8	841.4	633.8	852.7	878.8	865.1	863.7	879.1	750.3	842.8	523.7	854.2	145.8	858.3	147.9	841.7	903.5	851.5	675.7	538.8
44	888.4	702.8	869.9	689.5	886.3	930.6	893.1	918.7	892.4	801.1	882.6	838.7	887.1	215.3	887.1	182.7	879.1	869.0	882.8	881.5	842.5
45	890.0	740.3	895.8	729.5	894.1	894.4	894.3	889.1	902.6	848.9	894.6	869.1	890.7	306.8	885.0	219.8	894.3	839.4	892.7	864.0	794.1
46	893.5	802.3	934.5	772.1	906.7	893.0	911.2	877.8	927.2	908.3	914.7	856.9	905.3	387.1	905.0	252.8	915.6	834.8	907.3	881.3	887.4
47	898.2	847.7	934.6	872.6	931.4	891.2	930.4	887.3	931.0	888.9	926.8	883.1	912.1	735.8	943.4	632.0	949.3	884.7	911.9	862.3	922.8

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																			
(min)	(°C)	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
48	897.9	860.0	907.8	839.9	898.5	870.4	906.7	867.4	903.9	846.6	894.0	859.7	896.0	854.0	927.4	733.0	912.3	860.4	891.4	858.6	914.2
49	900.4	846.4	828.3	841.3	861.8	852.9	875.4	847.4	875.6	841.0	813.7	846.2	875.0	839.6	880.2	773.4	877.0	846.4	870.4	825.4	840.4
50	903.4	824.1	862.8	820.3	860.5	807.7	867.0	808.3	844.5	828.2	849.7	818.9	858.7	814.2	871.8	809.2	849.2	801.8	847.9	817.9	849.4

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																			
(min)	(°C)	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
0	19.9	19.3	20.7	19.9	20.6	19.7	20.7	19.6	20.0	19.3	19.9	19.1	19.7	19.0	19.7	19.1	19.5	19.0	20.0	19.2	21.6
1	31.9	19.4	20.7	19.9	20.6	19.8	20.7	19.7	22.8	22.0	23.5	22.2	23.7	21.4	22.8	21.2	21.2	20.9	22.0	21.5	21.6
2	214.1	24.9	21.7	21.2	20.7	20.4	30.5	19.7	85.8	79.8	85.0	83.1	86.7	77.7	88.1	87.5	87.1	95.0	76.2	77.3	21.6
3	424.2	31.7	23.5	23.0	22.8	21.7	26.7	20.9	79.3	75.7	85.3	79.1	77.5	72.5	82.8	79.5	82.5	88.6	70.7	67.8	21.7
4	429.8	37.9	28.1	26.6	28.9	25.8	28.8	24.2	73.9	69.7	79.1	75.9	72.8	65.8	75.5	73.6	77.1	80.9	65.2	62.5	22.1
5	470.2	41.4	32.6	30.9	33.9	30.0	32.7	27.7	83.8	73.7	88.2	81.7	77.9	73.0	81.3	77.8	81.3	89.2	71.1	66.2	22.9
6	611.3	46.4	36.7	33.9	39.1	33.5	35.8	30.4	94.7	82.1	99.2	90.8	86.5	81.1	91.4	81.3	88.3	97.1	78.0	75.2	24.2
7	582.7	51.7	43.0	38.1	44.5	37.8	40.3	33.7	101.0	82.9	106.2	97.1	92.2	83.9	93.6	81.6	90.0	104.4	82.1	74.4	25.7
8	637.5	54.8	47.6	41.6	48.7	41.2	44.4	36.9	106.3	85.4	111.3	101.0	95.4	86.9	95.3	84.7	95.4	111.9	86.2	79.1	27.8
9	666.0	58.5	51.7	44.8	52.4	44.1	49.8	39.9	111.2	88.6	116.2	105.6	98.5	90.0	95.8	87.6	99.6	121.0	89.4	81.8	30.2
10	700.9	61.0	55.2	49.0	55.7	46.9	52.0	43.0	111.4	90.3	121.0	109.7	100.5	91.8	95.9	89.5	102.1	135.5	91.7	83.2	32.9
11	714.4	63.2	57.4	50.2	57.4	49.1	55.4	45.4	117.7	92.1	131.2	117.0	102.6	94.7	97.4	91.4	105.4	159.2	92.4	87.9	35.9
12	724.0	64.2	59.1	51.0	60.0	51.2	56.8	47.8	131.3	95.8	145.9	135.3	108.6	99.0	99.9	93.7	114.7	189.4	95.1	88.5	38.7
13	734.3	65.3	61.4	52.4	61.5	52.9	58.9	49.9	178.1	112.3	194.9	184.2	150.4	117.1	110.4	99.3	138.4	238.8	98.7	93.6	41.5
14	746.3	66.6	61.7	53.9	63.7	54.7	60.8	51.7	229.8	147.6	217.1	228.9	213.3	163.4	150.3	123.8	161.9	301.7	109.2	111.9	44.0
15	756.8	66.9	64.8	56.0	66.5	56.6	61.3	53.0	262.9	189.0	244.2	262.3	250.0	207.5	206.2	166.1	196.4	353.8	142.5	144.7	46.1
16	765.1	70.0	70.4	61.1	71.2	60.9	62.2	55.8	291.0	201.3	286.4	292.4	260.1	230.0	220.9	201.3	238.5	293.7	187.6	176.9	48.6
17	772.2	76.1	73.3	65.7	74.7	66.0	65.6	60.9	316.2	218.6	317.8	330.0	279.0	250.0	239.2	225.5	269.3	339.0	218.4	195.0	52.1
18	777.3	79.3	76.3	68.9	78.8	69.9	70.6	65.9	343.4	250.5	340.9	361.0	303.8	279.8	263.1	257.1	304.6	394.4	241.3	222.8	55.8
19	783.3	82.0	78.6	71.9	80.2	73.4	73.7	69.5	364.1	288.4	354.8	377.7	335.0	320.2	287.9	288.9	353.5	441.4	263.8	256.5	59.6
20	791.4	84.0	80.5	74.6	82.0	76.0	76.7	72.1	378.5	319.5	342.3	383.9	362.5	356.1	316.5	321.2	411.0	494.9	289.2	291.0	62.9
21	797.8	86.8	82.4	77.3	84.2	78.0	78.5	74.8	399.2	348.2	357.4	400.4	388.4	379.1	343.5	348.2	496.5	510.8	308.3	318.7	65.8
22	802.9	92.9	82.9	79.6	85.0	81.0	80.4	76.4	420.5	371.9	379.2	418.8	410.1	396.8	366.6	370.6	534.7	518.2	325.5	340.7	68.2
23	807.8	99.9	83.5	80.2	86.0	83.3	81.9	78.6	442.5	405.0	410.4	444.0	435.9	420.9	388.8	394.0	543.0	538.3	345.3	362.7	70.2
24	812.1	104.6	84.5	81.2	87.9	84.9	83.1	81.2	468.9	435.9	445.7	470.5	457.1	446.5	416.0	422.9	561.3	791.1	360.9	391.2	71.6
25	817.4	108.0	85.1	82.6	89.5	86.4	84.1	82.7	493.7	467.1	478.5	500.7	483.5	470.9	443.5	450.5	570.5	789.9	373.6	420.9	72.6
26	822.7	111.4	88.1	84.5	90.9	87.5	85.4	84.0	516.6	519.3	511.1	523.5	507.9	492.9	470.7	480.7	574.7	784.2	394.0	453.9	73.4
27	826.7	114.4	88.8	86.1	92.4	89.0	88.0	85.1	541.1	792.7	535.8	853.2	532.8	511.6	496.6	535.6	589.4	843.8	423.7	491.4	74.1
28	831.7	117.6	90.1	87.3	93.9	90.7	89.1	86.5	589.5	815.3	557.1	820.3	573.8	734.7	576.2	687.2	698.9	841.4	449.3	553.7	74.7
29	834.7	121.5	91.4	88.9	97.6	93.4	90.8	88.1	743.2	791.2	631.8	739.7	622.3	818.9	643.3	766.8	821.0	832.6	473.3	734.8	75.2
30	840.1	127.6	93.8	91.0	106.9	97.0	91.7	90.1	849.5	787.1	884.9	795.6	852.3	840.9	819.4	826.4	851.2	852.0	492.0	817.0	75.5
31	844.7	138.4	98.3	95.4	116.0	102.4	95.4	93.1	847.7	790.1	886.3	833.9	857.3	824.3	830.9	829.1	838.9	843.8	509.5	808.9	75.6
32	846.8	177.4	114.9	111.2	138.8	116.7	97.7	97.5	858.7	802.1	904.5	854.3	860.1	828.5	847.9	846.3	849.4	854.3	523.8	802.6	75.6
33	852.2	237.9	189.8	149.7	182.3	151.6	99.2	109.3	865.4	817.8	908.5	868.2	856.5	835.4	841.6	823.9	855.4	860.6	536.6	810.1	76.4
34	856.2	287.1	302.9	192.8	223.1	205.9	104.2	132.9	873.5	822.3	908.0	856.7	861.2	844.8	842.3	835.4	859.8	865.2	548.8	819.3	81.3
35	858.3	327.8	451.7	219.9	239.1	234.0	110.1	169.5	885.1	827.6	908.5	854.7	868.6	854.0	847.3	850.7	874.8	868.2	562.0	833.6	84.8
36	863.0	317.1	515.1	247.9	263.3	269.7	116.3	200.1	895.0	833.4	907.4	872.3	872.6	858.5	848.4	850.7	883.0	882.6	580.9	843.2	86.2
37	867.6	328.0	514.3	278.2	303.0	298.6	148.0	224.8	928.8	848.3	925.5	891.4	931.1	866.5	871.9	853.5	895.6	889.1	808.9	866.4	87.8
38	867.9	350.8	478.1	309.5	363.1	327.8	185.7	249.4	917.5	842.0	874.5	880.8	916.9	867.0	861.6	853.5	898.4	909.8	829.3	851.3	90.1
39	873.5	368.0	501.3	338.5	432.5	345.8	205.5	275.0	893.8	844.5	905.7	884.5	914.8	875.8	868.7	869.0	902.8	924.8	842.8	852.3	93.5
40	875.9	381.5	833.5	375.6	504.9	374.4	228.4	298.8	828.2	849.8	920.3	900.5	928.1	890.8	880.1	883.8	916.1	920.3	862.6	874.6	96.5
41	883.8	394.4	862.4	505.1	776.7	469.1	296.3	319.6	853.8	849.7	874.8	922.5	903.2	891.1	893.8	873.6	954.8	926.8	867.4	861.7	98.8
42	883.7	425.9	850.8	672.9	938.6	553.0	405.2	347.0	860.8	859.4	870.8	919.5	906.6	925.3	918.4	888.0	902.4	916.8	945.0	889.4	104.5
43	884.4	456.8	839.3	894.3	842.0	642.1	451.7	379.9	855.6	874.7	849.0	908.6	854.0	905.5	854.8	869.8	849.4	864.5	903.2	877.6	115.0
44	888.4	489.4	879.2	902.4	882.3	818.8	852.6	417.5	888.7	930.9	882.5	871.3	883.8	875.0	888.6	856.6	877.5	889.3	837.9	872.9	125.4
45	890.0	526.3	898.0	852.8	894.0	848.0	828.5	454.2	893.2	846.2	885.6	867.3	887.2	854.9	887.0	850.2	890.2	879.0	801.9	848.7	141.5
46	893.5	609.1	916.6	830.5	905.4	875.1	891.9	543.1	906.3	848.6	902.2	846.5	904.0	889.2	903.8	901.7	906.1	900.9	883.6	860.8	198.9
47	898.2	842.8	934.7	850.8	951.8	885.1	914.8	903.1	919.6	863.1	937.0	864.0	929.0	869.2	922.0	872.1	925.5	858.5	912.3	845.1	309.2

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																			
(min)	(°C)	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
48	897.9	849.7	902.3	843.8	931.7	878.0	900.0	890.9	897.6	841.0	905.0	840.9	912.3	865.1	895.8	859.0	909.5	829.4	902.8	855.9	327.6
49	900.4	846.6	864.9	831.5	881.0	852.7	861.0	870.5	830.8	837.0	849.7	833.1	878.1	845.9	864.9	852.7	874.7	803.3	867.3	850.0	372.4
50	903.4	831.4	847.1	817.0	870.7	810.3	835.3	816.8	801.8	817.3	840.6	820.3	834.3	793.0	820.8	783.7	789.7	742.2	824.5	816.7	389.0

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																		
(min)	(°C)	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
0	19.9	20.8	21.7	21.1	21.5	20.7	21.4	20.8	21.4	20.9	21.3	20.5	20.4	20.4	20.0	20.0	19.8	19.8	19.3	19.3
1	31.9	20.9	21.8	21.2	21.5	20.8	21.4	20.9	21.5	20.9	21.4	20.6	20.4	20.4	20.1	20.0	19.8	19.8	19.3	19.3
2	214.1	20.8	21.8	21.2	21.4	20.7	21.4	20.8	21.4	20.9	21.4	20.6	20.4	20.5	20.1	20.0	19.9	19.8	19.3	19.3
3	424.2	21.0	21.9	21.4	21.6	20.8	21.5	20.9	21.5	20.9	21.6	20.6	20.6	20.5	20.2	20.2	20.0	19.8	19.3	19.3
4	429.8	21.2	22.0	21.8	21.7	20.8	21.6	21.0	21.5	21.0	22.3	20.7	21.0	20.9	20.8	20.6	20.6	20.0	19.6	19.7
5	470.2	21.7	22.3	22.2	21.9	21.0	22.3	21.5	21.6	21.1	23.1	21.0	21.9	21.7	21.9	21.2	21.4	20.4	20.1	20.5
6	611.3	22.6	22.6	22.7	22.4	21.4	23.5	22.3	21.7	21.3	24.1	21.7	22.9	22.9	23.2	22.0	22.4	21.1	20.9	21.5
7	582.7	23.7	23.1	23.3	23.0	21.9	25.0	23.3	22.0	21.5	25.3	22.5	24.4	24.5	25.0	23.1	23.7	22.0	21.9	22.8
8	637.5	25.0	23.7	24.1	24.0	22.7	27.0	24.6	22.5	21.8	26.8	23.5	26.3	26.4	27.0	24.6	25.4	23.1	23.2	24.5
9	666.0	26.5	24.5	25.0	25.3	23.7	29.3	26.1	23.1	22.2	28.5	24.7	28.2	28.5	29.0	26.2	27.1	24.4	24.7	26.2
10	700.9	28.3	25.6	26.2	26.9	24.8	31.9	27.8	24.1	22.7	30.6	26.1	30.3	30.7	31.0	28.0	28.9	25.8	26.3	28.0
11	714.4	30.3	26.8	27.7	28.7	26.2	34.6	29.6	25.4	23.5	33.0	27.7	32.5	33.1	33.1	29.9	30.8	27.4	28.1	29.9
12	724.0	32.2	28.3	29.2	30.7	27.6	37.3	31.4	26.9	24.3	35.4	29.4	34.7	35.4	35.1	31.9	32.7	29.0	29.8	31.7
13	734.3	34.0	29.9	30.6	32.8	28.9	39.9	33.2	28.6	25.2	37.8	31.1	36.9	37.7	37.0	33.9	34.5	30.7	31.6	33.6
14	746.3	35.6	31.5	32.1	34.8	30.3	42.4	35.1	30.3	26.2	40.2	32.8	39.0	39.9	38.8	35.9	36.3	32.3	33.5	35.4
15	756.8	37.2	33.1	33.5	36.7	31.8	44.7	36.8	31.9	27.1	42.4	34.6	41.1	42.0	40.8	38.0	38.0	33.9	35.4	37.2
16	765.1	38.9	35.0	35.0	38.8	33.8	47.2	38.6	33.7	28.1	44.4	36.3	43.7	44.4	43.4	40.4	39.7	35.5	37.3	39.1
17	772.2	41.0	37.2	37.1	41.4	36.4	50.4	40.7	35.9	29.2	46.1	38.1	45.0	47.1	44.8	42.9	42.2	37.3	39.5	41.2
18	777.3	43.8	39.5	39.6	44.2	39.7	54.1	43.5	38.1	30.5	48.2	40.5	46.6	49.9	45.4	45.4	45.1	39.3	42.0	43.7
19	783.3	46.9	41.7	42.5	46.6	43.3	58.0	46.7	40.5	32.3	51.1	43.6	47.8	52.7	47.3	47.7	47.9	41.6	44.4	46.4
20	791.4	50.2	43.4	45.1	48.2	46.7	61.6	50.2	43.7	34.8	54.6	47.0	49.8	55.3	49.5	49.4	50.6	44.0	48.7	49.2
21	797.8	53.4	45.2	46.8	49.8	49.5	64.7	53.7	50.1	38.8	57.8	50.5	52.0	57.7	51.7	52.4	53.1	46.4	48.6	52.0
22	802.9	56.5	48.0	47.8	52.4	51.8	67.2	57.0	56.7	44.2	60.6	53.9	54.2	59.9	53.9	54.7	55.5	48.8	50.8	54.8
23	807.8	59.2	52.5	50.6	56.1	53.8	69.2	60.0	61.5	49.7	63.4	56.8	56.5	61.9	55.9	56.7	57.7	51.1	52.6	57.5
24	812.1	61.5	57.7	54.8	60.0	56.4	70.7	62.4	64.7	54.3	65.6	59.2	58.5	63.8	57.7	58.7	59.7	53.4	54.9	59.9
25	817.4	63.4	61.5	58.6	63.0	59.2	71.5	64.4	66.6	57.4	67.4	61.3	60.5	65.5	59.5	60.5	61.5	55.5	57.4	62.1
26	822.7	65.0	63.7	61.3	64.9	61.4	72.1	65.9	67.5	59.3	68.9	63.1	62.4	67.1	61.3	62.3	63.1	57.5	59.9	64.0
27	826.7	66.3	65.7	63.5	66.2	62.9	72.5	67.2	68.3	61.1	70.3	64.5	64.1	68.7	63.1	64.0	64.8	59.5	62.2	65.8
28	831.7	67.4	67.5	65.5	67.4	64.1	72.8	68.4	69.0	62.9	71.5	65.9	65.7	70.0	64.7	65.6	66.5	61.3	64.2	67.3
29	834.7	68.5	69.1	67.3	68.6	65.4	73.1	69.6	69.6	64.7	72.5	67.2	67.3	71.4	66.3	67.2	68.1	63.2	66.1	68.8
30	840.1	69.6	70.3	69.0	69.7	66.5	73.3	70.8	70.1	66.3	73.3	68.4	68.9	72.8	67.8	68.6	69.7	65.0	67.8	70.2
31	844.7	70.6	71.1	70.6	70.7	67.7	73.6	71.7	70.5	67.9	73.7	69.5	70.2	74.1	69.1	69.8	71.5	66.8	69.3	71.6
32	846.8	72.3	71.9	72.7	71.4	69.3	73.9	72.6	70.9	69.6	74.1	70.5	71.5	75.3	70.5	71.1	74.0	69.3	70.7	72.8
33	852.2	74.0	74.1	75.1	72.5	72.2	74.2	73.7	72.1	71.6	74.5	71.9	72.8	77.1	72.3	73.1	77.9	72.9	71.9	73.9
34	856.2	76.8	79.8	77.6	74.5	74.8	75.3	75.4	73.1	73.4	74.6	74.2	76.1	81.3	75.1	77.7	82.6	77.7	73.1	75.1
35	858.3	80.4	84.5	81.4	78.6	78.8	77.9	79.0	75.7	77.1	74.9	76.9	86.3	89.3	80.3	86.3	87.7	84.0	74.2	76.8
36	863.0	82.3	84.9	84.2	85.8	82.3	82.8	82.1	80.6	80.6	75.5	80.1	95.5	102.0	87.0	97.9	94.1	92.5	75.6	80.3
37	867.6	84.0	85.9	86.0	88.0	85.3	86.2	84.8	84.4	82.9	78.0	82.0	98.6	108.0	93.7	98.1	101.7	98.9	77.6	86.4
38	867.9	85.8	86.5	87.7	90.3	87.7	88.9	88.5	86.9	85.2	81.0	83.3	106.0	115.1	102.6	100.7	110.6	104.8	80.7	94.8
39	873.5	87.4	87.5	89.1	91.5	90.0	91.9	92.6	88.7	86.9	83.2	85.0	117.1	136.0	112.1	111.6	119.6	111.8	85.1	102.5
40	875.9	89.6	88.0	90.5	93.1	92.3	95.6	96.7	90.3	88.1	84.3	87.1	138.2	600.5	124.3	155.7	128.3	118.2	91.2	110.5
41	883.8	92.1	89.3	92.6	95.4	95.6	99.9	100.6	91.7	92.5	86.7	89.7	867.2	859.0	158.6	224.2	135.6	124.4	96.6	115.2
42	883.7	95.9	91.2	94.5	96.7	98.4	104.2	102.8	92.4	96.0	88.4	92.4	870.4	923.2	870.0	861.6	144.0	131.5	98.3	119.5
43	884.4	102.2	93.0	95.6	97.3	101.4	109.1	105.7	92.9	97.9	92.3	95.4	896.1	900.3	825.9	844.8	157.2	144.7	99.9	124.1
44	888.4	110.6	95.5	99.5	97.9	106.0	116.5	109.6	91.8	99.2	96.5	96.8	890.0	905.6	873.0	882.9	175.1	169.4	102.4	129.7
45	890.0	119.2	99.8	107.0	103.0	107.9	127.2	116.5	93.8	98.3	103.6	98.5	835.8	830.1	897.5	888.1	196.7	200.2	105.9	136.0
46	893.5	131.2	114.2	114.1	120.4	119.8	137.3	123.1	99.0	98.1	115.6	102.0	844.6	836.2	934.0	906.3	344.8	261.0	110.3	143.8
47	898.2	149.0	126.5	121.9	118.7	129.3	165.0	124.9	103.6	100.1	128.1	108.9	841.8	875.8	941.7	938.8	891.9	883.0	115.7	155.0

Table 8. Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
48	897.9	222.9	129.0	135.2	130.8	141.4	258.6	138.0	109.4	102.2	127.7	114.2	856.7	864.2	911.4	911.5	900.6	884.8	124.3	168.5
49	900.4	289.5	138.1	171.5	133.1	177.8	342.5	184.4	123.3	106.1	142.3	113.7	842.1	849.9	825.5	867.3	888.6	823.2	143.1	187.6
50	903.4	387.7	145.7	185.4	154.5	202.3	370.3	254.0	162.4	115.9	216.2	124.7	803.5	807.7	837.6	815.3	796.3	750.6	630.6	685.9

Table 9. Average Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(48,49,50,51,52,53, 54,55,56,57,58,59)	BL/WStd. (Exp.) Av(24,25,26, 27,28,29)	BL/Cav. (Exp.) Av(36,37,38, 39,40,41)	Mid. WStd. Av(16,17,18,19,20,21,22,23 72,73,74,75,76,77,78,79)	BL/Cav. (UnExp.) Av(42,43,44, 45,46,47)	BL/WStd. (UnExp.) Av(30,31,32, 33,34,35)	BL/FL (UnExp.) Av(60,61,62,63,64,65, 66,67,68,69,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
0	19.9	19.5	19.7	19.9	19.9	20.2	20.7	21.1	20.4
1	31.9	22.1	20.0	20.0	19.9	20.2	20.7	21.2	20.4
2	214.1	84.1	39.5	25.5	20.7	22.4	20.8	21.2	20.4
3	424.2	78.4	43.6	32.1	21.6	23.1	20.9	21.3	20.4
4	429.8	72.7	49.4	41.0	23.5	27.1	21.2	21.5	20.3
5	470.2	78.8	51.2	45.8	25.9	31.3	21.6	21.9	20.3
6	611.3	87.3	55.1	51.1	28.0	34.9	22.1	22.5	20.4
7	682.7	90.8	60.0	56.2	31.1	39.6	22.9	23.3	20.5
8	637.5	94.9	62.8	59.2	33.9	43.4	23.9	24.4	20.7
9	666.0	98.8	66.2	62.4	36.5	47.1	25.0	25.8	21.0
10	700.9	101.9	69.2	65.0	39.2	50.3	26.3	27.3	21.6
11	714.4	107.4	71.6	66.9	41.2	52.5	27.6	29.1	22.3
12	724.0	116.4	73.2	68.1	43.0	54.3	29.0	30.9	23.1
13	734.3	143.0	75.2	69.1	44.7	56.2	30.5	32.8	24.1
14	746.3	179.9	76.5	70.0	46.5	57.8	32.0	34.6	25.3
15	756.8	218.8	78.8	71.5	48.6	59.7	33.7	36.3	26.6
16	765.1	240.0	83.4	75.5	51.7	63.6	36.2	38.2	27.9
17	772.2	266.5	86.9	79.6	55.1	67.7	39.0	40.5	29.4
18	777.3	296.9	88.3	82.6	57.9	71.7	42.4	43.1	31.0
19	783.3	327.7	89.0	85.2	60.5	74.6	46.1	46.1	32.8
20	791.4	355.6	90.0	89.0	62.9	77.0	49.4	48.0	34.9
21	797.8	383.2	91.7	93.5	65.1	79.2	52.1	52.2	37.3
22	802.9	404.5	92.8	98.5	66.9	80.9	54.2	55.4	40.0
23	807.8	427.6	93.1	102.8	68.5	82.2	56.3	58.6	42.8
24	812.1	472.3	93.5	106.1	69.9	83.8	58.3	61.6	45.7
25	817.4	495.3	93.9	108.9	71.3	85.1	60.4	63.9	48.4
26	822.7	519.1	93.4	111.5	72.6	86.7	62.3	65.5	50.9
27	826.7	595.6	94.6	114.0	73.8	88.2	63.9	66.9	53.0
28	831.7	658.1	96.4	116.8	75.0	89.6	66.1	68.1	54.9
29	834.7	718.2	101.2	121.0	76.2	91.7	68.4	69.2	56.4
30	840.1	800.7	125.9	127.5	77.3	95.1	70.6	70.2	57.7
31	844.7	808.4	165.5	139.3	78.8	100.1	72.2	71.1	58.9
32	846.8	819.4	226.7	173.1	82.8	112.8	73.3	72.1	59.9
33	852.2	823.3	265.4	241.8	98.7	146.9	74.3	73.5	60.9
34	856.2	828.1	311.8	302.1	120.5	193.6	75.5	75.9	61.9
35	858.3	837.9	363.6	335.4	143.6	237.4	77.9	79.2	62.9
36	863.0	844.0	421.0	359.0	167.6	268.7	81.7	82.3	64.2
37	867.6	881.4	497.0	388.9	220.6	294.5	220.1	84.6	65.7
38	867.9	875.2	541.6	411.5	232.6	318.9	213.2	86.8	67.2
39	873.5	881.6	606.6	435.8	252.7	349.8	217.9	88.9	68.5
40	875.9	887.9	629.4	493.7	304.8	435.9	228.0	91.0	69.8
41	883.8	889.5	660.2	571.7	429.8	538.2	241.6	93.7	70.9
42	883.7	900.2	804.0	658.5	609.1	627.9	515.9	96.5	71.9
43	884.4	872.2	848.3	711.3	627.5	674.9	561.8	99.8	72.6
44	888.4	879.6	887.0	807.4	663.6	792.1	648.9	103.8	73.1
45	890.0	866.0	887.2	801.8	661.5	795.9	677.7	109.7	73.4
46	893.5	887.6	904.0	839.3	694.6	827.1	703.6	122.8	73.7
47	898.2	893.1	910.0	895.6	792.9	906.7	838.9	140.4	74.0

Table 9. Average Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(48,49,50,51,52,53, 54,55,56,57,58,59)	BL/WStd. (Exp.) Av(24,25,26, 27,28,29)	BL/Cav. (Exp.) Av(36,37,38, 39,40,41)	Mid. WStd. Av(16,17,18,19,20,21,22,23 72,73,74,75,76,77,78,79)	BL/Cav. (UnExp.) Av(42,43,44, 45,46,47)	BL/WStd. (UnExp.) Av(30,31,32, 33,34,35)	BL/FL (UnExp.) Av(60,61,62,63,64,65, 66,67,68,69,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
48	897.9	876.2	882.2	881.1	780.8	891.1	860.7	161.4	75.7
49	900.4	849.0	859.0	851.0	753.5	860.3	838.0	191.2	77.6
50	903.4	807.1	836.0	832.9	799.1	832.8	837.1	225.7	79.1

Table 9. Average Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(48,49,50,51,52,53, 54,55,56,57,58,59)	BL/WStd. (Exp.) Av(24,25,26, 27,28,29)	BL/Cav. (Exp.) Av(36,37,38, 39,40,41)	Mid. WStd. Av(16,17,18,19,20,21,22,23 72,73,74,75,76,77,78,79)	BL/Cav. (UnExp.) Av(42,43,44, 45,46,47)	BL/WStd. (UnExp.) Av(30,31,32, 33,34,35)	BL/FL (UnExp.) Av(60,61,62,63,64,65, 66,67,68,69,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
0	19.9	19.5	19.7	19.9	19.9	20.2	20.7	21.1	20.4
1	31.9	22.1	20.0	20.0	19.9	20.2	20.7	21.2	20.4
2	214.1	84.1	39.5	25.5	20.7	22.4	20.8	21.2	20.4
3	424.2	78.4	43.6	32.1	21.6	23.1	20.9	21.3	20.4
4	429.8	72.7	49.4	41.0	23.5	27.1	21.2	21.5	20.3
5	470.2	78.8	51.2	45.8	25.9	31.3	21.6	21.9	20.3
6	611.3	87.3	55.1	51.1	28.0	34.9	22.1	22.5	20.4
7	582.7	90.8	60.0	56.2	31.1	39.6	22.9	23.3	20.5
8	637.5	94.9	62.8	59.2	33.9	43.4	23.9	24.4	20.7
9	666.0	98.8	66.2	62.4	36.5	47.1	25.0	25.8	21.0
10	700.9	101.9	69.2	65.0	39.2	50.3	26.3	27.3	21.6
11	714.4	107.4	71.6	66.9	41.2	52.5	27.6	29.1	22.3
12	724.0	116.4	73.2	68.1	43.0	54.3	29.0	30.9	23.1
13	734.3	143.0	75.2	69.1	44.7	56.2	30.5	32.8	24.1
14	746.3	179.9	76.5	70.0	46.5	57.8	32.0	34.6	25.3
15	756.8	218.8	78.8	71.5	48.6	59.7	33.7	36.3	26.6
16	765.1	240.0	83.4	75.5	51.7	63.6	36.2	38.2	27.9
17	772.2	266.5	86.9	79.6	55.1	67.7	39.0	40.5	29.4
18	777.3	296.9	88.3	82.6	57.9	71.7	42.4	43.1	31.0
19	783.3	327.7	89.0	85.2	60.5	74.6	46.1	46.1	32.8
20	791.4	355.6	90.0	89.0	62.9	77.0	49.4	49.0	34.9
21	797.8	383.2	91.7	93.5	65.1	79.2	52.1	52.2	37.3
22	802.9	404.5	92.8	98.5	66.9	80.9	54.2	55.4	40.0
23	807.8	427.6	93.1	102.8	68.5	82.2	56.3	58.6	42.8
24	812.1	472.3	93.5	106.1	69.9	83.8	58.3	61.6	45.7
25	817.4	495.3	93.9	108.9	71.3	85.1	60.4	63.9	48.4
26	822.7	519.1	93.4	111.5	72.6	86.7	62.3	65.5	50.9
27	826.7	595.6	94.6	114.0	73.8	88.2	63.9	66.9	53.0
28	831.7	658.1	96.4	116.8	75.0	89.6	66.1	68.1	54.9
29	834.7	718.2	101.2	121.0	76.2	91.7	68.4	69.2	56.4
30	840.1	800.7	125.9	127.5	77.3	95.1	70.6	70.2	57.7
31	844.7	808.4	165.5	139.3	78.8	100.1	72.2	71.1	58.9
32	846.8	819.4	226.7	173.1	82.8	112.8	73.3	72.1	59.9
33	852.2	823.3	265.4	241.8	98.7	146.9	74.3	73.5	60.9
34	856.2	828.1	311.8	302.1	120.5	193.6	75.5	75.9	61.9
35	858.3	837.9	363.6	335.4	143.6	237.4	77.9	79.2	62.9
36	863.0	844.0	421.0	359.0	167.6	268.7	81.7	82.3	64.2
37	867.6	881.4	497.0	388.9	220.6	294.5	220.1	84.6	65.7
38	867.9	875.2	541.6	411.5	232.6	318.9	213.2	86.8	67.2
39	873.5	881.6	606.6	435.8	252.7	349.8	217.9	88.9	68.5
40	875.9	887.9	629.4	483.7	304.8	435.9	228.0	91.0	69.8
41	883.8	889.5	660.2	571.7	429.8	538.2	241.6	93.7	70.9
42	883.7	900.2	804.0	658.5	609.1	627.9	515.9	96.5	71.9
43	884.4	872.2	848.3	711.3	627.5	674.9	561.8	99.8	72.6
44	888.4	879.6	887.0	807.4	663.6	792.1	648.9	103.8	73.1
45	890.0	866.0	887.2	801.8	661.5	795.9	677.7	109.7	73.4
46	893.5	887.8	904.0	839.3	694.6	827.1	703.6	122.8	73.7
47	898.2	893.1	910.0	895.6	792.9	906.7	838.9	140.4	74.0

Table 9. Average Temperatures Measured in Full Scale Assembly F-02B, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(48,49,50,51,52,53, 54,55,56,57,58,59)	BL/WStd. (Exp.) Av(24,25,26, 27,28,29)	BL/Cav. (Exp.) Av(36,37,38, 39,40,41)	Mid. WStd. Av(16,17,18,19,20,21,22,23 72,73,74,75,76,77,78,79)	BL/Cav. (UnExp.) Av(42,43,44, 45,46,47)	BL/WStd. (UnExp.) Av(30,31,32, 33,34,35)	BL/FL (UnExp.) Av(60,61,62,63,64,65, 66,67,68,69,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
48	897.9	876.2	882.2	881.1	780.8	891.1	860.7	161.4	75.7
49	900.4	849.0	859.0	851.0	753.5	860.3	838.0	191.2	77.6
50	903.4	807.1	836.0	832.9	799.1	832.8	837.1	225.7	79.1

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	22.3	23.2	25.4	20.8	21.0	25.1	25.6	23.2	20.1	23.1	24.5	26.0	21.3	26.8	22.2	24.9	24.3	21.0	24.1
1	38.2	23.2	25.4	20.9	21.0	25.2	25.6	23.2	20.2	23.2	24.5	26.1	21.4	26.8	22.3	25.0	28.6	23.9	24.2
2	217.0	23.2	25.4	20.9	21.0	25.2	25.6	23.3	20.2	23.2	24.7	26.2	21.5	26.9	22.4	25.1	78.2	75.4	29.8
3	402.3	23.3	25.5	21.0	21.1	25.2	25.6	23.3	20.2	23.2	24.7	26.2	21.5	26.9	22.4	25.2	73.8	70.1	36.5
4	411.3	23.3	25.5	21.0	21.1	25.3	25.7	23.3	20.3	23.2	24.4	26.1	21.5	26.9	22.5	25.1	68.3	64.7	47.0
5	479.2	23.4	25.5	21.1	21.2	25.3	25.7	23.4	20.3	23.3	24.3	26.1	21.6	26.8	22.6	24.9	73.7	69.1	51.3
6	607.9	23.7	25.6	21.2	21.2	25.4	25.7	23.4	20.4	23.3	24.3	26.1	21.7	26.8	22.7	25.0	80.4	77.5	55.0
7	590.2	24.0	25.7	21.3	21.3	25.6	25.8	23.5	20.5	23.4	24.3	26.1	22.0	26.8	22.9	25.0	79.3	76.4	60.0
8	635.1	24.5	25.9	21.5	21.5	25.9	26.0	23.7	20.8	23.7	24.5	26.3	22.3	26.9	23.3	25.2	83.8	80.3	63.3
9	663.5	25.1	26.2	21.7	21.7	26.3	26.3	24.0	21.1	24.0	24.7	26.6	22.6	27.1	23.6	25.5	87.7	84.2	66.0
10	698.2	25.8	26.8	22.1	22.1	27.0	26.7	24.5	21.5	24.5	25.2	27.2	23.1	27.5	24.1	25.9	90.6	86.2	68.4
11	715.8	26.6	27.5	22.6	22.6	27.8	27.4	25.1	21.9	25.2	25.6	27.8	23.6	28.0	24.6	26.4	95.2	89.5	70.8
12	721.0	27.6	28.5	23.2	23.2	28.9	28.2	25.8	22.5	26.0	26.0	28.2	24.2	28.6	25.1	26.9	116.8	95.9	72.4
13	737.1	28.5	29.7	23.9	23.9	30.2	29.3	26.8	23.1	26.9	26.5	29.1	24.9	29.3	25.9	27.6	162.9	116.1	73.8
14	747.4	29.6	31.1	24.7	24.7	31.7	30.7	27.9	23.8	28.1	27.2	29.5	25.5	30.0	26.6	28.3	197.1	161.1	77.4
15	755.9	30.7	32.7	25.6	25.6	33.3	32.2	29.2	24.5	29.3	27.7	30.3	26.2	31.0	27.3	29.0	221.2	194.5	81.9
16	762.4	32.0	34.5	26.6	26.6	35.1	34.1	30.6	25.4	30.6	28.6	31.0	26.9	31.8	27.9	29.9	255.8	218.7	84.7
17	770.1	33.4	36.3	27.6	27.6	37.1	36.2	32.1	26.2	32.1	29.3	31.8	27.6	32.9	28.6	30.8	291.0	255.4	88.2
18	776.6	35.0	38.3	28.7	28.6	39.2	38.6	33.8	27.1	33.8	30.3	32.9	28.2	33.8	29.2	31.5	320.5	295.0	92.5
19	783.9	36.8	40.5	29.9	29.8	41.8	41.5	35.6	28.1	35.8	31.1	34.3	29.0	35.2	30.0	32.6	346.7	329.3	97.1
20	793.0	38.8	43.2	31.2	31.1	44.6	44.7	37.8	29.1	38.1	32.2	35.2	29.9	36.2	30.7	33.4	369.1	360.7	101.8
21	799.1	41.0	46.0	32.7	32.5	47.5	47.9	40.2	30.3	40.5	33.5	36.8	30.9	37.6	31.4	34.8	394.2	400.4	105.8
22	803.3	43.2	48.8	34.3	34.1	50.4	50.9	42.9	31.6	43.1	34.4	37.9	31.8	38.7	32.5	35.8	424.3	561.0	109.2
23	804.8	45.5	51.5	36.2	35.8	53.0	53.8	45.7	32.9	45.7	35.3	39.1	32.7	39.7	33.6	37.1	449.3	748.0	112.2
24	811.0	47.7	53.9	38.2	37.6	55.2	56.2	48.4	34.4	48.0	35.8	40.7	33.8	40.8	34.5	37.9	471.7	796.8	114.9
25	817.7	49.7	56.0	40.3	39.4	57.0	58.2	50.8	35.9	50.1	36.7	41.4	35.1	40.7	35.6	39.1	493.0	816.5	116.9
26	821.8	51.7	57.8	42.4	41.3	58.6	59.9	52.8	37.4	51.9	37.0	42.2	35.9	42.0	36.7	39.4	512.5	781.0	119.2
27	828.2	53.4	59.2	44.3	43.0	59.8	61.2	54.2	39.0	53.4	37.9	43.0	36.6	42.7	37.3	40.2	530.9	791.0	121.4
28	832.4	55.0	60.4	46.2	44.7	60.8	62.2	55.4	40.6	54.5	38.1	43.4	37.8	42.5	37.9	40.6	551.9	783.9	126.6
29	836.8	56.5	61.3	47.8	46.2	61.3	63.0	56.3	42.2	55.6	38.8	44.2	38.8	42.3	38.8	40.9	570.8	805.0	133.4
30	838.3	57.8	62.1	49.3	47.7	61.6	63.7	57.0	43.7	56.5	38.9	45.1	39.5	42.6	39.4	41.3	593.4	800.8	144.7
31	843.3	59.0	63.1	50.7	49.2	61.8	64.2	57.7	45.2	57.4	38.9	45.2	40.6	42.4	40.1	41.2	632.8	821.4	159.8
32	847.1	60.3	63.4	51.9	50.8	62.0	64.4	58.3	46.8	58.2	40.4	45.4	41.4	42.8	40.8	41.6	684.1	824.9	186.8
33	851.5	61.9	63.9	53.1	53.8	62.2	64.9	59.1	48.3	59.3	42.4	45.5	42.5	43.2	41.9	42.1	731.0	834.7	228.8
34	856.3	64.4	64.3	54.1	58.3	62.3	65.3	60.1	50.1	60.2	43.9	46.5	43.5	43.3	43.4	41.8	856.4	850.4	274.1
35	861.3	68.1	64.3	55.0	62.3	63.0	65.8	61.2	51.9	61.6	45.2	47.7	44.9	44.7	46.2	42.1	861.5	844.5	301.9
36	863.4	72.5	64.7	55.8	65.3	64.9	66.2	62.2	53.8	65.1	46.0	48.7	46.4	47.0	49.1	42.8	861.8	843.5	339.7
37	862.8	76.8	66.6	57.0	67.6	67.6	67.2	62.9	56.2	69.1	47.0	50.9	49.0	48.0	51.7	45.0	864.1	842.2	370.8
38	866.4	80.2	69.2	59.8	69.8	69.7	69.1	64.5	60.2	72.4	47.1	54.0	52.9	49.8	53.7	47.0	862.6	854.1	406.8
39	870.6	82.3	71.3	63.8	71.3	71.6	71.9	67.4	65.4	74.6	46.8	56.4	57.2	50.7	55.2	49.6	865.5	848.1	487.1
40	874.9	84.5	71.6	67.8	72.2	73.1	74.4	70.3	70.5	76.2	46.8	58.3	61.2	51.4	56.0	49.8	855.4	850.2	574.7
41	877.1	86.8	71.3	71.0	72.5	73.9	76.3	72.7	74.7	76.8	47.2	60.4	65.3	51.0	56.2	50.6	867.5	804.7	558.6
42	881.1	88.9	71.4	72.8	72.1	74.0	77.7	74.4	78.4	77.0	47.2	62.5	68.1	51.1	56.4	49.7	859.0	809.3	574.0

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	Temperature at Thermocouple Number																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
43	883.6	90.0	71.6	73.9	71.6	73.9	78.5	74.1	81.7	77.2	46.2	60.5	68.7	50.3	55.2	48.6	866.3	790.3	608.4
44	883.1	90.7	71.5	74.5	71.1	73.9	79.0	74.0	84.4	77.2	44.8	61.7	69.4	50.3	55.2	47.9	872.3	798.1	642.1
45	888.3	92.8	71.6	74.5	70.6	74.0	79.4	73.3	86.6	77.0	45.5	62.2	70.9	50.2	55.0	48.6	880.8	813.7	656.3
46	890.5	95.2	71.9	74.5	70.7	74.3	79.4	72.6	87.1	76.9	48.8	63.7	70.2	50.5	56.0	47.9	891.7	808.6	676.4
47	894.5	97.6	71.7	74.5	71.0	74.5	79.4	72.2	86.8	76.6	53.1	64.3	71.1	50.3	58.3	47.4	902.4	807.7	710.9
48	900.2	100.9	72.9	74.5	77.5	74.5	79.6	73.4	87.7	76.5	53.8	65.9	73.3	50.9	64.4	50.9	910.9	885.5	726.9
49	902.5	104.5	73.5	80.1	82.5	74.8	80.0	75.1	89.0	76.5	54.5	66.3	75.5	51.6	66.9	55.6	920.0	831.7	738.8
50	901.7	107.9	75.3	84.1	83.9	75.5	80.6	78.2	91.5	76.9	56.1	67.3	77.5	52.2	67.8	57.0	917.3	837.7	752.6
51	903.3	109.5	81.4	86.3	86.2	76.7	81.1	84.4	95.4	79.4	55.7	68.0	79.4	52.2	68.9	56.9	927.8	805.1	755.5
52	907.2	112.4	85.2	89.7	91.6	80.1	81.5	89.2	98.2	86.7	57.1	68.3	80.3	54.6	69.0	58.5	924.7	846.4	768.9
53	908.4	113.0	89.2	94.4	96.6	86.1	81.8	93.0	100.5	91.6	55.7	70.1	81.3	58.2	68.7	56.8	928.1	846.2	779.0
54	910.1	116.5	93.5	99.0	92.4	90.0	82.4	96.6	102.9	95.9	60.2	72.5	82.1	61.2	68.8	56.0	934.7	822.7	781.7
55	914.0	121.0	97.8	103.7	102.3	93.9	83.1	99.7	105.9	99.3	66.1	72.2	83.4	60.7	69.2	55.1	942.4	812.3	790.9
56	917.0	130.8	101.6	107.9	109.0	97.4	85.7	101.8	109.5	103.4	69.1	74.5	84.1	61.9	72.2	62.4	942.8	820.6	798.6
57	916.5	139.7	104.8	111.6	114.1	100.6	87.5	104.2	114.3	106.8	72.2	75.6	85.8	63.1	80.2	66.6	941.5	824.8	819.6
58	919.6	148.2	107.5	114.8	118.0	103.4	89.2	106.6	120.2	109.8	74.8	75.1	89.6	62.7	86.4	70.1	936.1	838.9	841.4
59	921.4	159.3	110.0	117.4	121.2	105.7	91.3	109.1	126.6	112.6	79.7	77.4	93.9	64.7	90.8	72.4	924.4	846.2	865.2
60	923.9	172.3	112.5	119.9	125.8	107.7	94.0	112.3	133.4	115.5	84.0	77.4	95.7	66.4	96.1	75.3	934.5	915.7	858.5
61	925.8	188.2	115.1	122.9	136.4	109.0	97.2	115.4	142.1	118.3	92.1	79.7	97.9	69.0	100.7	77.8	1034.5	926.6	982.7
62	929.5	196.5	117.5	130.1	165.6	110.3	100.9	119.0	155.7	120.9	102.8	81.0	102.1	72.5	106.3	79.9	953.8	933.7	986.3
63	931.3	214.6	119.7	138.9	254.3	112.1	104.8	123.3	174.0	124.3	124.1	83.6	104.8	75.5	124.8	83.6	946.5	917.1	983.0

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
0	22.3	20.7	24.4	20.9	24.9	21.2	24.1	20.7	24.3	20.5	24.3	20.6	24.4	20.6	18.3	20.9	24.4	20.9	24.3
1	38.2	20.7	24.4	20.9	24.9	21.3	25.9	23.9	25.0	20.8	24.4	20.6	24.5	20.7	18.4	20.9	30.1	26.2	24.4
2	217.0	21.7	31.0	22.3	25.0	21.4	81.6	83.5	79.2	66.8	31.6	24.7	24.8	21.0	18.4	21.0	76.5	74.9	25.4
3	402.3	31.2	30.4	25.6	25.3	21.5	83.9	83.8	74.8	63.1	42.3	33.7	27.2	23.0	18.5	21.1	73.6	71.8	35.5
4	411.3	41.4	36.5	31.0	25.9	21.9	78.7	75.2	68.5	67.7	45.6	38.7	30.6	26.0	18.4	21.3	68.3	68.8	47.1
5	479.2	45.8	41.0	35.8	26.7	22.7	81.0	81.8	66.7	70.0	47.6	42.3	34.0	29.5	18.5	21.8	74.5	72.7	52.3
6	607.9	49.6	45.1	39.9	27.8	23.8	90.1	92.2	70.1	78.4	49.9	46.3	37.6	33.0	18.4	22.5	80.8	81.4	56.6
7	590.2	54.4	50.6	44.1	29.2	25.2	95.8	98.7	73.6	77.7	53.9	50.3	42.4	36.7	18.5	23.4	79.8	84.7	62.0
8	635.1	57.1	53.8	47.5	31.0	26.9	102.4	104.3	76.9	79.3	57.8	53.3	46.7	40.3	18.5	24.5	85.0	87.3	65.0
9	663.5	59.5	57.4	50.1	33.1	28.7	108.5	109.6	80.8	82.2	61.4	56.3	50.4	43.8	18.5	25.8	88.5	90.9	67.7
10	698.2	62.0	60.5	52.4	35.4	30.7	113.5	113.6	83.8	83.0	64.9	59.2	54.0	46.7	18.6	27.3	91.2	95.3	70.2
11	715.8	63.6	62.8	54.2	37.7	32.6	117.6	118.6	85.8	84.8	67.9	61.5	56.9	48.9	18.6	28.8	95.4	102.3	72.0
12	721.0	64.8	64.9	55.5	40.2	34.5	129.3	127.7	88.6	85.9	70.4	63.5	59.5	50.6	18.6	30.5	107.3	120.5	73.6
13	737.1	65.9	66.8	56.6	42.6	36.3	147.4	139.3	89.6	85.3	72.5	64.9	61.5	52.2	18.7	32.0	141.1	155.3	74.8
14	747.4	67.0	68.4	57.8	44.8	37.7	186.5	183.1	89.9	79.3	73.8	65.4	63.3	53.6	18.7	33.5	188.5	208.2	76.5
15	755.9	70.0	73.5	59.6	47.2	39.0	221.6	217.3	93.6	82.8	76.4	65.8	67.2	55.1	18.7	34.9	215.7	248.5	82.0
16	762.4	75.0	77.4	62.9	50.1	40.3	253.3	246.3	95.3	87.1	80.5	68.0	71.7	57.7	18.7	36.4	252.3	281.6	85.9
17	770.1	78.7	79.6	66.4	53.5	42.1	274.0	262.4	95.3	90.1	84.1	71.1	75.5	60.8	18.7	37.9	297.3	324.2	88.2
18	776.6	81.8	82.3	69.8	56.9	44.3	294.6	277.4	96.6	91.0	87.0	73.8	78.7	63.9	18.7	39.7	338.4	368.1	92.3
19	783.9	86.4	84.2	72.0	59.8	46.8	316.4	296.1	98.7	92.2	89.7	77.4	80.7	66.6	18.5	41.8	365.1	405.6	96.8
20	793.0	91.5	85.5	73.8	62.3	49.4	336.9	318.4	102.0	93.5	92.2	80.4	82.2	68.7	18.7	44.1	391.3	443.0	101.7
21	799.1	96.0	86.8	75.7	64.7	51.9	336.6	342.1	106.3	94.1	94.9	82.9	83.2	70.4	18.6	46.4	420.5	483.5	106.1
22	803.3	100.0	88.3	77.2	66.6	54.1	339.6	360.2	113.3	95.1	97.2	85.5	83.9	71.9	18.5	48.6	448.3	520.5	110.1
23	804.8	104.3	89.8	79.1	68.2	56.0	358.9	377.0	119.1	95.6	100.1	87.8	84.4	72.9	18.5	50.6	473.9	559.2	113.0
24	811.0	109.2	92.0	81.2	69.4	57.7	383.1	394.6	123.6	96.8	102.8	89.9	85.0	73.9	18.7	52.5	496.4	585.2	116.1
25	817.7	115.2	94.0	83.9	70.5	59.2	412.0	413.6	128.7	97.6	105.8	92.1	85.8	74.9	18.6	54.3	516.0	613.1	118.0
26	821.8	120.3	95.2	87.5	71.3	60.5	443.6	444.9	132.5	99.7	108.4	94.5	86.5	76.0	18.5	55.9	534.8	662.1	120.0
27	828.2	129.0	97.1	92.2	71.7	61.7	475.7	484.5	140.4	110.2	111.7	97.1	87.4	77.4	18.7	57.5	549.6	748.6	122.1
28	832.4	150.1	101.8	99.9	71.8	63.0	505.7	516.0	152.9	122.2	116.9	99.8	89.2	78.6	18.4	59.0	569.4	834.2	124.9
29	836.8	209.3	109.1	119.0	71.5	65.5	530.1	524.0	168.9	128.1	123.5	103.4	91.5	80.2	18.5	60.5	669.6	885.5	129.3
30	838.3	251.4	117.0	147.6	71.3	66.3	553.4	525.6	194.4	132.8	131.6	108.8	95.5	82.2	18.7	62.1	716.2	884.8	140.5
31	843.3	293.0	132.2	176.7	71.2	72.2	572.2	533.4	226.0	138.8	143.8	117.9	100.7	87.2	18.8	63.8	739.4	893.2	162.9
32	847.1	357.3	143.2	208.6	71.3	79.0	589.3	546.5	251.3	152.9	159.3	135.3	109.8	97.4	18.7	65.6	767.3	893.8	237.6
33	851.5	369.7	166.3	238.5	71.6	83.1	605.8	566.5	278.1	198.1	183.9	164.8	125.3	113.4	18.6	67.7	769.8	894.7	291.9
34	856.3	385.6	206.3	266.6	72.8	86.9	870.9	608.2	317.1	259.0	216.0	204.5	148.0	138.5	19.0	70.7	878.0	898.6	326.1
35	861.3	396.2	218.9	291.4	77.7	90.5	871.4	851.9	400.5	305.7	253.8	242.4	173.4	166.7	18.9	75.3	872.0	893.7	374.3
36	863.4	427.6	245.3	319.5	82.4	94.2	870.1	833.2	440.3	351.9	293.3	281.0	201.0	193.6	18.9	83.4	876.1	892.4	392.8
37	862.8	471.3	277.0	375.4	86.2	97.3	874.6	856.5	531.5	398.4	330.7	326.2	230.4	231.3	19.1	88.5	875.9	902.2	415.9
38	866.4	484.5	318.3	407.1	89.8	98.7	878.6	868.3	650.6	450.1	373.5	386.4	270.5	279.4	18.9	92.6	886.3	915.5	437.2
39	870.6	527.3	422.2	474.2	92.9	99.9	871.6	873.0	628.1	502.0	431.6	462.5	320.1	340.1	18.9	95.2	889.8	913.9	468.0
40	874.9	614.6	572.5	634.9	95.0	101.7	841.4	830.8	603.4	742.8	503.7	741.6	421.8	650.5	19.0	97.1	889.9	814.2	528.4
41	877.1	890.2	501.2	815.6	96.3	106.2	836.6	815.5	606.9	879.3	545.6	839.9	453.9	803.9	18.9	100.1	905.4	756.0	549.4
42	881.1	889.9	622.7	819.3	97.5	113.1	837.1	808.3	631.3	919.6	561.9	899.0	493.3	823.0	18.7	103.5	907.1	811.3	527.2

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
43	883.6	900.0	695.4	812.7	99.3	120.4	847.1	782.7	649.2	905.1	592.6	883.5	525.9	851.6	16.9	107.7	904.3	808.6	566.0
44	883.1	910.0	673.1	843.3	101.6	128.8	873.1	808.6	707.2	912.7	658.2	897.9	591.6	840.6	15.3	110.9	894.5	833.4	595.2
45	888.3	884.8	700.0	854.9	104.1	151.2	868.6	840.7	758.8	904.9	706.4	880.7	645.8	836.7	15.0	114.1	890.6	874.6	657.5
46	890.5	874.6	702.0	860.3	106.0	216.0	844.2	779.1	781.7	871.1	737.4	857.6	668.0	800.7	14.6	127.7	909.9	862.0	759.7
47	894.5	868.4	745.4	882.3	106.3	267.7	832.3	833.5	799.0	878.3	818.0	866.5	687.8	810.3	15.1	160.6	943.0	905.5	787.2
48	900.2	878.7	758.0	885.9	109.4	360.3	834.3	876.8	800.4	882.9	838.2	872.1	708.5	834.8	15.7	212.7	946.4	924.7	798.1
49	902.5	888.4	774.1	886.3	118.9	394.6	846.8	896.2	803.9	890.4	859.9	880.8	736.5	849.9	16.6	250.0	952.8	923.7	814.4
50	901.7	898.5	790.0	883.7	140.8	426.3	854.9	887.9	842.6	890.5	854.8	897.6	740.7	854.6	17.0	278.8	942.6	921.8	821.2
51	903.3	904.9	817.5	901.7	192.2	459.1	858.2	884.8	867.6	918.8	883.4	910.3	757.9	861.1	17.3	304.3	948.5	921.7	846.9
52	907.2	910.1	894.5	900.6	222.2	499.5	861.8	879.0	828.0	926.8	888.2	907.6	866.9	864.2	17.4	330.2	899.0	900.5	870.3
53	908.4	924.6	896.6	900.9	235.5	536.5	842.1	875.7	837.7	924.5	896.7	908.6	873.8	874.5	17.5	350.0	896.8	932.2	878.4
54	910.1	936.4	898.4	908.3	256.4	571.0	855.6	885.3	845.0	931.5	907.6	908.3	883.4	883.7	17.7	369.9	903.2	944.7	892.7
55	914.0	949.7	901.3	915.7	291.1	601.5	865.9	891.5	861.3	927.4	915.3	914.5	890.4	896.1	17.8	393.5	903.6	960.0	888.3
56	917.0	948.6	872.6	913.9	352.1	633.2	872.7	891.2	873.0	925.7	916.6	924.7	855.8	892.4	18.1	424.8	920.5	948.5	880.1
57	916.5	955.0	878.2	923.2	416.7	663.3	873.7	892.8	883.2	916.8	913.6	912.3	868.1	885.6	18.3	466.3	912.5	940.7	876.0
58	919.6	971.3	909.1	943.4	495.2	691.8	857.1	904.1	909.5	939.4	924.0	910.4	899.5	900.9	18.8	521.7	911.4	943.6	890.7
59	921.4	936.9	916.9	937.4	572.3	743.7	865.9	904.3	911.4	926.1	922.5	910.5	904.3	901.0	18.6	582.3	910.8	932.2	887.8
60	923.9	930.5	919.1	981.4	636.5	924.6	878.1	908.5	913.6	922.6	912.7	911.2	907.8	909.7	18.8	636.3	926.2	940.3	899.7
61	925.8	925.7	920.4	951.7	687.7	857.9	920.3	912.0	1035.5	916.5	915.7	915.5	906.8	908.3	18.8	682.3	948.2	945.4	892.8
62	929.5	963.8	961.7	959.8	747.8	833.2	930.7	917.4	1025.0	913.7	948.7	922.7	901.2	911.5	19.0	717.8	957.7	956.6	905.5
63	931.3	942.1	955.3	953.6	762.7	808.5	936.0	918.0	1004.3	909.4	961.5	923.1	902.9	908.8	19.0	734.1	960.7	977.5	922.0

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
0	22.3	20.6	24.5	20.8	24.8	20.9	23.9	20.3	24.0	20.3	24.1	20.4	24.2	20.6	24.8	20.7	23.9	20.4	24.0
1	38.2	20.6	24.5	20.8	24.9	20.9	25.7	21.3	24.1	20.3	24.2	20.4	24.3	20.6	24.8	20.8	25.9	22.3	24.0
2	217.0	22.0	25.6	22.0	24.9	21.0	95.9	95.5	25.1	21.5	24.6	21.0	24.4	20.7	24.8	20.8	74.9	68.8	25.5
3	402.3	31.3	29.4	25.7	25.0	21.1	89.7	89.9	47.2	40.7	27.5	23.9	25.2	21.3	24.9	20.9	72.7	67.2	35.1
4	411.3	40.9	36.0	31.2	25.3	21.5	78.4	81.6	59.4	55.9	34.6	31.3	28.2	23.2	25.1	21.1	66.7	61.6	47.1
5	479.2	46.0	40.7	35.4	25.9	22.3	86.8	87.1	63.4	61.7	41.4	38.3	33.1	26.5	25.6	21.6	71.9	66.7	52.2
6	607.9	50.0	44.4	38.9	26.9	23.4	88.4	95.1	73.1	72.6	47.1	44.4	37.9	30.7	26.9	22.5	80.1	74.9	56.8
7	590.2	54.8	49.2	42.8	28.1	24.7	91.3	96.7	75.5	78.4	53.2	51.3	43.8	35.1	28.8	23.8	79.3	73.8	62.6
8	635.1	57.9	52.7	46.0	29.8	26.4	97.7	99.4	78.6	80.4	57.9	56.2	48.8	39.1	31.7	25.5	85.3	77.5	65.8
9	663.5	60.6	55.7	49.0	31.7	28.4	104.0	101.0	81.0	82.1	61.7	59.9	52.9	42.8	35.0	27.6	89.3	79.8	68.7
10	698.2	62.8	58.8	51.8	33.9	30.4	110.1	102.0	82.5	82.3	65.1	62.7	56.3	46.2	38.2	30.3	92.3	83.9	71.4
11	715.8	64.8	61.3	53.3	36.2	32.5	115.1	105.2	84.1	82.6	67.8	65.0	59.0	48.7	41.1	33.2	95.5	86.2	73.4
12	721.0	66.3	63.5	55.1	38.5	34.5	123.3	109.2	85.2	83.1	70.1	66.6	61.3	50.7	43.6	36.0	102.0	87.9	74.7
13	737.1	67.5	65.1	56.4	40.8	36.4	143.0	114.6	85.3	83.6	71.8	67.8	63.0	52.3	45.8	38.4	120.2	91.6	75.7
14	747.4	68.9	67.0	58.0	42.9	38.1	174.8	123.9	86.4	83.8	73.3	68.8	64.7	53.9	47.7	40.4	156.7	103.3	75.9
15	755.9	73.4	71.3	59.7	45.1	39.8	200.3	151.3	92.5	84.3	76.2	69.9	68.8	55.7	50.0	42.4	197.9	134.0	79.0
16	762.4	76.8	75.3	62.4	47.6	41.5	234.4	187.6	95.7	88.1	80.4	71.6	73.1	58.1	53.0	44.5	216.4	173.2	85.5
17	770.1	80.1	78.7	66.0	50.8	43.6	288.4	200.4	97.2	92.4	84.1	75.0	76.5	61.5	56.3	46.5	242.9	194.4	88.5
18	776.6	83.9	81.4	69.3	54.2	46.0	386.1	223.5	97.7	94.9	87.2	78.5	79.2	64.9	58.9	48.3	276.5	219.0	92.2
19	783.9	89.0	84.1	72.5	57.9	48.9	443.8	269.1	97.6	95.8	90.1	81.7	81.1	67.8	61.4	49.9	311.0	253.1	96.7
20	793.0	94.0	86.6	75.5	61.5	51.8	507.9	301.2	100.5	96.1	92.8	84.4	82.5	70.1	63.7	51.4	338.0	286.9	101.4
21	799.1	98.8	88.8	78.3	64.6	54.6	551.1	328.4	107.7	96.4	95.5	86.6	83.3	72.0	65.4	53.1	360.5	317.5	106.2
22	803.3	103.3	90.6	80.7	67.0	57.1	584.7	368.7	118.0	96.5	98.3	88.3	84.0	73.6	67.0	54.8	382.8	343.3	109.9
23	804.8	107.0	92.3	82.9	68.8	59.4	622.9	413.3	124.7	96.8	101.4	90.2	84.1	74.8	68.0	56.5	406.3	364.4	113.0
24	811.0	110.3	93.6	84.7	70.2	61.3	659.3	445.8	129.7	97.2	104.7	92.2	84.3	75.9	68.8	58.1	438.2	390.0	115.8
25	817.7	113.6	94.6	86.6	71.2	62.9	686.1	481.8	134.6	104.3	107.9	94.8	84.5	76.9	69.5	59.5	467.0	421.5	118.4
26	821.8	116.8	95.6	88.4	71.9	64.3	718.8	516.0	144.6	116.2	111.0	97.6	84.7	78.0	70.1	60.9	493.3	449.5	121.2
27	828.2	121.0	96.9	90.4	72.4	65.6	718.6	540.9	159.4	126.7	114.1	100.9	85.0	79.0	70.7	62.2	520.9	476.6	123.7
28	832.4	129.0	99.2	93.4	72.6	66.7	727.1	587.6	180.3	135.4	118.0	104.7	86.0	79.8	71.3	63.3	558.9	500.4	126.5
29	836.8	147.6	102.0	98.1	72.5	67.9	788.3	656.8	208.9	150.4	124.6	109.1	88.7	81.2	71.9	64.4	609.7	526.4	130.8
30	838.3	198.3	108.0	108.4	72.5	69.3	820.4	718.6	242.5	182.6	136.1	114.4	93.6	82.6	72.8	65.5	641.9	575.6	140.1
31	843.3	240.5	126.3	132.2	72.4	71.4	846.7	841.0	279.1	226.1	153.7	122.0	100.8	84.9	73.9	66.7	722.9	653.3	151.1
32	847.1	290.5	171.5	165.5	72.6	73.5	842.5	863.4	316.0	277.6	178.6	137.2	112.8	88.4	75.4	67.8	765.1	739.8	191.6
33	851.5	353.5	212.2	203.3	73.9	79.2	861.8	883.9	354.7	338.1	212.4	162.3	131.7	98.1	77.8	69.1	776.7	826.2	247.7
34	856.3	380.1	239.4	241.7	77.1	84.0	858.8	886.8	391.1	405.2	246.1	201.4	154.8	114.5	81.7	71.1	820.2	844.6	287.6
35	861.3	405.0	272.2	279.6	80.7	87.3	862.7	872.1	420.1	449.8	272.4	247.4	174.1	139.4	87.6	74.7	831.9	834.3	339.7
36	863.4	435.6	290.0	324.6	83.9	91.1	861.2	880.2	443.8	496.8	297.6	296.0	191.2	170.0	92.4	79.9	823.0	833.0	435.7
37	862.8	474.3	332.8	380.0	87.3	95.7	862.8	896.6	467.6	538.3	319.3	346.0	206.6	196.6	96.4	88.9	825.6	833.4	482.4
38	868.4	512.2	363.0	454.5	90.7	99.9	861.4	909.7	490.3	574.9	350.9	397.9	238.1	231.1	99.1	95.0	836.1	843.1	508.1
39	870.6	582.2	406.0	548.1	93.0	103.3	862.5	915.1	521.8	610.6	388.5	458.9	275.8	261.7	101.5	99.3	834.4	850.8	561.1
40	874.9	897.4	488.1	878.2	95.6	107.7	857.8	878.9	561.1	893.6	423.5	713.0	333.7	405.6	104.7	101.3	828.7	855.0	640.0
41	877.1	894.1	511.6	902.5	95.6	115.1	873.6	874.1	569.1	879.4	446.2	841.3	334.7	681.9	107.4	105.8	831.4	842.7	673.3
42	881.1	907.6	500.1	889.5	95.2	122.7	863.4	877.3	563.4	922.8	481.5	875.8	382.0	694.3	110.8	111.4	832.1	823.0	702.2

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
43	883.6	891.6	540.7	842.6	95.3	130.2	853.0	864.9	598.1	911.1	538.5	876.6	423.6	726.7	112.5	116.5	841.0	816.5	762.0
44	883.1	898.7	592.7	843.0	95.5	146.3	868.2	872.5	635.1	893.2	593.3	878.9	472.9	734.8	114.3	120.6	850.4	813.7	782.1
45	888.3	893.9	652.7	921.3	96.4	232.6	871.8	881.4	696.5	892.0	636.5	877.3	527.1	747.4	117.5	124.6	847.2	810.7	781.1
46	890.5	827.6	783.2	960.0	98.0	322.9	886.5	877.3	697.8	843.4	676.5	848.3	579.2	742.7	123.5	139.3	862.3	807.6	778.1
47	894.5	886.8	797.6	971.5	100.4	391.9	896.9	897.9	733.0	851.0	723.2	851.0	613.2	731.5	134.5	180.8	874.8	807.1	778.4
48	900.2	900.4	811.0	964.6	105.3	430.5	935.1	910.2	767.9	848.0	760.6	845.2	652.9	766.9	152.9	253.2	895.6	808.2	794.3
49	902.5	913.1	827.2	923.0	115.3	465.5	937.3	912.1	796.3	853.7	815.4	846.0	689.8	776.8	182.5	324.2	900.6	809.2	799.2
50	901.7	922.1	833.6	881.1	163.1	487.9	928.5	906.7	822.8	848.3	840.5	856.9	711.0	783.2	235.4	416.0	975.9	809.3	810.2
51	903.3	923.2	845.1	894.1	212.5	508.4	931.5	919.0	827.2	873.7	841.4	861.5	733.6	788.9	294.1	484.8	849.4	809.6	821.8
52	907.2	925.7	869.5	894.7	242.2	534.1	918.2	918.7	832.5	894.0	845.4	864.4	751.8	789.5	363.1	496.0	843.4	809.4	833.1
53	908.4	926.6	883.1	892.2	311.5	559.4	916.7	925.4	854.3	908.1	869.2	863.0	767.4	806.9	425.7	526.4	1016.9	808.8	834.0
54	910.1	929.6	885.2	896.2	367.1	585.5	918.7	932.4	873.0	909.4	885.8	863.4	770.0	817.7	477.5	583.8	1124.4	808.8	837.8
55	914.0	940.0	888.5	906.1	393.2	611.8	920.4	939.0	880.3	912.2	887.3	872.7	773.9	851.2	515.5	651.6	1228.8	811.0	845.3
56	917.0	922.9	865.4	905.4	410.3	639.4	937.3	927.9	887.2	913.9	898.2	882.0	815.2	857.0	534.4	689.2	911.2	813.1	852.4
57	916.5	913.7	863.4	907.1	424.3	668.3	936.7	930.8	912.5	914.9	903.7	896.4	821.3	865.7	540.5	718.5	910.1	813.0	856.6
58	919.6	950.2	881.7	933.3	433.6	697.9	951.2	954.1	922.8	920.6	918.6	917.2	831.8	882.4	555.1	746.9	915.5	815.7	866.5
59	921.4	953.7	891.3	944.7	461.4	726.9	949.6	945.2	920.3	923.8	922.1	916.6	831.8	877.4	570.4	764.6	913.7	817.2	865.9
60	923.9	960.3	888.9	919.7	493.2	751.0	952.6	963.0	922.9	926.9	926.6	911.4	839.8	897.5	587.8	774.6	917.7	818.7	864.4
61	925.8	960.0	892.6	920.3	526.3	766.2	961.1	956.1	928.2	919.4	925.3	913.6	864.9	903.4	608.3	780.6	923.6	820.5	863.7
62	929.5	964.4	907.4	922.1	562.0	767.7	979.4	953.1	963.8	926.0	936.5	919.4	895.6	909.1	643.4	793.9	929.1	826.2	870.1
63	931.3	962.5	907.8	935.2	602.8	760.5	966.6	942.7	977.7	923.5	938.5	910.1	892.7	910.0	688.6	776.0	923.1	829.0	870.2

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)					
		55	56	57	58	59
0	22.3	20.4	24.2	20.4	25.0	21.3
1	38.2	20.4	24.2	20.4	25.0	21.4
2	217.0	21.3	25.6	21.3	25.1	21.5
3	402.3	26.8	28.6	24.4	25.2	21.5
4	411.3	35.7	35.2	30.9	25.4	21.7
5	479.2	41.2	40.1	35.7	25.9	22.1
6	607.9	45.7	44.1	39.5	26.8	22.8
7	590.2	51.4	49.2	43.9	28.1	23.7
8	635.1	54.5	52.8	47.2	29.8	24.9
9	663.5	57.5	56.3	50.2	31.9	26.5
10	698.2	60.0	59.1	52.6	34.3	28.2
11	715.8	62.2	61.7	54.8	36.7	29.9
12	721.0	64.0	63.9	56.4	39.2	31.7
13	737.1	65.0	65.0	57.8	41.7	33.5
14	747.4	66.2	66.3	59.2	44.0	35.1
15	755.9	67.4	68.8	60.6	46.2	36.8
16	762.4	69.2	73.1	62.5	48.5	38.4
17	770.1	75.0	77.0	66.0	51.6	40.1
18	776.6	78.7	80.0	70.3	55.2	42.1
19	783.9	82.8	82.6	74.0	58.8	44.6
20	793.0	87.3	85.2	77.3	62.0	47.7
21	799.1	91.9	87.7	80.6	64.8	50.8
22	803.3	96.3	89.6	83.8	67.0	53.7
23	804.8	99.9	91.3	86.3	68.7	56.3
24	811.0	102.6	92.9	88.4	69.9	58.6
25	817.7	105.4	93.8	90.2	70.8	60.4
26	821.8	107.3	95.6	92.4	71.5	62.0
27	828.2	109.9	96.8	94.1	72.0	63.3
28	832.4	112.2	98.7	95.4	72.4	64.4
29	836.8	114.2	100.3	97.5	72.9	65.4
30	838.3	116.7	102.2	99.8	73.3	66.4
31	843.3	120.9	107.4	102.8	73.6	67.6
32	847.1	128.9	116.2	107.1	73.6	68.6
33	851.5	138.4	139.3	119.0	73.5	69.8
34	856.3	179.5	174.6	148.1	73.8	70.7
35	861.3	250.1	233.8	204.4	76.5	71.8
36	863.4	318.1	349.0	232.1	82.7	74.6
37	862.6	352.1	429.7	277.2	86.0	78.9
38	866.4	401.9	443.9	327.6	88.7	83.0
39	870.6	448.0	535.9	368.4	89.4	87.8
40	874.9	507.0	634.8	422.5	90.1	91.7
41	877.1	787.9	658.9	877.7	92.0	93.7
42	881.1	859.7	678.9	896.1	93.8	101.0

Table 10. Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	55	56	57	58	59
43	883.6	867.2	764.4	894.5	94.9	108.3
44	883.1	871.0	775.3	898.7	97.1	114.5
45	886.3	856.7	780.1	887.4	99.7	120.7
46	890.5	844.8	780.5	886.9	104.8	136.0
47	894.5	841.8	787.9	900.2	123.4	193.5
48	900.2	843.1	809.9	898.8	174.5	275.5
49	902.5	844.3	825.1	896.4	209.3	330.3
50	901.7	841.3	830.5	888.6	238.4	376.5
51	903.3	836.4	834.3	898.3	296.3	405.8
52	907.2	832.7	843.0	904.0	359.7	429.9
53	908.4	830.6	843.1	901.1	391.3	454.2
54	910.1	829.5	847.4	905.5	414.8	485.8
55	914.0	830.0	858.4	909.0	430.8	517.8
56	917.0	831.1	867.6	907.9	447.9	546.4
57	916.5	831.7	873.7	910.2	472.0	570.9
58	919.8	832.9	883.0	917.4	491.6	592.3
59	921.4	834.1	881.4	916.9	512.2	612.7
60	923.9	835.5	878.0	918.7	533.0	632.4
61	925.8	837.5	878.0	923.4	553.6	653.6
62	929.5	839.5	887.7	926.7	576.3	675.9
63	931.3	841.4	883.6	922.3	601.3	699.6

Table 11. Average Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,24,25,34,35, 42,43,52,53)	BL/SStd. (Exp.) Av(26,27,44,45)	BL/Cav. (Exp.) Av(18,19,36, 37,54,55)	Mid. SStd. Av(28,29,46,47)	BL/Cav. (UnExp.) Av(20,21,38, 39,56,57)	BL/SStd. (UnExp.) Av(30,31,48,49)	BL/FL (UnExp.) Av(22,23,32,33,40, 41,50,51,58,59)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
0	22.3	21.6	22.3	22.3	22.4	22.5	20.9	22.1	23.0
1	36.2	24.2	22.6	22.4	22.4	22.5	21.0	22.2	23.1
2	217.0	58.9	48.1	24.3	25.5	24.6	21.1	22.3	23.1
3	402.3	78.3	56.5	32.7	31.9	27.4	22.0	22.4	23.1
4	411.3	73.7	62.9	43.2	37.5	33.5	24.0	22.7	23.2
5	479.2	74.7	65.5	48.1	42.4	38.1	26.9	23.2	23.3
6	607.9	80.6	73.5	52.3	46.9	42.0	30.0	24.1	23.3
7	590.2	84.6	76.3	57.5	52.2	46.6	33.5	25.1	23.5
8	635.1	88.2	78.8	60.6	56.3	50.0	36.7	26.5	23.7
9	683.5	92.4	81.5	63.3	59.9	53.1	39.5	28.1	24.1
10	696.2	96.5	82.9	65.8	63.0	55.9	42.0	29.8	24.6
11	715.8	100.4	84.3	67.8	65.6	58.0	43.8	31.6	25.2
12	721.0	107.1	85.7	69.3	67.6	59.9	45.3	33.5	26.0
13	737.1	123.6	85.9	70.4	69.3	61.3	46.6	35.2	26.9
14	747.4	152.1	84.9	71.9	70.3	62.8	47.7	36.9	28.0
15	755.9	187.6	88.3	75.6	72.1	65.6	49.6	38.5	29.3
16	762.4	220.0	91.6	79.4	75.1	68.9	51.9	40.2	30.6
17	770.1	252.2	93.8	83.1	78.6	72.3	54.4	42.3	32.1
18	776.6	289.4	95.0	86.9	81.6	75.5	56.7	44.6	33.7
19	783.9	323.5	96.1	91.5	84.7	78.2	58.5	47.1	35.5
20	793.0	355.7	98.0	96.3	87.5	80.6	60.0	49.7	37.6
21	799.1	384.7	101.1	100.8	90.0	83.0	61.1	52.0	39.8
22	803.3	412.2	105.7	104.8	92.3	85.0	62.0	54.1	42.1
23	804.8	452.5	109.1	108.2	94.9	87.0	62.6	55.8	44.4
24	811.0	494.8	111.8	111.5	97.4	88.8	63.2	57.3	46.6
25	817.7	523.2	116.3	114.6	100.2	90.5	63.7	58.5	48.6
26	821.8	550.9	123.2	117.5	102.9	92.5	64.3	59.5	50.4
27	828.2	573.5	134.2	121.2	106.0	94.6	65.0	60.3	51.9
28	832.4	606.0	147.7	128.2	109.9	98.1	65.7	61.0	53.3
29	836.8	649.4	164.0	144.1	115.1	104.3	67.1	61.8	54.5
30	838.3	678.7	188.0	165.3	122.7	113.8	69.3	62.7	55.5
31	843.3	717.0	217.5	188.0	134.3	129.6	72.9	63.8	56.5
32	847.1	743.2	249.5	232.1	152.6	152.0	79.3	65.4	57.3
33	851.5	765.8	292.2	271.7	180.8	179.8	90.5	67.2	58.5
34	856.3	792.5	343.1	305.5	217.0	212.8	106.7	69.4	59.9
35	861.3	835.3	394.0	344.5	254.0	250.0	124.8	72.3	61.5
36	863.4	859.5	433.2	391.6	292.0	293.4	143.4	76.4	63.4
37	862.8	860.5	483.5	427.8	330.5	345.4	163.4	79.9	65.7
38	868.4	869.0	541.5	458.5	377.2	385.7	191.4	82.8	68.3
39	870.6	873.0	565.6	512.3	435.2	459.1	224.1	85.1	71.1
40	874.9	858.3	700.2	627.0	595.4	605.2	352.2	87.2	73.4
41	877.1	846.1	733.7	725.6	668.2	711.3	459.8	89.7	75.1
42	881.1	843.9	759.3	743.4	704.6	734.4	479.5	93.2	76.3

Table 11. Average Temperatures Measured in Full Scale Assembly F-03, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,24,25,36,37,44, 44,45,52,53,64,65)	BL/WStd. (Exp.) Av(26,27,38, 39,54,55)	BL/Cav. (Exp.) Av(18,19,46, 47, 66,67)	Mid. WStd. Av(28,29,30,31, ,56,57,58,59)	BL/Cav. (UnExp.) Av(20,21,48, 49,68,69)	BL/WStd. (UnExp.) Av(32,33,40, 41,60,61)	BL/FL (UnExp.) Av(22,23,34,34,42) 43,50,51,62,63,70,71)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
43	883.6	517.0	765.9	765.9	722.8	758.4	504.7	96.6	76.9
44	883.1	841.9	787.1	783.2	754.6	771.0	515.9	101.2	77.4
45	888.3	852.9	813.1	788.4	775.2	799.4	531.5	116.7	77.8
46	890.5	861.0	798.5	793.5	779.9	828.8	534.3	140.7	78.1
47	894.5	864.9	815.3	812.3	814.7	847.5	542.5	169.9	78.3
48	900.2	879.6	824.8	823.6	829.0	854.7	567.6	210.5	79.7
49	902.5	894.3	836.1	833.0	850.5	855.4	583.3	237.6	81.8
50	901.7	897.9	851.1	841.0	862.5	851.2	591.5	266.1	83.8
51	903.3	887.8	871.8	848.2	874.1	865.2	600.2	299.5	86.7
52	907.2	876.5	870.3	856.8	876.4	884.4	605.7	329.4	90.5
53	908.4	900.9	881.2	862.2	884.4	886.2	616.6	357.0	94.0
54	910.1	912.4	889.7	867.9	891.3	890.2	622.3	383.5	96.6
55	914.0	926.1	895.3	874.0	897.5	896.5	634.7	407.2	100.7
56	917.0	897.0	900.0	872.3	905.4	888.8	645.7	434.0	105.2
57	916.5	897.1	906.8	875.4	906.5	892.6	647.7	462.5	109.3
58	919.6	902.4	923.1	892.2	917.6	911.3	658.5	492.9	113.1
59	921.4	900.5	920.4	890.6	917.9	914.8	657.2	528.7	117.0
60	923.9	905.9	921.5	891.5	915.5	917.6	666.4	578.2	121.5
61	925.8	919.2	949.9	910.4	917.5	914.4	673.9	593.3	127.2
62	929.5	939.5	957.1	921.6	931.8	927.5	683.8	612.4	135.2
63	931.3	933.5	953.7	920.2	933.3	926.3	682.6	623.6	151.8

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Time (min)	T(Fav) (°C)	Temperature at Thermocouple Number																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	22.3	22.6	24.5	22.1	21.6	23.4	23.9	23.2	20.9	22.6	23.5	23.9	22.6	24.4	23.5	22.4	22.9	22.0	21.3
1	41.7	22.6	24.6	22.2	21.6	23.4	23.9	23.2	20.9	22.6	23.6	23.9	22.6	24.4	23.6	22.4	28.0	28.1	25.1
2	238.7	22.6	24.6	22.2	21.7	23.4	23.9	23.2	20.9	22.7	23.6	23.9	22.7	24.4	23.6	22.4	79.6	75.8	71.4
3	394.7	22.6	24.6	22.2	21.7	23.4	23.9	23.2	21.0	22.7	23.7	24.0	22.7	24.6	23.7	22.5	70.5	68.8	68.4
4	397.4	22.7	24.6	22.3	21.8	23.4	23.9	23.3	21.0	22.7	23.7	24.0	22.8	24.6	23.7	22.4	65.6	63.7	62.8
5	506.2	22.7	24.6	22.3	21.9	23.5	24.0	23.3	21.0	22.8	23.8	24.0	22.9	24.6	23.7	22.6	75.7	72.6	71.5
6	597.4	22.8	24.7	22.4	22.1	23.6	24.0	23.3	21.1	22.8	23.9	24.2	22.9	24.6	23.8	22.7	79.9	77.7	76.1
7	585.2	23.0	24.8	22.5	22.3	23.8	24.1	23.4	21.1	23.0	24.0	24.1	23.0	24.7	23.8	22.6	79.6	77.2	77.6
8	639.8	23.2	24.9	22.6	22.5	24.0	24.2	23.6	21.2	23.2	24.0	24.2	23.0	24.7	23.8	22.5	86.4	81.0	81.7
9	665.8	23.5	25.2	22.8	22.9	24.4	24.4	23.9	21.3	23.5	24.3	24.3	23.1	24.8	24.1	22.7	89.9	85.4	84.7
10	699.5	23.9	25.5	23.0	23.3	24.9	24.5	24.2	21.4	24.0	24.6	24.5	23.1	25.0	24.2	22.7	92.3	89.2	87.0
11	715.0	24.4	26.0	23.4	23.8	25.6	24.8	24.7	21.5	24.7	24.8	24.8	23.2	25.4	24.4	22.7	97.2	94.6	90.3
12	722.1	25.1	26.7	23.9	24.4	26.5	25.2	25.4	21.7	25.6	25.1	25.1	23.3	25.6	24.7	22.7	104.2	110.8	97.7
13	734.7	25.9	27.6	24.5	25.2	27.6	25.8	26.3	21.9	26.7	25.6	25.4	23.5	26.2	25.0	23.0	142.8	143.1	120.2
14	744.7	26.9	28.7	25.2	26.1	28.9	26.5	27.4	22.2	27.9	26.2	26.0	23.6	26.7	25.5	23.1	193.1	188.5	155.4
15	756.7	27.9	29.9	26.1	27.1	30.4	27.3	28.6	22.5	29.3	26.9	26.6	23.9	27.3	26.2	23.4	205.7	201.8	188.6
16	764.4	29.1	31.4	27.0	28.2	32.0	28.4	30.1	22.9	30.9	27.5	27.5	24.3	28.3	26.9	23.8	227.3	231.4	208.9
17	770.0	30.5	33.0	28.1	29.5	33.8	30.0	31.6	23.4	32.6	28.4	28.3	24.7	29.2	27.5	24.2	265.5	264.1	233.5
18	777.4	32.3	34.7	29.3	30.8	35.9	33.3	33.2	23.9	34.5	29.4	29.2	25.2	29.9	28.4	24.8	333.6	296.0	259.2
19	783.8	34.6	36.7	30.6	32.4	38.3	39.1	34.9	24.5	36.6	30.3	30.4	25.6	31.0	29.5	25.4	350.3	322.2	289.3
20	791.0	37.4	39.1	32.0	34.2	41.2	46.7	36.8	25.2	39.1	31.5	31.6	26.2	32.6	30.7	26.2	369.4	347.1	319.8
21	796.9	40.6	41.9	33.6	36.3	44.2	54.1	39.0	26.1	41.8	32.8	33.1	26.9	34.2	32.0	26.5	385.4	368.2	352.1
22	801.9	44.0	44.9	35.6	38.8	47.4	59.5	41.5	27.2	44.7	34.3	34.6	27.5	36.3	33.4	27.9	401.8	395.2	375.2
23	807.2	47.4	48.1	37.9	41.4	50.3	63.0	44.1	28.5	47.5	35.9	35.7	28.2	37.6	35.1	28.8	418.9	425.3	395.7
24	812.7	50.5	51.1	40.4	44.2	53.1	65.0	46.6	29.7	50.3	36.5	37.3	29.4	38.6	36.3	29.2	443.6	452.2	424.1
25	818.7	53.2	53.7	43.1	46.7	55.3	66.0	49.3	31.6	52.6	37.7	37.4	30.7	39.8	37.2	30.0	459.9	478.5	450.9
26	822.0	55.6	55.9	45.7	49.2	57.2	66.5	51.9	33.7	54.6	38.2	38.7	32.2	40.3	37.3	30.9	479.7	512.7	487.7
27	826.7	57.4	57.8	48.2	51.4	58.7	66.6	54.1	35.7	56.3	38.7	39.1	33.8	40.4	37.4	31.4	503.0	596.7	539.5
28	831.2	58.8	59.2	50.4	53.4	60.0	66.4	56.0	37.9	57.8	38.8	39.8	35.5	41.0	38.6	31.8	546.1	690.7	619.2
29	836.5	59.9	60.3	52.3	55.1	61.1	66.2	57.6	40.0	59.0	39.7	40.6	37.1	41.2	39.1	32.7	670.8	833.6	807.1
30	839.9	61.0	61.2	53.9	56.6	62.0	65.9	59.0	42.2	60.0	39.9	41.1	38.6	41.3	39.3	32.9	739.0	853.8	836.2
31	843.4	61.9	61.8	55.3	58.0	62.7	65.8	60.2	44.2	60.9	40.2	41.5	40.1	41.0	38.9	33.2	786.2	872.2	840.7
32	847.2	62.7	62.3	56.3	59.2	63.2	65.9	61.2	46.2	61.6	40.2	41.6	41.4	41.7	39.7	32.7	804.3	874.0	839.1
33	852.9	63.3	62.7	57.3	60.5	63.6	66.0	62.1	48.2	62.2	40.5	42.4	42.6	41.9	39.7	32.9	818.6	879.8	832.0
34	855.0	63.9	62.9	58.1	61.9	64.0	65.9	62.8	50.0	62.8	41.5	43.3	43.6	41.9	40.4	33.8	879.7	872.9	846.5
35	858.3	64.5	63.0	58.7	63.5	64.6	65.4	63.4	51.8	63.4	42.2	43.4	45.0	42.3	40.9	34.2	875.8	875.8	850.4
36	863.5	65.1	63.1	59.1	65.7	65.2	64.6	64.0	53.4	64.2	43.6	44.3	46.3	43.4	42.4	34.6	882.5	877.3	851.9
37	865.8	65.9	63.2	59.5	68.3	66.0	64.0	64.6	55.0	66.2	44.2	45.1	48.0	43.8	42.8	34.3	883.1	882.0	855.3
38	868.8	67.0	63.7	60.0	69.6	67.0	63.7	65.0	56.5	68.7	44.9	45.9	49.5	44.6	43.2	35.3	882.2	880.3	856.6
39	871.5	68.7	64.9	60.9	70.2	68.7	63.8	65.6	58.2	70.7	45.2	47.1	50.9	45.3	43.3	36.1	882.5	886.9	858.2
40	875.7	70.5	66.5	63.0	71.1	70.4	64.6	66.7	60.1	72.2	45.4	48.4	52.6	46.7	43.7	36.8	884.5	887.9	859.0
41	877.4	72.2	67.9	65.2	72.1	71.5	66.0	67.7	62.5	72.9	46.0	49.2	54.3	47.3	44.2	37.3	893.6	900.2	866.8
42	881.1	73.5	69.1	66.9	72.9	72.2	67.8	68.6	65.1	73.4	45.5	49.8	54.9	48.2	44.5	36.7	900.0	912.4	871.6

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	Temperature at Thermocouple Number																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
43	884.8	74.6	70.0	67.9	73.4	72.8	69.4	69.6	67.9	73.6	45.9	51.0	56.7	49.0	45.0	37.9	905.8	921.4	875.4
44	888.6	75.5	70.7	68.6	73.6	73.3	70.7	70.6	70.7	73.8	45.8	51.3	57.3	49.6	44.0	37.5	914.1	889.0	888.8
45	892.8	76.2	71.1	69.1	73.8	73.6	71.7	71.6	73.4	73.8	46.3	52.2	58.2	50.0	44.8	37.5	914.0	870.8	886.3
46	894.8	76.6	71.4	69.5	74.1	74.2	72.6	72.5	75.7	73.6	45.7	52.4	58.8	49.4	44.1	38.6	909.5	901.2	862.5
47	892.6	76.8	71.5	70.0	74.7	74.5	73.3	73.2	77.6	73.5	46.2	52.2	58.7	49.4	43.7	37.5	907.6	918.9	854.8
48	898.4	76.9	71.8	70.5	75.1	74.7	73.9	73.8	79.1	73.5	45.6	53.1	59.7	49.6	43.9	37.4	834.6	926.1	867.3
49	899.2	76.6	71.9	70.8	75.4	74.9	74.2	74.3	80.2	73.4	46.6	54.2	61.2	50.3	44.6	37.4	818.0	878.2	882.4
50	903.8	76.6	72.2	71.0	76.2	74.9	74.0	74.6	80.9	73.2	51.3	54.5	61.0	49.2	43.2	36.7	808.5	863.0	903.7
51	907.5	76.9	73.2	71.9	79.8	74.4	73.9	74.7	81.5	73.6	54.5	53.9	61.4	48.9	43.2	36.7	807.8	857.6	861.7
52	908.1	77.0	74.1	74.0	83.8	74.1	74.1	74.7	81.7	73.5	56.7	53.4	60.4	48.5	43.0	37.8	821.9	864.7	863.6
53	909.4	77.2	76.6	79.2	88.6	74.7	74.5	74.7	81.9	73.4	57.1	54.6	60.5	48.6	43.0	37.7	813.3	882.7	873.2
54	911.6	77.6	82.6	82.8	94.0	75.3	75.4	74.8	82.2	73.4	56.4	54.3	60.2	48.7	45.0	37.0	847.2	869.2	818.4
55	912.5	79.8	85.7	86.0	99.2	75.3	76.6	74.8	82.5	73.7	58.6	54.9	62.2	49.7	49.0	37.5	866.3	847.4	773.9
56	916.4	83.1	90.0	89.9	103.7	79.6	77.6	75.2	82.8	73.6	56.3	55.5	62.1	49.4	53.1	39.8	885.6	817.1	759.7
57	918.0	85.2	94.7	94.3	108.0	85.6	78.6	75.8	82.9	78.5	55.0	56.5	63.6	51.2	54.7	42.2	898.6	820.2	788.6
58	919.8	87.3	99.1	98.5	112.0	90.2	79.5	76.7	83.3	84.6	53.9	57.3	64.8	52.0	53.9	49.8	913.1	787.5	787.5
59	921.8	89.7	102.8	102.6	115.8	94.9	80.1	77.7	83.9	88.9	62.0	58.6	66.1	53.7	54.6	45.2	916.6	785.3	788.9
60	923.3	92.5	105.7	106.0	118.9	99.6	80.8	78.8	84.7	93.0	67.4	58.8	66.5	53.6	53.9	47.2	901.5	783.5	779.2
61	926.8	95.6	108.5	108.7	121.8	103.8	81.6	80.2	85.2	97.1	71.6	59.0	66.5	58.3	52.6	43.0	907.8	758.0	752.8
62	926.4	98.8	111.3	111.0	125.3	107.4	82.6	81.5	85.9	101.0	72.8	60.7	67.1	59.0	52.9	43.3	879.7	746.7	739.2
63	929.7	102.0	114.0	113.1	134.6	110.4	83.4	83.1	86.1	104.3	76.9	60.9	67.2	60.3	53.4	43.4	838.1	741.3	734.3
64	931.1	105.2	116.6	115.5	145.6	113.5	83.9	86.3	86.4	107.0	83.5	61.9	67.6	61.3	62.5	41.9	809.3	738.2	731.5

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
0	22.3	23.1	22.2	21.1	22.9	22.2	21.1	23.3	22.7	21.3	22.8	21.0	22.9	20.7	23.3	21.0	23.5	21.5	22.6
1	41.7	23.2	22.3	21.2	23.0	22.2	21.2	23.3	22.8	21.4	29.9	22.4	25.4	21.6	23.3	21.0	23.5	21.6	24.1
2	238.7	38.5	24.8	24.9	26.6	26.3	29.0	23.3	22.8	21.4	85.9	88.1	84.1	79.1	23.6	21.0	23.5	21.6	97.1
3	394.7	34.3	32.1	28.1	27.9	26.3	26.5	23.7	23.0	22.5	86.1	88.0	74.4	71.1	24.0	21.1	23.7	21.8	89.9
4	397.4	42.5	41.6	36.6	31.5	30.5	29.8	24.3	23.4	23.5	81.0	82.5	69.4	68.7	24.5	21.1	24.3	22.3	83.8
5	506.2	47.7	46.9	42.2	35.0	34.2	33.5	25.1	24.0	24.4	84.1	86.8	66.6	67.4	25.2	21.3	25.0	22.6	95.1
6	597.4	52.1	51.8	47.1	38.9	38.3	36.6	26.2	25.0	25.5	89.7	91.2	66.7	69.3	26.0	21.6	26.0	23.2	95.8
7	585.2	57.0	56.5	52.4	44.2	43.8	40.2	27.6	26.2	26.8	91.6	97.7	67.8	70.0	26.9	22.0	27.3	23.9	96.9
8	639.8	60.7	59.4	55.6	48.2	45.9	43.5	29.3	27.7	28.4	94.7	104.4	69.0	70.8	28.1	22.5	28.9	24.5	100.5
9	665.8	64.3	62.3	59.0	50.9	50.0	45.6	31.3	29.4	30.3	98.1	108.8	71.0	72.7	29.4	23.2	30.7	25.4	103.3
10	699.5	67.7	65.1	61.6	55.2	51.4	48.3	33.6	31.4	32.2	100.6	112.2	73.4	74.9	31.0	24.0	33.0	26.4	106.6
11	715.0	69.8	67.2	63.6	58.3	55.7	51.2	36.0	33.5	34.2	103.6	116.3	75.3	76.9	32.6	24.9	35.4	27.6	110.8
12	722.1	71.4	69.3	65.7	60.7	58.1	52.8	38.6	35.9	36.2	109.7	122.5	77.3	79.0	34.4	25.9	37.7	28.8	115.3
13	734.7	72.8	71.2	67.5	62.4	59.2	54.8	41.1	38.3	38.3	117.9	131.7	79.1	82.2	36.0	27.0	40.0	30.0	123.9
14	744.7	74.7	73.4	69.6	64.4	62.5	56.3	43.5	40.8	40.3	146.7	154.2	79.9	80.7	37.7	28.1	42.0	31.1	134.4
15	756.7	80.7	78.6	71.4	68.7	67.1	58.2	45.7	43.4	42.1	186.1	206.5	83.8	81.9	40.8	29.3	43.9	32.3	162.0
16	764.4	83.8	81.7	77.2	75.5	70.9	61.7	48.5	46.5	43.7	207.9	235.9	87.2	86.5	46.1	30.7	46.4	33.7	198.8
17	770.0	86.7	85.1	81.2	77.2	74.5	66.2	52.0	50.6	45.9	218.8	248.6	90.2	91.6	54.8	32.5	49.8	35.5	231.2
18	777.4	89.3	86.3	84.3	79.5	78.0	70.1	56.0	55.3	48.8	225.1	263.5	93.7	93.0	62.2	35.3	53.8	37.6	264.0
19	783.8	93.5	93.0	87.8	82.1	80.2	73.6	59.9	59.9	52.2	236.4	283.4	96.4	93.4	68.8	40.6	57.8	40.0	292.5
20	791.0	98.1	98.1	93.5	82.9	80.9	76.9	63.3	64.0	55.7	250.6	305.6	98.4	95.6	73.7	49.6	61.3	42.5	325.0
21	798.9	102.2	102.5	98.4	84.2	83.2	79.9	66.3	67.5	59.0	267.8	335.4	99.9	98.4	77.0	59.6	64.1	45.0	364.6
22	801.9	105.4	106.0	102.4	85.1	87.7	82.5	68.6	70.6	62.1	287.8	359.6	101.1	100.4	79.3	68.5	66.0	47.4	404.7
23	807.2	107.8	108.9	105.4	85.1	89.4	85.3	70.4	72.8	64.7	306.7	373.7	102.4	104.1	81.5	72.6	66.9	49.9	445.3
24	812.7	110.1	111.1	108.1	85.5	90.6	87.5	72.0	74.4	66.9	319.4	392.2	103.5	107.6	82.3	74.0	66.9	52.2	487.4
25	818.7	111.9	113.4	110.5	86.2	91.6	89.4	73.1	75.7	68.7	323.7	411.4	103.9	110.4	82.9	75.1	66.9	54.4	535.2
26	822.0	113.6	115.2	112.5	86.3	94.5	91.1	74.1	76.6	70.2	335.0	432.6	104.9	111.9	83.3	77.0	67.0	56.5	581.5
27	826.7	115.0	117.3	113.8	86.9	94.6	92.4	75.0	77.3	71.6	341.7	454.9	106.1	113.5	84.0	78.8	67.8	58.7	622.6
28	831.2	116.7	120.1	115.0	88.1	97.4	94.3	75.8	77.9	72.8	345.1	460.1	107.4	113.3	84.5	80.4	68.8	61.0	655.2
29	836.5	118.6	124.8	115.7	89.8	102.3	94.6	76.5	78.3	73.9	347.3	430.8	109.1	112.9	84.7	81.4	70.0	63.2	680.6
30	839.9	123.6	139.2	117.8	90.7	111.2	96.5	76.9	78.5	74.8	352.2	382.4	111.2	114.0	84.9	82.3	71.1	65.1	700.1
31	843.4	132.8	164.0	124.6	95.4	128.7	98.9	77.1	78.9	75.8	366.4	325.0	117.0	117.3	84.7	83.7	72.2	67.0	720.8
32	847.2	163.1	249.8	138.5	117.2	158.7	102.8	77.2	79.9	77.1	397.1	496.1	123.6	130.8	84.5	84.6	72.7	69.0	721.8
33	852.9	224.8	308.6	184.9	153.8	207.3	113.4	77.4	81.8	78.8	417.9	536.2	135.2	160.9	83.7	84.5	72.7	70.6	741.7
34	855.0	266.4	339.0	230.7	171.9	237.0	137.1	77.9	83.2	80.5	550.3	559.5	148.9	221.4	83.4	84.8	74.1	72.1	790.8
35	856.3	301.0	354.6	262.9	195.1	252.4	170.8	78.4	85.4	82.4	753.4	645.8	197.8	291.1	82.9	82.0	74.9	73.9	880.8
36	863.5	327.9	379.2	289.0	235.1	270.2	200.7	79.3	87.9	85.6	831.1	577.1	413.8	373.0	84.7	79.7	75.9	75.9	875.9
37	865.6	347.0	398.2	312.8	232.4	284.4	224.4	80.5	89.6	87.1	879.5	642.6	694.6	445.3	85.4	80.7	77.7	78.4	872.3
38	868.8	365.6	415.3	339.2	249.3	312.0	245.7	82.8	91.1	87.9	880.1	633.5	717.3	452.0	86.3	81.8	80.7	80.8	873.8
39	871.5	389.3	431.3	371.1	232.0	331.5	276.3	85.0	93.0	90.7	892.0	631.3	786.1	496.6	87.3	84.2	82.5	83.4	890.3
40	875.7	406.3	450.7	405.4	247.9	334.5	312.2	85.7	95.5	94.6	923.8	631.1	912.7	532.7	86.6	86.6	83.9	85.7	894.2
41	877.4	427.0	467.9	426.2	259.0	362.1	330.4	87.3	98.5	98.4	925.8	651.1	938.5	552.2	89.2	89.5	85.0	87.4	901.6
42	881.1	456.3	485.5	449.4	308.9	400.7	351.8	89.4	102.0	101.5	945.1	657.6	945.9	570.4	92.1	91.1	88.3	88.3	909.6

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
43	884.8	498.5	549.6	492.4	406.6	600.8	385.5	91.5	104.7	104.4	857.6	666.5	881.9	569.2	95.3	94.0	86.2	88.9	914.7
44	888.6	877.6	841.3	660.3	871.0	841.9	483.9	93.0	108.5	107.4	870.1	863.1	885.2	627.3	102.9	94.5	86.3	90.8	917.3
45	892.8	873.3	875.2	942.8	897.0	895.3	830.6	95.2	112.3	111.8	813.7	929.5	733.1	718.2	113.7	96.9	87.0	92.2	920.9
46	894.8	858.0	863.4	888.7	848.2	862.5	850.6	96.9	118.6	118.8	844.0	939.4	734.1	741.3	829.8	99.2	87.8	93.7	918.1
47	892.6	869.1	866.6	882.7	855.3	867.3	875.8	98.3	126.4	126.5	827.1	942.4	761.5	769.6	820.7	101.7	88.8	94.5	913.6
48	898.4	881.9	883.1	889.8	878.9	881.0	886.3	99.7	140.8	138.3	835.1	921.1	748.1	835.7	867.4	106.5	89.7	95.2	829.0
49	899.2	907.4	910.9	922.7	903.5	908.3	909.9	100.8	195.5	190.5	830.8	934.7	768.0	890.1	842.4	117.7	91.6	95.6	817.8
50	903.8	897.5	899.3	926.2	878.6	904.6	908.9	102.4	331.5	273.5	830.5	927.5	779.0	860.2	835.7	147.2	91.4	99.4	810.3
51	907.5	852.6	857.6	913.9	829.0	852.7	879.3	104.5	394.4	325.4	842.8	898.1	799.1	892.2	825.6	658.8	93.8	103.9	819.4
52	908.1	819.0	835.2	896.0	813.3	847.0	870.8	109.6	430.8	371.9	856.3	860.2	834.5	869.7	825.4	748.5	96.1	110.8	845.6
53	909.4	826.0	836.0	891.0	809.7	855.8	871.8	119.0	454.4	415.5	856.8	832.3	812.3	846.2	833.1	743.7	101.6	122.6	817.9
54	911.6	806.1	806.2	884.4	793.6	845.7	868.0	143.0	479.9	447.6	883.0	787.6	856.9	790.7	832.8	735.2	105.5	142.8	862.0
55	912.5	777.7	770.3	838.8	770.6	795.3	825.5	203.1	511.9	485.8	888.8	768.5	865.1	784.6	838.4	745.9	106.9	148.7	872.8
56	916.4	761.3	756.4	789.5	768.8	765.1	779.3	246.0	543.4	519.4	896.3	764.0	889.7	759.0	837.8	770.5	110.3	157.5	896.8
57	918.0	782.3	789.9	768.1	803.0	771.8	765.7	283.5	571.2	555.5	903.5	803.5	899.9	787.5	851.8	811.0	117.9	168.0	904.3
58	919.8	800.7	785.2	790.3	803.2	789.0	782.8	336.9	595.8	587.4	917.4	779.2	913.4	796.4	849.6	773.0	127.3	185.0	920.3
59	921.8	803.8	787.8	794.6	802.0	802.0	787.7	372.9	618.2	611.4	929.3	770.3	914.3	800.3	857.5	766.0	138.0	198.2	925.2
60	923.3	801.4	784.5	787.3	791.7	799.3	781.7	407.2	638.8	632.7	916.6	761.5	896.5	787.3	860.2	757.4	149.3	207.2	907.7
61	926.8	761.3	763.4	768.9	770.9	775.7	760.9	446.4	657.8	653.1	927.3	742.3	904.3	759.2	871.5	734.7	161.3	215.6	918.6
62	926.4	774.2	755.6	766.1	761.8	767.9	753.7	488.1	676.8	674.5	913.6	730.0	887.0	745.0	871.8	725.1	173.1	231.1	904.2
63	929.7	774.8	755.3	771.5	761.3	769.6	755.6	519.7	692.0	701.5	882.4	726.3	841.0	740.6	875.6	717.8	188.1	268.2	881.5
64	931.1	772.4	753.1	770.0	758.1	767.6	753.4	552.8	708.5	736.2	849.8	723.5	804.6	735.2	884.2	715.8	208.6	315.0	824.1

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
0	22.3	20.7	22.7	20.5	23.1	20.7	23.2	21.1	22.3	21.4	20.4	22.9	21.8	20.9	23.1	22.0	21.0	23.6	22.6
1	41.7	22.0	22.7	20.5	22.9	20.7	23.2	21.1	24.5	26.3	21.0	22.9	21.8	20.8	23.1	22.0	21.0	23.6	22.7
2	238.7	97.5	23.6	21.2	23.9	20.7	24.0	21.2	82.5	79.1	76.3	24.5	23.0	21.8	23.3	22.1	21.5	23.6	22.7
3	394.7	90.3	39.5	37.5	26.4	20.9	23.6	21.3	77.9	74.0	73.4	33.7	31.4	27.9	24.7	23.8	22.3	23.7	22.7
4	397.4	83.7	54.0	52.7	24.9	21.0	23.7	21.5	73.9	70.6	68.6	43.0	41.3	37.3	27.7	26.3	24.5	23.8	22.8
5	506.2	94.6	60.6	58.9	24.9	21.2	24.0	21.7	80.7	82.5	75.0	47.6	45.5	42.1	30.8	29.4	26.9	24.3	23.2
6	597.4	94.1	72.6	70.5	25.3	21.4	24.4	22.0	87.0	90.8	80.3	52.8	51.3	47.0	34.3	31.6	29.4	25.1	23.8
7	585.2	92.3	77.2	73.5	26.6	21.7	25.2	22.4	90.0	93.6	79.7	58.2	56.2	52.3	38.7	35.6	32.7	26.3	24.6
8	639.8	94.7	79.5	75.6	30.7	22.2	26.1	22.8	94.6	98.1	85.5	61.2	58.9	55.9	42.3	40.1	35.5	27.9	25.7
9	665.8	100.1	81.9	77.8	35.5	22.8	27.3	23.4	98.8	102.2	89.4	64.6	62.3	59.5	45.9	43.1	39.0	29.8	27.1
10	699.5	109.6	83.5	78.7	41.9	23.7	28.4	24.2	102.9	106.2	91.6	67.9	64.8	62.0	49.9	47.7	41.9	32.0	28.7
11	715.0	114.1	84.7	79.4	49.0	25.0	29.7	25.2	107.3	111.9	93.6	70.1	67.0	64.1	52.8	49.2	44.6	34.5	30.4
12	722.1	122.4	86.1	80.5	50.9	26.3	31.4	26.4	111.8	122.4	94.9	71.9	69.2	65.9	55.6	51.9	47.6	37.1	32.3
13	734.7	137.1	86.7	82.1	45.0	27.6	33.3	27.7	120.8	152.6	97.1	73.6	71.5	67.8	57.9	53.7	49.5	39.6	34.3
14	744.7	166.7	85.5	82.4	60.7	31.7	35.4	28.9	136.7	190.0	100.9	76.6	75.2	69.7	61.1	58.7	51.7	42.0	36.3
15	756.7	217.6	84.5	83.5	68.8	42.9	37.9	30.2	181.0	227.4	106.1	83.0	81.2	73.2	64.9	62.5	54.8	44.4	38.4
16	764.4	261.4	87.3	85.4	74.2	49.4	40.9	31.8	221.3	253.9	123.4	85.9	84.2	79.1	69.4	67.5	58.7	47.2	40.8
17	770.0	287.5	90.6	86.6	77.9	58.0	44.5	33.6	244.6	272.7	158.3	88.8	87.2	83.2	74.0	71.8	64.3	50.8	44.0
18	777.4	315.4	91.8	87.4	81.4	65.4	48.1	35.7	257.2	292.2	182.8	92.2	90.0	86.6	78.2	74.8	68.5	55.0	47.7
19	783.8	342.6	92.5	88.4	83.4	69.9	51.2	37.8	271.5	312.9	195.6	97.0	95.4	90.4	80.9	77.5	72.6	59.2	51.8
20	791.0	359.7	93.1	89.5	84.9	72.7	54.8	39.5	290.5	331.5	203.2	102.0	100.3	95.5	82.3	79.5	75.5	63.1	55.9
21	796.9	372.7	95.4	92.2	85.6	74.4	59.0	40.4	314.2	348.4	223.8	106.1	104.5	100.8	83.3	81.4	77.3	66.3	59.4
22	801.9	396.5	98.9	96.1	86.2	76.4	64.4	41.3	338.2	363.9	238.6	109.8	108.3	105.2	84.3	82.3	78.8	68.9	62.4
23	807.2	422.2	101.3	99.4	86.5	78.1	69.8	43.9	356.6	379.7	251.4	112.8	111.5	109.1	84.6	83.4	80.2	70.7	64.7
24	812.7	447.6	102.8	102.2	86.7	79.2	72.1	49.5	372.6	397.1	263.9	115.6	113.8	112.1	85.1	83.8	81.0	71.2	66.5
25	818.7	472.1	105.7	105.1	86.9	79.0	73.3	55.5	387.1	414.6	277.9	117.0	115.6	115.0	85.7	84.7	81.4	72.0	67.9
26	822.0	496.6	108.1	107.1	87.1	78.1	73.8	59.5	402.6	434.9	294.3	117.8	117.5	116.9	86.0	85.2	82.2	72.7	69.1
27	826.7	522.0	111.5	110.2	86.8	76.8	74.1	62.1	418.4	449.5	311.4	118.9	118.6	118.2	86.5	85.3	82.7	73.3	70.0
28	831.2	571.8	115.8	113.4	86.7	76.3	74.4	63.7	437.6	463.8	328.5	120.0	123.4	119.0	86.8	85.8	83.0	73.6	70.7
29	836.5	722.9	122.0	117.2	87.1	76.8	74.5	65.0	453.8	479.1	345.3	123.0	130.5	120.1	87.5	87.3	83.5	73.8	71.3
30	839.9	856.5	127.8	123.4	87.0	78.6	74.5	65.7	470.7	489.7	361.0	131.1	156.5	124.4	88.2	91.5	84.3	74.0	72.0
31	843.4	870.2	135.8	130.5	87.0	79.7	74.4	66.2	485.6	500.3	372.4	141.4	202.9	126.5	93.2	103.2	85.4	74.0	73.1
32	847.2	888.7	172.1	158.0	87.1	80.9	74.3	67.0	500.5	518.7	348.3	166.9	244.4	147.9	101.7	124.1	86.9	74.1	74.5
33	852.9	885.7	205.1	219.6	88.2	80.0	74.5	69.0	512.1	724.5	312.2	226.3	261.5	204.0	121.2	154.8	99.7	74.3	75.9
34	855.0	889.6	228.8	263.0	86.2	84.8	75.0	72.5	523.9	780.2	315.4	272.7	282.1	232.0	142.5	179.8	114.0	75.3	77.4
35	858.3	892.9	256.8	306.7	88.5	86.3	75.6	76.0	538.3	853.6	355.2	299.8	296.6	253.4	164.7	192.8	127.2	75.9	80.0
36	863.5	896.6	278.8	353.4	94.0	85.9	76.3	79.6	554.1	930.7	725.2	316.5	315.7	275.8	180.7	200.7	145.9	76.3	81.6
37	865.6	912.2	299.1	390.0	113.1	85.5	79.4	81.3	569.7	937.9	786.3	338.7	341.0	298.8	198.6	217.7	165.0	77.4	83.4
38	868.6	924.0	319.4	392.3	138.5	86.3	83.2	82.7	585.2	947.5	823.5	363.5	358.9	320.1	212.1	233.9	185.6	79.9	86.0
39	871.5	928.6	351.4	420.4	127.7	88.7	85.1	83.8	858.8	968.3	885.3	388.6	377.0	344.9	235.7	268.9	205.1	82.5	89.2
40	875.7	919.3	379.8	455.6	109.4	88.6	86.6	85.3	874.9	962.3	895.1	406.4	408.8	372.2	255.7	301.1	219.2	84.9	92.8
41	877.4	931.3	410.6	488.8	109.2	89.6	87.8	86.8	897.5	952.9	915.3	418.7	430.4	395.4	277.6	333.5	238.2	87.3	96.2
42	881.1	931.1	445.7	518.8	114.2	90.8	88.9	87.8	919.3	955.1	897.8	424.1	449.3	415.0	302.2	354.9	260.1	89.9	99.1

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
43	884.8	947.3	483.0	544.3	123.4	92.3	89.7	88.6	912.6	939.9	867.1	430.1	473.1	432.2	322.3	377.5	276.9	92.5	101.3
44	888.6	957.5	514.7	563.5	124.2	93.6	90.2	89.3	908.3	940.0	836.9	440.5	493.8	450.6	342.7	407.1	291.9	94.9	103.0
45	892.8	918.1	540.3	581.9	126.8	94.5	90.9	90.9	927.2	937.7	860.8	450.5	500.1	473.3	364.7	431.5	311.9	97.3	104.9
46	894.8	899.1	562.8	599.6	841.2	184.9	92.2	92.6	921.3	887.0	847.0	462.6	517.4	498.7	382.8	474.2	343.1	99.1	107.0
47	892.8	822.9	578.2	611.6	815.0	766.2	94.4	94.3	901.5	881.9	854.5	738.6	701.4	732.0	662.9	812.3	641.1	100.8	109.2
48	896.4	872.4	626.5	627.2	829.8	723.6	96.0	95.3	800.3	844.7	845.3	807.5	837.0	780.6	838.6	801.7	739.4	102.7	111.5
49	899.2	873.2	904.2	643.9	778.8	738.1	98.0	96.5	797.8	839.8	840.8	875.0	875.5	782.8	885.0	887.6	749.9	104.5	113.9
50	903.8	874.4	893.4	668.8	793.9	754.2	97.3	94.2	806.7	849.3	844.1	861.7	868.3	816.8	855.5	880.0	765.8	105.9	116.1
51	907.5	873.5	874.0	854.1	793.9	769.1	95.8	95.2	812.6	850.9	851.1	859.0	863.9	876.6	855.1	870.7	796.0	106.5	120.4
52	908.1	853.1	867.3	871.6	773.9	768.4	96.6	97.0	829.0	849.0	854.5	857.6	860.5	882.8	858.0	863.3	837.9	107.5	131.3
53	909.4	860.9	874.1	902.1	759.6	775.2	98.1	98.7	836.1	852.7	859.6	888.8	882.5	899.3	889.5	898.1	893.6	110.5	174.5
54	911.6	864.2	879.6	849.0	762.4	767.3	100.4	103.9	855.7	860.6	860.7	869.9	879.0	897.7	896.5	888.1	883.3	114.8	241.3
55	912.5	869.0	871.9	805.6	759.9	781.1	101.6	115.3	855.5	862.9	861.0	874.8	886.7	892.1	891.6	883.1	889.3	118.4	288.2
56	916.4	859.5	844.1	773.3	767.8	779.6	102.8	140.8	864.5	867.1	856.8	861.1	877.1	881.7	858.8	876.6	875.9	123.2	341.1
57	918.0	869.4	834.8	799.4	775.9	849.3	104.9	175.8	870.2	874.0	853.4	866.8	874.8	879.5	867.2	881.6	880.3	131.4	379.6
58	919.8	853.7	806.2	798.8	734.8	817.5	106.6	193.3	886.6	877.6	844.6	871.1	877.1	869.1	877.2	889.6	875.7	143.1	413.6
59	921.6	855.2	798.8	803.6	745.9	797.0	108.3	215.9	894.2	882.6	835.6	874.1	879.4	869.8	879.2	887.1	879.7	183.6	453.5
60	923.3	866.2	790.0	785.4	763.1	765.5	110.5	248.7	884.4	886.0	833.7	884.7	886.2	869.3	884.7	883.3	874.2	248.3	484.0
61	926.8	874.5	761.6	780.4	783.0	741.5	114.1	277.6	913.7	894.6	825.1	894.6	893.4	881.0	892.6	891.6	880.0	309.3	519.6
62	926.4	872.4	746.5	748.8	787.0	731.8	121.7	301.8	883.2	898.4	843.2	900.1	895.1	886.3	896.7	895.8	883.6	361.0	554.6
63	929.7	874.8	740.9	745.1	798.1	727.2	134.7	332.6	862.9	897.1	887.7	905.4	902.2	894.6	903.3	902.3	892.2	396.7	583.3
64	931.1	879.5	736.5	741.1	801.4	725.7	155.3	372.4	848.2	900.3	882.0	912.9	914.0	903.9	912.7	912.0	902.1	426.8	608.4

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	55
0	22.3	21.5
1	41.7	21.5
2	236.7	21.6
3	394.7	21.6
4	397.4	21.8
5	506.2	22.1
6	597.4	22.7
7	585.2	23.5
8	639.8	24.6
9	665.8	25.9
10	699.5	27.3
11	715.0	28.9
12	722.1	30.6
13	734.7	32.4
14	744.7	34.2
15	756.7	36.0
16	764.4	37.9
17	770.0	40.2
18	777.4	43.0
19	783.8	46.5
20	791.0	50.3
21	796.9	54.1
22	801.9	57.6
23	807.2	60.6
24	812.7	63.2
25	818.7	65.3
26	822.0	67.0
27	826.7	68.4
28	831.2	69.6
29	836.5	70.5
30	839.9	71.3
31	843.4	72.1
32	847.2	73.2
33	852.9	74.7
34	855.0	76.1
35	858.3	77.3
36	863.5	80.2
37	865.6	83.5
38	868.8	85.7
39	871.5	87.8
40	875.7	90.4
41	877.4	93.3
42	881.1	95.7

Table 12. Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly (Cont.)

Time (min)	T(Fav) (°C)	55
43	884.8	98.0
44	888.6	100.4
45	892.6	102.1
46	894.8	104.3
47	892.8	106.5
48	898.4	108.5
49	899.2	109.5
50	903.8	115.7
51	907.5	121.5
52	908.1	128.8
53	909.4	143.5
54	911.6	193.3
55	912.5	263.2
56	916.4	336.4
57	918.0	375.4
58	919.8	405.8
59	921.8	438.6
60	923.3	472.9
61	926.8	514.9
62	926.4	553.6
63	929.7	583.9
64	931.1	610.7

Table 13. Average Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,18,28,29, 36,37,44,45,46)	BL/WStd. (Exp.) Av(30,31,38,39)	BL/Cav. (Exp.) Av(19,20,21, 47,48,49)	BL/Cav. (UnExp.) Av(22,23,24, 50,51,52)	BL/WStd. (UnExp.) Av(32,33,40, 41,60,61)	BL/FL (UnExp.) Av(25,26,27,34,35, 42,43,53,54,55)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
0	22.3	21.7	21.7	22.0	22.0	22.0	22.4	22.8
1	41.7	25.1	22.5	22.0	22.1	21.9	22.5	22.8
2	238.7	83.3	52.0	26.2	24.8	22.3	22.6	22.8
3	394.7	78.7	55.6	31.2	25.3	23.1	22.8	22.8
4	397.4	73.6	61.2	40.4	28.4	22.9	23.1	22.9
5	506.2	81.9	63.4	45.4	31.6	23.2	23.6	22.9
6	597.4	86.3	69.8	50.4	34.8	23.6	24.4	23.0
7	585.2	87.6	72.1	55.4	39.2	24.3	25.4	23.1
8	639.8	92.2	73.7	58.6	42.6	25.9	26.6	23.3
9	665.8	96.1	75.8	62.0	45.7	27.7	28.1	23.5
10	699.5	99.8	77.6	64.8	49.1	30.1	29.7	23.9
11	715.0	104.0	79.1	67.0	52.0	32.9	31.5	24.3
12	722.1	111.2	80.7	68.9	54.5	34.4	33.5	25.0
13	734.7	126.7	82.5	70.7	56.3	33.9	35.5	25.7
14	744.7	156.7	82.1	73.0	59.1	39.5	37.4	26.6
15	758.7	188.3	83.4	76.0	62.7	45.4	39.4	27.7
16	764.4	217.0	86.6	82.0	67.3	50.1	41.7	28.9
17	770.0	242.5	89.8	85.4	71.3	55.8	44.7	30.3
18	777.4	268.9	91.5	88.5	74.9	61.1	48.1	32.0
19	783.6	289.7	92.7	92.9	77.8	65.7	51.6	34.2
20	791.0	310.2	94.2	97.9	79.7	70.2	55.0	36.9
21	796.9	333.3	96.5	102.4	81.6	74.1	58.1	39.7
22	801.9	356.2	99.2	106.2	83.5	77.6	60.9	42.6
23	807.2	377.5	101.8	109.3	84.7	79.7	63.4	45.4
24	812.7	400.0	104.0	111.8	85.6	80.5	65.5	47.9
25	818.7	421.1	106.3	113.9	86.5	80.9	67.3	50.2
26	822.0	445.7	108.0	115.6	87.6	81.4	68.7	52.2
27	826.7	476.0	110.3	117.0	88.1	81.6	69.8	54.0
28	831.2	511.8	112.5	119.0	89.2	82.0	70.8	55.6
29	836.5	577.1	115.3	122.1	90.8	82.5	71.7	56.8
30	839.9	604.2	119.1	132.1	93.7	83.2	72.4	58.0
31	843.4	614.0	125.1	148.7	100.8	83.8	73.1	59.0
32	847.2	638.9	146.1	185.1	115.2	84.3	73.9	59.8
33	852.9	666.1	180.2	235.0	141.7	84.1	75.0	60.6
34	855.0	700.9	215.5	270.5	163.7	84.8	76.4	61.4
35	858.3	752.2	263.1	294.7	183.8	84.9	78.0	62.0
36	863.5	800.3	354.8	317.4	205.6	86.1	79.9	62.7
37	865.6	822.1	457.2	339.4	220.4	91.2	81.8	63.6
38	868.8	828.7	470.3	360.4	239.8	98.2	84.1	64.6
39	871.5	868.2	513.6	383.7	258.2	97.0	86.3	65.8
40	875.7	873.2	570.2	408.3	278.4	92.8	88.5	67.2
41	877.4	883.6	597.5	427.6	300.1	94.4	90.8	68.7
42	881.1	890.0	620.2	446.6	329.8	97.1	92.9	69.9

Table 13. Average Temperatures Measured in Full Scale Assembly F-04, Wood Stud, 2x2 Gypsum Layers, No Insulation, Loaded Assembly

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,18,28,29, 36,37,44,45,46)	BL/WStd. (Exp.) Av(30,31,38,39)	BL/Cav. (Exp.) Av(19,20,21, 47,48,49)	BL/Cav. (UnExp.) Av(22,23,24, 50,51,52)	BL/WStd. (UnExp.) Av(32,33,40, 41,60,61)	BL/FL (UnExp.) Av(25,26,27,34,35, 42,43,53,54,55)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
43	884.8	880.8	619.6	479.3	394.9	101.3	94.6	71.0
44	888.6	898.5	647.7	627.3	539.8	103.8	96.4	71.9
45	892.8	897.9	643.4	685.9	621.9	108.0	98.5	72.7
46	894.8	892.9	659.4	681.5	626.9	488.8	101.1	73.3
47	892.8	882.5	677.7	798.4	785.8	625.9	104.0	73.9
48	898.4	857.6	709.4	846.6	837.6	631.8	107.8	74.3
49	899.2	851.3	801.6	879.0	874.1	619.3	119.6	74.6
50	903.6	851.8	800.4	878.3	865.6	632.7	142.7	74.8
51	907.5	847.5	854.9	870.6	847.1	761.9	156.1	75.5
52	908.1	849.8	860.8	858.5	848.4	779.0	168.0	76.4
53	909.4	848.6	858.7	870.6	869.7	777.9	183.8	77.9
54	911.6	850.9	844.1	857.2	860.9	774.4	207.3	79.8
55	912.5	846.6	831.8	840.1	842.6	781.3	234.3	81.5
56	916.4	846.7	816.5	821.2	820.8	788.9	262.1	83.9
57	918.0	858.6	830.4	826.9	828.3	822.0	286.3	87.1
58	919.8	856.7	828.7	832.2	836.3	793.7	309.5	90.2
59	921.6	858.3	829.3	834.9	839.6	791.6	333.9	92.9
60	923.3	852.0	814.8	835.6	835.8	786.5	360.0	95.6
61	926.8	851.5	796.4	830.4	828.5	782.7	387.0	98.1
62	926.4	841.1	781.8	829.8	826.6	778.9	413.6	100.5
63	929.7	832.6	766.9	834.0	830.7	779.7	440.1	103.4
64	931.1	818.6	754.3	837.7	834.3	781.8	469.5	106.7

Table 14. Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
0	24.5	23.8	27.3	24.4	27.7	24.1	26.9	23.7	27.6	23.8	27.4	24.1	27.4	24.1	27.6	24.3	26.8	23.4	27.2
1	43.7	23.9	27.4	24.4	27.7	24.1	29.2	24.9	27.6	24.4	27.4	24.1	27.4	24.1	27.6	24.4	28.1	24.3	27.3
2	233.6	24.4	29.6	24.9	27.7	24.1	91.3	91.8	28.6	44.3	28.4	25.8	27.5	24.2	27.6	24.4	84.6	80.3	28.6
3	393.7	28.6	32.9	26.6	27.8	24.2	86.6	88.2	31.8	43.0	32.5	29.1	28.1	25.1	27.7	24.4	84.3	81.3	40.3
4	397.5	36.8	37.5	30.5	28.0	24.4	79.6	82.3	34.6	48.7	38.8	33.1	30.3	26.5	27.7	24.5	77.6	74.6	52.2
5	494.6	42.6	41.8	34.3	28.5	24.9	89.8	89.8	37.7	52.6	44.0	37.2	33.5	28.5	28.0	24.7	85.7	79.5	59.3
6	610.7	47.8	45.5	37.7	29.4	25.6	93.8	91.2	41.6	59.1	48.7	41.2	37.6	30.8	28.6	25.1	92.2	87.6	69.0
7	580.6	53.8	50.0	42.0	30.6	26.6	99.9	96.0	46.1	64.1	54.1	45.5	43.7	34.1	29.5	25.7	97.2	91.7	74.5
8	637.9	57.9	53.8	45.5	32.1	27.7	107.9	104.1	50.1	67.0	58.6	49.3	48.9	37.8	30.9	26.7	103.5	98.8	77.7
9	666.7	61.3	57.0	48.7	34.1	29.1	113.6	109.7	53.7	70.7	62.8	52.9	53.4	41.3	32.7	27.8	108.9	103.7	81.6
10	699.1	64.4	60.6	51.8	36.2	30.8	118.1	114.3	57.2	73.9	66.9	56.4	57.4	44.8	34.8	29.2	113.0	107.0	84.4
11	717.6	67.2	63.4	54.5	38.6	32.7	122.1	119.8	60.2	76.5	70.1	59.7	61.1	48.1	37.2	30.8	116.9	110.5	86.8
12	722.6	69.6	64.8	57.2	41.2	34.8	129.1	125.9	63.7	78.6	72.7	62.5	63.8	50.8	40.0	32.6	121.0	113.2	88.6
13	733.1	71.6	66.6	59.2	43.9	37.1	144.2	138.2	66.0	80.4	74.8	64.9	66.1	53.3	43.0	34.8	128.9	116.6	91.4
14	746.0	73.0	67.8	61.2	46.4	39.2	195.5	186.9	68.0	81.3	76.4	67.0	68.0	55.0	45.9	36.9	149.9	124.1	95.2
15	755.4	74.4	69.4	62.9	48.9	41.0	233.6	222.9	70.5	83.7	78.0	68.9	70.1	57.1	48.8	39.0	197.2	143.7	97.9
16	766.5	78.7	71.9	66.0	51.4	42.7	274.9	249.6	75.7	89.8	81.7	71.6	74.2	59.6	51.4	41.2	239.3	182.6	98.7
17	772.0	82.5	74.5	70.1	54.7	44.6	305.4	275.9	78.6	93.4	85.6	75.3	78.0	63.3	54.2	43.9	267.3	221.9	100.1
18	776.7	85.9	77.1	73.6	58.5	46.9	320.8	303.8	81.2	95.0	88.6	79.1	80.6	66.9	57.2	45.8	285.2	246.8	102.8
19	784.3	89.4	79.9	76.7	62.4	49.7	334.8	330.7	83.8	95.8	91.3	82.5	82.8	70.0	60.2	48.7	303.9	268.6	106.7
20	789.3	93.7	83.3	79.2	65.7	52.8	353.2	355.4	84.8	96.2	93.9	85.6	84.3	72.7	62.8	51.8	324.3	291.0	111.4
21	797.4	98.2	86.8	81.9	68.5	56.0	372.5	379.2	86.7	96.4	96.5	88.1	85.5	74.7	64.8	54.9	344.3	315.1	115.8
22	803.4	102.5	87.3	84.6	70.8	59.0	390.8	401.4	89.1	98.5	99.1	90.5	86.5	76.6	66.8	57.8	359.9	333.6	120.2
23	807.8	105.9	89.4	86.7	72.7	61.7	407.2	419.9	90.4	106.0	101.9	92.9	87.4	78.1	69.2	60.3	375.8	345.5	124.4
24	812.1	108.9	90.7	88.7	74.3	64.1	421.7	435.5	92.1	114.8	104.9	95.3	88.0	79.4	71.4	62.6	390.6	353.7	128.1
25	818.3	111.6	92.2	90.2	75.5	66.1	437.4	454.8	93.6	121.7	107.6	97.6	88.7	80.4	73.1	64.5	405.1	359.8	131.4
26	821.2	113.6	93.2	91.6	76.5	68.0	454.4	474.1	95.9	127.9	110.1	100.2	89.5	81.1	74.5	66.2	418.7	369.0	134.1
27	827.9	115.4	95.1	93.2	77.3	69.6	473.4	492.6	99.1	133.3	112.5	102.6	90.3	81.9	75.6	67.6	433.9	384.5	136.9
28	830.5	117.5	95.8	94.7	78.0	70.9	492.1	509.4	103.2	134.7	115.3	104.8	91.4	82.7	76.4	68.9	453.9	400.2	139.9
29	835.3	120.2	97.4	96.4	78.5	72.0	512.2	525.5	105.8	138.4	118.9	107.1	92.6	83.5	77.2	70.1	471.4	419.3	144.7
30	838.6	122.5	99.1	98.4	78.9	73.0	532.2	545.5	107.8	144.5	123.9	109.2	93.8	84.3	77.9	71.2	489.2	436.6	152.2
31	844.6	125.3	103.2	101.3	79.2	73.8	549.9	557.1	110.4	151.2	130.4	112.1	95.8	85.3	78.4	72.2	507.0	451.0	167.7
32	848.3	128.6	118.1	104.6	79.4	74.7	565.1	502.5	116.6	154.4	139.0	115.8	98.3	86.8	78.9	73.3	523.1	464.4	196.1
33	851.7	134.6	128.7	110.0	79.6	75.6	578.5	420.4	121.5	158.2	151.4	121.2	102.3	88.4	79.3	74.5	537.5	477.9	226.3
34	854.2	145.4	148.4	120.4	79.9	76.7	589.4	383.4	131.6	166.3	166.1	131.1	108.0	90.9	80.0	75.7	551.3	492.2	255.6
35	859.5	162.4	165.7	136.1	80.2	77.6	599.4	374.9	145.2	182.2	182.3	146.2	116.2	95.4	80.8	76.7	566.4	505.9	284.6
36	862.6	196.3	159.3	154.3	80.1	78.3	603.0	417.2	170.5	203.1	200.3	165.1	128.7	102.4	81.6	78.1	581.2	519.5	310.8
37	866.2	248.8	191.4	185.3	79.7	78.9	599.2	438.0	184.5	223.3	218.8	185.4	143.7	111.1	82.6	79.4	596.8	532.6	335.4
38	868.8	312.2	217.4	219.2	80.8	80.1	591.4	468.4	180.9	256.0	240.6	214.7	155.8	124.3	85.5	80.8	613.6	548.0	361.3
39	871.8	355.5	231.4	246.7	83.9	84.7	593.0	490.7	188.9	284.6	258.9	239.0	170.0	142.5	90.6	82.4	629.0	566.9	381.8
40	875.3	388.2	254.5	273.7	86.4	87.5	603.2	495.5	195.6	308.3	273.4	259.1	181.3	159.7	92.3	85.0	642.8	581.3	402.2
41	876.8	409.8	278.2	298.5	88.5	89.6	611.6	481.0	203.9	332.1	286.0	280.4	194.1	176.1	93.4	86.8	657.1	595.7	420.0
42	881.9	427.3	294.8	322.5	90.5	91.5	619.9	469.7	224.0	346.0	306.1	296.6	206.2	189.6	95.2	88.3	671.1	611.3	433.8

Table 14. Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
43	884.9	444.2	338.8	349.3	92.5	93.4	644.9	872.2	248.1	435.6	331.5	317.7	223.3	203.8	96.9	89.2	702.4	639.0	445.1
44	885.9	460.3	397.7	377.3	94.3	95.3	659.9	912.2	289.8	635.0	368.2	372.5	248.3	230.7	99.2	90.4	745.3	656.6	462.1
45	888.6	793.5	766.2	530.8	95.9	98.1	709.6	899.9	513.7	810.0	767.3	569.0	259.1	315.4	101.8	93.7	820.2	671.1	499.7
46	891.9	867.6	799.1	863.6	98.3	101.4	775.4	884.0	579.8	873.5	771.7	819.3	276.3	800.7	101.8	95.7	801.6	703.1	584.4
47	892.9	837.4	824.5	849.8	100.1	103.3	795.3	863.6	973.6	887.4	804.7	835.1	295.9	794.1	103.8	95.7	814.8	715.7	612.0
48	896.6	869.9	872.4	856.5	101.2	104.4	881.7	862.1	983.0	903.4	862.3	868.1	319.4	858.1	106.8	97.6	875.3	846.9	716.5
49	897.7	858.9	900.1	843.4	101.8	106.6	906.6	832.1	986.7	863.4	901.0	855.9	369.5	855.6	111.9	102.2	892.3	840.4	951.9
50	901.8	870.1	903.3	883.8	104.4	109.2	908.4	873.4	970.2	827.0	903.2	875.4	476.1	874.4	114.8	108.0	895.9	871.4	943.7
51	905.4	865.0	903.4	881.4	109.8	113.5	909.2	860.6	971.6	958.9	904.3	874.1	601.7	867.1	119.1	116.2	897.4	863.4	935.0
52	905.9	860.3	903.3	880.9	115.3	117.3	910.5	853.4	957.6	956.9	912.0	878.2	620.7	864.3	124.2	124.9	893.1	857.5	925.6
53	910.1	864.9	768.5	886.6	121.7	118.5	913.2	859.0	953.6	966.3	922.5	886.8	636.5	870.8	128.9	145.1	892.1	864.6	923.3
54	910.9	861.1	749.6	885.1	134.8	126.8	901.7	856.3	940.1	909.8	907.2	884.3	655.7	871.3	139.4	186.8	889.9	866.4	902.6
55	914.4	865.0	895.4	890.7	195.2	156.1	890.5	861.2	923.5	913.1	897.2	888.2	714.2	876.1	177.0	243.9	885.6	871.0	893.1
56	915.1	866.0	873.3	890.2	268.8	232.2	866.8	863.7	882.4	913.5	877.3	887.3	744.9	875.8	246.9	296.0	866.8	869.8	870.2
57	916.1	875.9	861.7	898.2	349.0	286.2	848.8	874.4	869.5	932.6	859.7	895.3	856.6	883.3	326.9	320.0	856.3	878.7	862.8
58	921.2	881.0	842.8	902.0	412.5	363.3	826.4	881.0	848.8	937.8	829.4	898.5	812.5	887.6	355.1	344.4	834.2	883.8	848.0
59	921.9	881.9	827.7	905.0	438.1	405.9	812.2	882.9	845.6	949.9	809.9	898.9	863.1	887.5	368.7	369.7	822.9	887.4	861.2
60	925.3	883.2	880.1	908.1	452.8	431.3	876.7	884.7	1037.9	945.2	882.6	900.7	862.6	889.4	382.8	388.8	875.3	890.5	989.2
61	925.2	882.5	872.2	911.6	467.2	457.0	870.4	881.8	1060.7	955.7	869.0	899.8	869.8	888.8	400.2	407.0	864.7	891.0	986.2
62	928.5	885.0	875.9	917.0	483.5	479.2	885.1	883.2	1055.1	952.4	882.4	898.4	893.6	889.8	417.6	427.4	873.9	892.0	926.4
63	929.7	888.3	892.4	923.1	508.4	505.2	902.2	887.3	1052.1	946.4	900.3	896.5	888.5	890.1	433.9	448.1	888.8	892.6	921.6
64	930.7	885.8	897.6	916.1	528.9	531.2	901.0	888.0	1070.3	949.7	898.8	890.2	926.1	886.5	448.8	467.2	895.4	887.9	988.1
65	935.0	883.8	893.6	909.5	549.6	554.7	897.6	888.5	1063.6	937.7	891.7	885.7	927.1	885.3	463.3	487.4	895.4	883.6	986.2
66	936.2	881.1	892.9	896.0	570.7	583.8	897.3	879.8	1051.6	928.6	893.0	877.0	927.0	877.2	476.6	517.9	896.1	874.1	985.0
67	937.3	873.8	921.5	881.4	590.7	625.8	919.9	858.9	1076.0	968.2	926.6	859.6	935.5	858.2	491.9	564.3	916.9	859.8	1006.1
68	938.8	835.3	925.4	832.9	610.5	680.0	922.4	819.9	1063.7	998.1	929.7	822.3	932.8	821.5	508.1	622.6	918.4	833.3	984.0

Table 14. Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	24.5	26.3	28.0	24.2	24.6	27.8	28.4	26.4	23.7	26.7	25.1	27.1	23.5	27.7	24.5	26.7	27.0	23.6	27.0
1	43.7	26.3	28.0	24.2	24.5	27.8	28.4	26.4	23.7	26.6	25.3	27.1	23.2	27.9	24.4	26.7	30.3	26.4	27.1
2	233.6	26.3	28.0	24.2	24.5	27.7	28.4	26.4	23.7	26.6	25.2	27.1	23.3	27.9	24.5	26.8	74.1	69.2	27.6
3	393.7	26.3	27.9	24.2	24.5	27.7	28.3	26.4	23.7	26.6	25.2	27.0	23.1	27.7	24.4	26.6	72.3	67.6	33.3
4	397.5	26.3	27.9	24.2	24.5	27.7	28.3	26.4	23.7	26.6	25.2	27.3	23.1	28.0	24.1	26.6	65.9	61.5	42.9
5	494.6	26.2	27.9	24.2	24.4	27.7	28.4	26.4	23.7	26.6	25.3	27.4	23.3	28.1	24.5	26.8	74.6	71.0	48.9
6	610.7	26.2	27.9	24.2	24.4	27.7	28.4	26.4	23.7	26.6	25.3	27.4	23.2	27.9	24.5	26.9	79.6	76.8	54.1
7	580.8	26.3	28.0	24.3	24.5	27.8	28.4	26.5	23.8	26.7	25.5	27.2	23.4	28.2	24.5	26.9	78.5	78.0	59.9
8	637.9	26.4	28.1	24.4	24.5	27.9	28.5	26.6	23.8	26.8	25.5	27.4	23.4	28.8	24.3	27.0	83.0	82.4	63.7
9	666.7	26.6	28.2	24.5	24.6	28.2	28.7	26.8	23.9	27.0	25.9	27.4	23.3	29.4	24.6	27.3	86.8	86.8	66.9
10	699.1	26.9	28.5	24.8	24.9	28.5	29.0	27.2	24.2	27.3	26.2	27.6	23.8	30.3	24.9	27.7	89.2	89.0	70.0
11	717.6	27.4	28.8	25.1	25.2	28.9	29.4	27.6	24.5	27.7	26.5	28.0	23.8	31.0	25.0	28.2	91.4	92.0	72.7
12	722.8	28.0	29.4	25.6	25.6	29.8	30.1	28.3	24.8	28.3	26.8	28.3	24.4	31.7	25.4	28.7	94.4	98.9	74.7
13	733.1	28.8	30.2	26.2	26.1	30.4	30.9	29.2	25.3	29.0	27.2	28.9	24.9	32.2	25.7	29.5	105.6	112.8	76.3
14	746.0	29.7	31.2	27.1	26.8	31.5	31.9	30.4	26.0	29.9	27.8	29.5	25.1	32.8	26.4	30.3	133.8	145.3	77.8
15	755.4	30.8	32.4	28.1	27.6	32.9	33.0	31.8	26.7	30.9	28.4	30.2	25.5	33.2	26.9	31.2	161.9	191.4	79.3
16	766.5	32.0	33.9	29.2	28.6	34.4	34.4	33.4	27.5	32.2	28.9	30.9	25.9	34.0	27.5	32.1	200.0	220.4	84.2
17	772.0	33.3	35.5	30.4	29.7	36.2	36.0	35.1	28.4	33.6	30.0	31.6	26.6	34.6	28.2	33.2	226.3	251.4	87.5
18	776.7	34.7	37.2	31.7	31.0	38.1	37.8	36.9	29.3	35.2	30.9	32.7	26.9	35.3	29.0	34.1	252.6	276.2	90.6
19	784.3	36.3	39.1	33.1	32.4	40.4	39.8	38.9	30.4	37.0	31.7	33.6	27.5	36.1	29.5	35.1	281.1	303.7	94.7
20	789.3	38.0	41.3	34.6	34.0	43.0	42.1	40.9	31.6	39.1	32.8	35.0	28.6	37.4	30.2	36.2	309.4	320.7	98.8
21	797.4	40.0	43.8	36.3	35.9	45.7	44.7	43.1	32.9	41.5	34.0	36.2	29.2	38.4	31.5	37.7	333.7	333.8	102.9
22	803.4	42.2	46.5	38.1	38.0	48.7	47.5	45.4	34.4	44.0	35.3	37.5	29.8	39.2	32.1	38.8	355.3	351.2	106.6
23	807.8	44.5	49.2	40.1	40.2	51.5	50.2	47.5	36.1	46.7	36.4	38.9	31.1	40.7	32.9	40.2	374.0	368.3	109.6
24	812.1	46.9	51.8	42.3	42.6	54.1	52.8	49.4	38.0	49.3	37.5	39.8	31.6	41.8	34.4	41.5	391.8	386.7	111.6
25	818.3	49.2	54.2	44.6	45.0	56.5	55.2	51.0	40.1	51.8	37.9	40.9	32.6	42.7	35.6	42.4	416.4	414.2	113.8
26	821.2	51.5	56.2	46.9	47.3	58.6	57.2	52.4	42.4	54.1	38.8	41.9	34.0	43.6	37.3	43.7	437.4	443.1	115.8
27	827.9	53.6	58.0	49.2	49.5	60.3	59.0	53.6	44.7	56.1	39.9	43.0	34.9	44.3	38.9	44.7	454.9	466.9	117.4
28	830.5	55.6	59.4	51.3	51.5	61.7	60.5	54.6	47.0	57.9	40.2	43.9	35.9	44.5	40.0	44.8	470.9	491.5	119.2
29	835.3	57.4	60.5	53.1	53.2	62.9	61.8	55.6	49.2	59.4	40.8	44.9	37.4	45.2	40.7	45.8	486.1	511.5	121.0
30	836.6	59.0	61.5	54.8	54.8	63.8	63.0	56.4	51.3	60.7	40.7	45.4	38.7	45.3	40.9	46.1	500.9	530.9	122.9
31	844.6	60.3	62.3	56.2	56.2	64.5	63.8	57.1	53.2	61.9	40.8	46.2	39.3	45.4	41.4	46.2	515.1	549.4	127.0
32	848.3	61.6	63.0	57.5	57.4	65.1	64.6	57.8	54.9	62.8	41.2	46.2	40.3	45.4	41.8	46.8	530.6	568.9	135.5
33	851.7	62.8	63.6	58.7	58.5	65.6	65.3	58.5	56.5	63.6	41.6	46.2	41.2	45.3	41.7	46.8	546.2	587.2	145.5
34	854.2	63.9	64.1	59.7	59.5	66.0	66.0	59.3	58.0	64.4	41.5	46.4	40.5	46.6	43.3	46.6	561.4	604.3	167.1
35	859.5	65.1	64.5	60.7	60.6	66.4	66.6	60.3	59.4	65.0	42.3	47.3	42.2	46.9	42.6	46.8	577.3	629.1	187.1
36	862.6	66.4	64.8	61.5	61.6	66.8	67.2	61.3	60.6	65.6	42.3	47.5	43.4	46.8	43.4	47.4	596.0	658.4	204.2
37	866.2	68.0	65.0	62.1	62.5	66.9	67.8	62.4	61.7	66.0	43.8	48.0	43.0	46.7	44.4	47.7	618.9	689.7	241.4
38	868.8	69.9	65.1	62.6	63.2	67.0	68.6	63.8	62.6	66.4	45.2	48.7	43.3	46.7	45.3	47.8	640.8	862.0	271.3
39	871.9	72.6	65.4	63.1	64.5	67.8	69.3	65.2	63.6	66.8	47.4	49.4	44.2	48.2	46.0	47.7	660.3	868.2	290.1
40	875.3	75.6	66.0	63.7	67.0	69.5	70.7	65.9	64.6	67.1	48.0	49.9	45.3	49.1	46.7	48.4	678.1	864.7	310.1
41	876.6	78.2	67.6	64.4	69.5	71.0	72.6	66.5	65.7	67.6	48.5	51.7	46.2	50.7	47.5	49.1	700.4	869.1	332.7
42	881.9	80.1	69.3	65.6	71.5	72.2	74.5	67.7	67.0	68.8	49.1	51.9	46.8	51.5	49.0	50.6	715.3	874.3	350.8

Table 14. Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time	T(Fav)	Temperature at Thermocouple Number																	
(min)	(°C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
43	884.9	81.3	70.5	67.8	73.0	73.2	75.9	69.2	68.7	70.3	50.0	53.5	48.5	51.5	50.1	51.8	877.7	871.8	391.1
44	885.9	82.3	71.4	70.0	74.0	74.1	76.7	70.5	71.4	71.5	51.0	54.3	49.3	52.3	51.3	53.6	911.1	899.8	442.5
45	888.6	83.1	72.2	71.8	74.8	74.9	77.2	71.5	74.5	72.3	51.8	54.7	51.6	52.6	52.9	54.6	856.8	872.4	756.8
46	891.9	83.7	72.9	73.6	75.6	75.5	78.0	73.0	77.3	73.1	51.9	56.3	52.1	53.5	54.3	56.7	964.9	873.6	868.3
47	892.9	84.3	73.7	75.3	76.0	76.0	78.7	73.9	80.2	73.7	52.1	56.6	55.0	53.9	56.2	57.9	***	848.6	847.3
48	896.6	85.0	74.4	76.4	76.2	76.5	79.3	73.3	82.7	74.2	52.1	57.0	56.4	55.6	57.2	57.7	***	882.5	851.0
49	897.7	85.0	75.0	77.1	76.1	76.6	79.8	71.9	84.2	74.6	52.4	58.2	55.9	55.5	57.0	57.5	***	898.5	831.8
50	901.8	85.0	75.4	77.5	75.8	76.5	79.9	71.2	85.0	74.8	52.9	59.3	59.4	55.4	58.0	57.8	***	932.4	879.2
51	905.4	85.4	75.9	77.6	75.2	76.7	80.2	71.0	84.8	74.8	51.7	59.8	60.9	55.8	58.1	57.6	1037.7	937.9	868.3
52	905.9	86.5	76.1	77.6	74.9	77.3	80.8	71.0	84.3	75.0	51.0	59.5	60.4	55.5	58.4	57.3	919.9	926.1	860.3
53	910.1	90.1	76.4	77.4	74.6	77.6	81.5	71.0	83.9	75.3	50.9	59.3	62.4	56.6	59.3	57.6	797.2	897.0	863.4
54	910.9	93.1	76.4	77.1	74.7	77.5	82.3	71.1	83.4	75.3	57.1	60.3	62.2	60.0	64.7	61.0	908.5	899.9	860.7
55	914.4	95.8	76.4	77.1	74.9	76.9	84.5	70.8	84.0	75.4	59.6	61.0	62.6	62.5	70.8	65.0	885.7	911.0	864.7
56	915.1	98.7	78.4	77.4	77.4	82.7	88.0	71.3	87.1	75.8	61.3	63.2	67.0	63.7	69.8	66.9	858.1	889.1	864.9
57	916.1	102.6	83.9	80.6	81.9	87.1	91.4	72.2	88.9	76.2	62.3	65.0	69.5	64.1	70.9	67.2	796.2	899.3	873.8
58	921.2	107.0	87.5	84.6	86.2	90.3	94.3	73.2	89.9	76.4	61.7	68.6	71.1	64.1	69.8	67.6	804.1	908.5	880.7
59	921.9	111.8	91.2	87.2	90.5	94.2	97.4	74.3	90.8	77.4	63.2	68.1	72.6	69.2	71.2	68.7	816.8	915.6	884.8
60	925.3	116.5	95.0	90.5	95.1	98.3	101.0	76.0	92.5	78.5	64.3	69.8	71.4	74.0	73.1	69.1	***	916.9	888.9
61	925.2	121.0	99.1	94.4	99.6	102.3	105.0	77.5	95.5	79.6	64.8	69.7	71.6	80.0	78.8	70.8	***	924.5	890.3
62	928.5	125.0	102.7	98.9	103.6	105.5	109.2	78.6	99.8	83.2	65.1	69.4	72.0	83.4	84.2	72.9	***	922.5	896.7
63	929.7	129.0	105.7	103.1	107.2	108.3	113.5	52.0	104.6	88.3	66.7	68.8	71.7	84.5	90.4	76.1	***	934.2	905.6
64	930.7	134.2	108.1	105.0	109.6	110.5	117.5	31.4	109.6	92.6	68.8	68.6	74.1	91.8	92.8	79.9	***	946.9	904.1
65	935.0	140.2	110.3	107.9	111.5	112.7	121.4	31.2	114.1	96.5	73.8	70.4	74.1	104.9	94.6	83.2	***	949.5	900.2
66	936.2	145.5	112.6	109.4	113.9	115.4	126.5	30.8	117.9	99.9	76.3	69.6	74.2	124.7	101.4	86.2	***	931.7	892.5
67	937.3	153.7	114.9	105.6	116.4	118.3	135.0	31.6	121.5	103.1	79.1	70.3	77.5	142.3	108.6	88.8	***	954.0	881.5
68	938.8	173.0	117.2	104.2	118.8	121.3	148.1	31.4	125.9	105.8	81.0	72.1	80.2	152.8	128.2	91.5	***	993.0	838.0

Table 14. Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time	T(Fav)															
(min)	(°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
0	24.5	23.5	27.1	23.9	26.7	23.6	27.5	24.1	26.5	23.1	26.8	23.3	26.9	23.6	27.2	23.5
1	43.7	23.5	27.2	23.9	26.7	23.7	27.6	24.2	28.3	25.2	26.8	23.3	26.9	23.6	27.2	23.6
2	233.6	23.8	27.5	24.4	26.8	23.8	27.6	24.2	70.7	70.3	27.5	24.1	28.7	26.1	27.3	23.6
3	393.7	31.8	29.9	26.3	27.3	23.9	27.6	24.2	69.0	69.5	32.7	29.9	30.2	28.5	27.3	23.6
4	397.5	43.4	35.6	31.0	29.1	24.8	27.7	24.2	62.5	62.8	41.8	38.9	35.7	31.3	27.6	23.9
5	494.6	50.6	40.9	36.2	32.8	26.6	28.3	24.4	75.5	74.5	47.8	44.7	39.8	35.6	28.0	24.2
6	610.7	57.5	46.5	41.6	37.2	28.8	30.2	24.8	79.8	79.4	53.9	50.4	44.5	38.1	28.8	24.7
7	580.8	63.9	52.7	46.9	42.3	31.8	33.6	25.4	78.8	84.0	60.9	56.8	49.7	42.2	30.2	25.5
8	637.9	67.4	57.6	51.3	46.7	35.5	37.5	26.2	86.2	88.7	65.0	60.9	53.7	46.3	32.0	26.4
9	666.7	71.0	61.9	55.2	50.8	39.0	40.5	27.4	89.7	93.1	68.7	64.6	57.6	50.3	34.5	27.8
10	699.1	74.1	66.0	58.8	54.8	42.5	42.3	28.8	91.7	95.6	71.7	67.9	60.7	53.6	37.1	29.2
11	717.6	76.7	69.3	62.2	59.1	45.8	43.1	30.4	93.7	98.7	74.2	70.5	63.6	56.4	40.0	31.0
12	722.6	79.1	72.3	65.2	62.5	49.0	43.2	32.3	95.7	102.0	76.3	72.2	66.1	59.0	43.1	32.9
13	733.1	81.3	74.8	67.7	63.7	51.9	44.7	34.2	99.5	106.5	77.6	73.4	68.1	60.3	46.1	35.0
14	746.0	82.8	76.9	70.0	64.4	54.4	46.9	36.4	114.1	123.9	78.3	74.5	69.9	61.7	48.8	37.0
15	755.4	84.3	79.0	72.4	59.0	56.8	48.8	38.6	157.8	172.7	78.8	75.1	70.8	63.3	51.3	38.9
16	766.5	88.9	81.8	74.8	59.4	59.5	50.6	40.8	211.2	205.7	81.7	76.0	74.2	64.6	53.6	40.7
17	772.0	93.9	85.4	77.7	61.9	62.6	52.7	42.9	232.6	234.1	86.8	81.5	78.2	67.7	56.2	42.4
18	776.7	96.2	88.5	81.1	65.8	66.4	55.4	45.1	250.9	263.3	89.4	84.0	80.9	71.3	59.5	44.3
19	784.3	96.9	91.3	84.4	69.6	70.1	58.3	47.6	267.4	295.4	92.7	88.1	84.0	74.6	63.2	46.5
20	789.3	96.6	94.1	87.3	72.5	72.9	60.6	50.0	289.7	316.4	96.6	92.6	86.1	77.3	66.3	48.9
21	797.4	96.7	96.7	89.9	74.9	75.4	62.4	52.5	312.7	341.2	101.0	97.5	88.3	80.0	69.2	51.6
22	803.4	97.1	99.2	92.4	76.8	77.3	65.1	54.6	335.1	346.1	105.3	102.0	90.5	82.3	71.6	54.3
23	807.8	97.6	101.6	94.8	78.4	79.0	67.8	57.1	356.8	340.6	108.9	105.7	92.5	84.3	73.7	56.9
24	812.1	98.8	104.0	97.1	79.4	80.6	70.0	59.9	376.1	353.7	111.9	108.4	94.1	86.0	75.3	59.3
25	818.3	102.9	106.2	99.3	80.3	81.8	71.5	62.6	394.0	371.1	114.1	110.3	95.4	87.5	76.7	61.5
26	821.2	108.3	108.1	101.3	80.9	82.8	72.6	64.8	421.9	385.3	116.3	112.4	96.4	88.7	77.6	63.5
27	827.9	116.4	110.0	103.5	81.7	83.7	73.4	66.7	443.0	405.2	118.2	114.1	97.2	89.8	78.4	65.3
28	830.5	121.4	112.0	105.7	82.4	84.6	74.0	68.1	462.0	430.7	119.8	116.0	98.1	90.9	79.0	66.8
29	835.3	125.2	114.1	107.6	83.0	85.4	74.4	69.3	479.9	452.9	121.6	117.7	99.1	92.0	79.6	68.1
30	838.6	129.1	116.9	110.1	83.6	86.4	74.8	70.2	495.7	471.9	123.5	119.3	100.4	93.1	80.1	69.2
31	844.6	132.6	121.0	113.0	84.1	87.7	75.1	71.0	509.2	489.2	126.1	120.7	101.9	94.2	80.5	70.1
32	848.3	137.5	129.4	117.0	84.8	89.4	75.4	71.6	522.6	505.7	128.6	122.8	104.0	95.6	81.0	70.8
33	851.7	144.0	143.9	122.7	85.4	92.0	75.7	72.2	547.6	521.4	131.3	125.0	105.6	97.2	81.3	71.5
34	854.2	161.2	165.6	131.4	85.7	95.3	76.1	72.8	567.3	536.0	137.0	127.7	109.1	99.7	81.5	72.1
35	859.5	186.9	187.6	143.8	85.8	99.2	76.9	73.6	579.7	550.3	146.9	132.1	115.9	102.7	81.5	72.7
36	862.6	214.8	211.6	160.6	85.5	105.2	77.6	75.2	592.3	564.1	158.3	140.5	122.8	106.9	81.3	73.4
37	866.2	245.7	235.8	184.7	84.9	114.9	78.9	76.6	607.1	577.6	186.4	149.0	141.4	113.3	81.1	74.1
38	868.8	274.7	256.0	204.2	84.1	128.5	82.5	78.2	631.5	592.4	228.6	170.1	166.7	126.7	81.0	74.7
39	871.9	304.7	275.6	225.1	149.6	143.7	85.5	80.4	653.6	610.9	263.5	212.9	193.0	148.3	82.0	75.3
40	875.3	332.0	291.8	244.0	155.3	159.2	87.5	82.4	658.4	630.7	291.1	244.8	211.9	171.1	85.6	76.1
41	876.8	359.3	307.2	262.4	160.7	176.0	89.4	84.6	668.2	787.8	317.4	273.5	241.4	191.4	89.0	78.0
42	881.9	382.1	320.0	286.7	166.4	192.2	90.9	87.2	694.0	814.1	338.1	303.4	267.9	208.4	91.3	81.8

Table 14. Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Time (min)	T(Fav) (°C)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
43	884.9	402.4	335.8	310.0	172.5	203.3	92.4	89.8	718.7	821.3	353.2	336.1	287.6	229.1	94.3	84.5
44	885.9	408.2	357.1	338.2	233.9	212.9	93.7	92.3	744.4	826.4	377.2	356.3	314.7	250.0	97.2	86.9
45	888.6	439.9	783.8	437.8	678.4	241.3	96.0	96.3	855.7	859.4	437.3	396.4	400.5	313.8	100.3	89.5
46	891.9	565.5	790.3	657.3	770.7	343.3	97.9	99.0	819.1	878.9	507.1	493.8	483.5	403.5	103.1	92.5
47	892.9	679.4	810.3	757.8	804.2	513.3	99.7	100.8	832.3	890.1	554.4	537.2	539.5	473.1	105.4	94.0
48	896.6	894.0	856.5	883.2	809.8	827.5	103.2	103.8	868.2	881.2	820.5	601.8	823.3	562.5	107.8	94.9
49	897.7	940.1	890.0	851.6	554.6	837.7	113.0	106.7	878.4	888.6	889.1	669.2	900.4	633.6	111.0	96.7
50	901.8	936.7	901.8	871.3	908.8	871.2	138.0	107.8	877.3	917.4	895.9	917.3	903.7	873.1	116.0	98.4
51	905.4	935.1	902.2	864.4	909.8	853.6	183.2	114.9	881.0	919.2	894.7	895.5	905.2	876.3	121.7	101.8
52	905.9	896.1	900.9	857.2	355.8	854.7	188.0	150.2	873.9	919.6	893.9	888.8	901.4	874.9	127.2	103.3
53	910.1	899.1	905.3	861.2	193.6	864.8	249.6	152.9	875.8	916.5	891.1	877.2	909.8	880.5	137.5	103.8
54	910.9	905.6	903.6	856.4	193.6	867.8	359.1	233.6	870.9	906.2	890.9	873.7	916.8	870.1	169.4	106.7
55	914.4	914.5	897.8	854.9	228.1	878.7	542.6	309.7	864.6	911.5	892.5	864.8	913.0	872.3	257.2	121.4
56	915.1	902.3	876.6	855.7	888.6	881.9	647.0	380.2	843.2	907.7	878.2	854.1	894.8	875.3	323.9	183.3
57	916.1	920.0	860.2	866.6	869.9	890.6	713.8	448.9	834.3	913.1	874.0	850.8	870.8	887.4	366.8	236.4
58	921.2	938.1	830.0	877.3	831.7	887.6	747.7	498.1	813.6	915.5	846.6	838.8	839.6	890.4	405.3	267.9
59	921.9	931.0	810.4	878.5	808.6	883.1	756.5	535.6	805.5	913.4	823.7	841.8	823.3	892.7	429.4	322.1
60	925.3	923.6	880.2	882.4	861.7	872.8	759.1	573.7	882.6	929.9	872.7	856.6	875.6	895.4	444.7	375.3
61	925.2	924.8	866.9	884.7	834.8	862.1	761.1	600.5	870.3	924.6	867.4	842.1	867.8	898.9	461.4	404.7
62	928.5	926.9	879.8	885.8	855.2	855.5	759.4	633.4	879.5	921.7	885.1	836.2	888.8	903.1	475.7	428.6
63	929.7	917.7	893.8	884.6	882.2	854.7	758.3	669.6	893.2	925.6	892.2	866.1	898.7	908.0	496.6	446.4
64	930.7	933.3	893.3	876.8	894.9	859.8	767.0	706.3	892.4	934.0	896.5	866.6	899.8	911.1	516.7	471.1
65	935.0	939.8	893.4	870.5	902.8	865.1	782.1	741.8	892.2	931.8	899.6	848.5	904.1	912.2	535.7	495.1
66	936.2	936.8	895.2	860.6	904.7	856.4	794.2	766.5	893.7	926.3	901.1	838.1	904.8	908.6	556.6	517.5
67	937.3	945.0	929.4	845.2	932.8	842.1	812.9	791.9	931.3	930.4	930.3	854.8	937.4	919.3	576.3	538.0
68	938.8	942.9	931.7	824.5	939.9	822.6	822.0	802.8	930.7	924.9	934.6	866.2	941.5	916.8	594.4	559.1

Table 15. Average Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,24,25, 34,35,44,45)	BL/SStd. (Exp.) Av(26,27,36,37)	BL/Cav. (Exp.) Av(18,19,46,47)	Mid. SStd. Av(28,29,38,39)	BL/Cav. (UnExp.) Av(20,21,48,49)	BL/SStd. (UnExp.) Av(30,31,40, 41,48,49)	BL/FL (UnExp.) Av(22,23,32,33, 42,43,50,51)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
0	24.5	25.1	25.5	25.2	25.6	25.5	25.5	25.8	26.2
1	43.7	27.1	25.7	25.3	25.6	25.6	25.5	25.8	26.2
2	233.6	79.1	31.3	25.9	26.5	27.3	25.6	25.8	26.2
3	393.7	77.4	36.7	31.1	29.5	29.6	26.1	25.8	26.2
4	397.5	70.9	44.7	40.1	34.6	33.8	27.7	26.0	26.2
5	494.6	80.0	50.1	46.0	39.6	37.9	30.3	26.4	26.2
6	610.7	85.1	56.8	51.6	44.5	41.5	33.6	27.1	26.2
7	580.6	88.0	62.1	57.8	49.8	46.0	37.9	28.4	26.2
8	637.9	94.3	65.5	61.8	54.2	49.8	42.2	30.0	26.3
9	666.7	99.0	69.3	65.4	58.2	53.4	46.1	31.7	26.5
10	699.1	102.2	72.4	68.5	62.0	56.7	49.9	33.5	26.8
11	717.6	105.6	75.1	71.1	65.3	59.5	53.5	35.5	27.2
12	722.6	110.0	77.5	73.2	68.1	61.8	56.6	37.5	27.7
13	733.1	119.0	79.8	74.7	70.6	63.5	58.8	39.8	28.5
14	746.0	146.7	81.8	75.9	72.6	65.1	60.5	42.2	29.4
15	755.4	187.6	84.1	76.9	74.6	66.6	60.8	44.4	30.5
16	766.5	223.0	88.3	80.2	77.5	69.2	63.2	46.6	31.7
17	772.0	251.9	91.5	84.5	81.0	72.6	66.5	48.9	33.1
18	776.7	275.0	93.8	87.5	84.3	75.7	69.9	51.6	34.7
19	784.3	298.2	95.8	91.2	87.4	78.8	73.1	54.6	36.4
20	789.3	320.0	97.3	95.4	90.2	81.5	75.6	57.4	38.3
21	797.4	341.6	98.9	99.9	92.8	84.2	77.6	60.0	40.4
22	803.4	359.2	101.2	104.1	95.3	86.2	79.3	62.5	42.7
23	807.6	373.5	104.6	107.5	97.8	88.2	80.7	64.9	45.1
24	812.1	388.7	108.4	110.2	100.3	89.9	81.8	67.1	47.5
25	818.3	406.6	112.4	112.4	102.7	91.3	82.8	68.9	49.7
26	821.2	425.5	116.5	114.5	104.9	92.5	83.6	70.5	51.8
27	827.9	444.3	121.4	116.3	107.2	93.8	84.4	71.7	53.8
28	830.5	463.8	124.8	118.1	109.4	94.9	85.3	72.8	55.5
29	835.3	482.3	128.5	120.1	111.9	96.2	86.1	73.7	57.0
30	838.6	500.4	133.4	122.0	115.0	97.7	87.0	74.4	58.4
31	844.6	516.0	140.5	124.8	119.2	100.1	88.2	75.0	59.5
32	848.3	522.8	151.1	128.9	125.3	105.6	89.8	75.6	60.5
33	851.7	527.1	162.5	134.1	134.8	110.4	92.0	76.2	61.5
34	854.2	535.6	178.7	144.3	148.6	119.4	95.0	76.8	62.3
35	859.5	547.9	199.7	157.1	165.0	130.1	99.1	77.5	63.2
36	862.6	591.5	224.8	174.8	184.4	135.8	105.5	78.2	64.0
37	866.2	605.0	247.2	206.4	206.2	157.9	113.6	78.9	64.7
38	868.8	618.5	268.2	245.5	228.9	182.5	123.2	80.4	65.5
39	871.9	634.1	290.0	280.5	249.7	204.8	151.4	83.1	66.5
40	875.3	644.3	309.5	308.6	267.1	227.8	163.9	85.3	67.8
41	876.8	671.3	328.8	333.3	284.0	252.4	176.7	87.4	69.2
42	881.9	683.7	346.5	354.9	302.3	273.4	188.6	89.6	70.7

Table 15. Average Temperatures Measured in Full Scale Assembly F-05, Steel Stud, 2x2 Gypsum Layers, No Insulation (Cont.)

Legend: BL - Base Layer, FL - Face Layer, Cav. - Cavity, SStd. - Steel Stud, WStd. - Wood Stud, Av - Average, Exp. - Exposed Side, UnExp. - Unexposed Side

Time (min)	T(Fav) (°C)	BL/FL (Exp.) Av(16,17,24,25, 34,35,44,45)	BL/SStd. (Exp.) Av(26,27,36,37)	BL/Cav. (Exp.) Av(18,19,46,47)	Mid. SStd. Av(28,29,38,39)	BL/Cav. (UnExp.) Av(20,21,48,49)	BL/SStd. (UnExp.) Av(30,31,40, 41,48,49)	BL/FL (UnExp.) Av(22,23,32,33, 42,43,50,51)	UnExp. Av(1,2,3,4,5, 6,7,8,9)
43	884.9	768.5	382.8	381.2	323.7	301.2	200.7	91.6	72.2
44	885.9	794.5	448.8	409.1	359.0	334.9	231.4	93.7	73.6
45	888.6	818.1	565.8	596.0	639.5	502.8	373.6	96.4	74.7
46	891.9	837.6	650.8	684.2	759.6	637.4	547.8	98.7	75.8
47	892.9	720.1	788.1	694.1	802.0	671.7	601.7	100.4	76.9
48	896.6	762.2	874.2	785.8	867.5	778.7	703.7	102.4	77.5
49	897.7	767.1	935.5	812.3	874.6	819.4	654.4	106.2	77.8
50	901.8	784.5	919.4	890.6	887.9	891.0	782.6	112.1	77.9
51	905.4	913.3	950.1	880.9	886.3	891.6	808.1	122.5	77.9
52	905.9	894.2	934.0	875.8	887.1	890.1	673.9	131.3	78.2
53	910.1	876.9	935.6	874.2	894.0	861.3	641.4	144.8	78.6
54	910.9	887.5	914.5	871.6	887.9	855.4	647.1	182.1	79.0
55	914.4	885.1	911.0	871.7	884.5	892.8	674.2	250.4	79.5
56	915.1	870.7	892.1	865.8	874.2	883.4	847.8	322.3	81.9
57	916.1	862.6	896.2	868.6	870.5	879.5	875.1	381.0	85.0
58	921.2	858.4	893.2	861.8	858.8	868.7	854.8	424.3	87.7
59	921.9	857.1	896.9	858.0	849.4	862.2	860.6	453.2	90.5
60	925.3	782.1	974.0	875.3	886.5	889.8	871.6	476.1	93.7
61	925.2	778.4	981.8	870.6	880.1	887.6	863.9	494.9	97.1
62	926.5	782.2	965.2	875.7	886.6	896.2	873.5	513.1	100.7
63	929.7	790.5	959.5	888.1	893.8	905.5	878.9	533.3	101.3
64	930.7	793.2	985.4	888.2	889.8	906.1	891.8	554.6	102.0
65	935.0	792.3	981.8	883.0	885.3	904.8	895.1	576.2	105.1
66	936.2	787.4	975.5	878.2	881.4	900.6	891.3	598.0	108.0
67	937.3	796.4	998.8	885.1	890.2	914.9	892.2	624.0	111.1
68	938.8	792.8	997.2	868.5	877.0	904.2	879.2	650.0	116.2

Table 16. Centre Deflections Measured in Full-Scale Assembly F-01, Loaded Assembly

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32					
Defln. (cm)	-0.1	-0.2	-0.2	-0.3	-0.4	-0.6	-0.7	-0.9	-1.2	-1.5	-2.0	-3.0	-4.4	-7.0					

Table 17. Deflection Measurements in Full Scale Test F-01B, Loaded Assembly

(a) Third Stud From Left Unexposed Face, Centre Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8
Time (min)	19	20	21	22	23	24	25	26											
Defln. (cm)	0.9	1.1	1.2	1.3	1.3	1.2	0.4	-10.9											

(b) Sixth Stud From Left Unexposed Face, Centre Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.2
Time (min)	19	20	21	22	23	24	25	26											
Defln. (cm)	0.0	-0.1	-0.3	-0.5	-1.0	-1.7	-3.2	-10.7											

(c) Eighth Stud From Left Unexposed Face, Centre Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Time (min)	19	20	21	22	23	24	25	26											
Defln. (cm)	0.5	0.4	0.2	0.1	-0.2	-0.7	-1.6	-7.3											

Table 18. Centre Deflections Measured in Full-Scale Assembly F-02, Loaded Assembly

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5	-0.6	-0.7	-0.8
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53			
Defln. (cm)	-1.0	-1.1	-1.3	-1.6	-1.8	-2.1	-2.4	-2.9	-3.4	-4.2	-5.0	-6.0	-7.2	-8.8	-10.5	-20.3			

Table 19. Deflection Measurements in Full Scale Test F-02B, Loaded Assembly

(a) Third Stud From Left Unexposed Face, Centre Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50						
Defln. (cm)	0.6	0.6	0.5	0.4	0.3	0.0	-0.7	-2.2	-6.3	-11.0	-14.7	-19.4	-21.2						

(b) Sixth Stud From Left Unexposed Face, Centre Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.5
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.0	1.1	1.1	1.1
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50						
Defln. (cm)	1.2	1.2	1.2	1.2	1.3	1.2	1.0	-0.1	-6.0	-12.0	-16.1	-18.0	-18.0						

(c) Eighth Stud From Left Unexposed Face, Centre Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50						
Defln. (cm)	0.6	0.5	0.4	0.3	0.2	0.0	-0.3	-0.7	-2.7	-9.1	-13.2	-16.8	-20.6						

(d) Third Stud From Left Unexposed Face, 3/4 Height Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50						
Defln. (cm)	0.4	0.3	0.3	0.3	0.2	-0.1	-0.6	-1.8	-4.8	-8.3	-11.2	-14.6	-16.5						

(e) Sixth Stud From Left Unexposed Face, 3/4 Height Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50						
Defln. (cm)	0.8	0.8	0.9	0.8	0.8	0.7	0.4	-0.5	-5.1	-9.2	-11.9	-14.4	-15.3						

(f) Eighth Stud From Left Unexposed Face, 3/4 Height Deflection

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50						
Defln. (cm)	0.3	0.3	0.3	0.2	0.1	0.0	-0.2	-0.5	-2.0	-5.8	-8.3	-10.5	-12.8						

Table 20. Centre Deflections Measured in Full-Scale Assembly F-03, Unloaded Assembly

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.0	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.6	-0.7	-1.0	-1.4	-1.9	-2.5	-3.2	-3.8	-4.4	-4.8
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Defln. (cm)	-5.2	-5.7	-5.7	-5.4	-5.1	-5.0	-4.9	-4.7	-4.4	-4.4	-4.3	-4.4	-4.5	-4.7	-4.8	-4.8	-4.9	-4.9	-4.9
Time (min)	57	58	59	60	61	62	63												
Defln. (cm)	-4.8	-4.8	-4.7	-4.5	-4.2	-3.4	-2.7												

Table 21. Centre Deflections Measured in Full-Scale Assembly F-04, Unloaded Assembly

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Defln. (cm)	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.8	-0.9	-0.9	-1.1	-1.2	-1.2
Time (min)	57	58	59	60	61	62	63	64											
Defln. (cm)	-1.3	-1.2	-1.3	-3.1	-3.2	-3.3	-3.3	-3.3											

Table 22. Centre Deflections Measured in Full-Scale Assembly F-05, Unloaded Assembly

Time (min)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Defln. (cm)	0.1	0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Time (min)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Defln. (cm)	-0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.1	-0.3	-0.6	-0.9	-1.2	-1.4	-1.6
Time (min)	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Defln. (cm)	-1.9	-2.2	-2.5	-2.7	-3.0	-3.2	-3.9	-3.7	-2.7	-2.2	-1.6	-1.0	-0.4	-0.1	0.2	1.0	1.4	1.7	1.9
Time (min)	57	58	59	60	61	62	63	64	65	66	67	68							
Defln. (cm)	2.1	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.1	1.9							

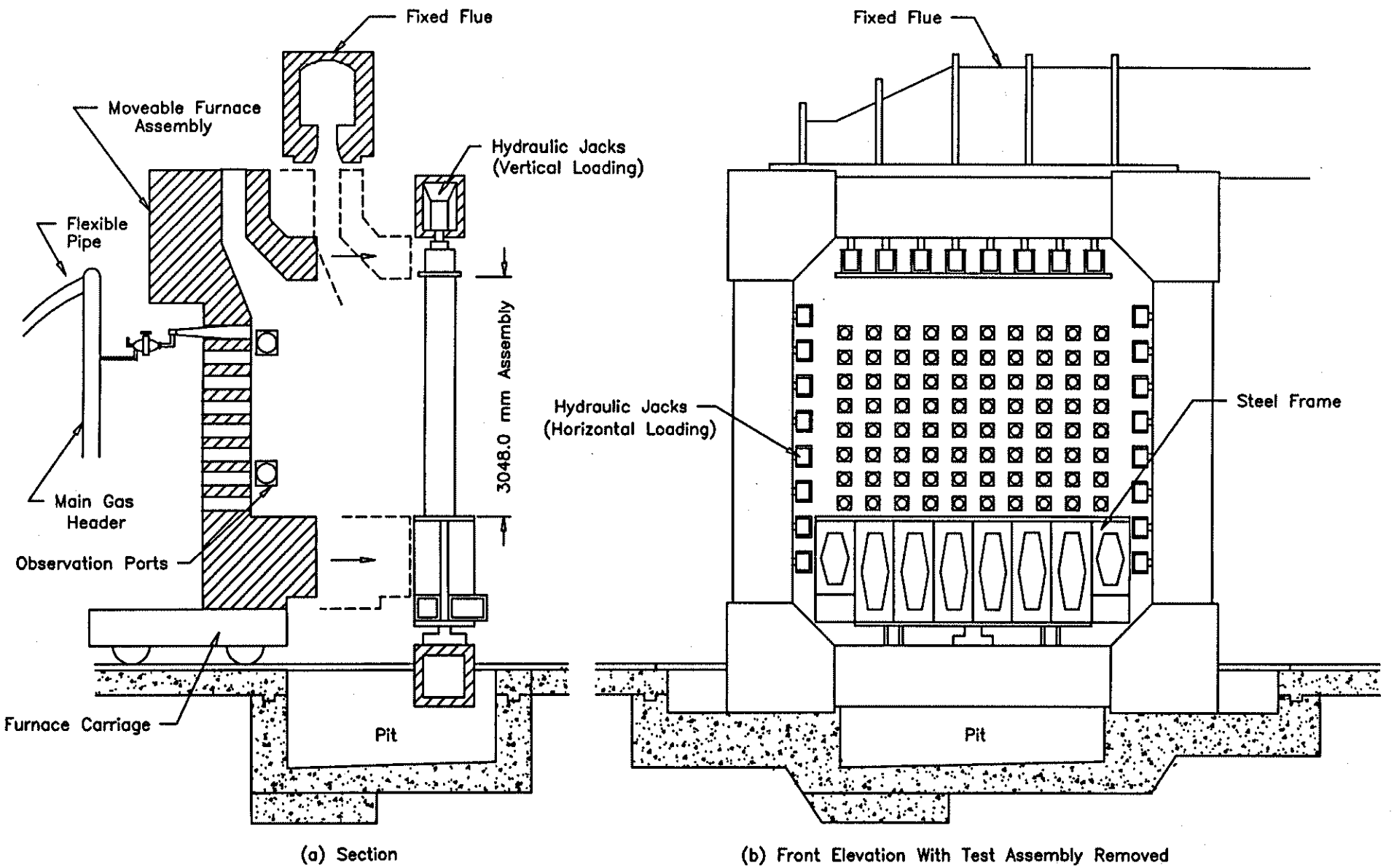


Figure 1. Full-Scale Test Assembly Furnace

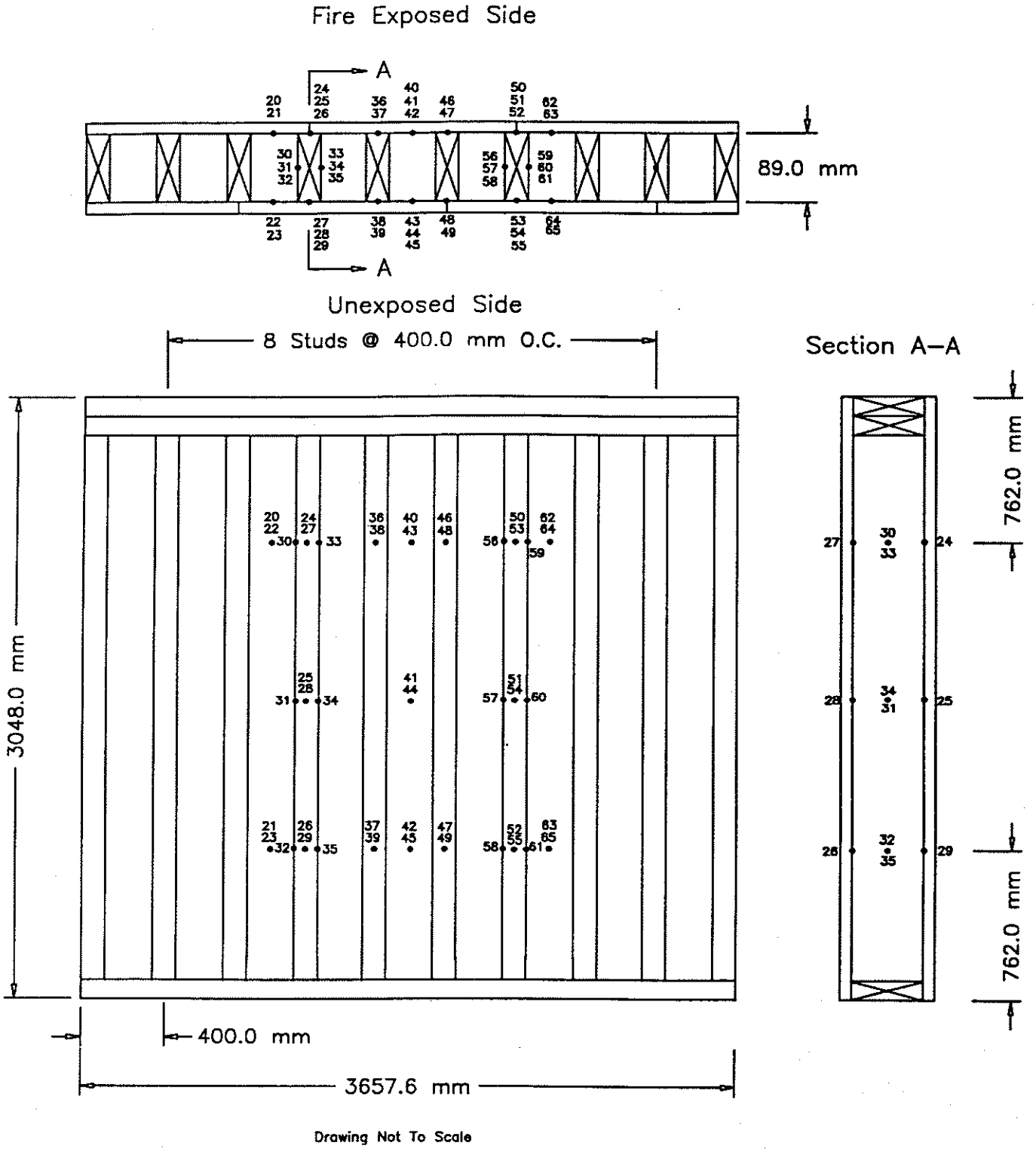


Figure 2. Thermocouple Locations in Full-Scale Test F-01

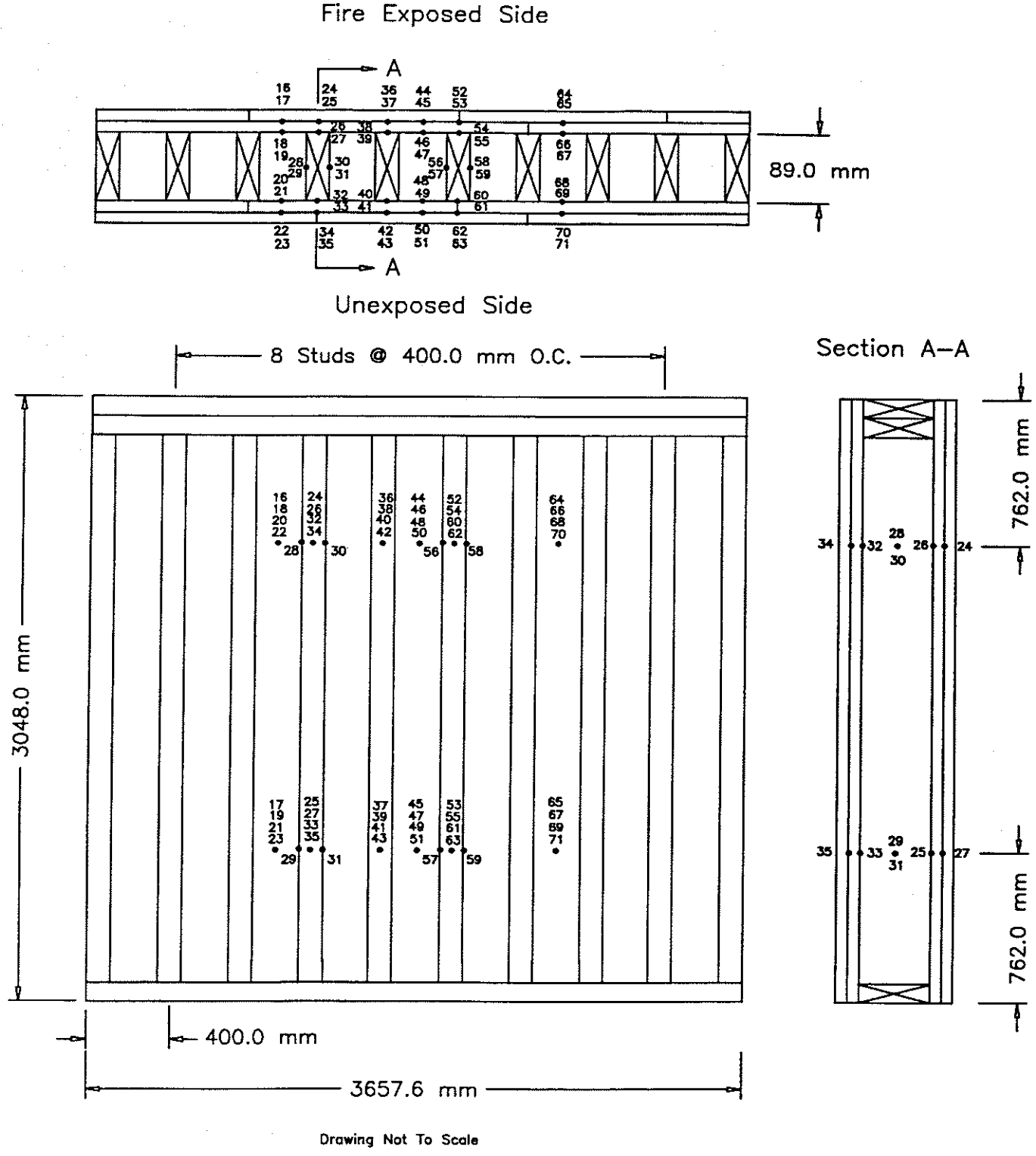


Figure 3. Thermocouple Locations in Full-Scale Test F-02

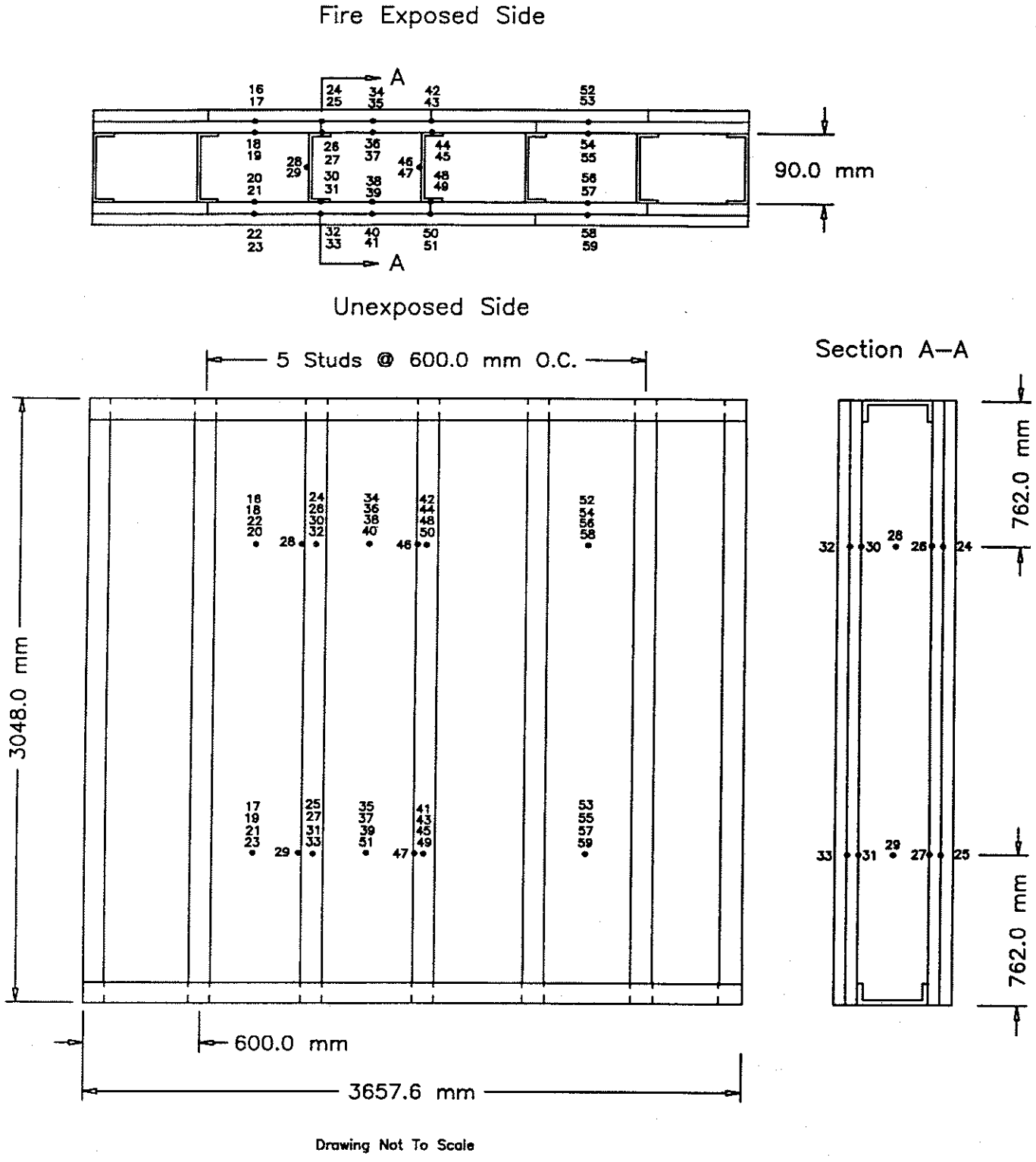


Figure 4. Thermocouple Locations in Full-Scale Test F-03

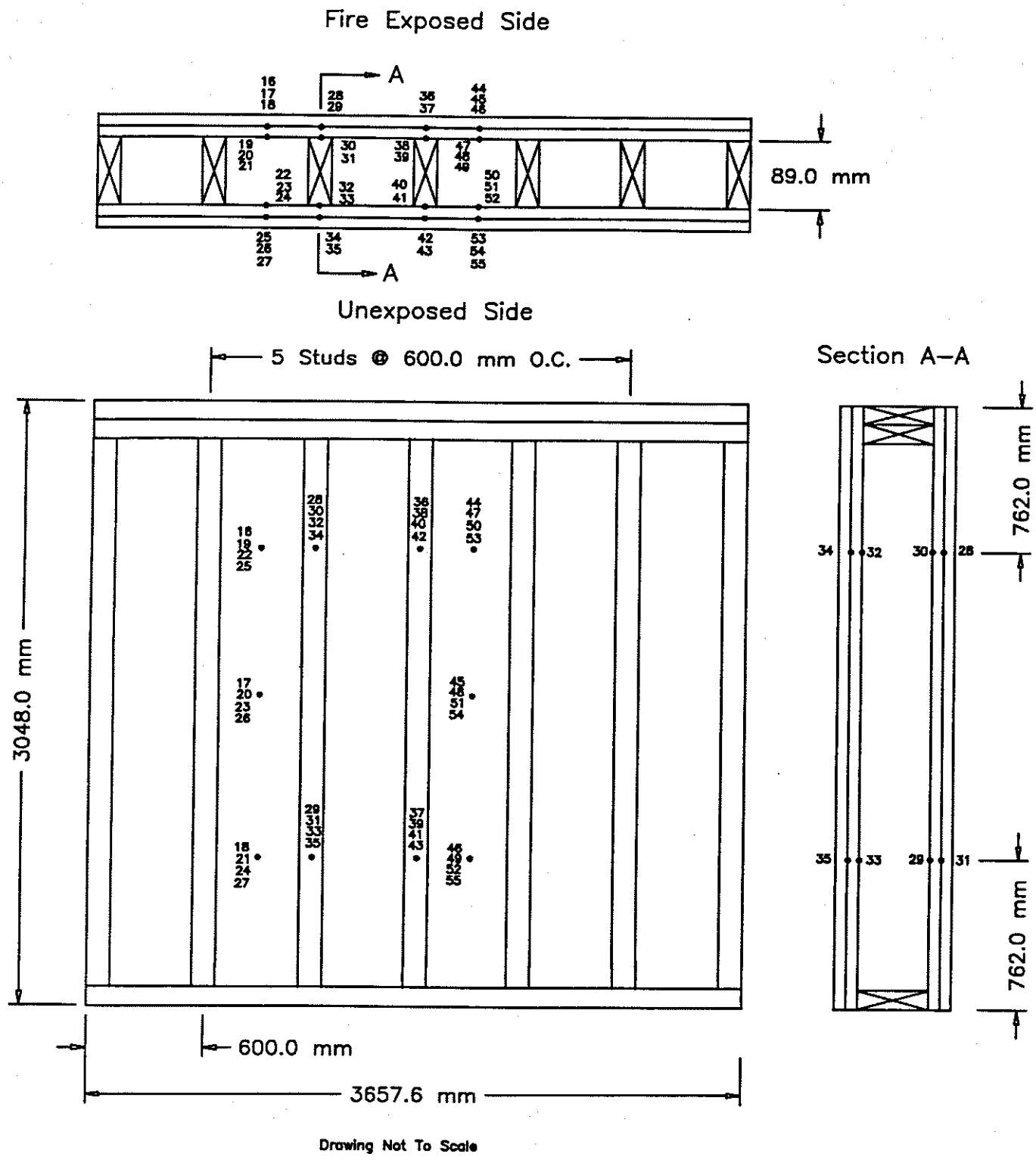


Figure 5. Thermocouple Locations in Full-Scale Test F-04

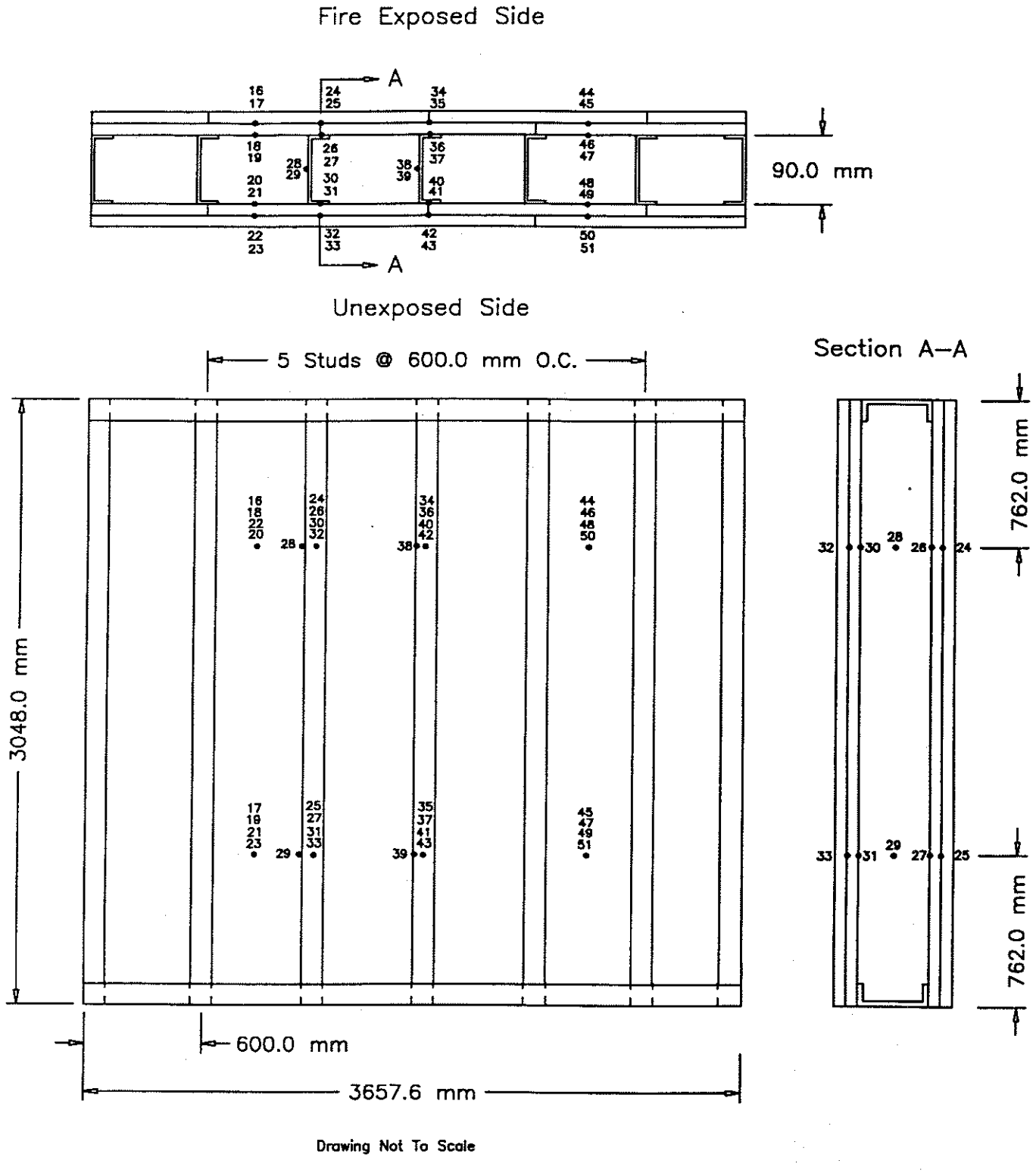


Figure 6. Thermocouple Locations in Full-Scale Test F-05

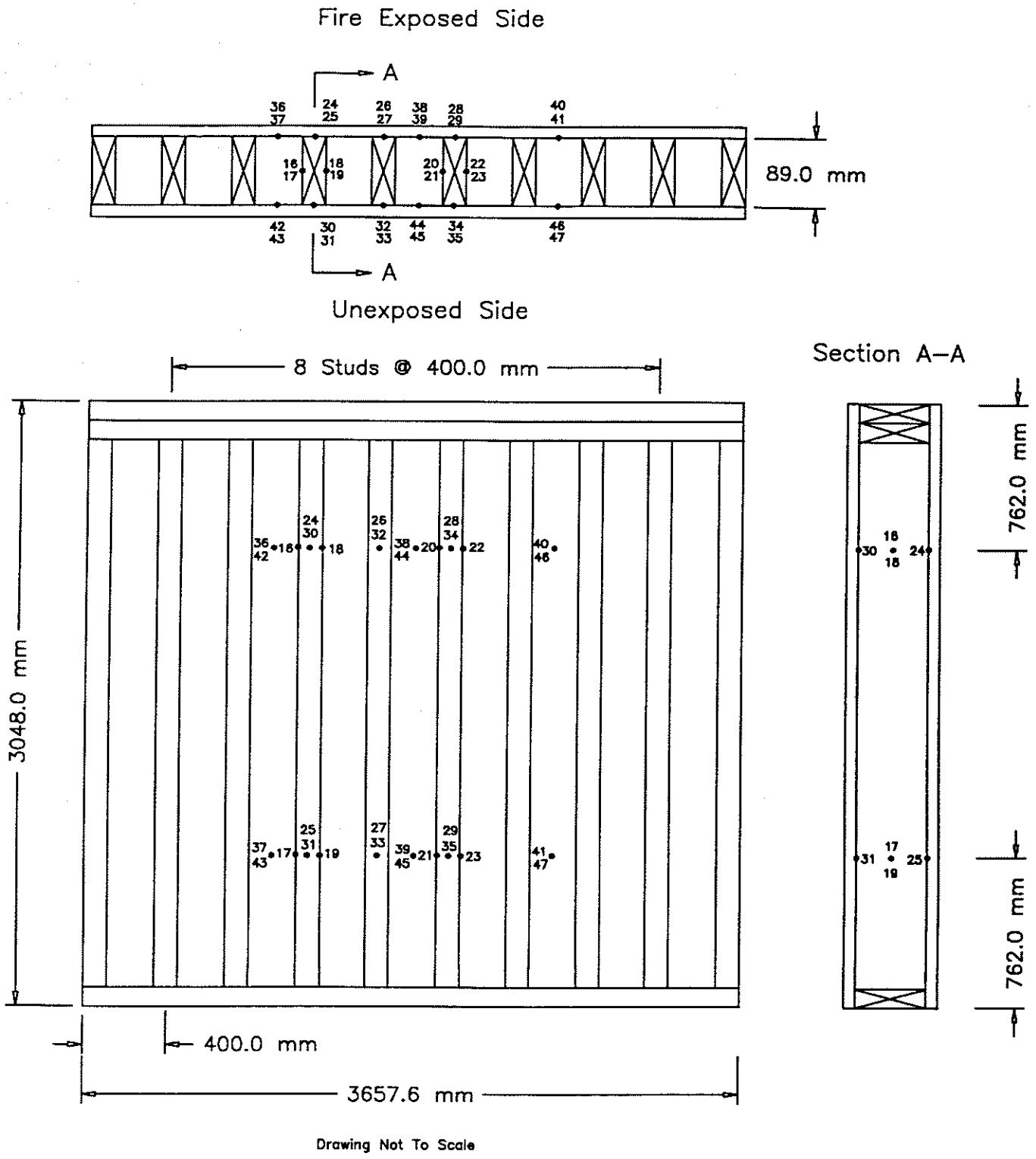


Figure 7. Thermocouple Locations in Full-Scale Test F-01B

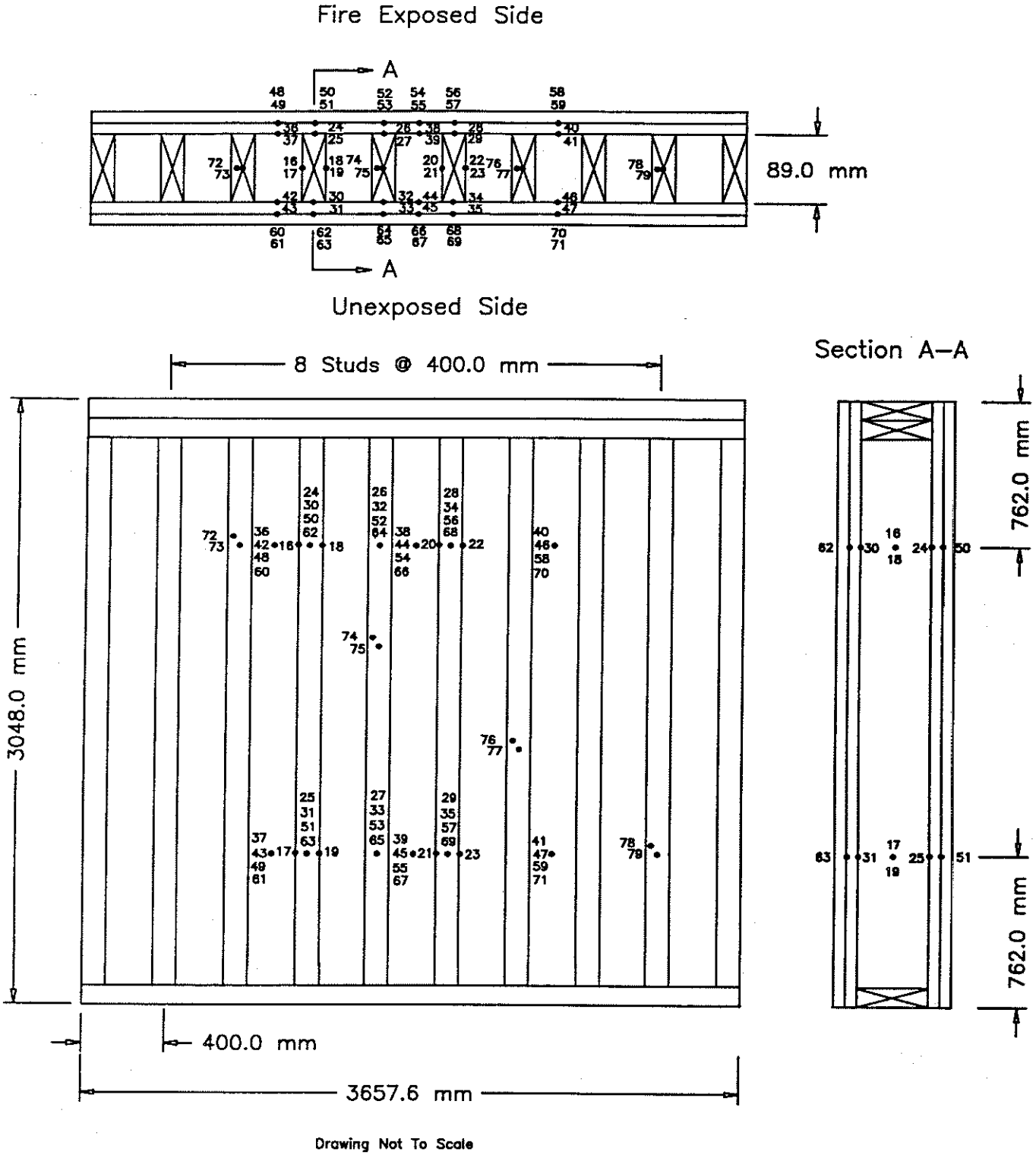


Figure 8. Thermocouple Locations in Full-Scale Test F-02B

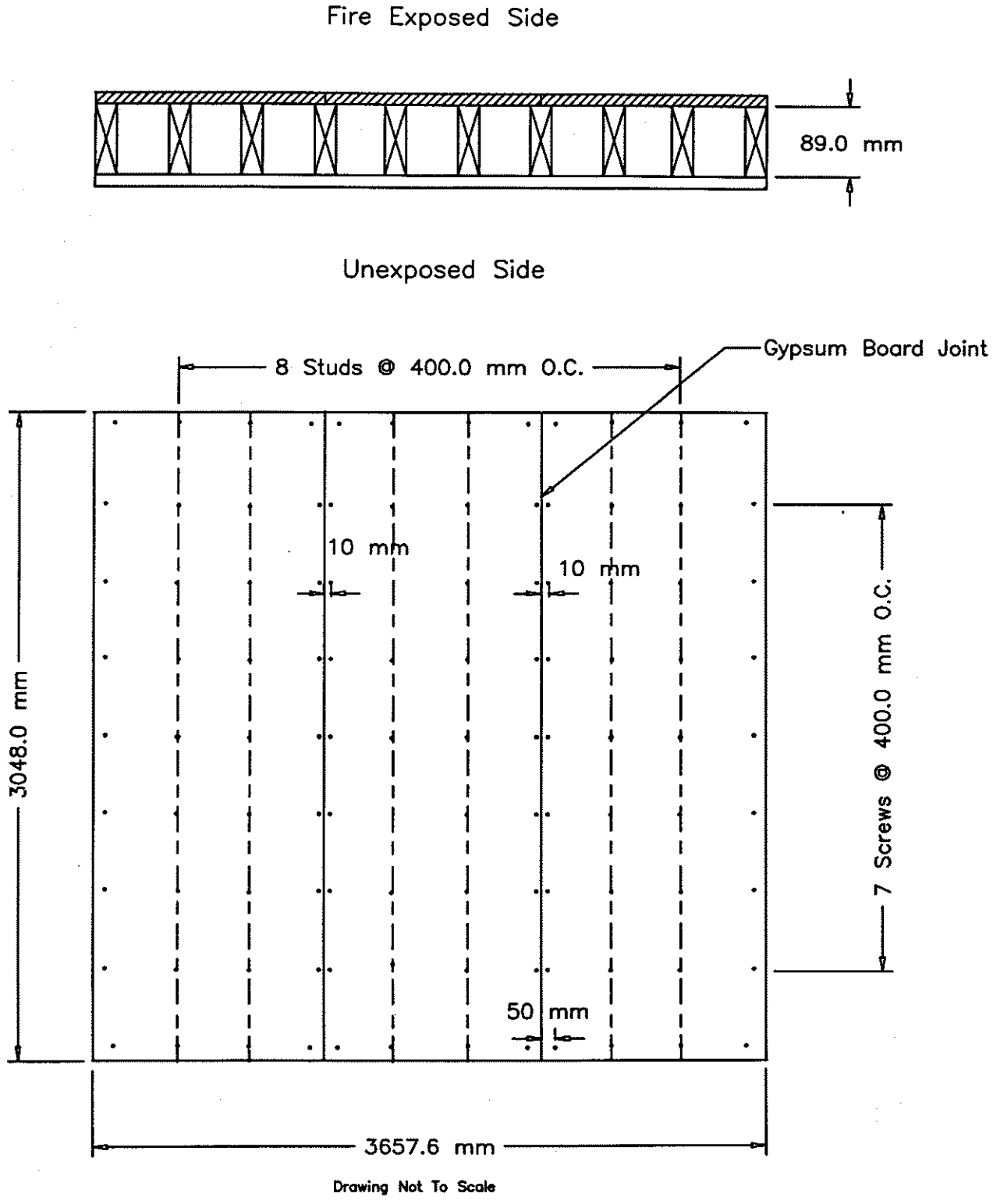


Figure 9. Screw Locations For Wood Stud, 1x1 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Fire Exposed Face

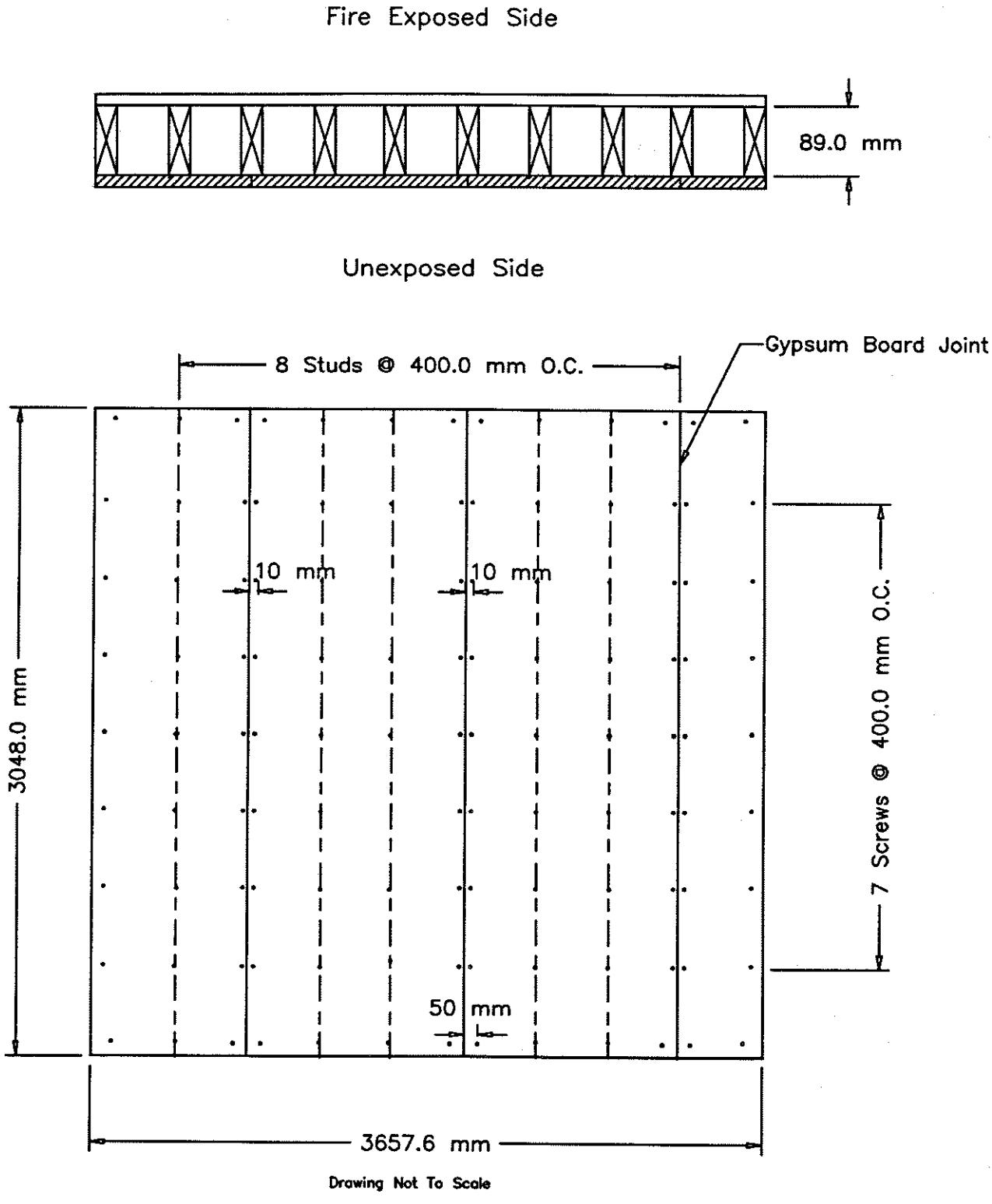


Figure 10. Screw Locations For Wood Stud, 1x1 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Unexposed Face

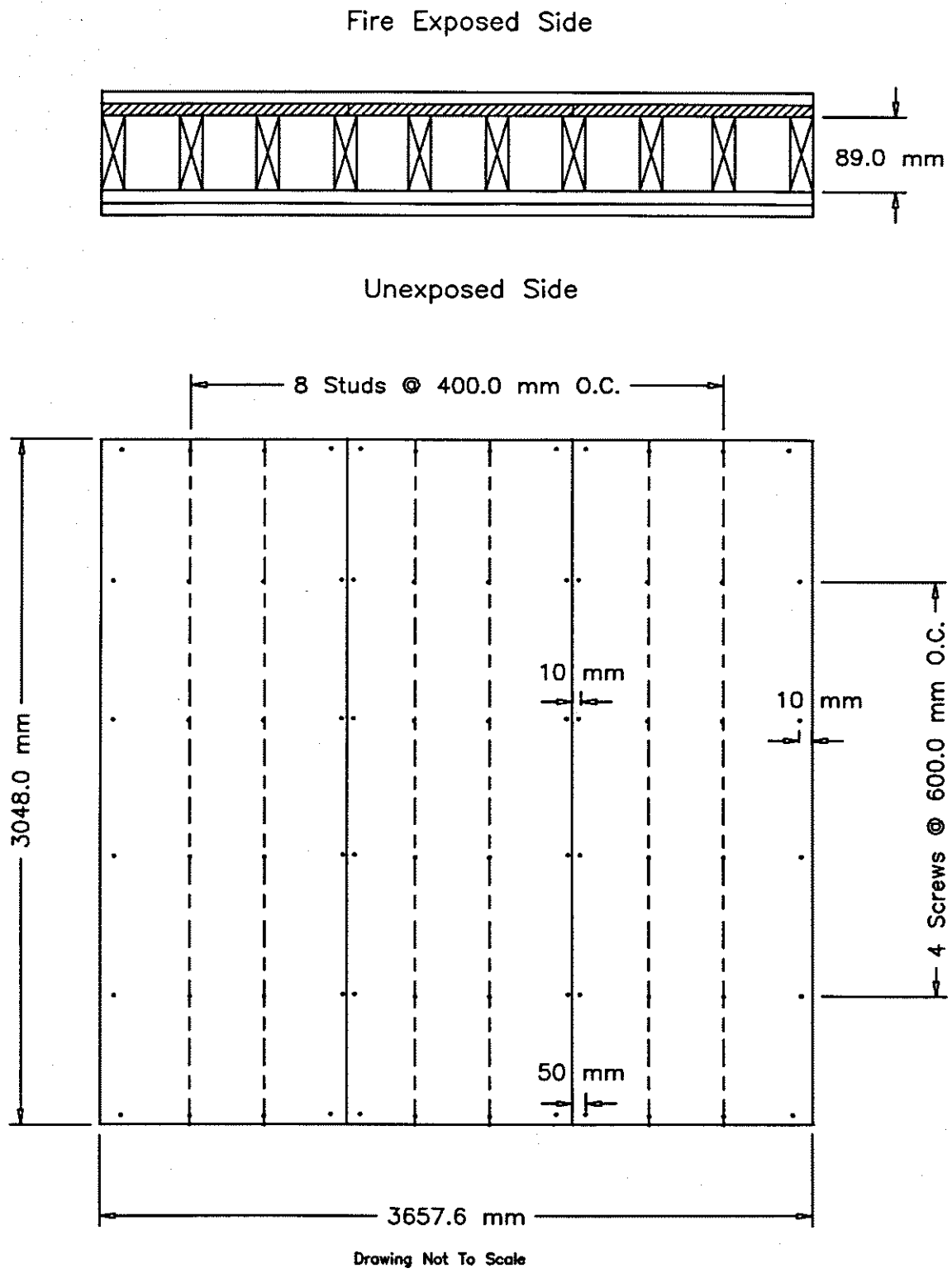


Figure 11. Screw Locations For Wood Stud, 2x2 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Fire Exposed Face

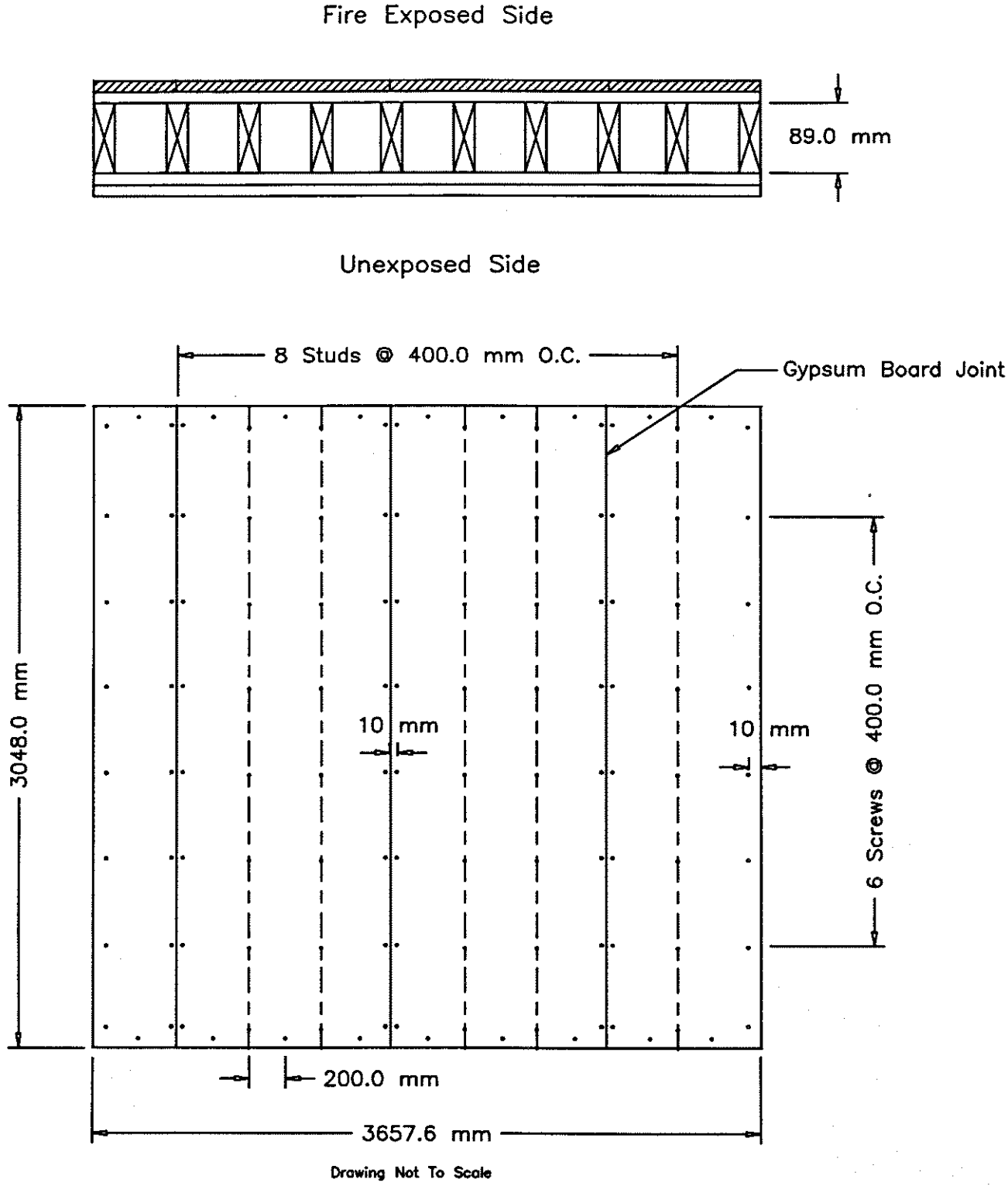


Figure 12. Screw Locations For Wood Stud, 2x2 Gypsum Board Layers, Full-Scale Assembly, Face Layer Gypsum Board, Fire Exposed Face

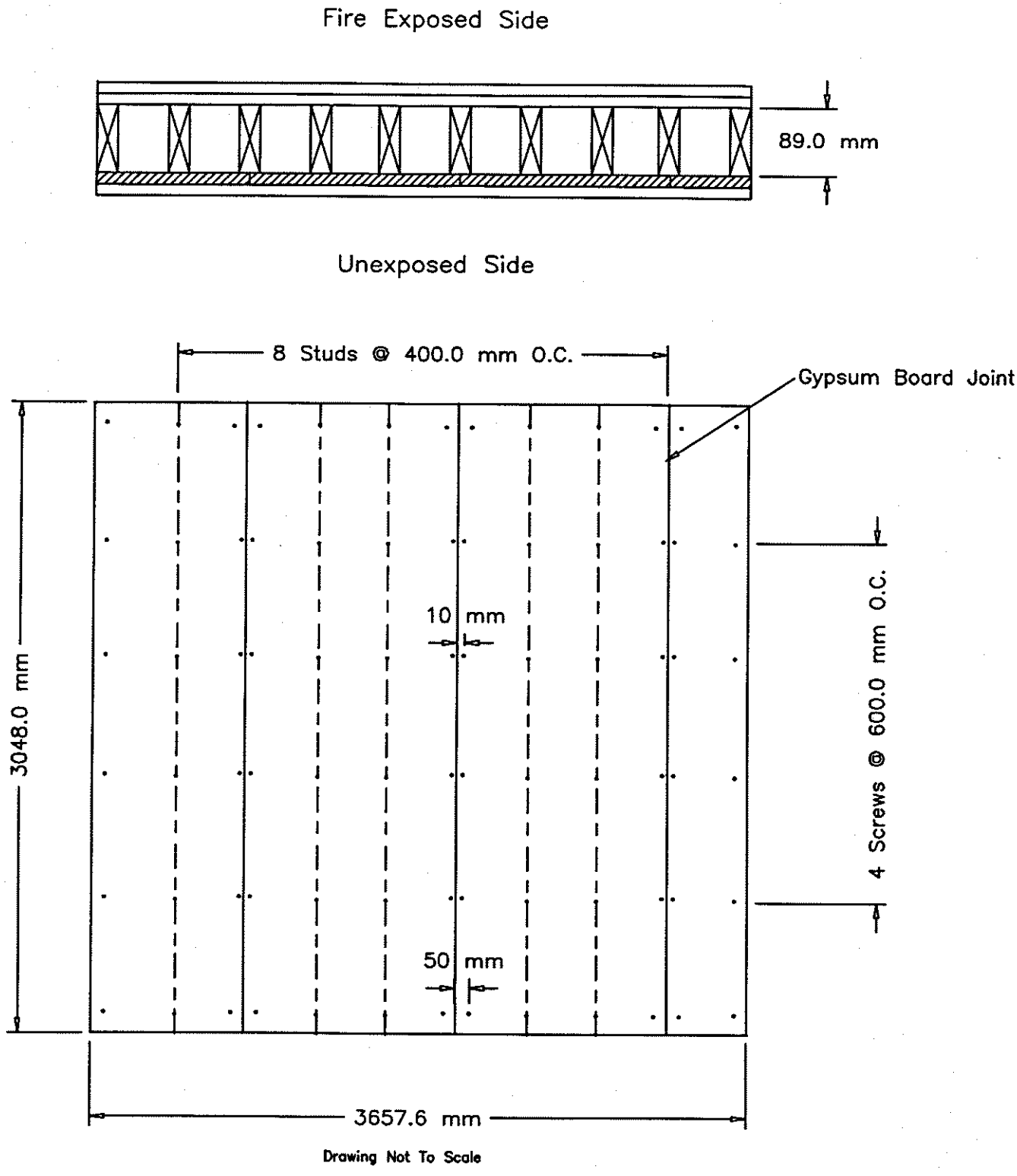


Figure 13. Screw Locations For Wood Stud, 2x2 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Unexposed Face

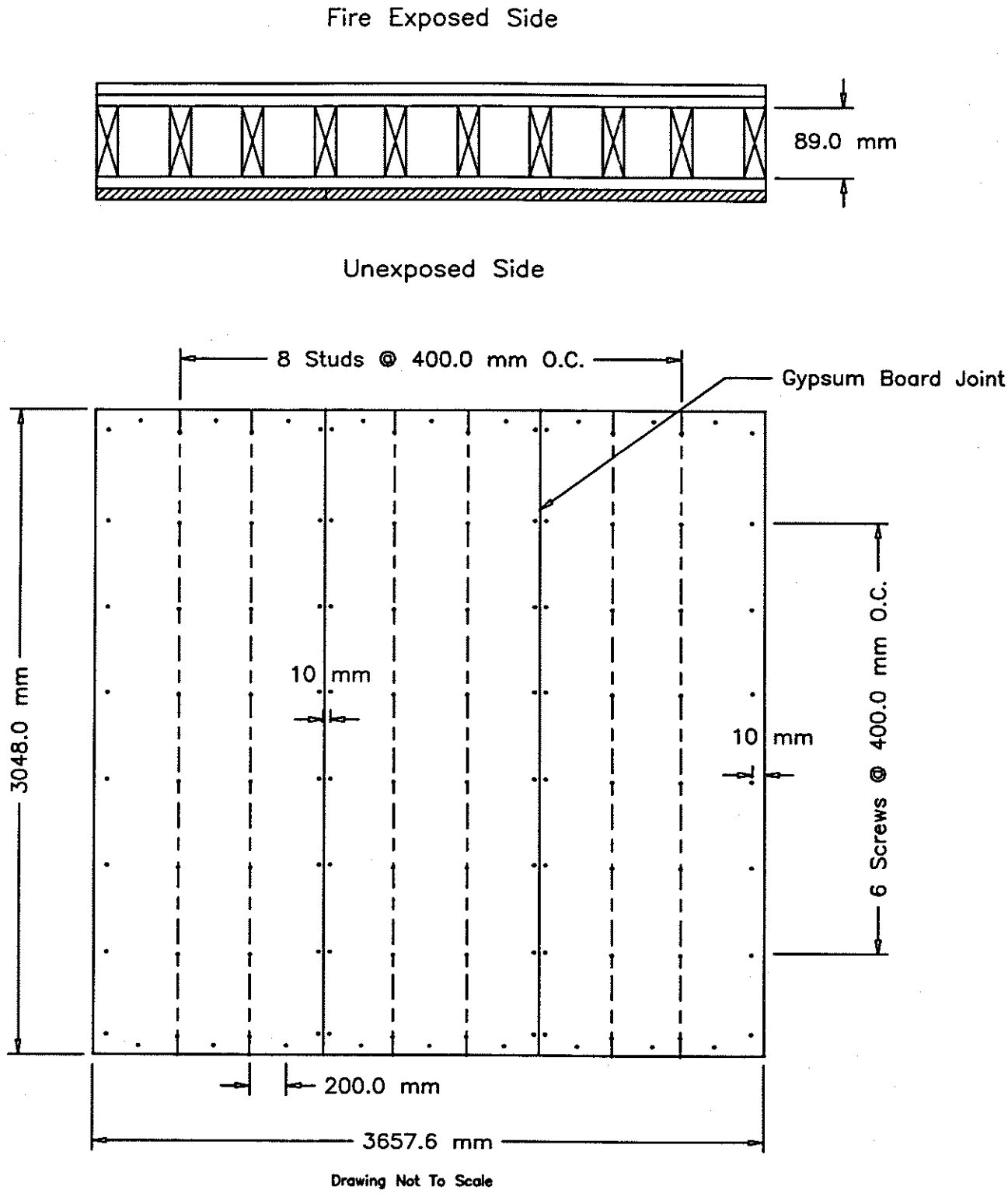


Figure 14. Screw Locations For Wood Stud, 2x2 Gypsum Board Layers, Full-Scale Assembly, Face Layer Gypsum Board, Unexposed Face

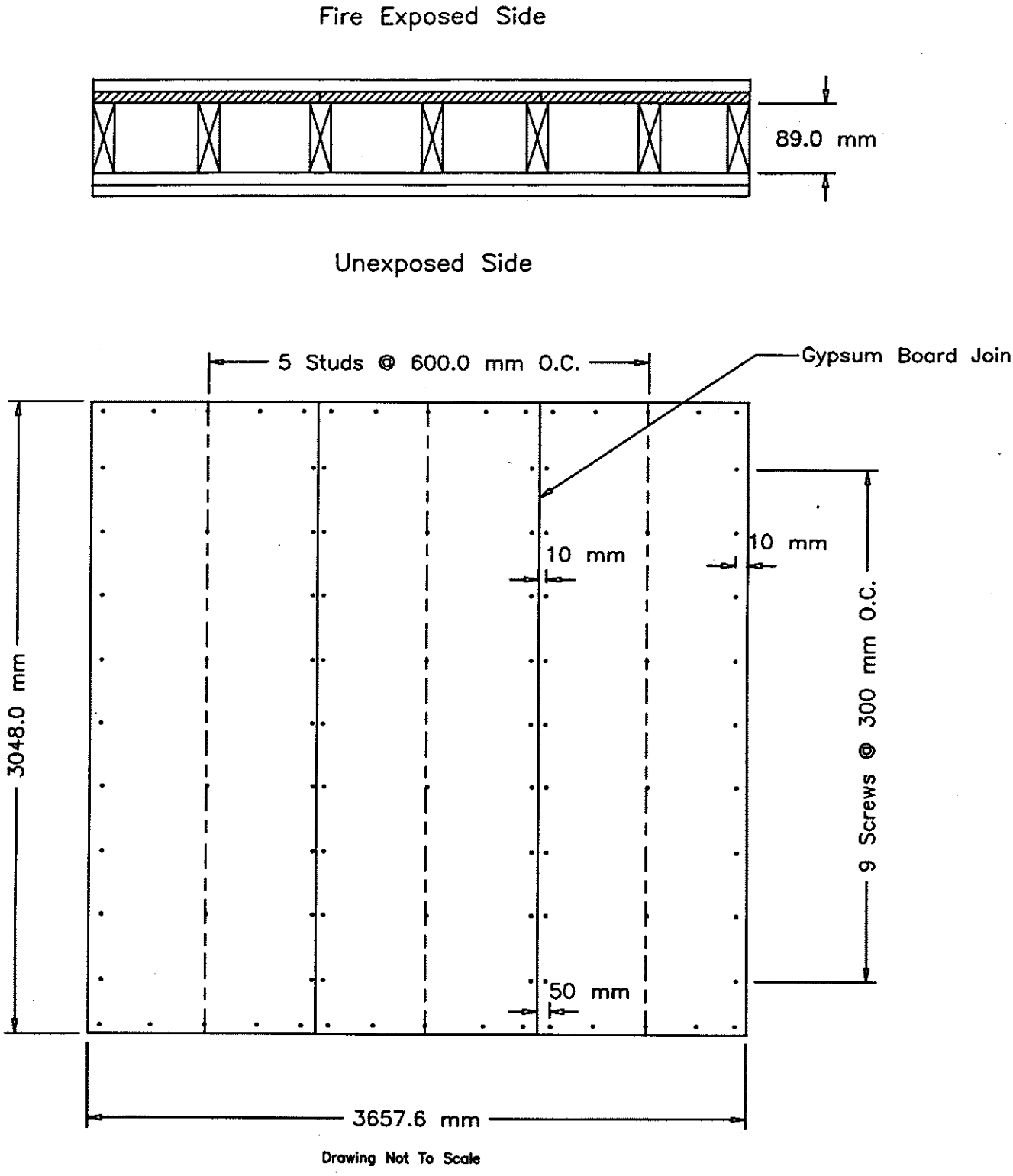


Figure 15. Screw Locations For Wood Stud (600 mm O.C.), 2x2 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Fire Exposed Face

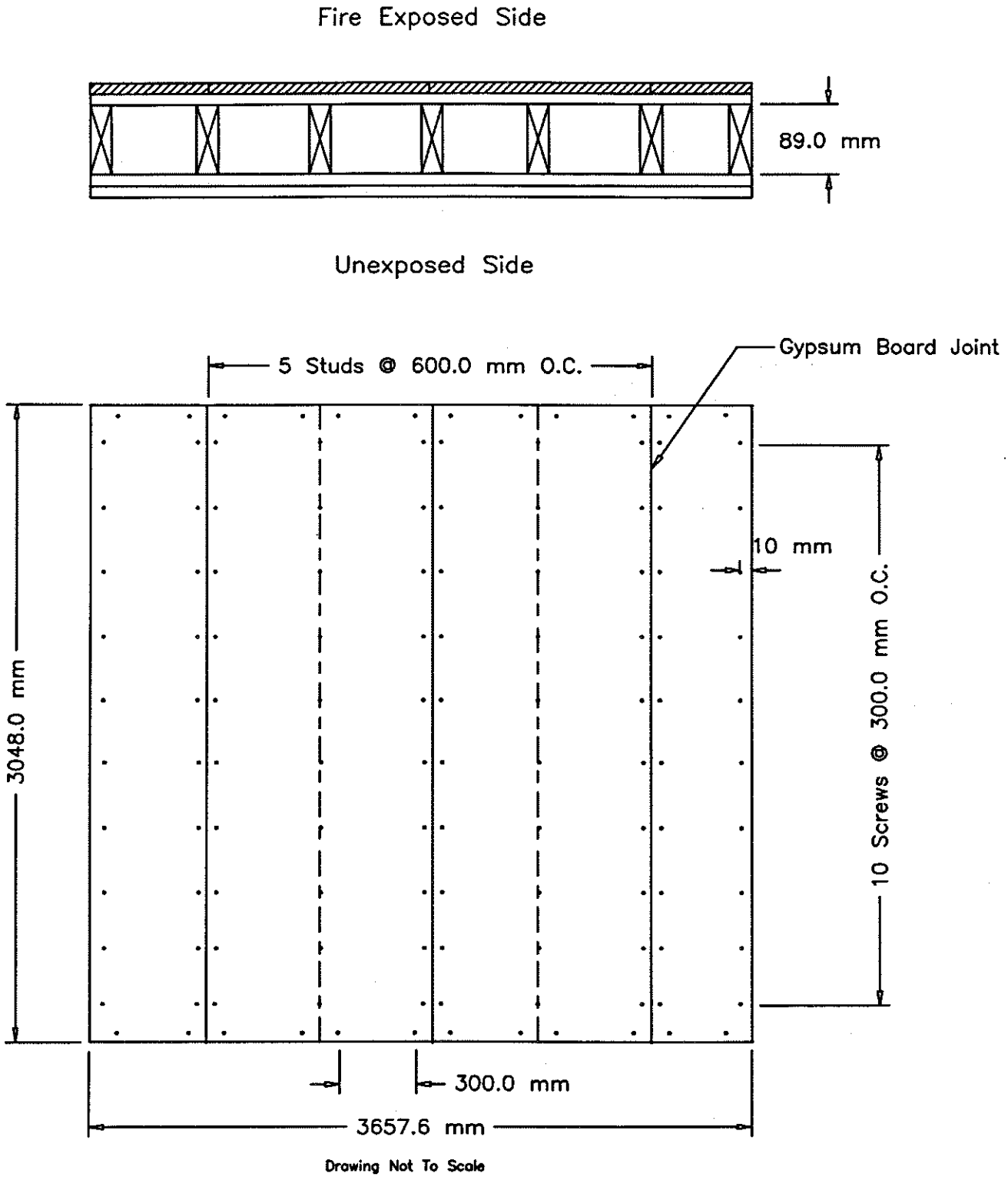


Figure 16. Screw Locations For Wood Stud (600 mm O.C.), 2x2 Gypsum Board Layers, Full-Scale Assembly, Face Layer Gypsum Board, Fire Exposed Face

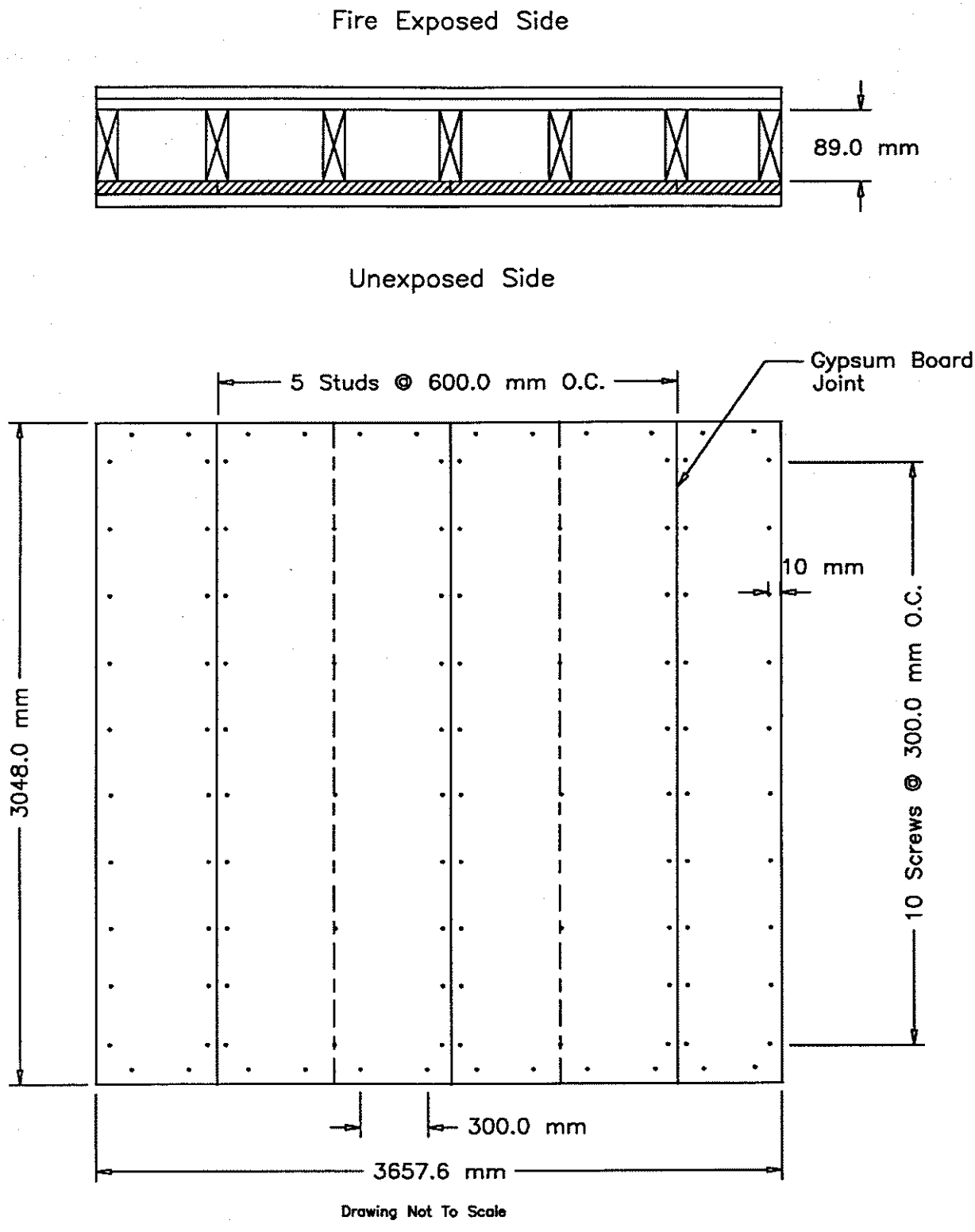


Figure 17. Screw Locations For Wood Stud (600 mm O.C.), 2x2 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Unexposed Face

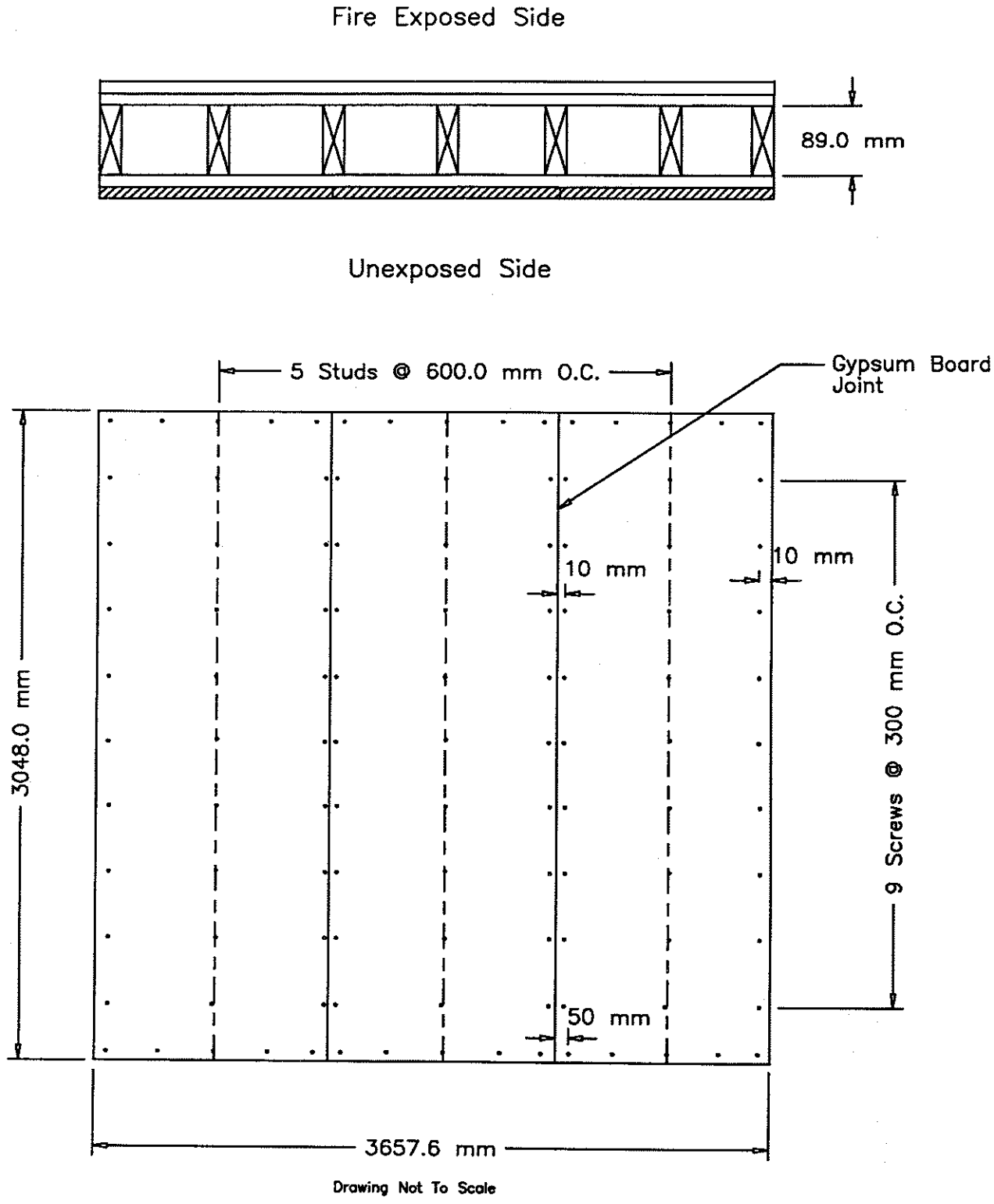


Figure 18. Screw Locations For Wood Stud (600 mm O.C.), 2x2 Gypsum Board Layers, Full-Scale Assembly, Face Layer Gypsum Board, Unexposed Face

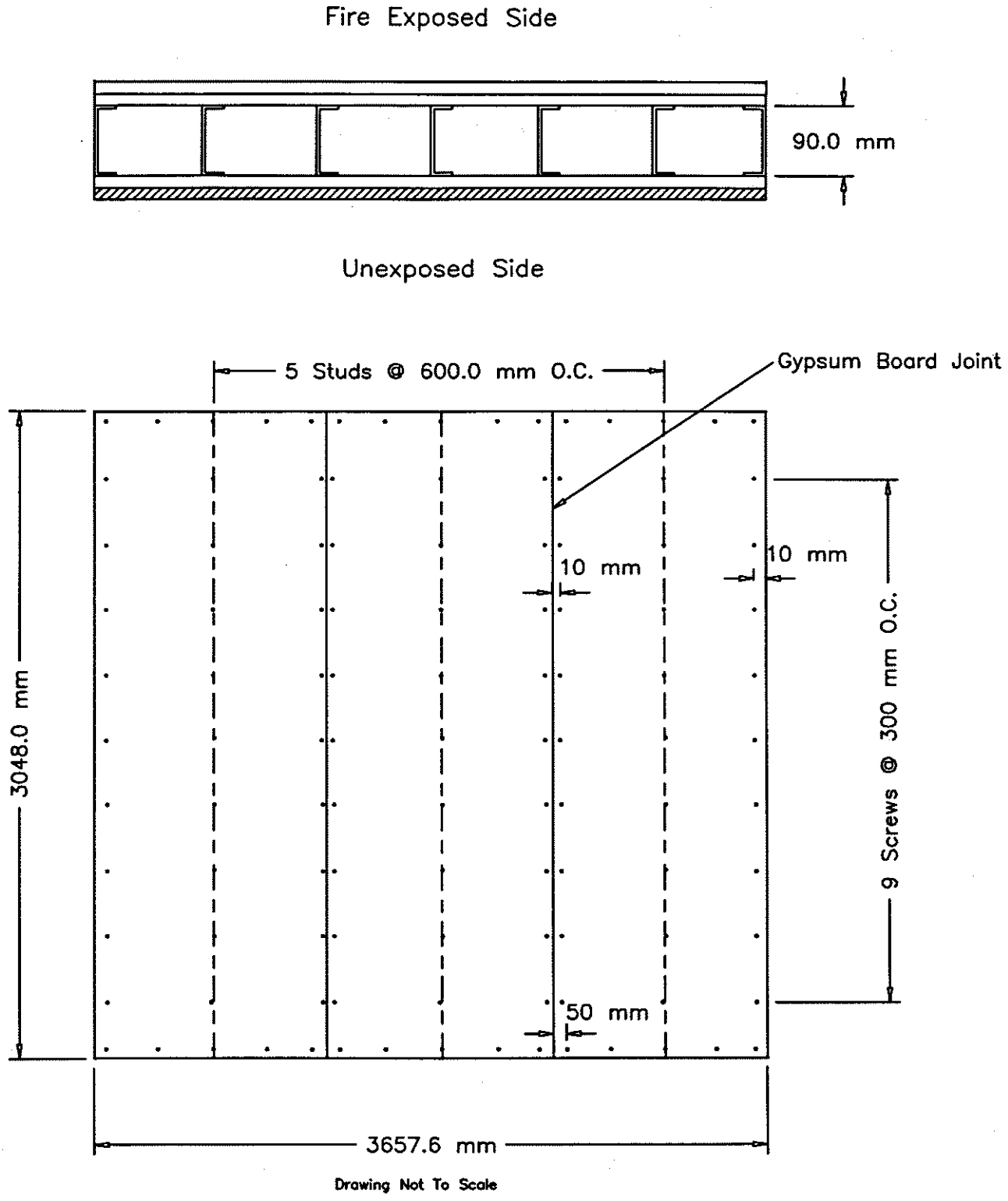


Figure 19. Screw Locations For Wood Stud (600 mm O.C.), 2x2 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Unexposed Face

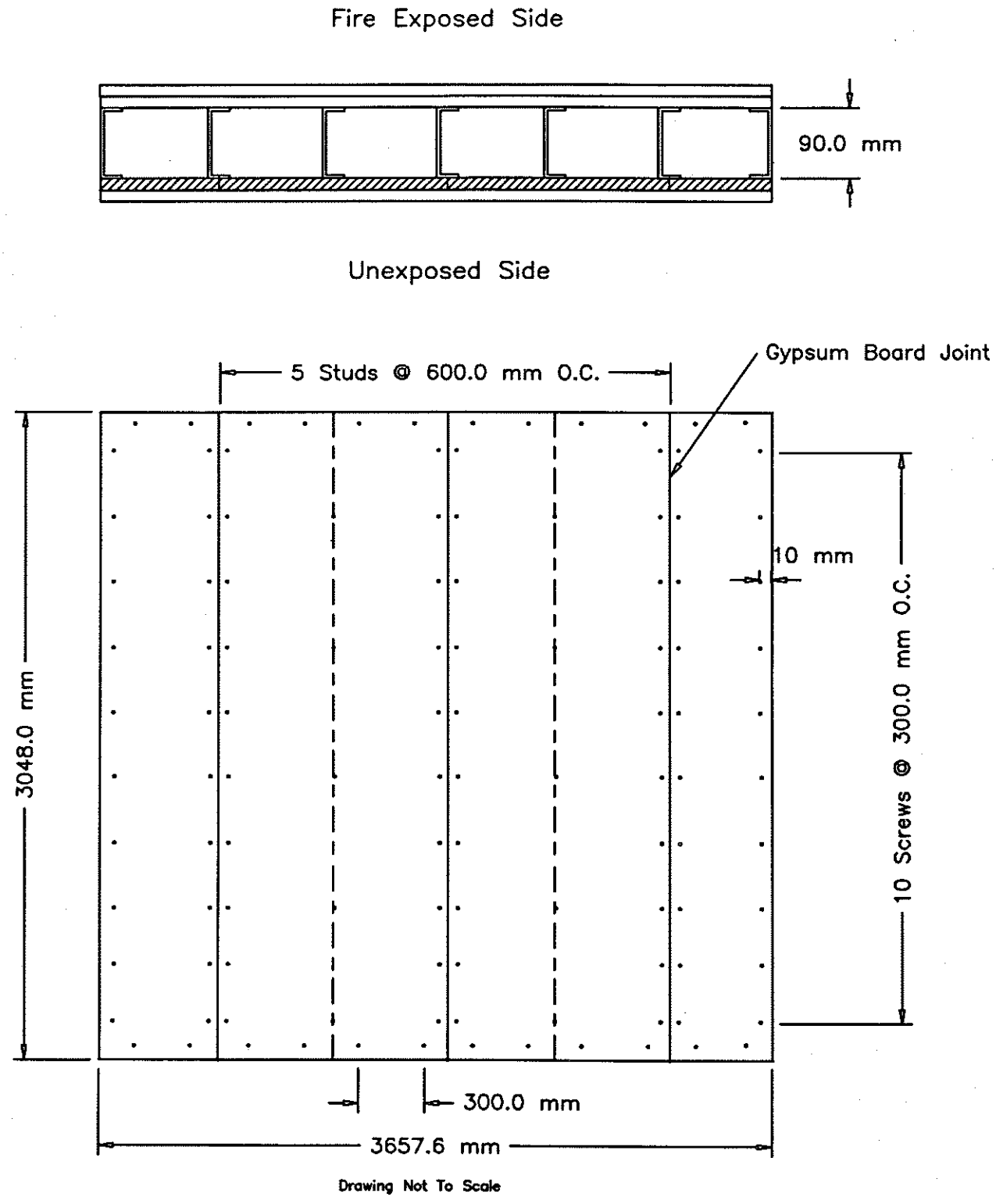


Figure 20. Screw Locations For Wood Stud (600 mm O.C.), 2x2 Gypsum Board Layers, Full-Scale Assembly, Face Layer Gypsum Board, Unexposed Face

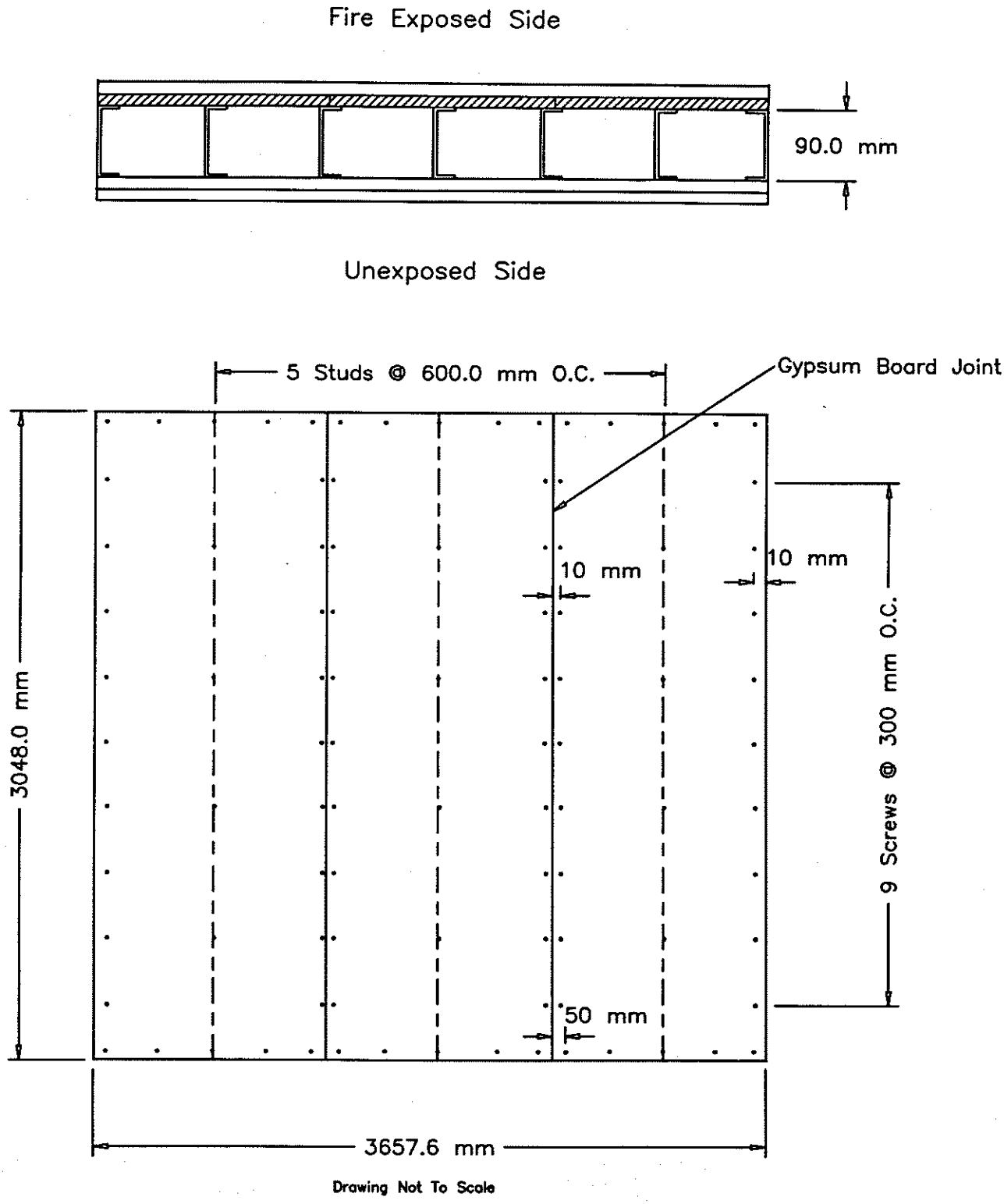


Figure 21. Screw Locations For Steel Stud, 2x2 Gypsum Board Layers, Full-Scale Assembly, Base Layer Gypsum Board, Fire Exposed Face

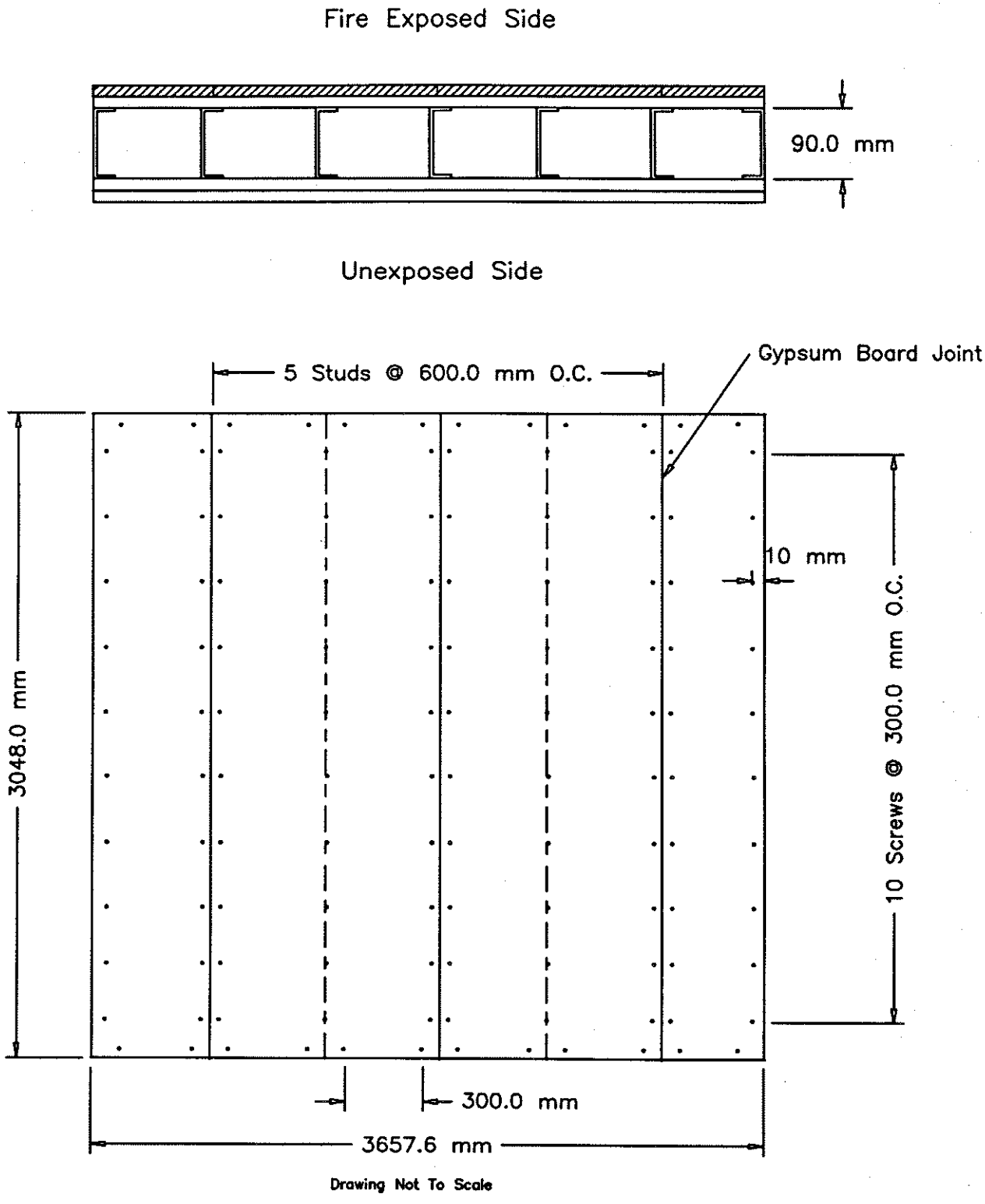


Figure 22. Screw Locations For Steel Stud, 2x2 Gypsum Board Layers, Full-Scale Assembly, Face Layer Gypsum Board, Fire Exposed Face

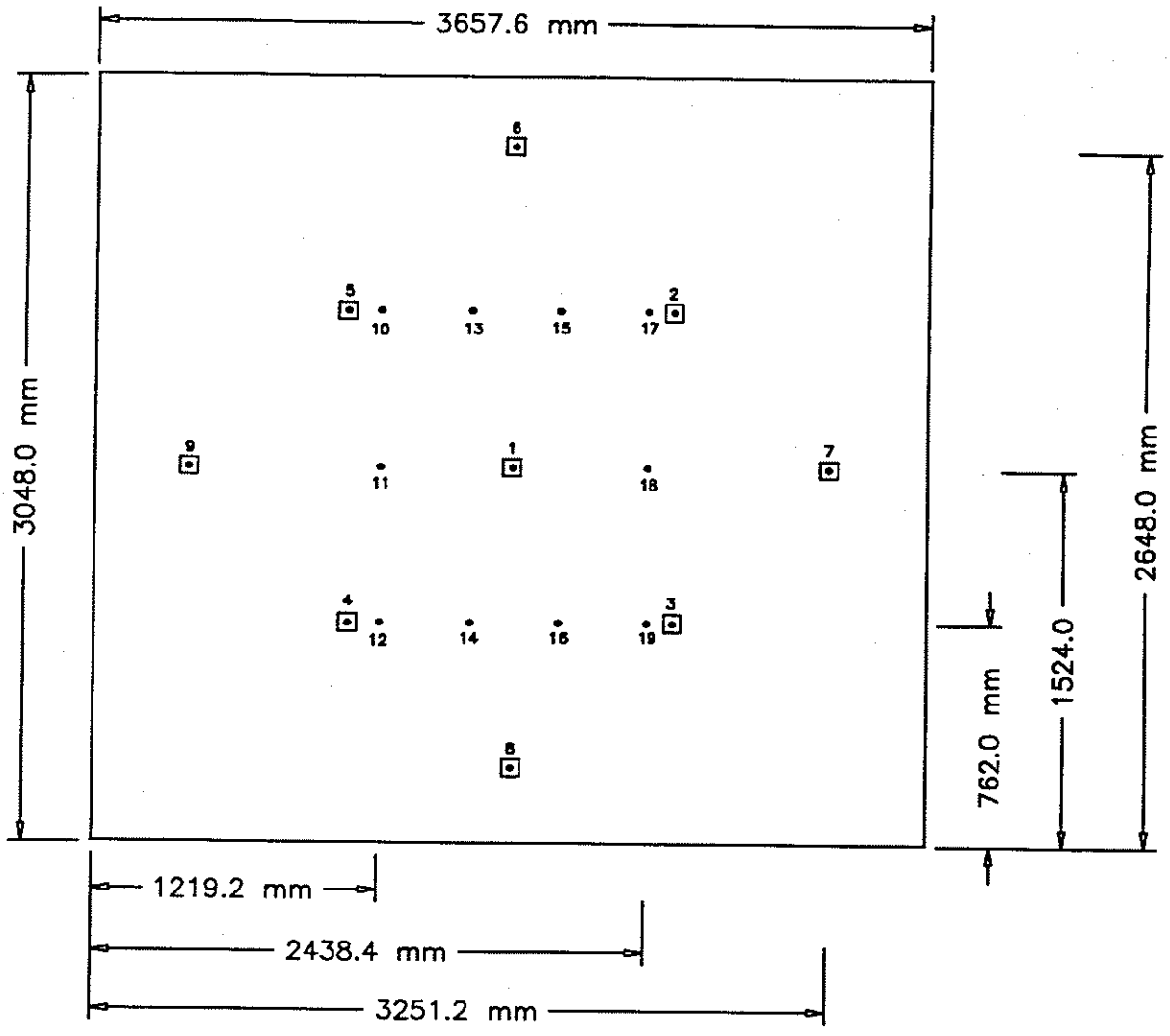


Figure 23. Thermocouuople Locations on Unexposed Surface Full-Scale Tests

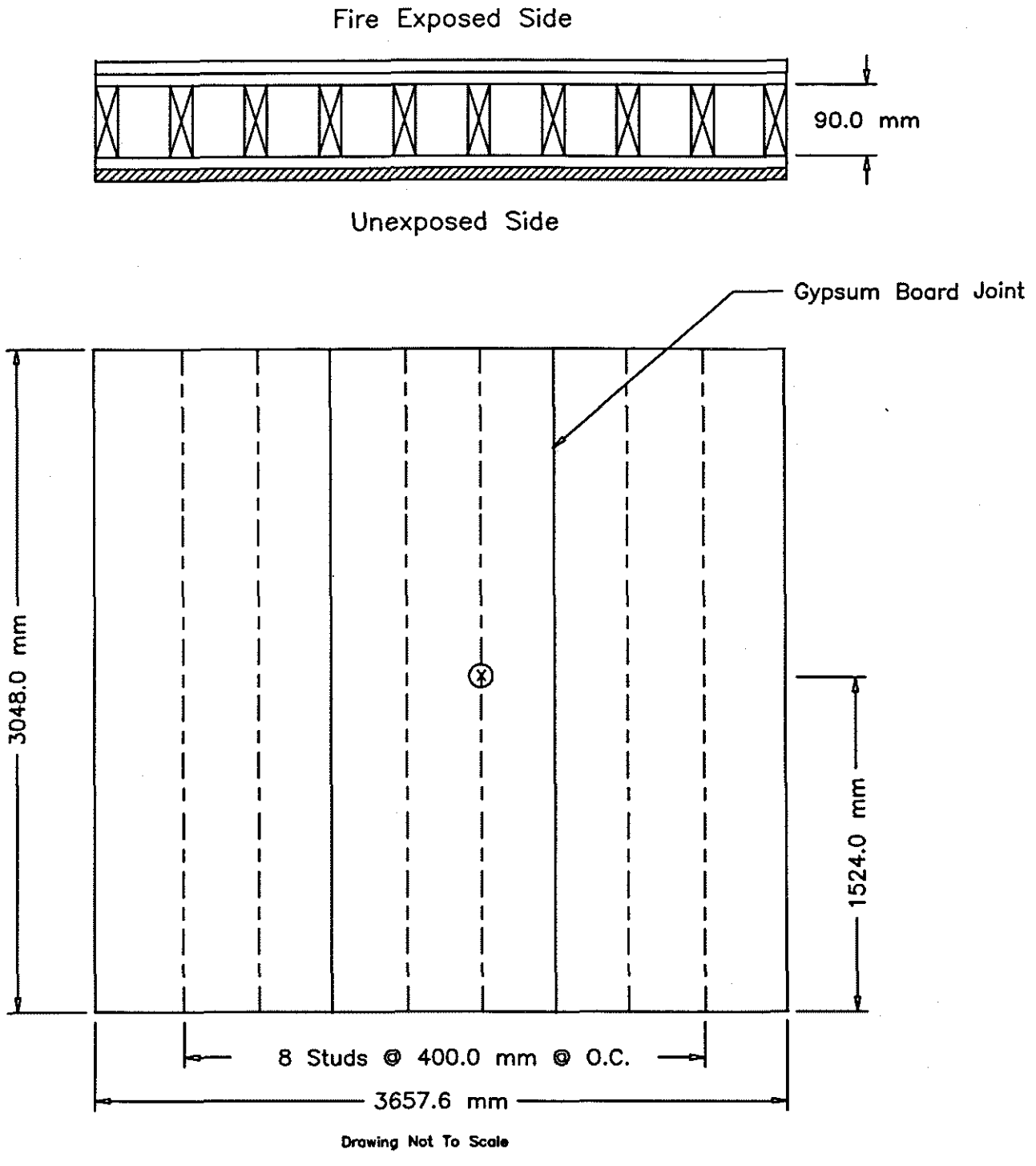


Figure 24. Deflection Attatchment Points For Full-Scale Tests (F-01, F-02)

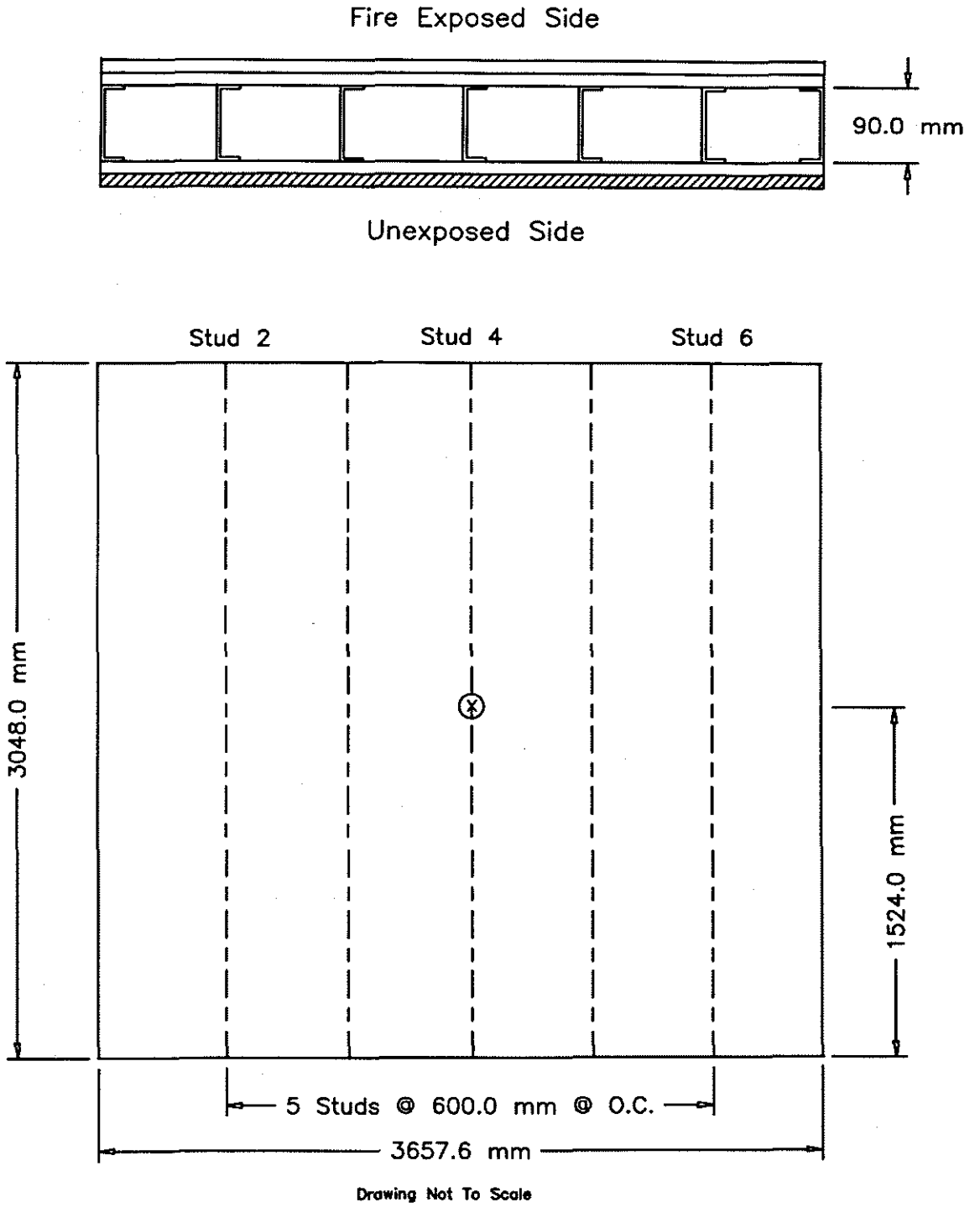


Figure 25. Deflection Attatchment Points For Full-Scale Tests (F-03, F-05)

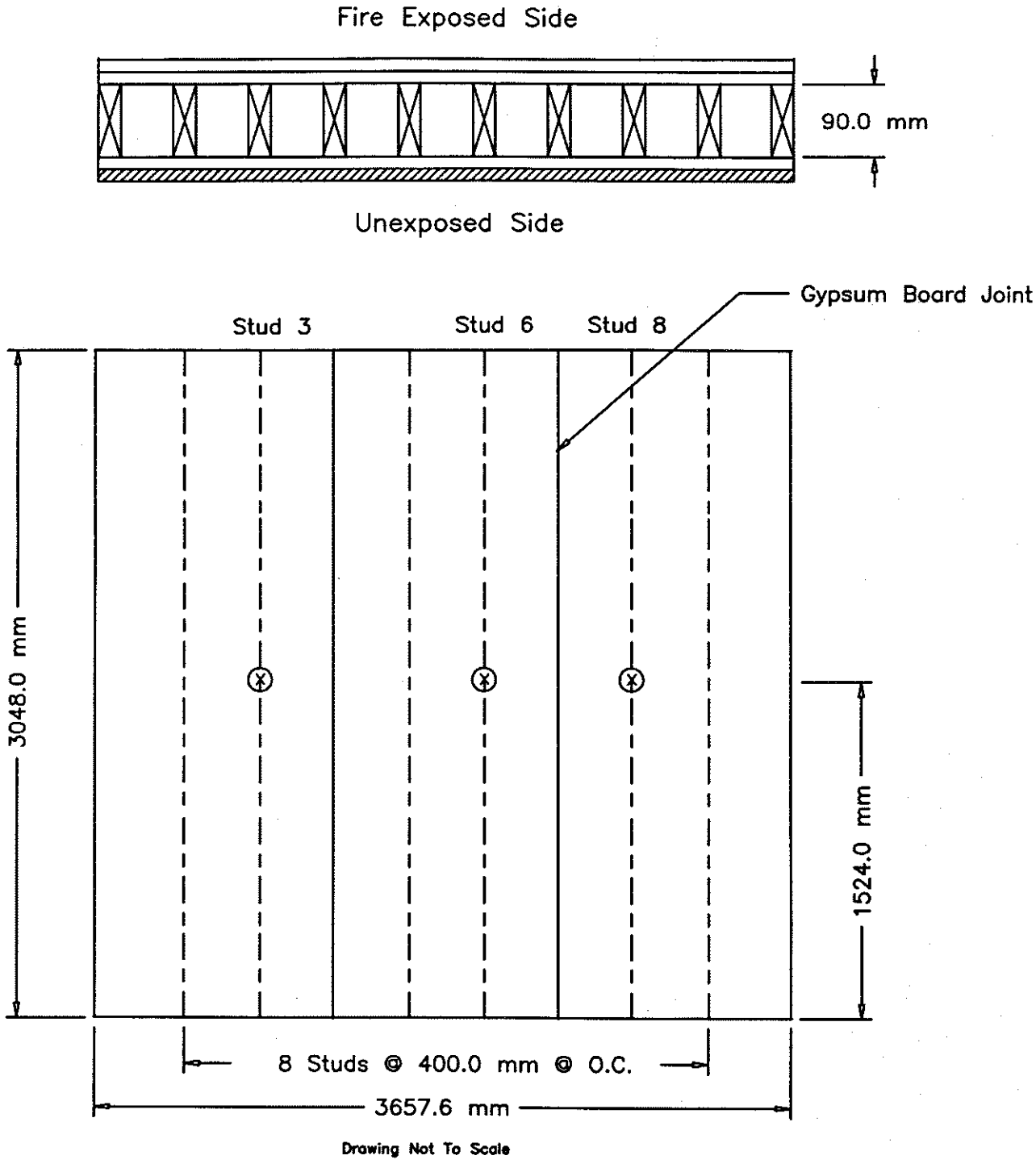


Figure 26. Deflection Attatchment Points For Full-Scale Tests (F-01B)

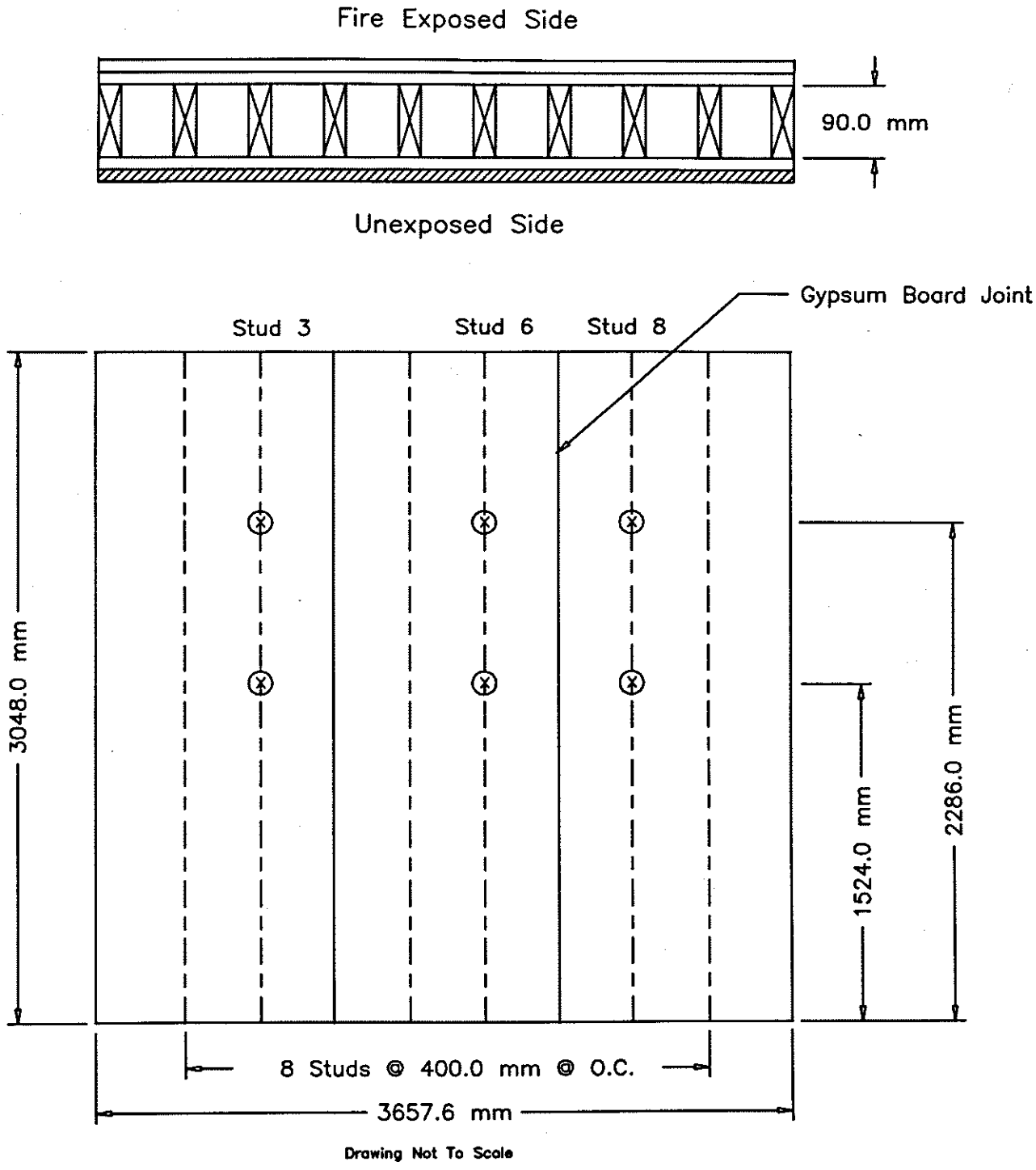
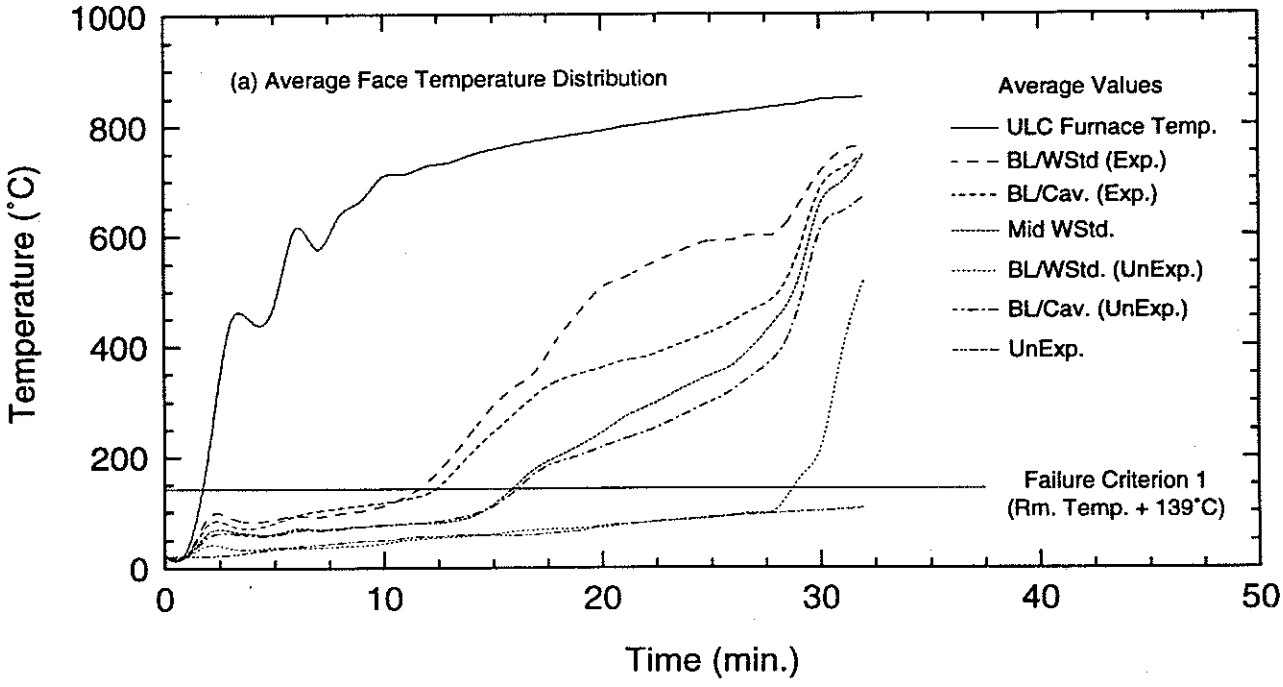


Figure 27. Deflection Attatchment Points For Full-Scale Tests (F-02B)



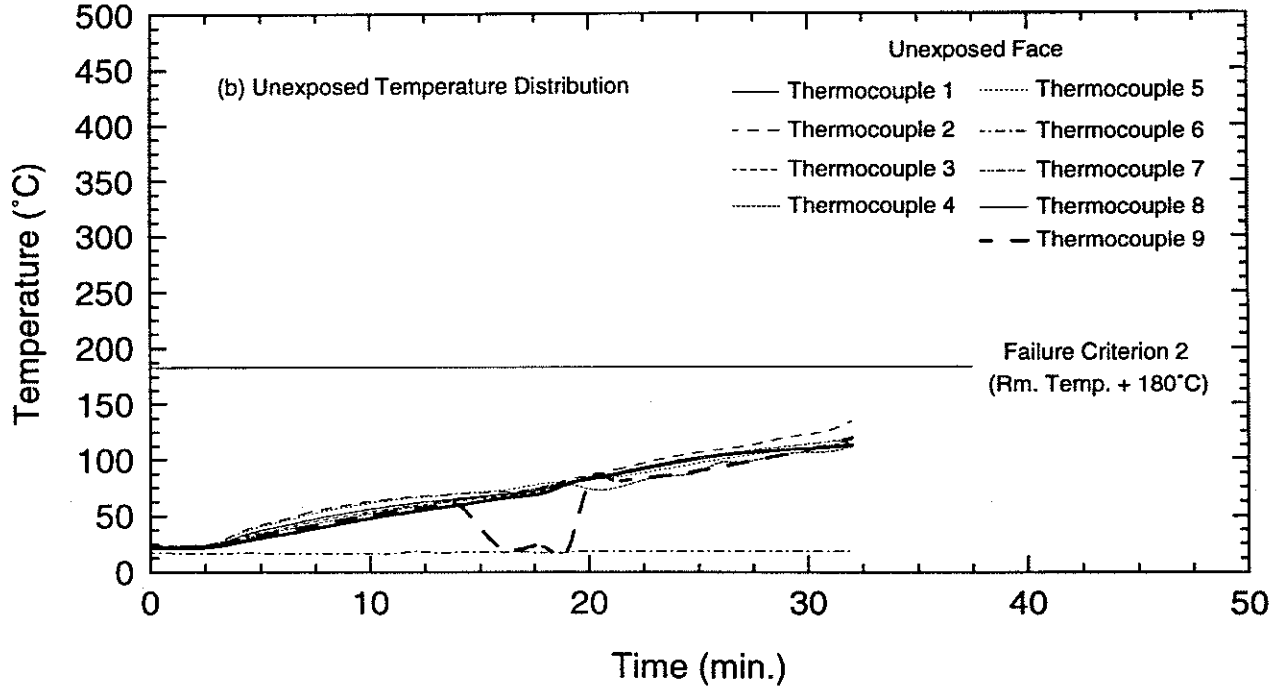
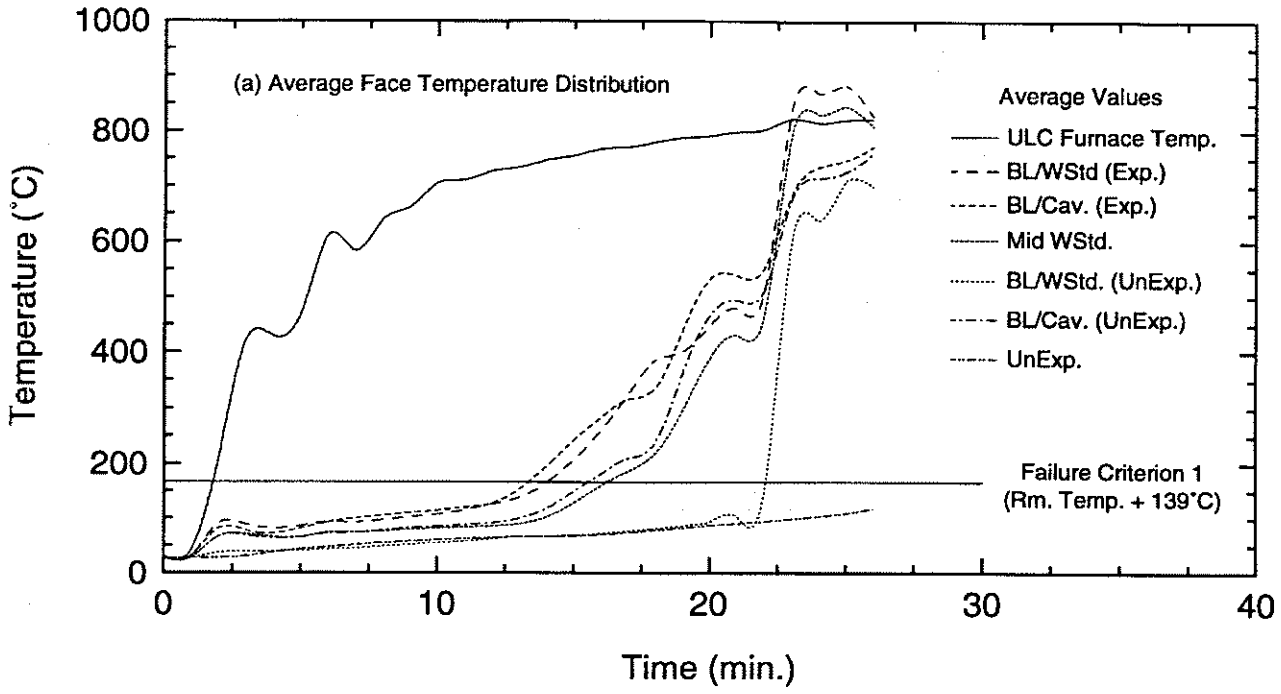


Figure 28. Temperature Distributions For Full Scale Test Assembly F-01



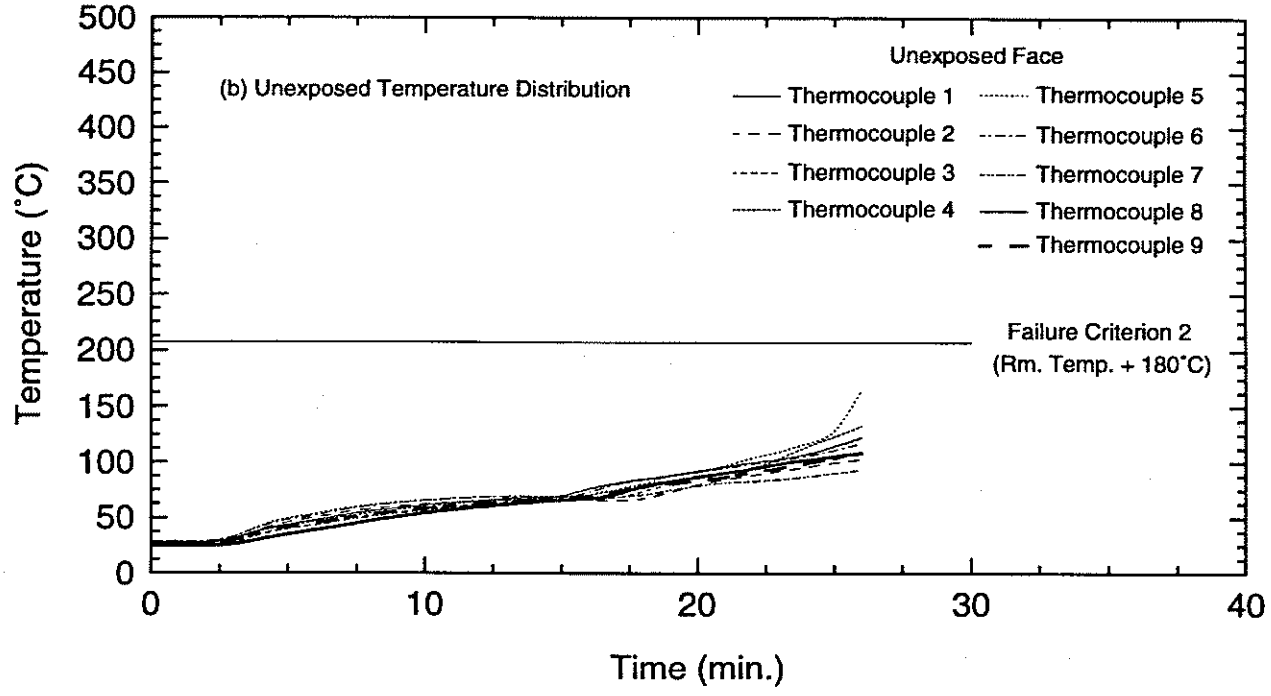


Figure 29. Temperature Distributions For Full Scale Test Assembly F-01B

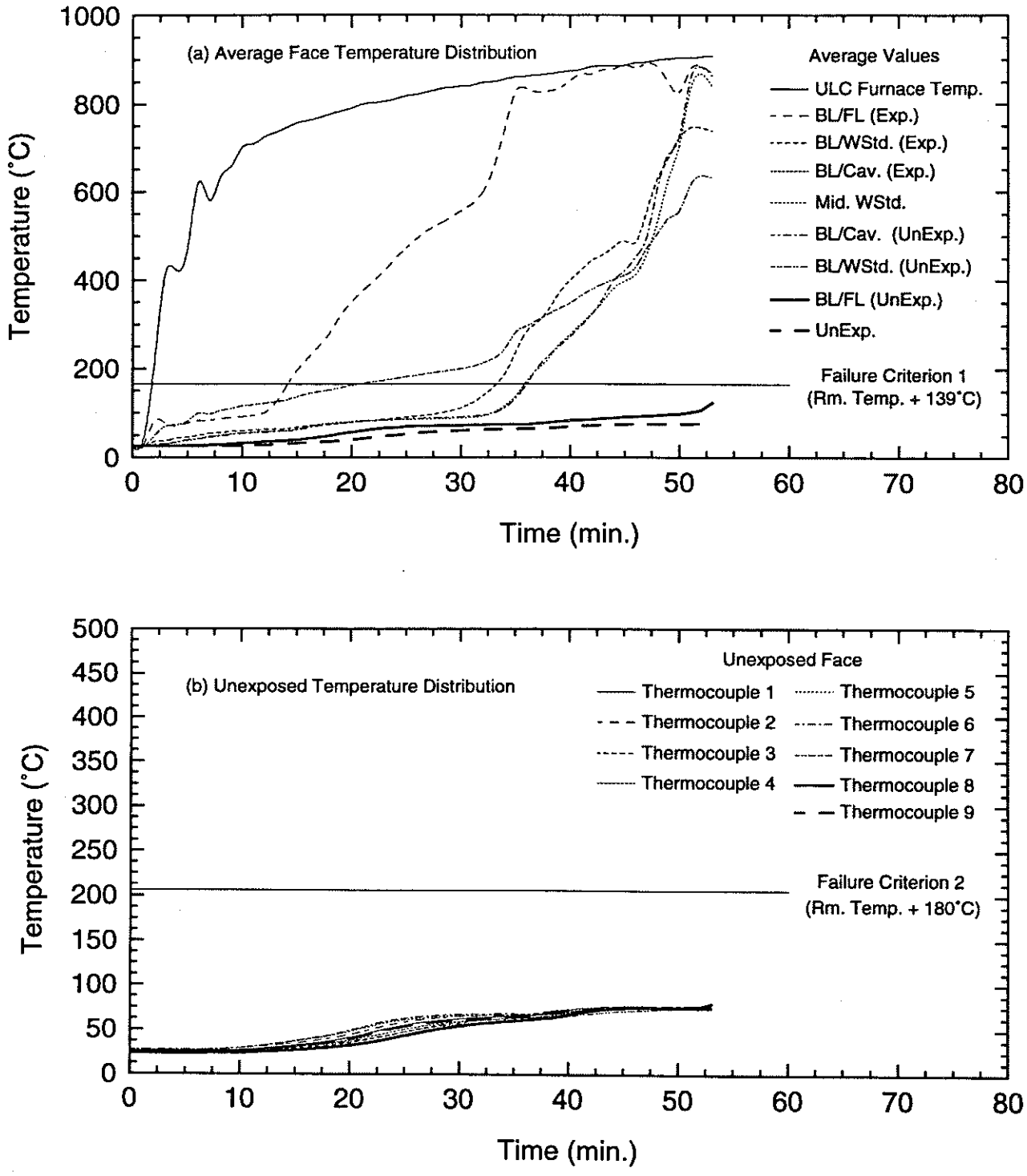
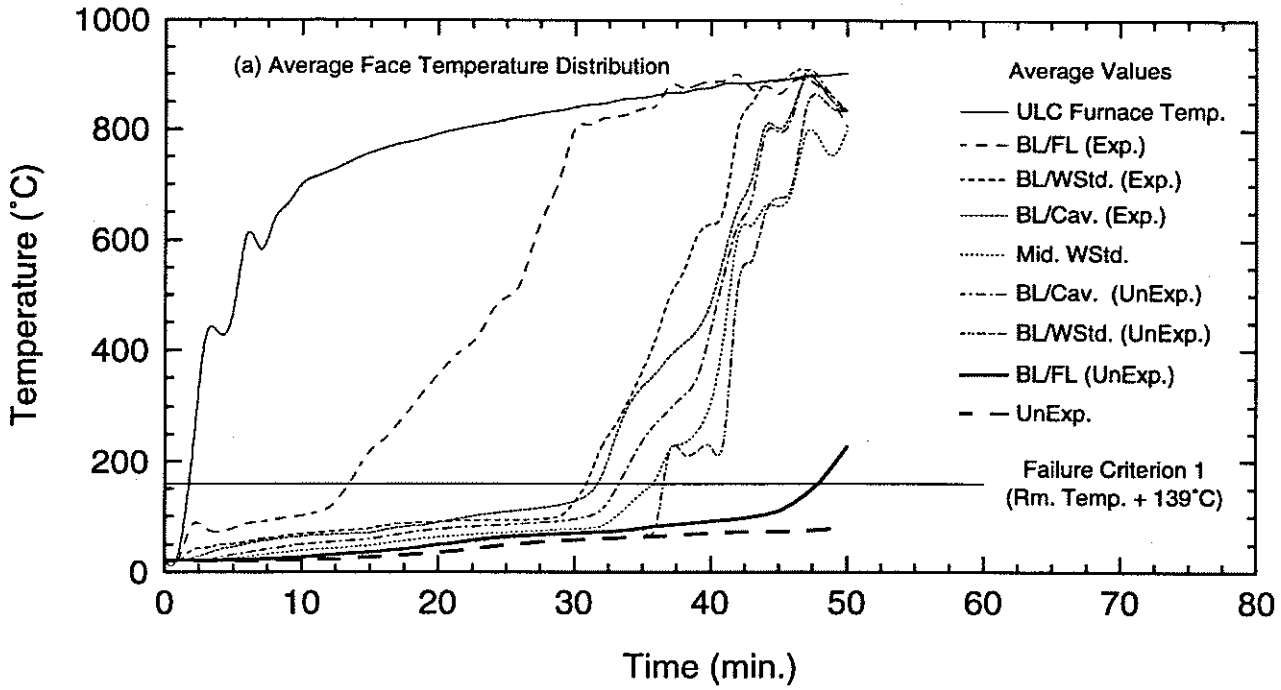


Figure 30. Temperature Distributions For Full Scale Test Assembly F-02



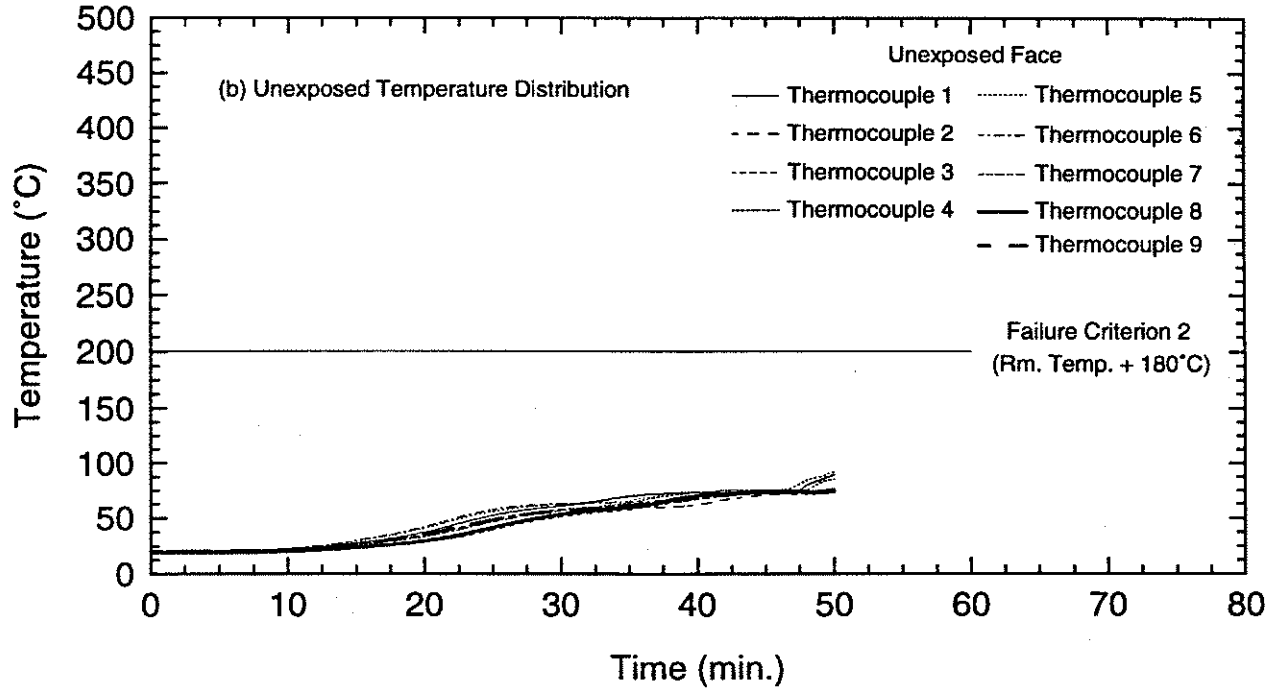
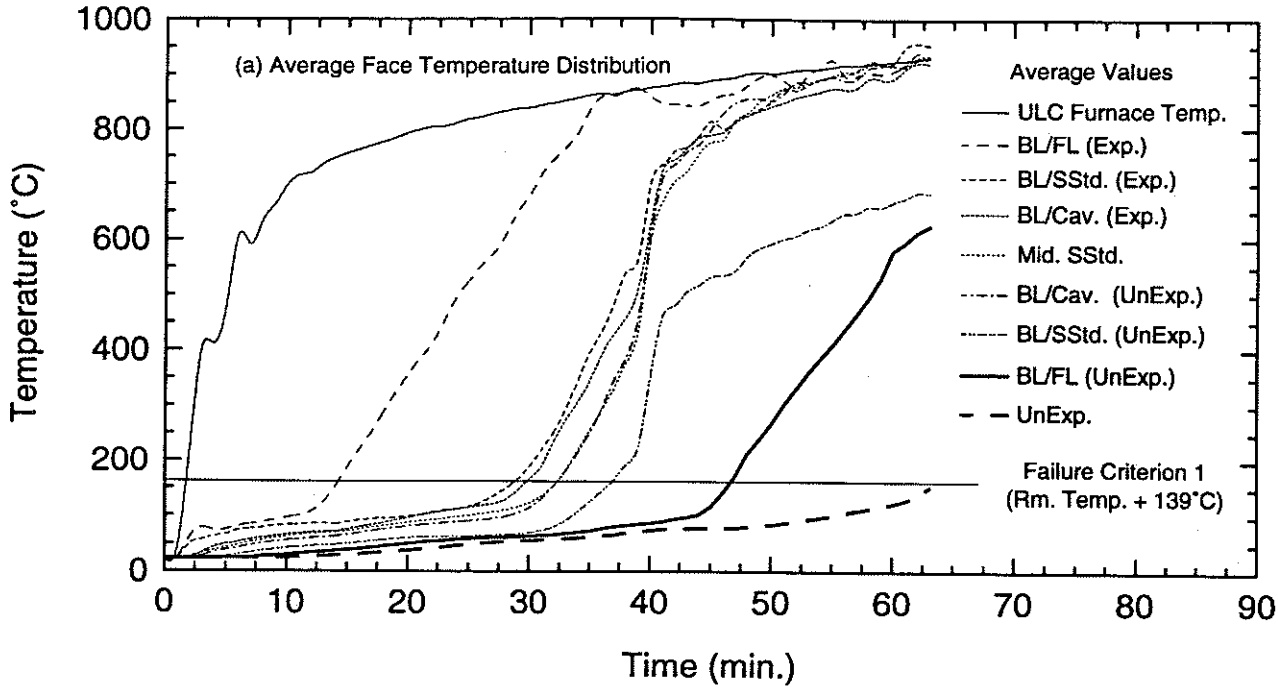


Figure 31. Temperature Distributions For Full Scale Test Assembly F-02B



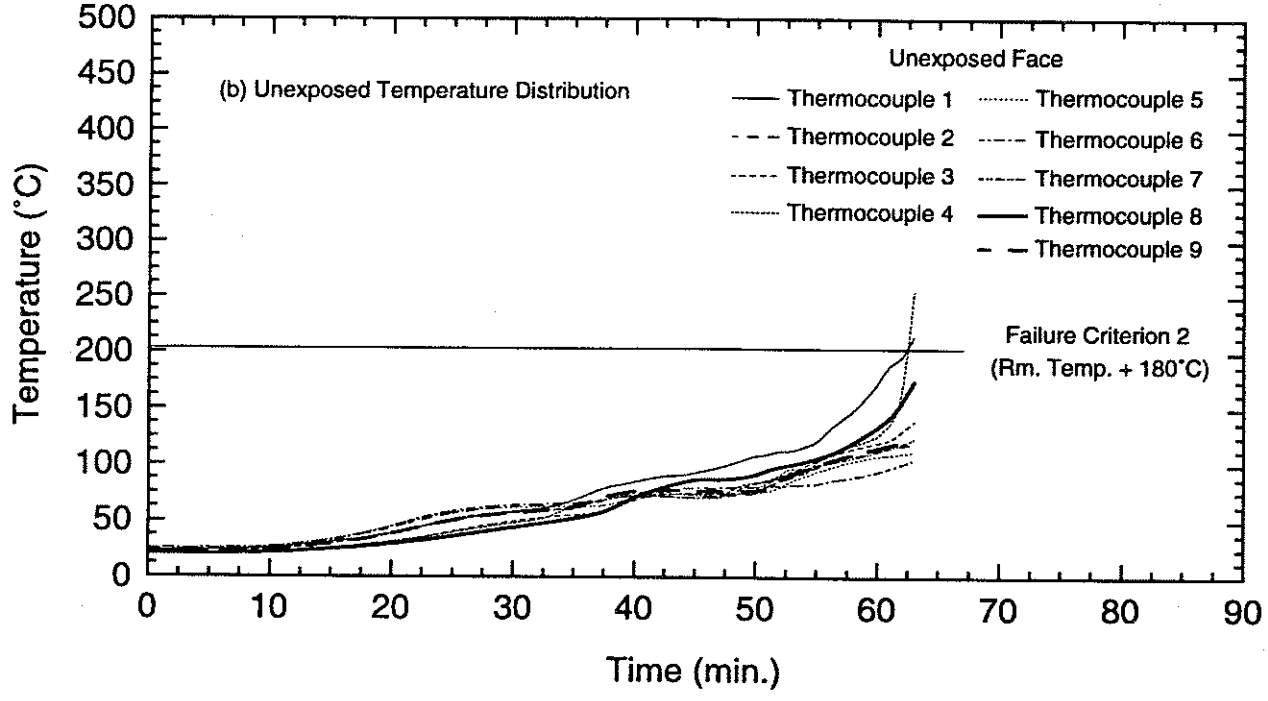
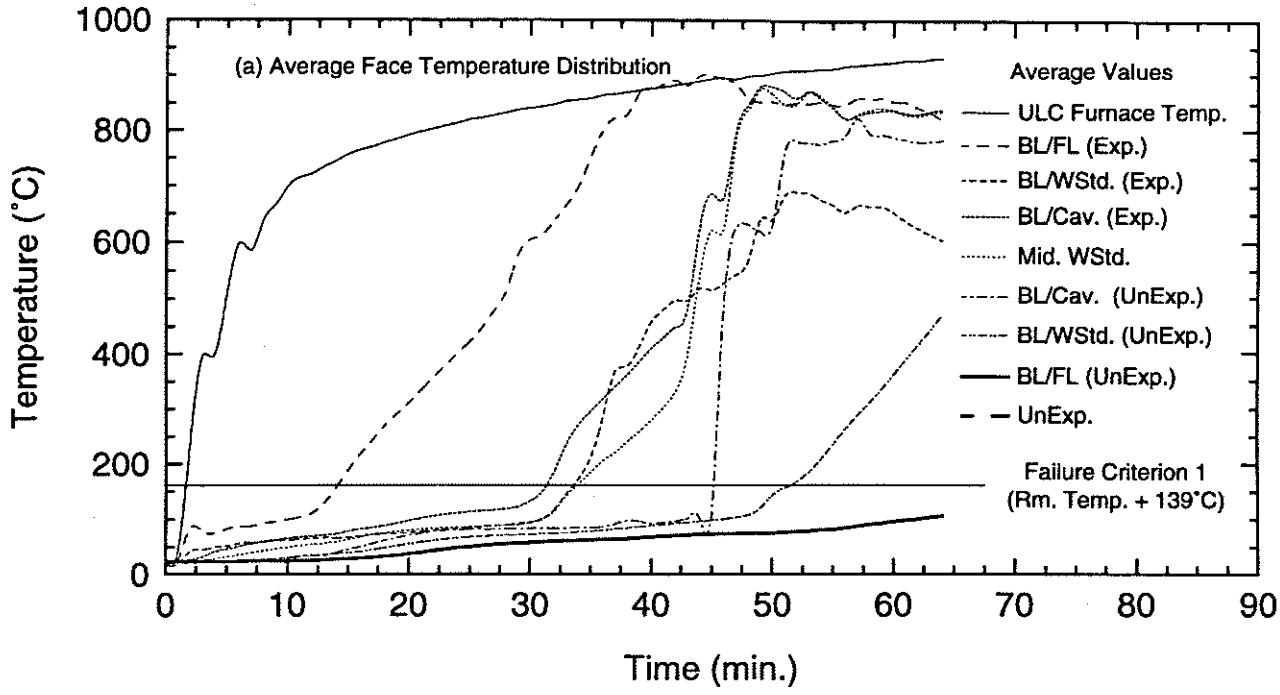


Figure 32. Temperature Distributions For Full Scale Test Assembly F-03



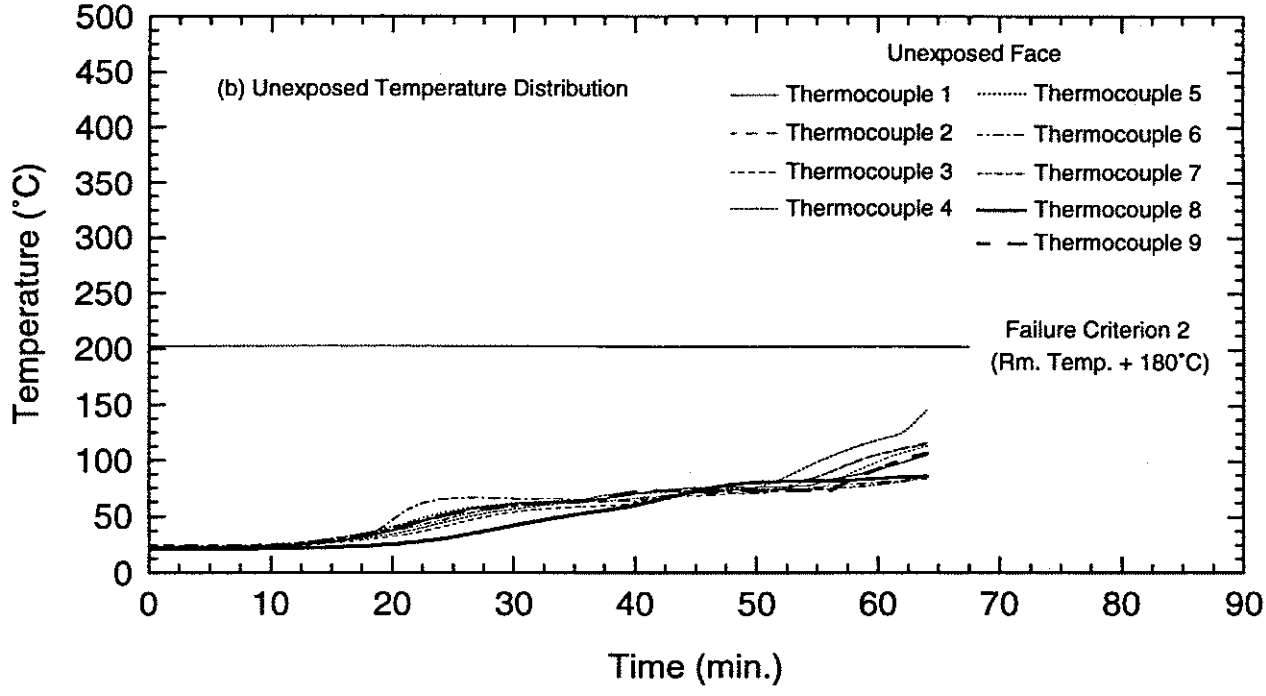


Figure 33. Temperature Distributions For Full Scale Test Assembly F-04

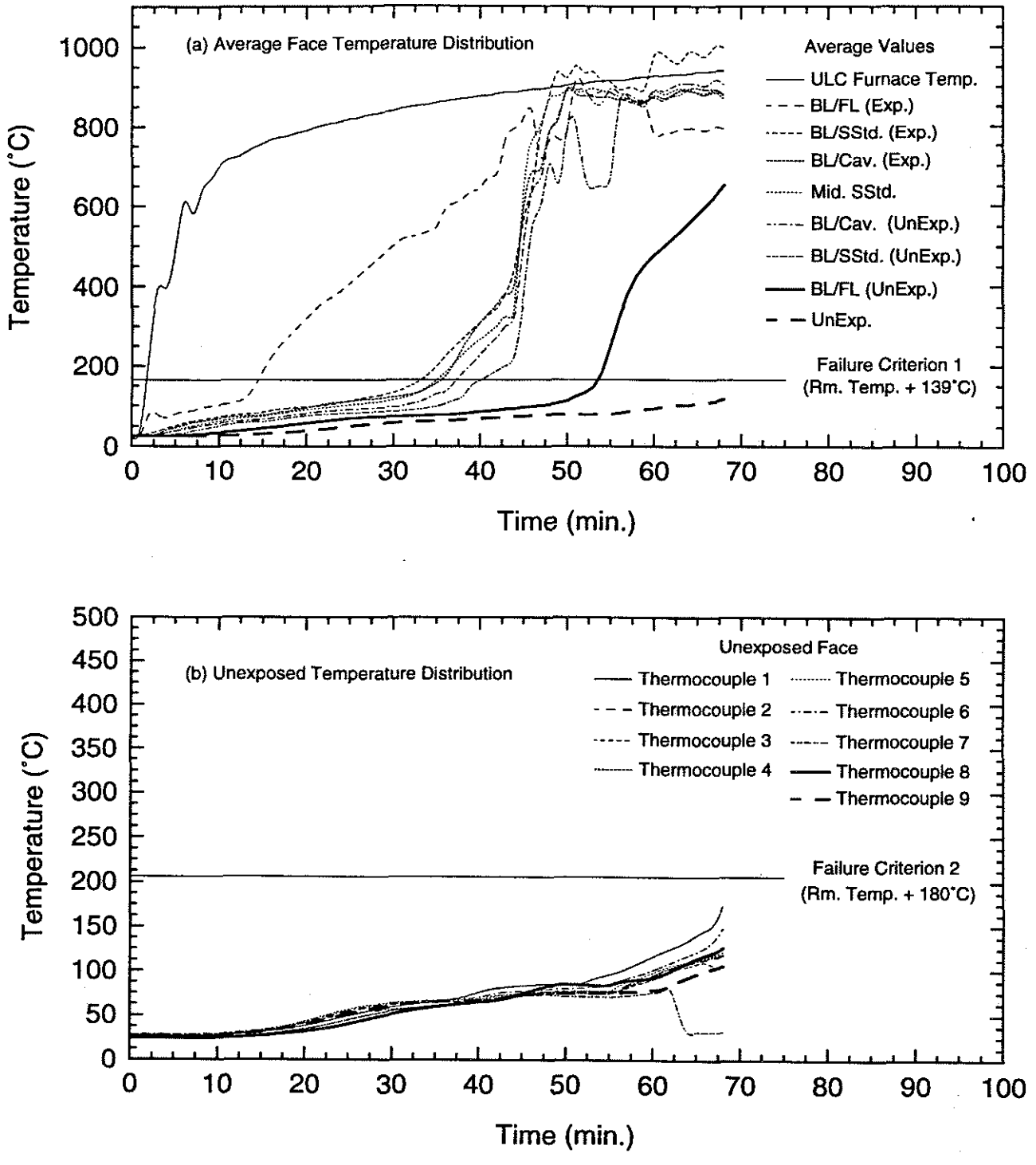


Figure 34. Temperature Distributions For Full Scale Test Assembly F-05

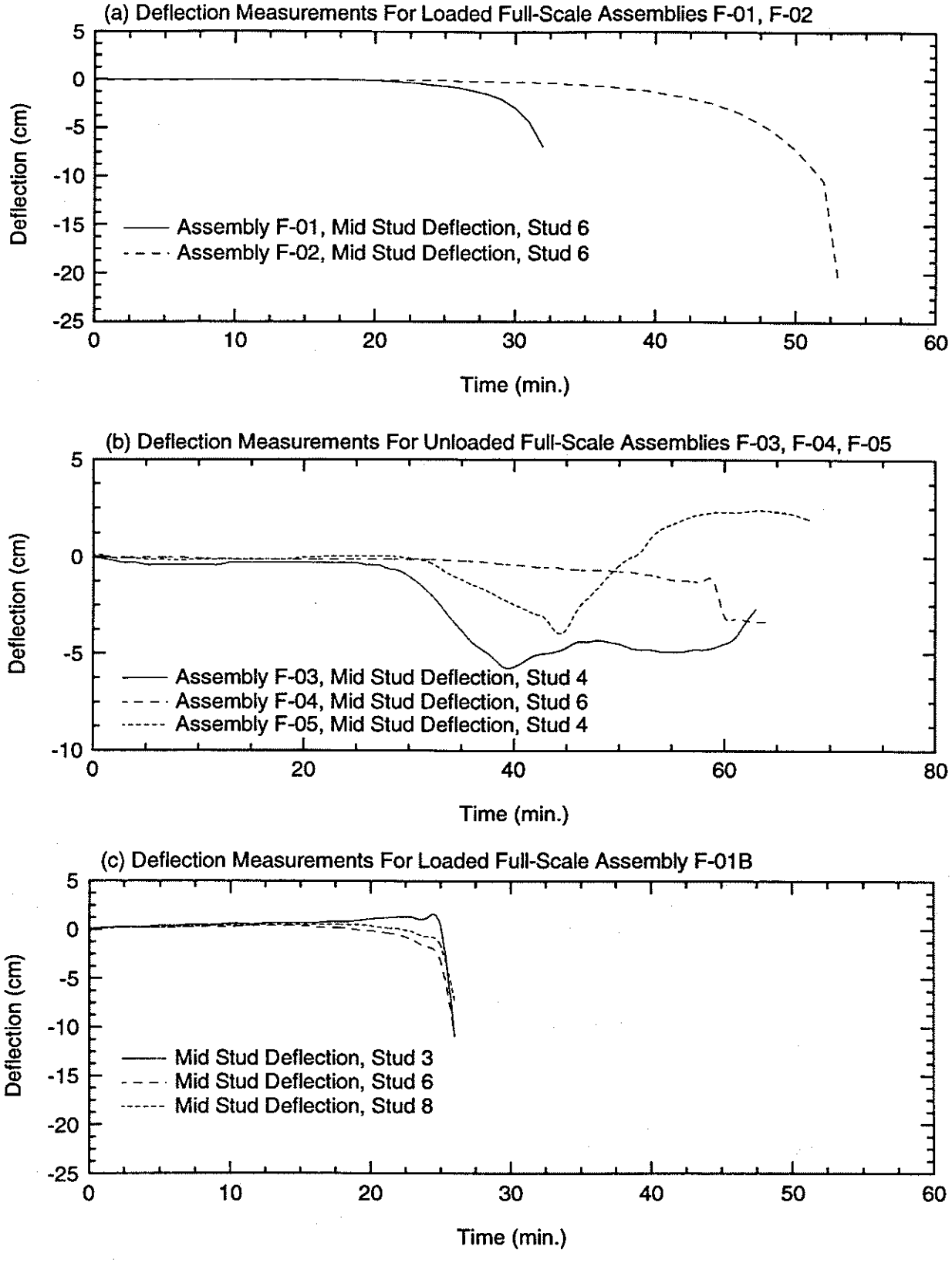
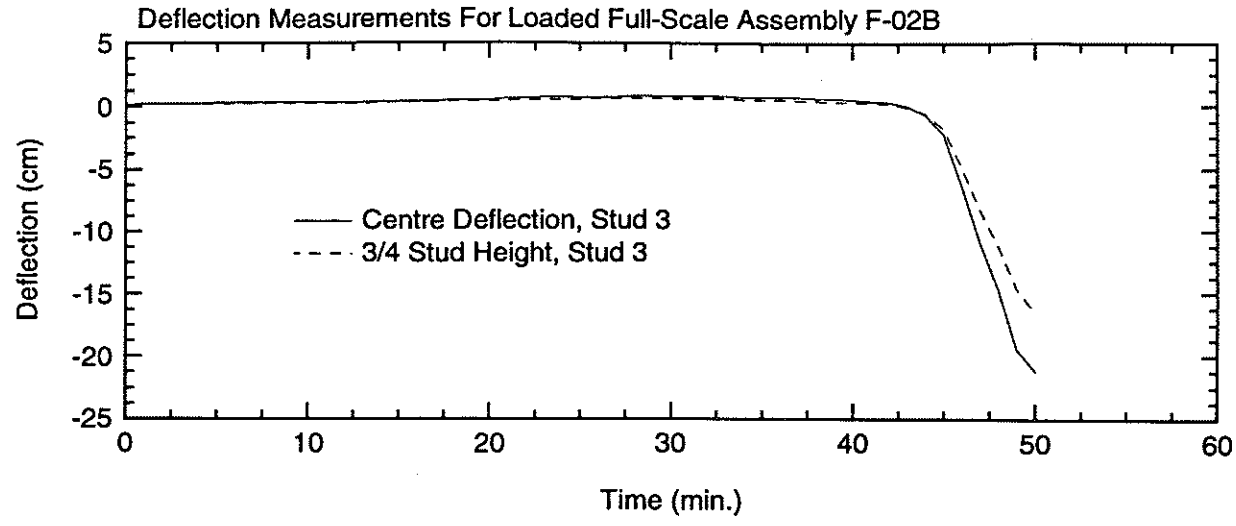
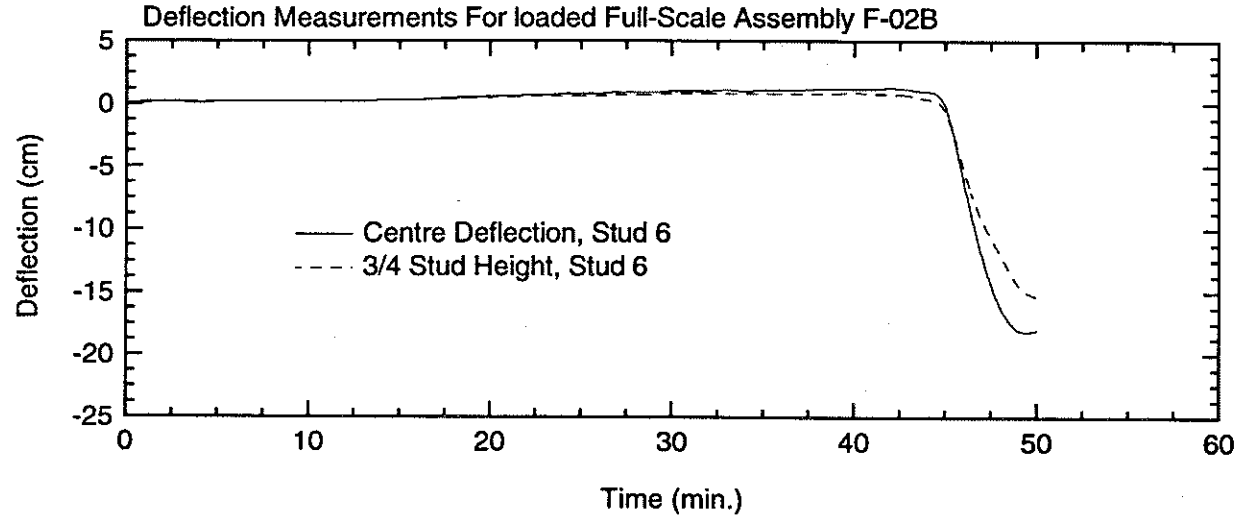


Figure 35. Measured Deflections For Full-Scale Assemblies





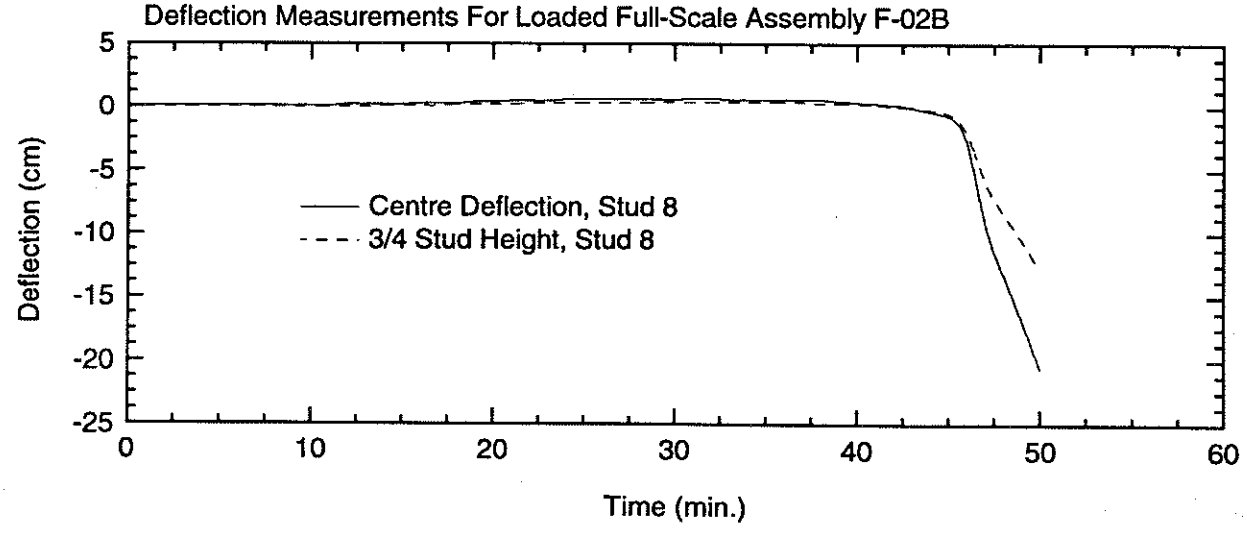
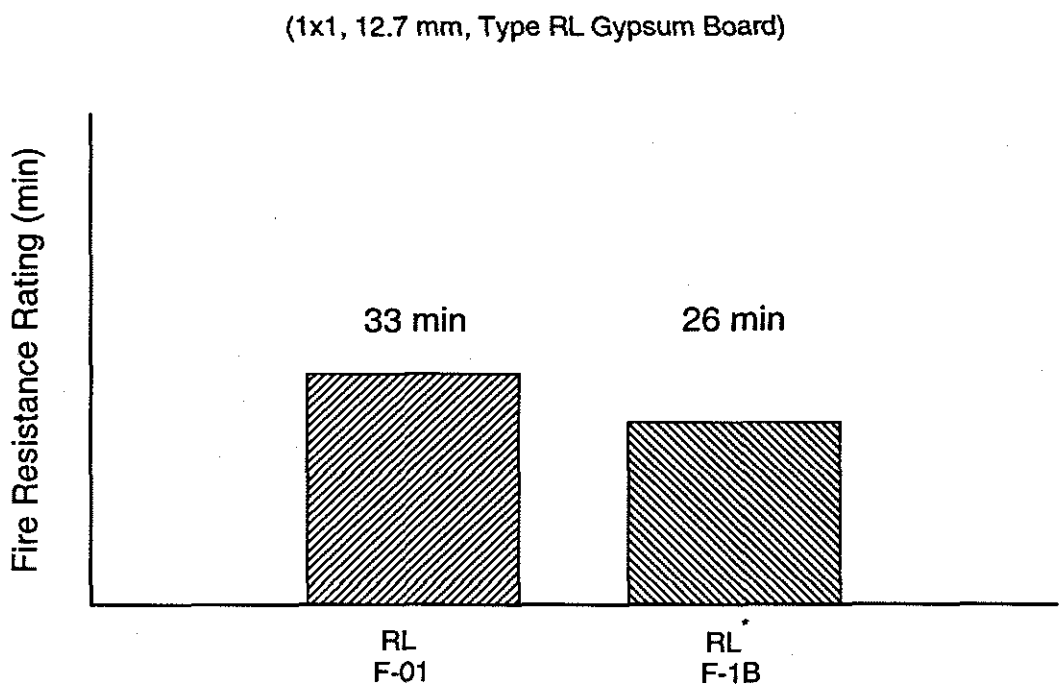


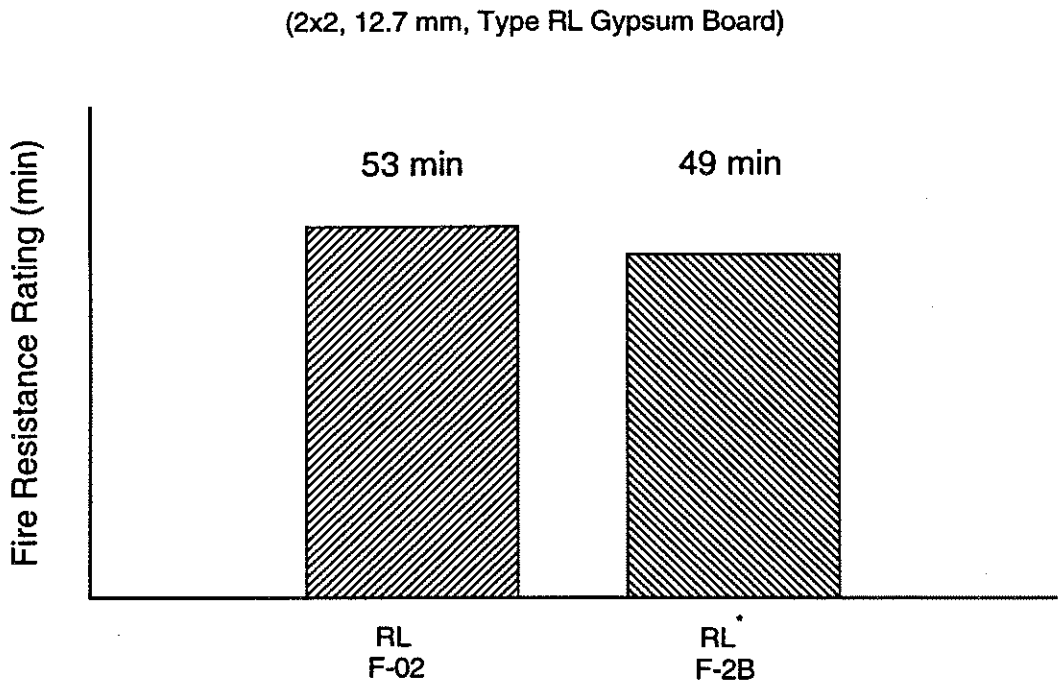
Figure 36. Measured Deflections For Full-Scale Assembly F-02B



RL - Regular Lightweight Gypsum Board with Glass Fibre in Gypsum Core (7.35 kg/m^2)

RL* - Regular Lightweight Gypsum Board with no Glass Fibre in Gypsum Core (7.27 kg/m^2)

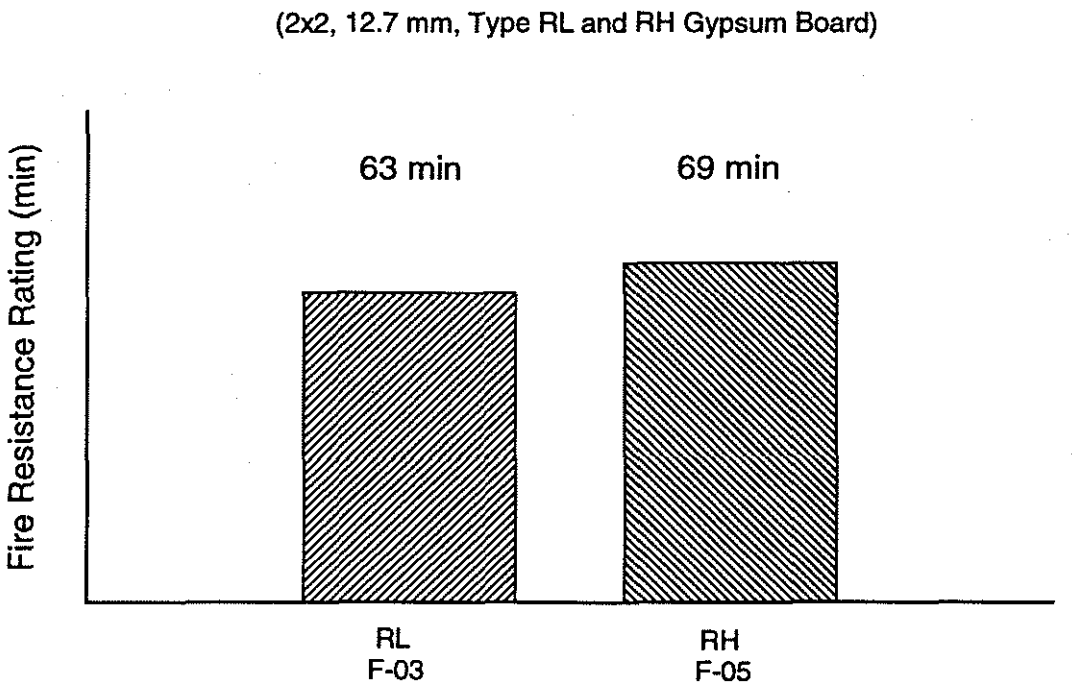
Figure 37. Effect of Glass Fibre in Lightweight Regular Gypsum Core on the Fire Resistance Ratings of Loadbearing (1x1) Assemblies



RL - Regular Lightweight Gypsum Board with Glass Fibre in Gypsum Core (7.35 kg/m^2)

RL* - Regular Lightweight Gypsum Board with no Glass Fibre in Gypsum Core (7.27 kg/m^2)

Figure 38. Effect of Glass Fibre in Lightweight Regular Gypsum Core on the Fire Resistance Rating of (2x2) Assemblies



RL - Regular Lightweight Gypsum Board with Glass Fibre in Gypsum Core (7.35 kg/m^2)

RH - Regular Gypsum Board with no Glass Fibre in Gypsum Core (7.80 kg/m^2)

Figure 39. Effects of Different Mass Per Unit Area of (2x2) Regular Gypsum Board Wall Assemblies

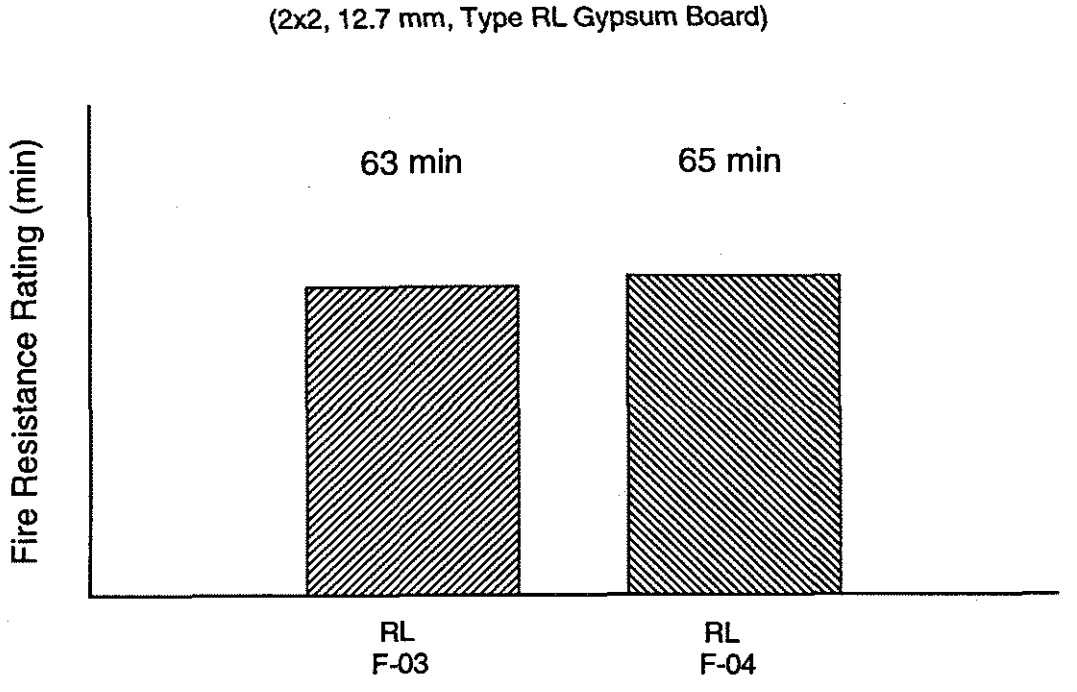


Figure 40. Effect of Stud Types (Wood and Steel) on the Fire Resistance Rating of Non-Load bearing (2x2) Lightweight Regular Gypsum Board Wall Assemblies