Intertek ETL SEMKO

Test:	**Compressive Strength**
Date:	June 27, 2003
Client:	Rocky Mountain Stone Works
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	ASTM C140-02a - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
Conditioning:	7 days @ 73 +/-5 deg F, and 50% relative humidity
Crosshead Speed:	0.1 in/min (Dial @ 2.0)
Equipment:	Tinius Olsen, 10K pressure transducer ITS ID 9-0432 Mitutoyo Digital Calipers CD-18 SN 7003817 Mitutoyo Digital Calipers SN 98865 ITS ID 52650

Sample	Height	Length	Width	Max Load	Net Area Comp. Strength	
	(mm)	(mm)	(mm)	(lbf)	(MPa)	(psi)
1	74.6	147.8	37.9	16645	13.2	1918
2	74.1	147.9	38.3	18756	14.7	2135
3	74.1	147.7	35.8	14296	12.0	1744

Mean Result	13.3 MPa	1932 psi
Coefficient of Variation	10.1 %	10.1 %
CCMC 07483 (minimum)	12 MPa	

Intertek ETL SEMKO

Test:	**Density**
Date:	August 29, 2003
Client:	Rocky Mountain Stone Works
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	ASTM C140-02a - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
Sample Type:	Whole units (#3 cut from large stone)
Equipment:	Setra Scale 2000g SN 144363 ITS ID P52606 Fluke 52II meter ITS ID D2679 Temperature controlled oven

Sample	Saturated weight	Immersed weight	Oven-dry weight[1]	Oven-dry weight[2]	Increment of Loss[3]	Density	
	(g)	(g)	(g)	(g)	(%) by mass)	kg/m^3	lb/ft^3
1	274.09	92.63	243.83	243.64	0.08	1343	83.8
2	425.28	119.83	382.41	382.13	0.07	1251	78.1
3	1205.32	352.47	1113.14	1112.20	0.08	1304	81.4

[1]Initial oven-dry weight

[2]Oven-dry weight 2 hours later

[3]Not to exceed 0.2 %

Mean Result	1299 kg/m^3	81.1 lb/ft^3

Intertek ETL SEMKO

Test:	**Density**		
Date:	26-Sep-06	Project No:	3090257
Client:	Rocky Mountain Stoneworks	Eng/Tech:	Trevor Kwasnycia
Product:	Stone Cladding		
Specimen Thickness:	1.50 in 38.1 mm		
Test Method:	ASTM C 140 - 05a Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units		
Conditioning:	Saturation - Immersed in water at 60 to 80°F (15.6 to 26.7°C) for 24 h		
	Drying - Dried in ventilated oven at 212 to 239°F (100-115°C) for min 24 h		
Equipment:	Setra Scale 125000g (Intertek ID 9-0418) Calibration due Date: March-07		
	Fluke 52II meter (Intertek ID D2679) Calibration due Date: 02-June-07		
	Temperature controlled oven (Intertek ID 9-0477)		

Sample	Oven-dry weight after 24 hours (g)	Oven-dry weight after 26 hours (g)	Increment of Loss[3] (% by mass)	Immersed weight (g)	Saturated weight in air (g)	Density (kg/m[3])
1	629	629	0.00	238	737	1262
2	720	720	0.00	297	867	1263
3	590	590	0.00	239	708	1258
4	720	720	0.00	260	850	1220
5	685	685	0.00	295	836	1266
					Mean:	1254
					StdDev:	19.19
					COV:	1.5%

[3]Not to exceed 0.2 %

Intertek ETL SEMKO

Test:	**Flexural Strength**
Date:	July 4, 2003
Client:	Rocky Mountain Stone Works
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	ASTM C99-87 (Reapproved 2000) Standard Test Method for Modulus of Rupture of Dimension Stone
Exposure cycle:	Dryed at 60 +/- 2°C for 48 hours, then cooled to 23 +/- 2°C in a desiccator.
Support Span:	7 inches
Crosshead Speed:	0.02 inches/min (Dial @ 1.3)
Equipment:	Tinius Olsen, 10K pressure transducer ITS ID 9-0432 Mitutoyo Digital Calipers CD-18 SN 7003817 Mitutoyo Digital Calipers SN 98865 ITS ID 52639

Sample	Width	Thickness	Max Load	Modulus of Rupture	
	(mm)	(mm)	(lbf)	(MPa)	(psi)
1	100.2	37.5	395	3.33	483
2	100.3	36.0	376	3.45	500
3	101.5	36.1	354	3.18	461
4	99.7	36.3	376	3.41	495
5	99.6	36.8	407	3.60	522
6	99.9	36.2	378	3.43	497

Mean Result	3.40 MPa	493 psi
Coefficient of Variation	4.1 %	4.1 %

Intertek ETL SEMKO

Test:	**Flexural Strength**
Date:	June 27, 2003
Client:	Rocky Mountain Stone Works
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	ASTM C99-87 (Reapproved 2000) Standard Test Method for Modulus of Rupture of Dimension Stone
Exposure cycle:	Immersed in water at 23 +/- 2°C for 48 hours, then removed surface water.
Support Span:	7 inches
Crosshead Speed:	0.02 inches/min (Dial @ 1.3)
Equipment:	Tinius Olsen, 10K pressure transducer ITS ID 9-0432 Mitutoyo Digital Calipers CD-18 SN 7003817 Mitutoyo Digital Calipers SN 98865 ITS ID 52639

Sample	Width	Thickness	Max Load	Modulus of Rupture	
	(mm)	(mm)	(lbf)	(MPa)	(psi)
1	100.3	36.8	589	5.16	748
2	100.4	36.8	505	4.42	641
3	100.9	36.0	479	4.36	632
4	100.8	36.1	541	4.90	710
5	100.8	36.2	512	4.61	669
6	100.8	37.9	392	3.22	467

Mean Result	4.44 MPa	644 psi
Coefficient of Variation	15.1 %	15.1 %

Intertek ETL SEMKO

Test:	**Flexural Strength**		
Date:	25-Sep-06		Project No: 3091486
Client:	Rocky Mountain Stoneworks		Technician(s): Trevor Kwasnycia, AScT
Product:	Stone Cladding		
Specimen Thickness:	1.50 in	38.1 mm	
Test Method(s):	ASTM C880 - 98 Standard Specification for Flexural Strength of Dimension Stone		
Conditioning:	48 hours at a temperature of 60 ± 2°C then cooled in a desiccator and tested at room temperature		
Support Span:	10.00 in	254 mm	
Crosshead Motion:	600.00 psi/min	4.14 MPa/min	
Bearing Edges:	1.00 in	25.4 mm	
Equipment:	*Loading:*	Tinius Olsen Universal Testing Machine (Intertek ID P52619)	
	Load Cell:	Instron 5000lbs Load Cell (Intertek ID D0567) Calibration due Date: 23-Aug-06	
	Dimensions:	Mitutoyo Digital Calipers (Intertek ID 1019) Calibration due Date: 13-June-06	
	Dimensions:	Mitutoyo Digital Deflection Gauge (Intertek ID 1462) Calibration due Date: 19-Dec-06	

Sample	Width (mm)			Depth (mm)					
	W1	W2	W3	D1	D2	D3	D4	D5	D6
1	102.50	102.68	102.86	37.33	37.60	38.36	37.76	37.82	38.29
2	102.13	102.04	102.13	37.90	37.78	37.35	37.34	37.81	37.00
3	102.73	103.02	102.74	36.63	37.21	37.53	37.61	37.84	37.49
4	102.40	102.60	102.70	39.83	40.24	39.94	39.99	40.05	39.21
5	102.08	107.92	107.56	37.96	38.23	38.43	38.35	38.51	38.59

Sample	Max Load	Max Load	Flexural Strength	
	(lbf)	(N)	(MPa)	(psi)
1	497	2212	2.86	415
2	376	1671	2.21	321
3	473	2105	2.79	405
4	441	1961	2.29	332
5	390	1734	2.12	308
		Mean:	2.46	356
		StdDev:	0.34	50
		COV:	14.03%	14.03%

Intertek ETL SEMKO

Test:	**Flexural Strength**		
Date:	25-Sep-06	Project No:	3091486
Client:	Rocky Mountain Stoneworks	Technician(s):	Trevor Kwasnycia, AScT
Product:	Stone Cladding		
Specimen Thickness:	1.50 in	38.1 mm	
Test Method(s):	ASTM C880 - 98 Standard Specification for Flexural Strength of Dimension Stone		
Conditioning:	immersed in water for 48 hours at a temperature of 22 ± 2°C		
Support Span:	10.00 in	254 mm	
Crosshead Motion:	600.00 psi/min	4.14 MPa/min	
Bearing Edges:	1.00 in	25.4 mm	
Equipment:	*Loading:*	Tinius Olsen Universal Testing Machine (Intertek ID P52619)	
	Load Cell:	Instron 5000lbs Load Cell (Intertek ID D0567) Calibration due Date: 23-Aug-06	
	Dimensions:	Mitutoyo Digital Calipers (Intertek ID 1019) Calibration due Date: 13-June-06	
	Dimensions:	Mitutoyo Digital Deflection Gauge (Intertek ID 1462) Calibration due Date: 19-Dec-06	

Sample	Width (mm)			Depth (mm)					
	W1	W2	W3	D1	D2	D3	D4	D5	D6
1	102.20	101.19	102.21	40.20	40.04	39.67	40.32	40.08	40.19
2	104.49	104.45	104.52	37.51	36.58	36.62	37.16	36.95	36.46
3	102.74	102.69	102.59	40.20	40.04	40.16	39.20	39.56	39.78
4	102.50	102.57	102.54	38.29	38.39	38.48	38.19	37.97	37.28
5	102.52	102.79	102.76	37.92	38.26	38.05	37.82	38.37	39.23

Sample	Max Load	Max Load	Flexural Strength	
	(lbf)	(N)	(MPa)	(psi)
1	677	3011	3.50	508
2	620	2756	3.69	536
3	744	3310	3.87	562
4	690	3069	3.93	570
5	718	3195	4.05	587
		Mean:	3.81	552
		StdDev:	0.21	31
		COV:	5.57%	5.57%

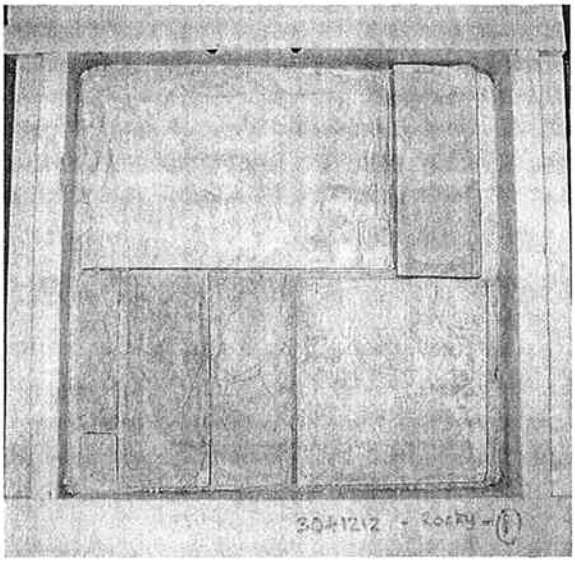
Intertek ETL SEMKO

Test:	**Freeze Thaw**
Date:	03/08/21
Client:	Rocky Mountain Stone
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	CCMC MasterFormat Number: 07483, section 6.5.5 (2001) Cladding Systems Using Adhered Manufactured Concrete Stone
Conditioning:	August 21, 2003 - Commenced damp cure for 7 days at 23 ± 2°C August 28, 2003 - 21 days at 23 ± 2°C and 50 ± 5% relative humidity
Exposure cycle:	Water immersion for 7 days at 20 ± 2°C 12 cycles, air temperature from +20 ± 5°C to -20 ± 3°C in 2.5 ± 1.5 hours 12 cycles, air temperature from 20 ± 5°C to -5 ± 1°C in 1.75 ± 0.75 hours
Equipment:	Ohaus balance (Intertek ID D2733) Fluke 52II meter (Intertek ID D2679) Cold Chamber (Intertek ID C04583)

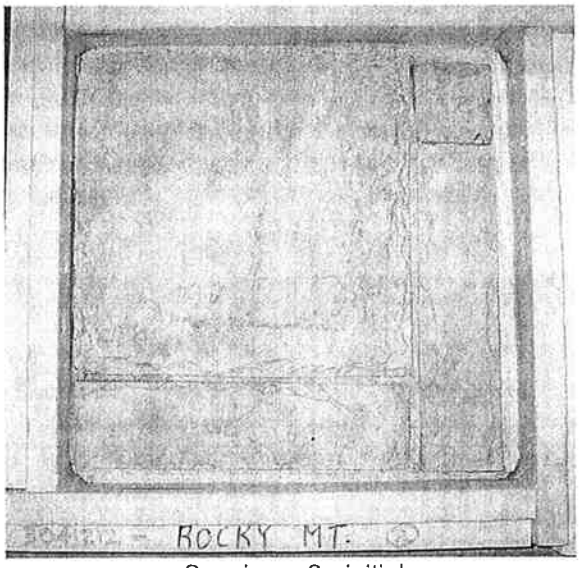
Date (m/dd/yy hh:mm)	Measurement	Specimen 1	Specimen 2
10/2/03 5:00 PM	Initial Weight (lbs):	32.6	29.3
10/9/03 5:00 PM	Weight after 7 day immersion (lbs):	34.3	32.5
	Water Absorption (% by mass):	5.2	10.9
11/14/03 5:00 PM	Weight after freeze/thaw cycling (lbs):	36.2	33.1
---	Weight after drying (lbs):	---	---
7/23/04 8:30 AM	Weight after drying (lbs):	32.2	29.3
	Loss of mass (% by mass):	-1.23	0.00

Intertek ETL SEMKO

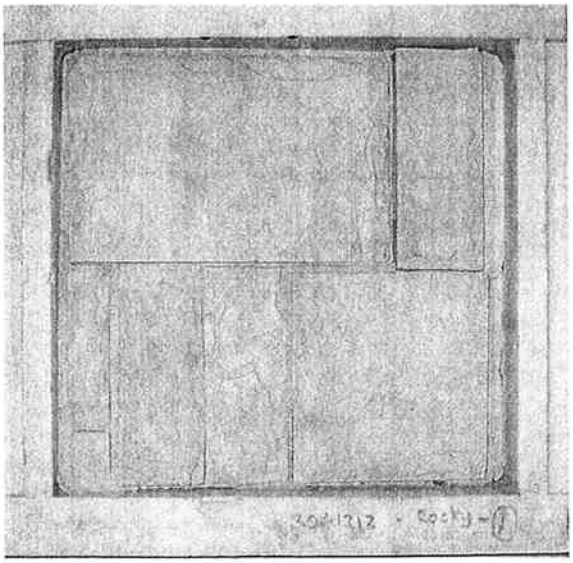
Test:	**Freeze Thaw**
Date:	03/10/02
Client:	Rocky Mountain Stone
Project No:	3041212
Product:	Manufactured concrete stone



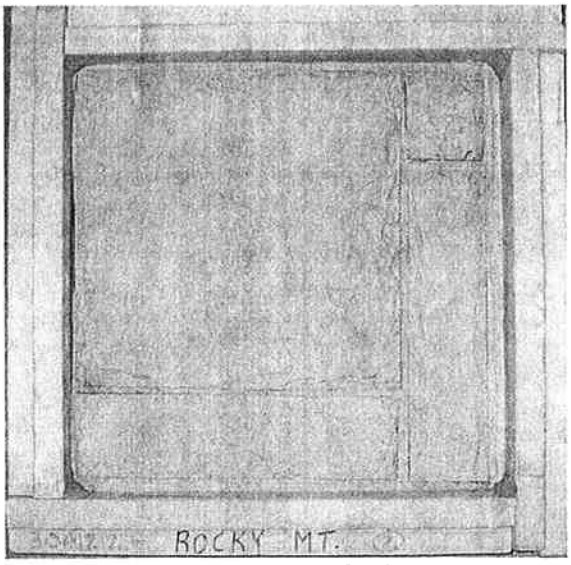
Specimen 1 - initial



Specimen 2 - initial



Specimen 1 - final



Specimen 2 - final

Intertek ETL SEMKO

Test: **Freeze Thaw**
Date: 03/10/09
Client: Rocky Mountain Stone
Project No: 3041212
Product: Manufactured concrete stone

Date	Cycle	Air temperature (°C)	Freezing phase	Thawing phase		Draining phase		Freezing phase
			Out (hh:mm)	In (hh:mm)	Out (hh:mm)	In (hh:mm)	Out (hh:mm	In (hh:mm)
9-Oct-03						11:15 AM	11:30 AM	11:30 AM
10-Oct-03	1	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
11-Oct-03								
12-Oct-03								
13-Oct-03								
14-Oct-03	2	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
15-Oct-03	3	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
16-Oct-03	4	-26	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
17-Oct-03	5	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
18-Oct-03								
19-Oct-03								
20-Oct-03	6	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
21-Oct-03	7	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
22-Oct-03	8	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
23-Oct-03	9	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
24-Oct-03	10	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
25-Oct-03								
26-Oct-03								
27-Oct-03	11	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
28-Oct-03	12	-20	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	

Visual examination: No change

Intertek ETL SEMKO

Test: **Freeze Thaw**
Date: 03/10/29
Client: Rocky Mountain Stone
Project No: 3041212
Product: Manufactured concrete stone

Date	Cycle	Air temperature (°C)	Freezing phase	Thawing phase		Draining phase		Freezing phase
			Out (hh:mm)	In (hh:mm)	Out (hh:mm)	In (hh:mm)	Out (hh:mm	In (hh:mm)
	1	-5						12:15 PM
29-Oct-03		-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
30-Oct-03	2	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
31-Oct-03	3	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
1-Nov-03								
2-Nov-03								
3-Nov-03	4	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
4-Nov-03	5	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
5-Nov-03	6	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
6-Nov-03	7	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
7-Nov-03	8	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
8-Nov-03								
9-Nov-03								
10-Nov-03	10	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
11-Nov-03								
12-Nov-03	11	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM
13-Nov-03	12	-5	8:00 AM	8:00 AM	12:00 PM	12:00 PM	12:15 PM	12:15 PM

Visual examination: No signs of delamination, cracking or spalling.
Some colour change apparent.

Intertek ETL SEMKO

Test: **Impact Resistance** Technician: Kevin Penner

Proj. #: 3041212
Date: October 20, 2004
Client: Rocky Mountain Stoneworks
Product: Manufactured concrete stone

Test Method: CCMC Masterformat 07483

Ambient conditions: Temperature: 18°C

Test method used: Simulated section of wall 8' x 8'(2.44m x 2.44m) mounted vertically in test frame

Impactors suspended by 3.2 m length of rope between impactor and overhead hook to rest against test sample.

Impactor pulled back and up to drop height and released allowing impactor to swing in falling arc until it impacts the sample

After impact, sample inspected for any cracks, or other damage around impact point

Safety Impact Tests

Impact Load and Type	Drop Ht.	Impact energy	Comments/Observations
Large Soft 50 kg bag	8 ins (203 mm)	100 N.m	No cracks or other damage No penetration of system No dislodging of any part of system No falling debris No structural damage
Hard 1 kg steel ball	40 ins (1.016 m)	10 N.m	As above

Retention of Peformance Tests

Impact Load and Type	Drop Ht.	Impact energy	Comments/Observations
Large Soft 50 kg bag	2.7 ins	34 N.m	No cracks or other damage No penetration of system No dislodging of any part of system No falling debris No structural damage
Small Soft 3kg bag	80 ins (2.032 m	60 N.m	As above
Hard 1 kg steel ball	40 ins (1.016 m)	10 N.m	As above

Intertek ETL SEMKO

Test: **Impact Resistance**
Date: 20-Sep-06 Project No: 3091486
Client: Rocky Mountain Stoneworks Eng/Tech: Adam Mantie
Product: Stone Cladding
Test Method: CCMC 07483 Cladding Systems using Adhered Manufactured Concrete Stone
Notes: Wind load test deck used after wind load testing
Impactors suspended by 3.2 m length of rope between impactor and overhead hook to rest against test sample.
Impactor pulled back and up to drop height and released allowing impactor to swing in falling arc until it impacts the sample.
After impact, sample inspected for any cracks, or other damage around impact location.

Safety Impact Tests

Impactor	Drop Height (in.)	Drop Height (cm)	Impact energy (Nm)	Location	Observations	Results (Pass/Fail)
Large Soft 50 kg bag	8	20	100	A	No penetration, dislodging, falling debris or structural damage	Pass
				B	No penetration, dislodging, falling debris or structural damage	Pass
				C	No penetration, dislodging, falling debris or structural damage	Pass
				D	No penetration, dislodging, falling debris or structural damage	Pass

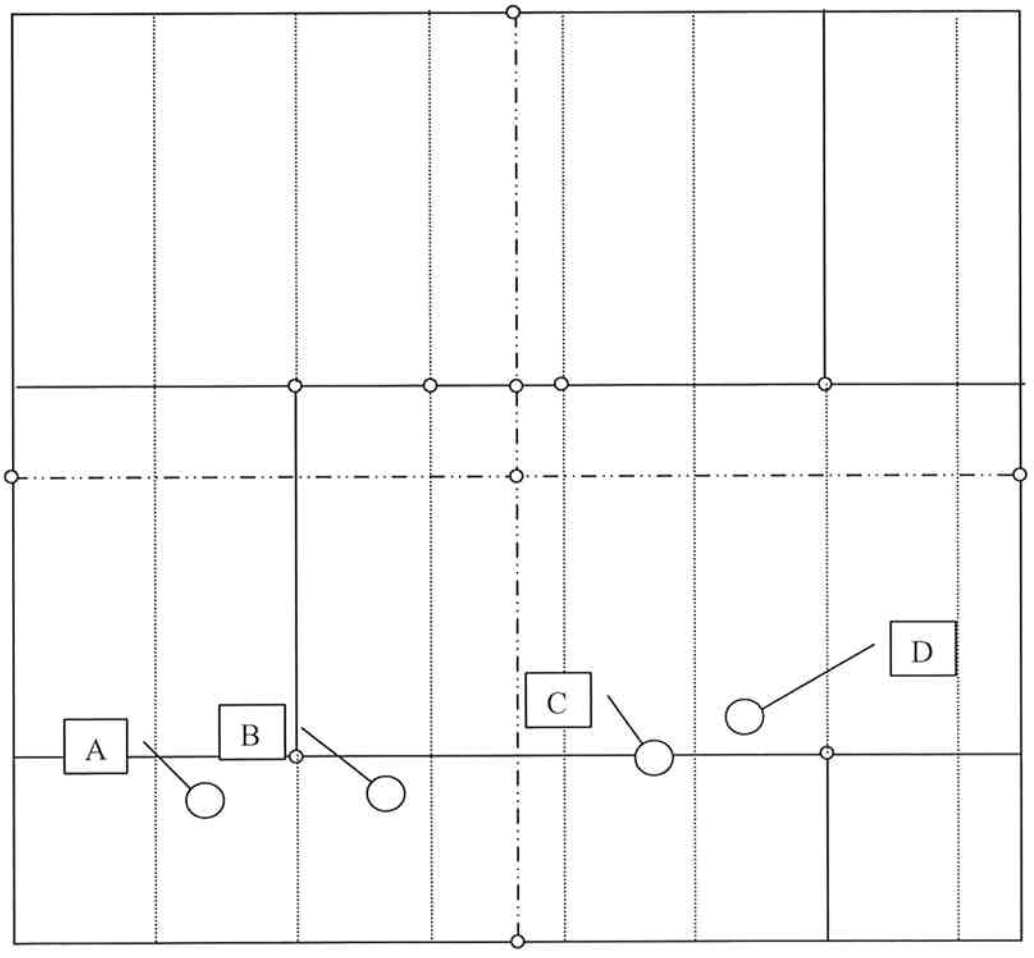
Retention of Peformance Tests

Impactor	Drop Height (in.)	Drop Height (cm)	Impact energy (Nm)	Location	Observations	
Large Soft 50 kg bag	2.7	6.9	34	A	No loss of functional or appearance characteristics	Pass
				B	No loss of functional or appearance characteristics	Pass
				C	No loss of functional or appearance characteristics	Pass
				D	No loss of functional or appearance characteristics	Pass
Small Soft 3kg bag	80	203	60	A	No loss of functional or appearance characteristics	Pass
				B	No loss of functional or appearance characteristics	Pass
				C	No loss of functional or appearance characteristics	Pass
				D	No loss of functional or appearance characteristics	Pass

Intertek ETL SEMKO

Test: **Impact Resistance**
Date: 20-Sep-06 Project No: 3091486
Client: Rocky Mountain Stoneworks Eng/Tech: Adam Mantei
Product: Stone Cladding
Test Methc CCMC 07483 Cladding Systems using Adhered Manufactured Concrete Stone
Notes: Wind load test deck used after wind load testing
Impactors suspended by 3.2 m length of rope between impactor and overhead hook to rest against test sample.
Impactor pulled back and up to drop height and released allowing impactor to swing in falling arc until it impacts the sample.
After impact, sample inspected for any cracks, or other damage around impact location.

Impact Locations



..... = Stud Location
-·-·- = Centre Lines

Intertek Testing Services
ETL SEMKO

September 22, 2003

Rocky Mountain Stoneworks Ltd.
26076 – 31B Avenue
Aldergrove, B.C. V4W 2Z6

Attention: Mr. Robert McIntosh

Dear Sir:

Re: Project No. 3041989

On September 18, 2003, Intertek Testing Services NA Ltd./Warnock Heresy conducted a test program on behalf of Rocky Mountain Stoneworks Ltd. The purpose of the testing was to determine whether or not the submitted samples of manufactured stone would meet the requirements of CAN/ULC S114, *Standard Method of Test for Determination of Non-Combustibility in Building Materials.*

After the specimens were conditioned, they were weighed and then tested in accordance with the test standard. This standard states that: the mean of the maximum temp. rise for the three specimens does not exceed 36°C; and there is no flaming of any of the three specimens during the last 14 min. and 30 s. of the test; and the maximum loss of mass of any of the three specimens does not exceed 20%. The results of the tests are as follows:

Sample No.	Temp. Rise Above Initial (°C)	Flaming After 30 Secs.	Weight Loss (%)
1	0	No	7.5
2	0	No	7.6
3	0	No	7.4
Average	**0**	**No**	**7.5**

The samples of manufactured stone, submitted by Rocky Mountain Stoneworks Ltd., therefore met the requirements of CAN/ULC S114, *Standard Method of Test for Determination of Non-Combustibility in Building Materials.*

INTERTEK TESTING SERVICES NA LTD.

Tested and Reported by:

Greg Philp
Technician – Construction Products Testing

Reviewed by

Cam Robinson, P.Eng.
Manager – Construction Products Testing

GP/bjm

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Intertek ETL SEMKO

Test:	**Shear Bond**
Date Tested:	August 22, 2003
Client:	Rocky Mountain Stone
Project No:	3041212
Product:	Manufactured concrete stone (Non-scratched back)
Test Method:	CCMC MasterFormat Number: 07483, section 6.5.4 (2001) Cladding Systems Using Adhered Manufactured Concrete Stone
Conditioning:	July 23, 2003 - Commenced damp cure for 7 days at 23 ± 2°C July 30, 2003 - 21 days at 23 ± 2°C and 50 ± 5% relative humidity
Crosshead Speed:	0.02 inches/min (Dial at 1.3)
Shear plate:	Tested without shear plate
Equipment:	Tinius Olsen, 60K pressure transducer ITS ID 9-0432 Mitutoyo Digital Calipers SN 98865 ITS ID 52650

Sample	Width (mm)	Height (mm)	Max Load (lbf)	Max Load (kN)	Failure Interface	Shear Bond Strength (MPa)
1	100	100	1287	5.72	plywood/lath	0.57
2	100	99	1122	4.99	plywood/lath	0.50

Intertek ETL SEMKO

Test:	**Shear Bond**
Date Tested:	August 22, 2003
Client:	Rocky Mountain Stone
Project No:	3041212
Product:	Manufactured concrete stone (Non-scratched back)
Test Method:	CCMC MasterFormat Number: 07483, section 6.5.4 (2001) Cladding Systems Using Adhered Manufactured Concrete Stone
Conditioning:	July 23, 2003 - Commenced damp cure for 7 days at 23 ± 2°C July 30, 2003 - 21 days at 23 ± 2°C and 50 ± 5% relative humidity
Crosshead Speed:	0.02 inches/min (Dial at 1.3)
Shear plate:	Tested with shear plate
Equipment:	Tinius Olsen, 60K pressure transducer ITS ID 9-0432 Mitutoyo Digital Calipers SN 98865 ITS ID 52650

Sample	Width (mm)	Height (mm)	Max Load (lbf)	Max Load (kN)	Failure Interface	Shear Bond Strength (MPa)
1	100	101	2119	9.43	stone/mortar	0.94
2	100	100	2730	12.14	stone/mortar	1.21
3	100	100	1957	8.71	plywood/lath	0.87
4	101	100	2801	12.46	stone/mortar	1.24
5	100	100	2345	10.43	stone/mortar	1.04
6	100	99	3021	13.44	stone/mortar	1.35
7	100	100	1654	7.36	stone/mortar	0.74
8	100	101	2070	9.21	stone/mortar	0.91

Mean Result	1.04 MPa
Coefficient of Variation	20.5 %
CCMC 07483 (minimum)	0.35 MPa

Intertek ETL SEMKO

Test: **Water Absorption (24 hour)**
Date: August 29, 2003
Client: Rocky Mountain Stone Works
Project No: 3041212
Product: Manufactured concrete stone
Test Method: ASTM C140-02a - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
Sample Type: Whole units (#3 cut from large stone)
Equipment: Setra Scale 2000g SN 144363 ITS ID P52606
Fluke 52II meter ITS ID D2679
Temperature controlled oven

Sample	Saturated weight	Immersed weight	Oven-dry weight[1]	Oven-dry weight[2]	Increment of Loss[3]	Water Absorption		Weight Change
	(g)	(g)	(g)	(g)	(%) by mass)	kg/m³	lb/ft³	%
1	274.09	92.63	243.83	243.64	0.08	168	10.5	12.50
2	425.28	119.83	382.41	382.13	0.07	141	8.8	11.29
3	1205.32	352.47	1113.14	1112.20	0.08	109	6.8	8.37

[1]Initial oven-dry weight
[2]Oven-dry weight 2 hours later
[3]Not to exceed 0.2 %

Mean:	10.7
StdDev:	2.1
COV:	19.8%

Mean Result	139 kg/m³	8.7 lb/ft³
Coefficient of Variation	21.1 %	21.1 %

Intertek ETL SEMKO

Test:	**Water Absorption Coefficient**
Date:	June 26, 2003
Client:	Rocky Mountain Stone Works
Project:	3041212
Product:	Manufactured Stone
Test Method:	EN 1925:1999 - Natural Stone Test Methods Determination of water absorption coefficient by capillarity
Test Conditions:	Temperature of 23 +/-2°C (73 +/-4°F) and 50% relative humidity
Exposure:	Water immersion to a depth of 3 +/- 1mm
Exposed surface:	Back face
Equipment:	Distilled Water Immersion Tray Setra Balance 2000g SN 144363 ITS ID P52606 Mitutoyo Digital Calipers SN 7041919 ITS ID 52626

Nominal Time	Elapsed Time (minutes)	Time In (m/dd hh:mm)	Time Out (m/dd hh:mm)
10 minutes	10	6/26 09:40	6/26 09:50
30 minutes	30	6/26 09:56	6/26 10:16
60 minutes	60	6/26 10:21	6/26 10:51
3 hours	191	6/26 10:56	6/26 13:07
8 hours	1322	6/26 13:12	6/27 08:03
24 hours	5642	6/27 08:10	6/30 08:10
3 days	8872	6/30 08:15	7/02 14:05
5 days	10404	7/02 14:11	7/03 15:43
7 days	17636	7/03 15:43	7/08 16:15
12 days			

Measurement	Specimen				
	1	2	3	4	5
Length (mm)	55.1	55.2	54.9	54.7	55.0
Width (mm)	54.9	54.9	55.1	55.1	55.2
Area (mm²)	3025	3030	3025	3014	3036
Weight after (g):					
0 minutes	187.24	209.24	185.63	206.33	196.33
10 minutes	188.82	211.15	187.85	208.49	198.78
30 minutes	189.81	212.38	188.99	209.75	199.87
60 minutes	190.67	213.41	189.96	210.82	200.81
3.18 hours	192.55	215.72	192.15	213.26	202.90
0.9 days	197.79	222.39	198.31	220.05	208.64
3.9 days	203.31	229.00	204.67	226.55	214.30
6.2 days	205.02	230.95	206.47	228.32	216.16
7.2 days	205.61	231.56	207.04	228.91	216.74
12.2 days	207.64	233.44	208.74	230.73	218.75

Intertek ETL SEMKO

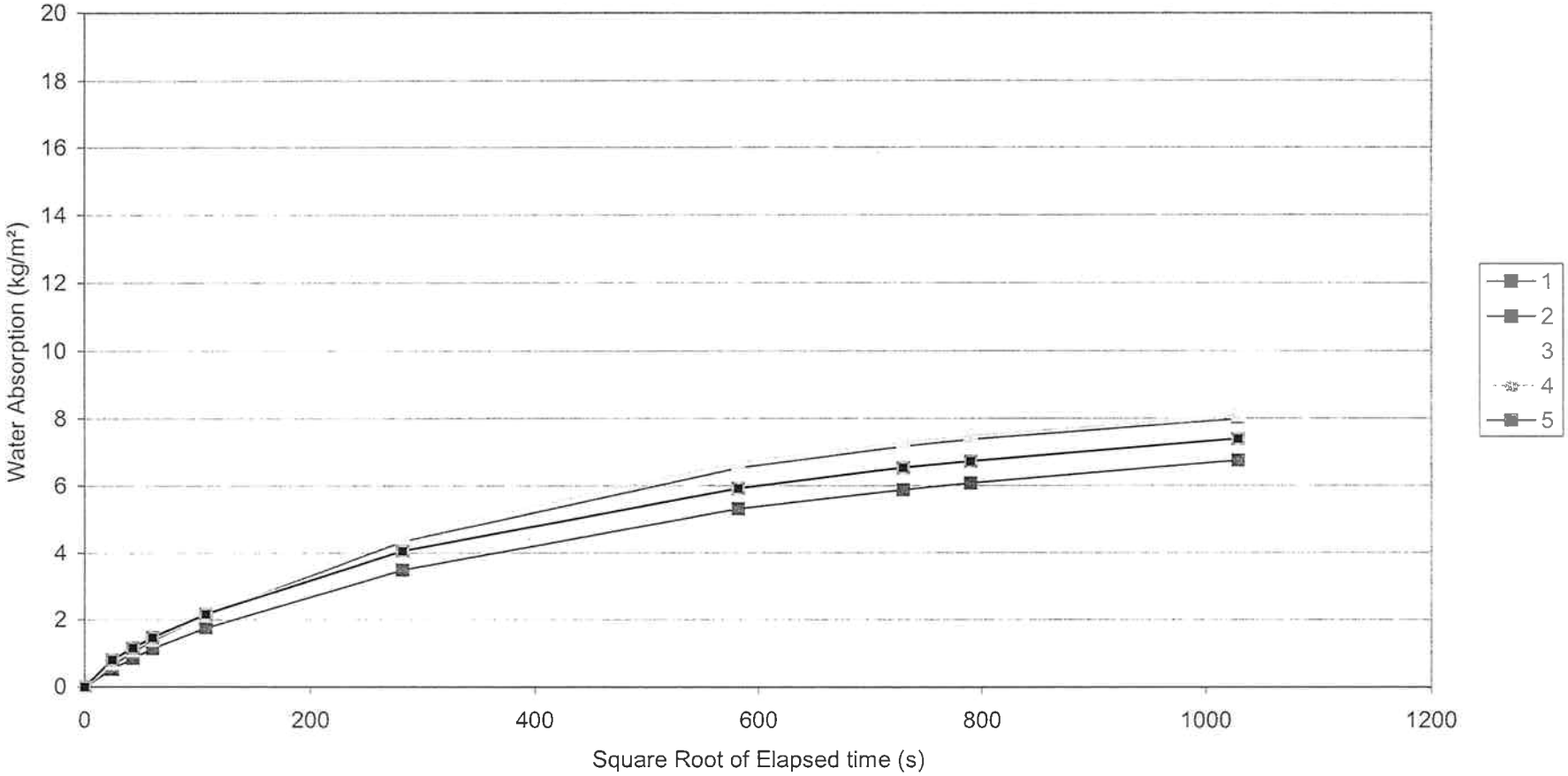
Test:	**Water Absorption Coefficient**
Date:	June 26, 2003
Client:	Rocky Mountain Stone Works
Project:	3041212
Product:	Manufactured Stone
Test Method:	EN 1925:1999 - Natural Stone Test Methods Determination of water absorption coefficient by capillarity
Test Conditions:	Temperature of 23 +/-2°C (73 +/-4°F) and 50% relative humidity
Exposure:	Water immersion to a depth of 3 +/- 1mm
Exposed surface:	Back face
Equipment:	Distilled Water Immersion Tray Setra Balance 2000g SN 144363 ITS ID P52606 Mitutoyo Digital Calipers SN 7041919 ITS ID 52626

Time square root (s)	Water Absorption (kg/m²)				
	1	2	3	4	5
0.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
24.5	5.22E-01	6.33E-01	7.34E-01	7.17E-01	8.06E-01
42.4	8.51E-01	1.04E+00	1.11E+00	1.13E+00	1.16E+00
60.0	1.13E+00	1.38E+00	1.43E+00	1.49E+00	1.47E+00
107.1	1.76E+00	2.14E+00	2.15E+00	2.30E+00	2.17E+00
281.6	3.49E+00	4.34E+00	4.19E+00	4.55E+00	4.05E+00
581.8	5.31E+00	6.52E+00	6.29E+00	6.71E+00	5.92E+00
729.6	5.88E+00	7.16E+00	6.89E+00	7.30E+00	6.53E+00
790.1	6.07E+00	7.37E+00	7.08E+00	7.49E+00	6.72E+00
1028.7	6.74E+00	7.99E+00	7.64E+00	8.09E+00	7.38E+00
Absorption Coefficient (kg/m²s$^{1/2}$)	1.18E-02	1.48E-02	1.40E-02	1.54E-02	1.34E-02

Mean Result	0.0139 kg/m²s$^{1/2}$
Coefficient of Variation	9.9 %

Water Absorption Coefficient

Rocky Mountain Stone Works
Project No. 3041212
Moisture Absorption versus Time
Sample tested: Manufactured Stone



Intertek ETL SEMKO

Test:	**Water Absorption Coefficient**
Date:	June 26, 2003
Client:	Rocky Mountain Stone Works
Project:	3041212
Product:	Manufactured Stone
Test Method:	EN 1925:1999 - Natural Stone Test Methods Determination of water absorption coefficient by capillarity
Test Conditions:	Temperature of 23 +/-2°C (73 +/-4°F) and 50% relative humidity
Exposure:	Water immersion to a depth of 3 +/- 1mm
Exposed surface:	Front face
Equipment:	Distilled Water Immersion Tray Setra Balance 2000g SN 144363 ITS ID P52606 Mitutoyo Digital Calipers SN 7041919 ITS ID 52626

Nominal Time	Elapsed Time (minutes)	Time In (m/dd hh:mm)	Time Out (m/dd hh:mm)
10 minutes	10	6/26 09:40	6/26 09:50
30 minutes	30	6/26 09:56	6/26 10:16
60 minutes	60	6/26 10:21	6/26 10:51
3 hours	191	6/26 10:56	6/26 13:07
8 hours	1322	6/26 13:12	6/27 08:03
24 hours	5642	6/27 08:10	6/30 08:10
3 days	8872	6/30 08:15	7/02 14:05
5 days	10404	7/02 14:11	7/03 15:43
7 days	17631	7/03 15:48	7/08 16:15
12 days			

Measurement	Specimen				
	1	2	3	4	5
Length (mm)	54.0	55.3	55.0	55.2	55.1
Width (mm)	55.2	54.8	55.1	55.1	54.7
Area (mm^2)	2981	3030	3031	3042	3014
Weight after (g):					
0 minutes	206.72	213.87	174.67	171.34	202.28
10 minutes	208.68	215.78	176.62	172.87	204.49
30 minutes	209.65	216.70	177.62	173.58	205.54
60 minutes	210.51	217.46	178.50	174.16	206.39
3.18 hours	212.27	219.04	180.29	175.35	208.17
0.9 days	216.68	223.16	184.80	178.57	212.59
3.9 days	221.38	227.67	189.57	182.78	217.75
6.2 days	223.37	229.67	191.13	184.29	219.55
7.2 days	223.87	230.20	191.55	184.80	220.06
12.2 days	226.01	232.44	193.35	186.85	222.24

Intertek ETL SEMKO

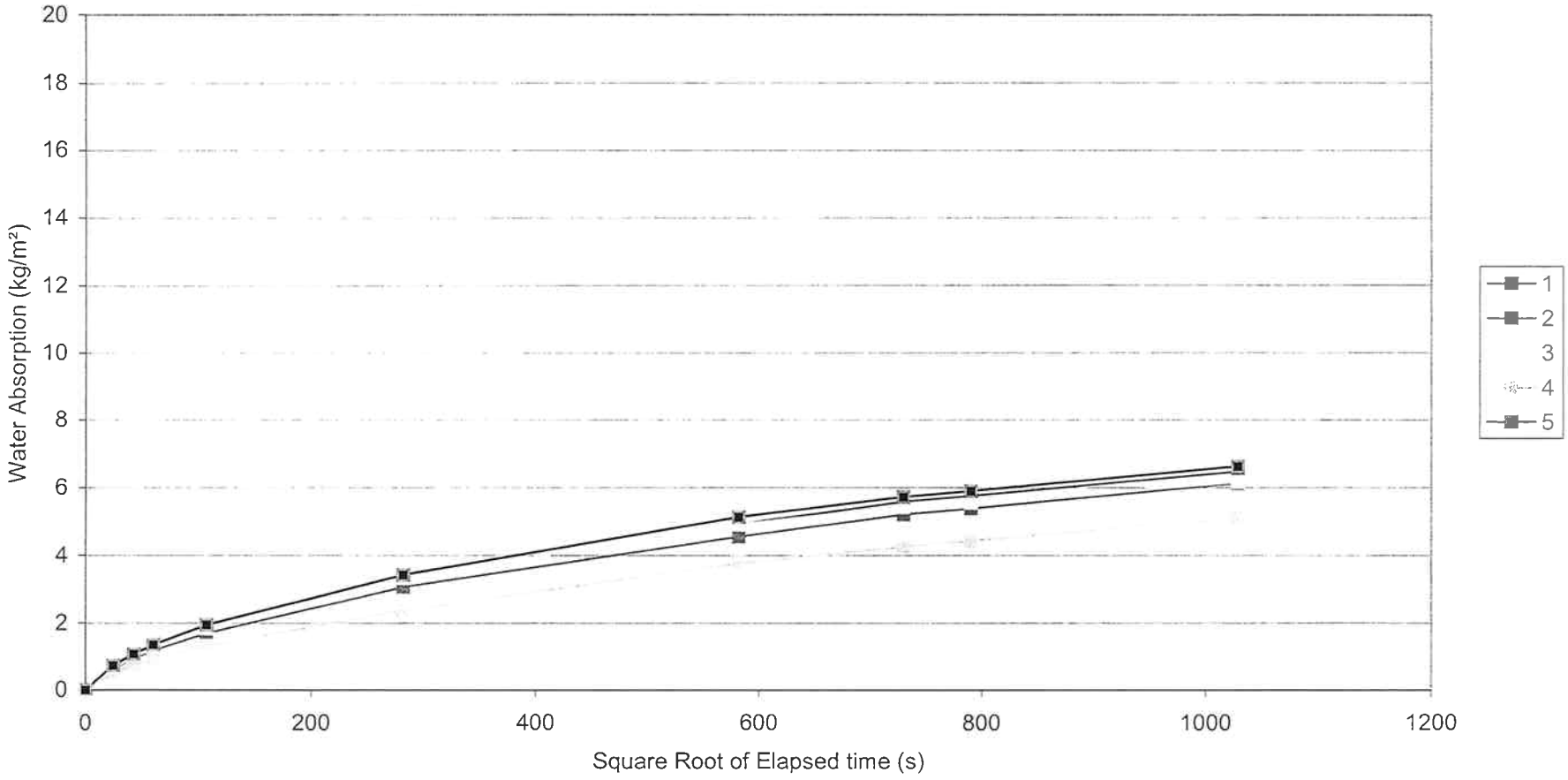
Test:	**Water Absorption Coefficient**
Date:	June 26, 2003
Client:	Rocky Mountain Stone Works
Project:	3041212
Product:	Manufactured Stone
Test Method:	EN 1925:1999 - Natural Stone Test Methods Determination of water absorption coefficient by capillarity
Test Conditions:	Temperature of 23 +/-2°C (73 +/-4°F) and 50% relative humidity
Exposure:	Water immersion to a depth of 3 +/- 1mm
Exposed surface:	Back face
Equipment:	Distilled Water Immersion Tray Setra Balance 2000g SN 144363 ITS ID P52606 Mitutoyo Digital Calipers SN 7041919 ITS ID 52626

Time square root (s)	Water Absorption (kg/m²)				
	1	2	3	4	5
0.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
24.5	6.60E-01	6.29E-01	6.46E-01	5.03E-01	7.34E-01
42.4	9.85E-01	9.35E-01	9.76E-01	7.37E-01	1.08E+00
60.0	1.27E+00	1.18E+00	1.26E+00	9.28E-01	1.37E+00
107.1	1.86E+00	1.71E+00	1.86E+00	1.32E+00	1.96E+00
281.6	3.34E+00	3.07E+00	3.34E+00	2.38E+00	3.42E+00
581.8	4.92E+00	4.55E+00	4.92E+00	3.76E+00	5.13E+00
729.6	5.59E+00	5.21E+00	5.43E+00	4.26E+00	5.73E+00
790.1	5.76E+00	5.39E+00	5.57E+00	4.42E+00	5.90E+00
1028.5	6.47E+00	6.13E+00	6.16E+00	5.10E+00	6.62E+00
Absorption Coefficient (kg/m²s$^{1/2}$)	1.10E-02	1.00E-02	1.10E-02	7.74E-03	1.11E-02

Mean Result	0.0102 kg/m²s$^{1/2}$
Coefficient of Variation	14.1 %

Water Absorption Coefficient

Rocky Mountain Stone Works
Project No. 3041212
Moisture Absorption versus Time
Sample tested: Manufactured Stone



Intertek ETL SEMKO

Test:	**Absorption**		
Date:	22-Sep-06	Project No:	3091486
Client:	Rocky Mountain Stoneworks	Eng/Tech:	Trevor Kwasnycia
Product:	Stone Cladding		
Specimen Thickness:	1.50 in 38.1 mm		
Test Method:	ASTM C 140 - 05a Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units		
Conditioning:	Saturation - Immersed in water at 60 to 80°F (15.6 to 26.7°C) for 24 h Drying - Dried in ventilated oven at 212 to 239°F (100-115°C) for min 24 h		
Equipment:	Setra Scale 125000g (Intertek ID 9-0418) Calibration due Date: March-07 Fluke 52II meter (Intertek ID D2679) Calibration due Date: 02-June-07 Temperature controlled oven (Intertek ID 9-0477)		

Sample	Oven-dry weight after 24 hours (g)	Oven-dry weight after 26 hours (g)	Increment of Loss[3] (% by mass)	Saturated weight in air (g)	Absorption (%)
1	629	629	0.00	737	17.09
2	720	720	0.00	867	20.40
3	590	590	0.00	708	19.98
4	720	720	0.00	850	18.16
5	685	685	0.00	836	21.99
				Mean:	19.52
				StdDev:	1.93
				COV:	9.9%

[3]Not to exceed 0.2 %

Intertek ETL SEMKO

Test: **Water Vapor Transmission**
Date: 12-Oct-06 Project: 3091486 Eng/Tech: Trevor Kwasnycia
Client: Rocky Mountain Stone Works
Product: Stone Cladding
Test Methods: Exterior surface face up
Conditioning: ASTM E96-05 Test Methods for Water Vapour Transmission of Materials
Exposure: Method B-Water
Equipment: 24 hours at a temperature of 23 ± 2°C and relative humidity of 50 ± 5%
Test Chamber (Intertek ID 9-0473) Setra Balance 2000g (Intertek ID P52606)
Gemini Tinytag Ultra (Intertek ID D2693) Digital Anemometer
Mitutoyo Digital Calipers (Intertek ID 52639) Calibration due date: 13-June-06

Measurement	Specimen		
	1	2	3
Mean Air Temperature (°C)	22.5	22.5	22.5
Saturation Vapour Pressure[1] (Pa)	2768	2768	2768
Mean Relative Humidity in chamber (%)	51.4	51.4	51.4
Relative Humidity in test dish (%)	0	0	0
Initial Air Velocity (m/s)	0.18	0.18	0.18
Final Air Velocity (m/s)	0.25	0.25	0.25
Air Velocity Minimum Control Limit (m/s)	0.02	0.02	0.02
Air Velocity Maximum Control Limit (m/s)	0.3	0.3	0.3
Mass of Dessicant (g)	0	0	0
Specimen Weight Loss (g)	14.900	11.700	13.700
Moisture Gain of Dessicant (%)	n/a	n/a	n/a
Moisture Gain Control Limit (%)	10	10	10
Test Dish Diameter (mm)	228	228	228
Test Area (m^2)	0.041	0.041	0.041
Gradient of weight/time graph (g/hour)	1.21E-01	9.07E-02	1.08E-01
Mean Thickness (mm)	21.60	21.81	20.94
Water Vapour Transmission (g/hour.m^2)	2.96E+00	2.22E+00	2.65E+00
Water Vapour Permeance (ng/Pa.s.m^2)	5.79E+02	4.34E+02	5.18E+02

[1]Estimated by the Clausius-Clapeyron equation

Test Result Summary	Metric units	Imperical Units
Water Vapor Transmission	2.61E+00 g/hr.m^2	3.74E+00 grains/hr.ft^2
	6.27E+01 g/day.m^2	8.97E+01 grains/day.ft^2
Water Vapor Permeance	5.10E+02 ng/Pa.s.m^2	8.92E+00 perms
Coefficient of Variation	14 %	14 %

Intertek ETL SEMKO

Test: **Water Vapour Transmission**
Date: 12-Oct-06 Project: 3091486 Eng/Tech: Trevor Kwasnycia
Client: Rocky Mountain Stone Works
Product: Stone Cladding
Test Methods: ASTM E96-05 Test Methods for Water Vapour Transmission of Materials
Conditioning: 24 hours at a temperature of 23 ± 2°C and relative humidity of 50 ± 5%
Exposure: As Received
Equipment: Setra Balance 2000g (Intertek ID P52606)
Gemini Tinytag Ultra H/RH (Intertek ID D2693)
Digital Anemometer
Mitutoyo Digital Calipers (Intertek ID 52639) Calibration due date: 13-June-06

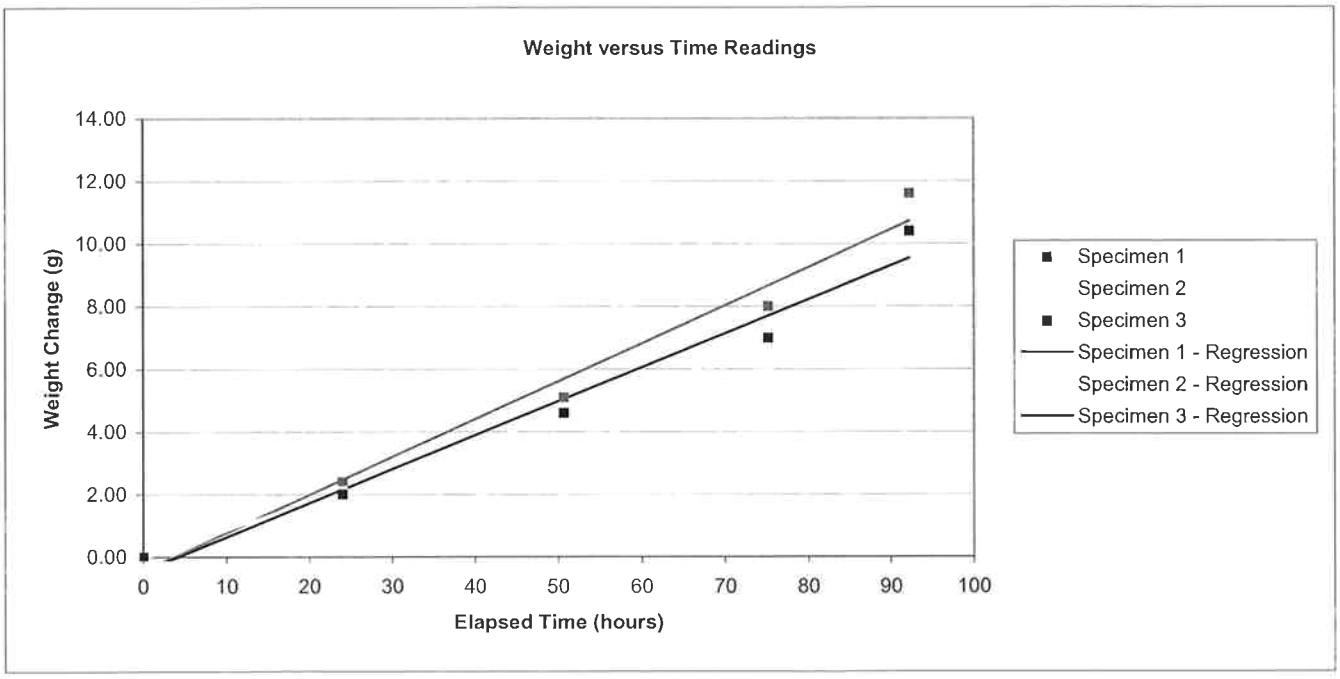
Test Procedure:	Water Method
Dessicant:	n/a
Sealant:	Parafin/Bees Wax
Air Temperature Setpoint (°C)	23
Relative Humidity Setpoint (%)	50
Initial Air Velocity (m/s)	0.2
Final Air Velocity (m/s)	0.25
Air Velocity Minimum Control Limit (m/s)	0.02
Air Velocity Maximum Control Limit (m/s)	0.3
Mass of Dessicant (g)	n/A
Test Dish Dimensions (mm)	228
Special conditioning (if applicable):	n/A
Specimen Orientation:	Exterior surface face up

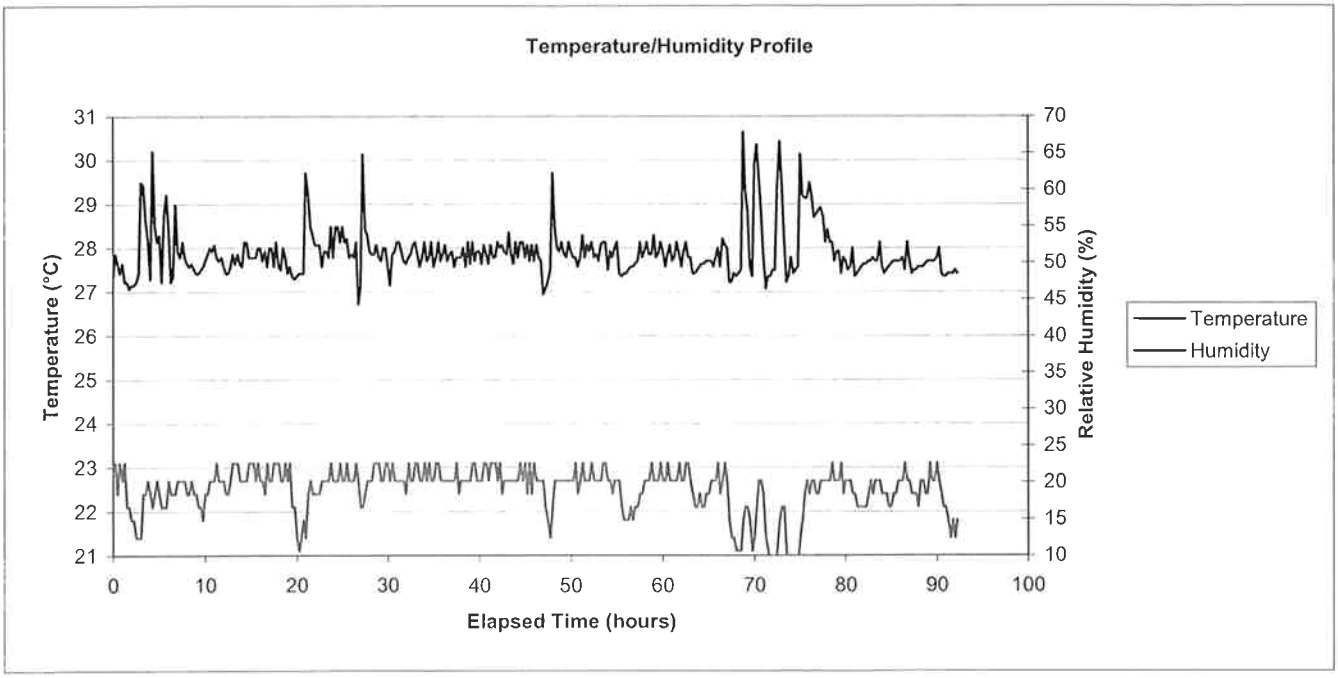
Quadrant	Thickness (mm)			
	Control	Specimen 1	Specimen 2	Specimen 3
1	22.30	22.21	21.92	20.89
2	23.48	21.26	21.11	21.21
3	22.83	21.72	22.54	20.74
4	22.90	21.21	21.66	20.91

Measurement	Date	Time	Mass (g)			
			Control	Specimen 1	Specimen 2	Specimen 3
1	16-Oct-06	12:45 PM	2077.600	2498.20	2546.90	2556.90
2	17-Oct-06	12:45 PM	2076.800	2495.00	2544.00	2554.10
3	18-Oct-06	3:25 PM	2075.600	2491.10	2540.40	2550.30
4	19-Oct-06	3:55 PM	2075.000	2487.60	2537.60	2547.30
5	20-Oct-06	9:00 AM	2074.300	2483.30	2535.20	2543.20
6						
7						
8						
9						
10						

Intertek ETL SEMKO

Test: **Water Vapor Transmission**
Date: 12-Oct-06 Project: 3091486 Eng/Tech: Trevor Kwasnycia
Client: Rocky Mountain Stone Works
Product: Stone Cladding





Intertek ETL SEMKO

Test:	**Weight (saturated)**
Date:	August 27, 2003
Client:	Rocky Mountain Stone Works
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	ASTM C140-02a - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
Sample Type:	Whole units (#3 cut from large stone)
Equipment:	Setra Balance 2000g SN 144363 ITS ID P52606 Mitutoyo Digital Calipers CD-18 SN 7003817 ITS ID P52639 Mitutoyo Digital Calipers SN 98865 ITS ID 52650

Sample	Length (mm)	Width (mm)	Mean Thickness[2] (mm)	Saturated Weight (g)	Weight (kg/m²)	Weight (per 70mm[1]) (kg/m²)
1	77	72	37	274.09	49.4	95
2	148	72	32	425.28	39.9	87
3	232	82	49	1205.32	63.4	90

[1]Weight/70mm thickness

[2]Based on 6 actual measurements

Calculated Mean Result	50.9 kg/m²
Coefficient of Variation	23.2 %
CCMC 07483 (maximum)	75 kg/m²

Intertek ETL SEMKO

Test:	**Weight (saturated)**
Date:	August 27, 2003
Client:	Rocky Mountain Stone Works
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	ASTM C140-02a - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
Sample Type:	Whole units
Equipment:	Setra Balance 2000g SN 144363 ITS ID P52606 Mitutoyo Digital Calipers CD-18 SN 7003817 ITS ID P52639 Mitutoyo Digital Calipers SN 98865 ITS ID 52650

Measurement	Sample thickness (mm)		
	1	2	3
1	37.2	32.29	49.72
2	37.3	32.2	50.9
3	35.0	32.2	51.1
4	37.2	31.5	50.1
5	37.6	30.8	47.9
6	35.6	33.2	46.2
Mean	36.5	32.0	49.3
Coefficient of Variation (%)	2.9	2.4	3.8

Intertek ETL SEMKO

Test: Wind Load Resistance
Date: October 20, 2004
Client: Rocky Mountain Stoneworks
Project No: 3041212
Product: Manufactured Concrete clone
Test Method: CCMC MF 07483 Section 6.5.6 Wind Load Resistance
ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1
Sample Type: Wall Panel 8 ft x 8 ft
Equipment:

	Type	Model	ITS ID #
	Manometer	Dwyer 16"	1010
1	Deflection Gauge	Mitutoyo IDF	9-0344
2	Deflection Gauge	Mitutoyo 2416F	1005
3	Deflection Gauge	Mitutoyo IDF	52630
4	Deflection Gauge	Mitutoyo 2416F	1003
5	Deflection Gauge	Mitutoyo 2416F	1007
6	Deflection Gauge	Mitutoyo 2416F	1004
7	Deflection Gauge	Mitutoyo 2416F	1002
8	Deflection Gauge	Mitutoyo 2416F	1006
9	Deflection Gauge	Starrel F2740-1	2699
10	Deflection Gauge	Starrel F2740-1	2673
11	Deflection Gauge	Starrel F2740-1	1014
12	Deflection Gauge	Starrel F2740-1	1013

I) Deformation Test (Sustained Pressure)
Negative Pressure denotes a Positive Wind Load
Positive Pressure denotes a Negative Wind Load

Pressure (Pa)	Deflection Location See Drawing											
	1	2	3	4	5	6	7	8	9	10	11	12
Negative	Deflection (in)											
15 min @ 400	0.004	0.027	N/A	N/A	0.001	0.028	N/A	N/A	0.020	N/A	0.018	N/A
Residual	0.000	0.006	N/A	N/A	0.000	0.007	N/A	N/A	0.004	N/A	0.006	N/A
15 min @ 600	0.008	0.040	N/A	N/A	0.008	0.041	N/A	N/A	0.029	N/A	0.031	N/A
Residual	0.002	0.008	N/A	N/A	0.002	0.009	N/A	N/A	0.005	N/A	0.012	N/A
15 min @ 800	0.013	0.055	N/A	N/A	0.012	0.055	N/A	N/A	0.039	N/A	0.045	N/A
Residual	0.004	0.010	N/A	N/A	0.002	0.011	N/A	N/A	0.006	N/A	0.020	N/A
Positive												
15 min @ 400	0.004	0.020	N/A	N/A	0.005	0.019	N/A	N/A	0.029	N/A	0.030	N/A
Residual	0.000	0.000	N/A	N/A	0.001	0.000	N/A	N/A	0.013	N/A	0.021	N/A
15 min @ 600	0.013	0.041	N/A	N/A	0.010	0.038	N/A	N/A	0.042	N/A	0.036	N/A
Residual	0.005	0.004	N/A	N/A	0.002	0.002	N/A	N/A	0.015	N/A	0.020	N/A
15 min @ 800	0.024	0.059	N/A	N/A	0.016	0.058	N/A	N/A	0.055	N/A	0.043	N/A
Residual	0.012	0.008	N/A	N/A	0.004	0.007	N/A	N/A	0.016	N/A	0.020	N/A

ii) Repeated Positive and Negative Pressure Test (Cyclic Pressure)

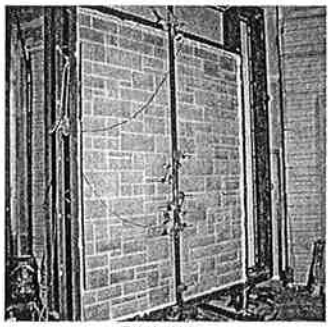
			Result
1000 cycles to 1060 Pa	Negative	No visual breakage or deformation	Pass
1000 cycles to 1060 Pa	Positive	No visual breakage or deformation	Pass

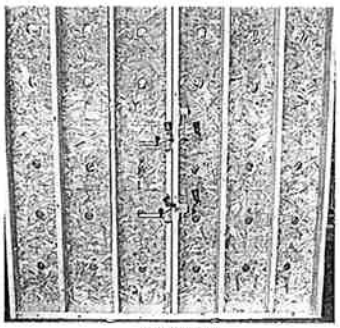
iii) Safety Gust (gust wind)

			Result
800 Pa	Negative	No visual breakage or deformation	Pass
800 Pa	Positive	No visual breakage or deformation	Pass
1200 Pa	Negative	No visual breakage or deformation	Pass
1200 Pa	Positive	No visual breakage or deformation	Pass
1600 Pa	Negative	No visual breakage or deformation	Pass
1600 Pa	Positive	No visual breakage or deformation	Pass

Maximum Wind Pressures for Deflection Measurements

Pressure (Pa)	Deflection Location See Drawing											
	1	2	3	4	5	6	7	8	9	10	11	12
Negative	Deflection (mm)											
10 sec @ 1320	0.020	0.092	N/A	N/A	0.020	0.091	N/A	N/A	0.070	N/A	0.028	N/A
Residual	0.006	0.012	N/A	N/A	0.002	0.013	N/A	N/A	0.010	N/A	0.016	N/A
10 sec @ 1980	0.037	0.144	N/A	N/A	0.034	0.142	N/A	N/A	0.102	N/A	0.062	N/A
Residual	0.014	0.018	N/A	N/A	0.008	0.019	N/A	N/A	0.010	N/A	0.005	N/A
10 sec @ 2640	0.059	0.200	N/A	N/A	0.050	0.195	N/A	N/A	0.137	N/A	0.102	N/A
Residual	0.022	0.027	N/A	N/A	0.010	0.027	N/A	N/A	0.010	N/A	0.004	N/A
Positive												
10 sec @ 1320	0.042	0.114	N/A	N/A	0.029	0.115	N/A	N/A	0.106	N/A	0.106	N/A
Residual	0.023	0.016	N/A	N/A	0.002	0.014	N/A	N/A	0.028	N/A	0.055	N/A
10 sec @ 1980	0.071	0.182	N/A	N/A	0.046	0.184	N/A	N/A	0.151	N/A	0.153	N/A
Residual	0.032	0.024	N/A	N/A	0.000	0.023	N/A	N/A	0.031	N/A	0.065	N/A
10 sec @ 2640	0.106	0.260	N/A	N/A	0.079	0.260	N/A	N/A	0.199	N/A	0.201	N/A
Residual	0.044	0.036	N/A	N/A	0.008	0.035	N/A	N/A	0.034	N/A	0.074	N/A


Exterior Veiw


Interior View

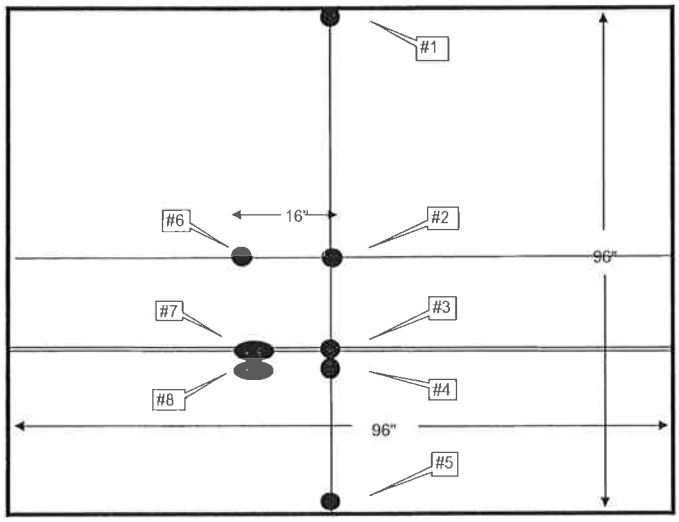
Intertek ETL SEMKO

Test:	**Wind Load Resistance**
Date:	October 20, 2004
Client:	Rocky Mountain Stoneworks
Project No:	3041212
Product:	Manufactured concrete stone
Test Method:	CCMC MF 07483 Section 6.5.6 Wind Load Resistance ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1
Sample Type:	Wall Panel 8 ft x 8 ft

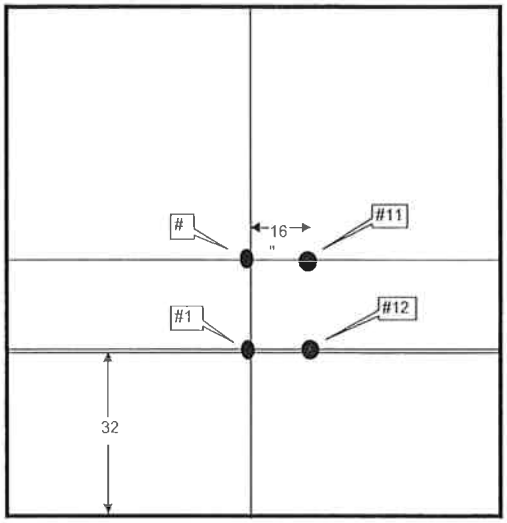
Equipment:

	Type	Model	ITS ID #
	Manometer	Dwyer 16"	1010
1	Deflection Gauge	Mitutoyo IDF	9-0344
2	Deflection Gauge	Mitutoyo 2416F	1005
3	Deflection Gauge	Mitutoyo IDF	52630
4	Deflection Gauge	Mitutoyo 2416F	1003
5	Deflection Gauge	Mitutoyo 2416F	1007
6	Deflection Gauge	Mitutoyo 2416F	1004
7	Deflection Gauge	Mitutoyo 2416F	1002
8	Deflection Gauge	Mitutoyo 2416F	1006
9	Deflection Gauge	Starret F2740-1	2699
10	Deflection Gauge	Starret F2740-1	2673
11	Deflection Gauge	Starret F2740-1	1014
12	Deflection Gauge	Starret F2740-1	1013

Gauge Locations - Viewed from outside



Gauge Locations - Viewed from inside



Intertek ETL SEMKO

Test:	**Wind Load Resistance**				
Date:	20-Sep-06	Zone:	2	Technicians:	Adam Mantei
Client:	Rocky Mountain Stoneworks	Load:	0.60 kPa		Josh Chapman
Project No:	3091486				
Product:	Stone Cladding				
Test Method:	CCMC MF 07483 Section 5.6.2 & 6.5.6 Wind Load Resistance ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1				
Sample Type:	Wall Panel 10 ft x 10 ft				

Equipment:

	Type	Model	ITS ID #	Location
	Manometer			
1	Deflection Gauge	Mitutoyo 1" Dial	D2674	8
2	Deflection Gauge	Mitutoyo Digital series 543-558A	1008	C
3	Deflection Gauge	Mitutoyo Digital series 543-558A	1462	6
4	Deflection Gauge	Mitutoyo Digital series 543-558A	1463	19
5	Deflection Gauge	Mitutoyo Digital series 543-558A	1461	18
6	Deflection Gauge	Mitutoyo Digital series 543-558A	2708	D
7	Deflection Gauge	Mitutoyo 1" Dial	D2725	16
8	Deflection Gauge	Mitutoyo Digital series 543-558A	1464	1
9	Deflection Gauge	MHC 1" Dial	32617	12
10	Deflection Gauge	Starrett 3" Dial	1465	A
11	Deflection Gauge	Mitutoyo 1" Dial	1460	B
12	Deflection Gauge	Shock Proof 1" Dial	02749	4

Pressure Conversions		(in. water)
100 Pa	=	0.40
200 Pa	=	0.80
400 Pa	=	1.61
600 Pa	=	2.41
800 Pa	=	3.21
1060 Pa	=	4.26
1320 Pa	=	5.30
1600 Pa	=	6.42
1920 Pa	=	7.75
2640 Pa	=	10.60
150 Pa	=	0.60
300 Pa	=	1.20
450 Pa	=	1.81
1200 Pa	=	4.82
1980 Pa	=	7.95

i) Deformation Test (Sustained Pressure)

Negative Pressure denotes a Positive Wind Load

Positive Pressure denotes a Negative Wind Load

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative	Deflection (in)											
10 seconds @ 150	-0.001	-0.002	-0.004	-0.004	-0.004	-0.003	-0.001	-0.004	-0.001	-0.002	-0.003	-0.001
10 seconds @ 300	-0.003	-0.010	-0.019	-0.018	-0.019	-0.003	-0.004	-0.020	-0.004	-0.010	-0.012	-0.004
10 seconds @ 450	-0.005	-0.019	-0.033	-0.032	0.032	-0.024	-0.008	-0.036	-0.007	-0.016	-0.020	-0.008
15 min @ 600	-0.010	-0.033	-0.060	-0.058	-0.056	-0.041	-0.014	-0.064	-0.013	-0.028	-0.036	-0.021
Residual	-0.004	-0.008	-0.015	-0.014	-0.014	-0.011	-0.005	-0.016	-0.004	-0.009	-0.010	-0.008
Positive												
10 seconds @ 150	0.001	0.008	0.015	0.016	0.014	0.01	0.003	0.015	0.003	0.005	0.008	0.004
10 seconds @ 300	0.002	0.016	0.029	0.030	0.028	0.020	0.004	0.031	0.006	0.012	0.015	0.008
10 seconds @ 450	0.005	0.027	0.048	0.048	0.045	0.033	0.008	0.050	0.009	0.019	0.027	0.013
15 min @ 600	0.008	0.039	0.070	0.071	0.066	0.049	0.013	0.074	0.014	0.029	0.010	0.023
Residual	0.002	0.004	-0.028	0.029	0.027	0.019	0.004	0.028	0.004	0.011	0.016	0.009

ii) Repeated Positive and Negative Pressure Test (Cyclic Pressure)

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative	Deflection (in)											
1000 cycles to 800	-0.006	-0.012	-0.022	-0.021	-0.021	-0.016	-0.009	-0.026	-0.008	-0.014	-0.015	-0.013
Positive												
1000 cycles to 800	0.004	0.021	0.039	0.040	0.038	0.027	0.005	0.039	0.004	0.014	0.020	0.012

iii) Safety Gust (gust wind)

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative												
3 sec @ 1200	-0.003	-0.002	-0.010	-0.008	-0.008	-0.006	-0.005	-0.014	-0.004	-0.006	-0.007	-0.003
Positive												
3 sec @ 1200	0.004	0.019	0.035	0.038	0.035	0.025	0.005	0.035	0.003	0.012	0.017	0.009

iv) Deflection Measurements

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative												
10 sec @ 1980	-0.006	-0.016	-0.034	-0.026	-0.028	-0.019	-0.010	-0.040	-0.006	-0.017	-0.021	-0.009
Positive												
10 sec @ 1980	0.008	0.023	0.048	0.053	0.053	0.040	0.010	0.048	0.007	0.018	0.022	0.015

Intertek ETL SEMKO

Test: **Wind Load Resistance**
Date: 20-Sep-06
Client: Rocky Mountain Stoneworks
Project No: 3091486
Product: Stone Cladding
Test Method: CCMC MF 07483 Section 5.6.2 & 6.5.6 Wind Load Resistance
ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1
Sample Type: Wall Panel 10 ft x 10 ft
Zone: **2**
Load: **0.60 kPa**
Technicians: Adam Mantei, Josh Chapman

Equipment:

	Type	Model	ITS ID #	Location
	Manometer			
1	Deflection Gauge	Mitutoyo Digital Series 543-463B	02686	C
2	Deflection Gauge	Mitutoyo Digital Series 543-463B	02684	D
3	Deflection Gauge	Mitutoyo Digital Series 543-463B	02702	B
4	Deflection Gauge	Mitutoyo Digital Series 543-463B	02699	A
5	Deflection Gauge	Mitutoyo Digital Series 543-463B	02764	1
6	Deflection Gauge	Mitutoyo Digital Series 543-463B	02700	8
7	Deflection Gauge	Mitutoyo Digital Series 543-463B	02780	6
8	Deflection Gauge	Mitutoyo Digital Series 543-463B	02762	4
9	Deflection Gauge	Mitutoyo Digital Series 543-463B	02707	12
10	Deflection Gauge	Mitutoyo Digital Series 543-463B	02763	16
11	Deflection Gauge	Mitutoyo Digital Series 543-463B	02768	18
12	Deflection Gauge	Mitutoyo Digital Series 543-463B	02683	19

Pressure Conversions		(in. water)
100 Pa	=	0.40
200 Pa	=	0.80
400 Pa	=	1.61
600 Pa	=	2.41
800 Pa	=	3.21
1060 Pa	=	4.26
1320 Pa	=	5.30
1600 Pa	=	6.42
1920 Pa	=	7.75
2640 Pa	=	10.60
150 Pa	=	0.60
300 Pa	=	1.20
450 Pa	=	1.81
1200 Pa	=	4.82
1980 Pa	=	7.95

i) Deformation Test (Sustained Pressure)
Negative Pressure denotes a Positive Wind Load
Positive Pressure denotes a Negative Wind Load

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (in)											
10 seconds @ 150	0.007	0.006	0.005	0.005	0	0.001	0.011	0.005	0.003	0.002	0.011	0.012
10 seconds @ 300	0.015	0.013	0.012	0.013	0.014	0.003	0.025	0.010	0.006	0.004	0.025	0.027
10 seconds @ 450	0.024	0.021	0.018	0.021	0.026	0.006	0.039	0.016	0.009	0.007	0.038	0.041
15 min @ 600	0.040	0.034	0.030	0.034	0.054	0.010	0.064	0.027	0.015	0.010	0.063	0.066
Residual	0.013	0.012	0.012	0.013	0.007	0.004	0.020	0.012	0.007	0.004	0.021	0.022
Positive												
10 seconds @ 150	-0.005	-0.004	-0.002	-0.002	-0.004	-0.001	-0.009	0	0	0	-0.007	-0.007
10 seconds @ 300	-0.013	-0.010	-0.007	-0.009	-0.016	-0.002	-0.022	-0.004	-0.002	-0.002	-0.019	-0.021
10 seconds @ 450	-0.025	-0.020	-0.015	-0.019	-0.034	-0.005	-0.041	-0.011	-0.006	-0.005	-0.038	-0.040
15 min @ 600	-0.038	-0.030	-0.025	-0.030	-0.052	-0.009	-0.062	-0.020	-0.010	-0.009	-0.058	-0.062
Residual	-0.013	-0.009	-0.007	-0.009	-0.017	-0.002	-0.021	-0.005	-0.003	-0.002	-0.020	-0.021

ii) Repeated Positive and Negative Pressure Test (Cyclic Pressure)

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (in)											
1000 cycles to 800	0.015	0.015	0.017	0.018	0.013	0.007	0.023	0.016	0.01	0.007	0.024	0.023
Positive												
1000 cycles to 800	-0.023	-0.015	-0.009	-0.013	-0.022	-0.003	-0.036	-0.009	-0.004	-0.004	-0.034	-0.037

iii) Safety Gust (gust wind)

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (mm)											
3 sec @ 1200	0.005	0.008	0.010	0.011	0.001	0.004	0.010	0.007	0.007	0.004	0.013	0.010
Positive												
3 sec @ 1200	-0.022	-0.014	-0.007	-0.012	-0.014	-0.002	-0.033	-0.007	-0.003	-0.004	-0.029	-0.034

iv) Deflection Measurements

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (mm)											
10 sec @ 1980	0.019	0.022	0.021	0.024	0.028	0.007	0.032	0.014	0.012	0.006	0.036	0.034
Positive												
10 sec @ 1980	-0.034	-0.020	-0.013	-0.016	-0.029	-0.006	-0.052	-0.010	-0.007	-0.007	-0.041	-0.048

Intertek ETL SEMKO

Test:	Wind Load Resistance				
Date:	20-Sep-06	Zone:	3	Technicians:	Adam Manlei
Client:	Rocky Mountain Stoneworks	Load:	0.80 kPa		Josh Chapman
Project No:	3091486				
Product:	Stone Cladding				
Test Method:	CCMC MF 07483 Section 5.6.2 & 6.5.6 Wind Load Resistance ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1				
Sample Type:	Wall Panel 10 ft x 10 ft				

Equipment:

	Type	Model	ITS ID #	Location
	Manometer			
1	Deflection Gauge	Mitutoyo 1" Dial	D2674	B
2	Deflection Gauge	Mitutoyo Digital series 543-558A	1008	C
3	Deflection Gauge	Mitutoyo Digital series 543-558A	1462	6
4	Deflection Gauge	Mitutoyo Digital series 543-558A	1463	19
5	Deflection Gauge	Mitutoyo Digital series 543-558A	1461	18
6	Deflection Gauge	Mitutoyo Digital series 543-558A	2708	D
7	Deflection Gauge	Mitutoyo 1" Dial	D2725	16
8	Deflection Gauge	Mitutoyo Digital series 543-558A	1464	1
9	Deflection Gauge	MHC 1" Dial	32617	12
10	Deflection Gauge	Starrett 3" Dial	1465	A
11	Deflection Gauge	Mitutoyo 1" Dial	1460	B
12	Deflection Gauge	Shock Proof 1" Dial	02749	4

Pressure Conversions		(in. water)
100 Pa	=	0.40
200 Pa	=	0.80
400 Pa	=	1.61
600 Pa	=	2.41
800 Pa	=	3.21
1060 Pa	=	4.26
1320 Pa	=	5.30
1600 Pa	=	6.42
1920 Pa	=	7.75
2640 Pa	=	10.60
150 Pa	=	0.60
300 Pa	=	1.20
450 Pa	=	1.81
1200 Pa	=	4.82
1980 Pa	=	7.95

i) Deformation Test (Sustained Pressure)

Negative Pressure denotes a Positive Wind Load
Positive Pressure denotes a Negative Wind Load

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative	Deflection (in)											
10 seconds @ 200	-0.002	0	-0.013	-0.012	-0.013	-0.009	-0.004	-0.015	-0.003	-0.007	-0.008	-0.006
10 seconds @ 400	-0.006	-0.002	-0.041	-0.041	-0.039	-0.027	-0.010	-0.045	-0.009	-0.018	-0.023	-0.014
10 seconds @ 600	-0.010	-0.017	-0.071	-0.071	-0.067	-0.048	-0.017	-0.078	-0.015	-0.032	-0.041	-0.023
15 min @ 800	-0.015	-0.048	-0.108	-0.108	-0.102	-0.075	-0.027	-0.118	-0.022	-0.047	-0.061	-0.036
Residual	-0.007	-0.010	-0.038	-0.038	-0.036	-0.027	-0.012	-0.041	-0.008	-0.017	-0.020	-0.014
Positive												
10 seconds @ 200	-0.001	0.014	0.009	0.009	0.008	0.006	-0.001	0.009	0.001	0.002	0.005	0.001
10 seconds @ 400	0.003	0.026	0.035	0.035	0.033	0.023	0.005	0.036	0.008	0.014	0.020	0.009
10 seconds @ 600	0.006	0.038	0.057	0.058	0.054	0.039	0.010	0.059	0.011	0.022	0.032	0.017
15 min @ 800	0.010	0.055	0.091	0.090	0.085	0.060	0.017	0.094	0.018	0.037	0.050	0.030
Residual	0.002	0.020	0.022	0.022	0.021	0.015	0.004	0.023	0.005	0.009	0.013	0.009

ii) Repeated Positive and Negative Pressure Test (Cyclic Pressure)

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative	Deflection (in)											
1000 cycles to 1060	-0.009	-0.016	-0.046	-0.048	-0.044	-0.034	-0.016	-0.053	-0.011	-0.024	-0.028	-0.019
Positive												
1000 cycles to 1060	0.006	0.027	0.036	-0.034	0.033	0.024	0.009	0.036	0.011	0.016	0.019	0.017

iii) Safety Gust (gust wind)

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative												
3 sec @ 1600	-0.003	-0.008	-0.031	-0.033	-0.029	-0.023	-0.008	-0.036	-0.005	-0.014	-0.018	-0.006
Positive												
3 sec @ 1600	0.005	0.024	0.031	0.029	0.029	0.022	0.007	0.031	0.010	0.013	0.016	0.013

iv) Deflection Measurements

Pressure (Pa)	Deflection Location See Drawing											
	8	C	6	19	18	D	16	1	12	A	B	4
Negative	Deflection (mm)											
10 sec @ 2640	-0.011	-0.029	-0.072	-0.072	-0.069	-0.051	-0.019	-0.080	-0.012	-0.031	-0.043	-0.017
Positive												
10 sec @ 2640	0.010	0.044	0.082	0.087	0.087	0.067	0.016	0.081	0.020	0.037	0.039	0.024

Intertek ETL SEMKO

Test:	Wind Load Resistance				
Date:	20-Sep-06	Zone:	3	Technicians:	Adam Mantei
Client:	Rocky Mountain Stoneworks	Load:	0.80 kPa		Josh Chapman
Project No:	3091486				
Product:	Stone Cladding				
Test Method:	CCMC MF 07483 Section 5.6.2 & 6.5.6 Wind Load Resistance ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1				
Sample Type:	Wall Panel 10 ft x 10 ft				

Equipment:

	Type	Model	ITS ID #	Location
	Manometer			
1	Deflection Gauge	Mitutoyp Digital Series 543-463B	02686	C
2	Deflection Gauge	Mitutoyp Digital Series 543-463B	02684	D
3	Deflection Gauge	Mitutoyp Digital Series 543-463B	02702	B
4	Deflection Gauge	Mitutoyp Digital Series 543-463B	02699	A
5	Deflection Gauge	Mitutoyp Digital Series 543-463B	02764	1
6	Deflection Gauge	Mitutoyp Digital Series 543-463B	02700	8
7	Deflection Gauge	Mitutoyp Digital Series 543-463B	02780	6
8	Deflection Gauge	Mitutoyp Digital Series 543-463B	02762	4
9	Deflection Gauge	Mitutoyp Digital Series 543-463B	02707	12
10	Deflection Gauge	Mitutoyp Digital Series 543-463B	02763	16
11	Deflection Gauge	Mitutoyp Digital Series 543-463B	02768	18
12	Deflection Gauge	Mitutoyp Digital Series 543-463B	02683	19

Pressure Conversions		(in. water)
100 Pa	=	0.40
200 Pa	=	0.80
400 Pa	=	1.61
600 Pa	=	2.41
800 Pa	=	3.21
1060 Pa	=	4.26
1320 Pa	=	5.30
1600 Pa	=	6.42
1920 Pa	=	7.75
2640 Pa	=	10.60
150 Pa	=	0.60
300 Pa	=	1.20
450 Pa	=	1.81
1200 Pa	=	4.82
1980 Pa	=	7.95

i) Deformation Test (Sustained Pressure)

Negative Pressure denotes a Positive Wind Load
Positive Pressure denotes a Negative Wind Load

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (in)											
10 seconds @ 200	-0.002	0.007	0.009	0.01	0.001	0.002	0.002	0.008	0.004	0.001	0.008	0.004
10 seconds @ 400	0.009	0.016	0.018	0.020	0.016	0.005	0.022	0.015	0.007	0.004	0.025	0.023
10 seconds @ 600	0.028	0.032	0.030	0.035	0.049	0.009	0.052	0.025	0.014	0.008	0.054	0.054
15 min @ 800	0.050	0.051	0.045	0.053	0.085	0.015	0.085	0.038	0.023	0.013	0.087	0.088
Residual	0.007	0.014	0.016	0.019	0.011	0.005	0.015	0.015	0.009	0.004	0.022	0.018
Positive												
10 seconds @ 200	-0.02	-0.007	-0.002	-0.004	-0.019	-0.002	-0.029	-0.002	-0.001	-0.003	-0.021	-0.025
10 seconds @ 400	-0.035	-0.020	-0.013	-0.016	-0.039	-0.005	-0.053	-0.010	-0.005	-0.007	-0.043	-0.051
10 seconds @ 600	-0.048	-0.030	-0.022	-0.027	-0.055	-0.009	-0.073	-0.018	-0.010	-0.009	-0.064	-0.072
15 min @ 800	-0.068	-0.045	-0.035	-0.043	-0.088	-0.013	-0.104	-0.030	-0.016	-0.014	-0.091	-0.102
Residual	-0.029	-0.016	-0.009	-0.012	-0.028	-0.004	-0.041	-0.009	-0.004	-0.006	-0.034	-0.040

ii) Repeated Positive and Negative Pressure Test (Cyclic Pressure)

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (in)											
1000 cycles to 1060	0.014	0.021	0.023	0.026	0.022	0.007	0.025	0.02	0.014	0.006	0.031	0.027
Positive												
1000 cycles to 1060	-0.040	-0.023	-0.017	-0.021	-0.036	-0.010	-0.057	-0.019	-0.012	-0.011	-0.049	-0.058

iii) Safety Gust (gust wind)

Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (mm)											
3 sec @ 1600	0.004	0.013	0.014	0.016	0.005	0.002	0.012	0.007	0.006	0.000	0.018	0.012
Positive												
3 sec @ 1600	-0.036	-0.020	-0.013	-0.017	-0.039	-0.009	-0.052	-0.014	-0.009	-0.010	-0.045	-0.052

iv) Deflection Measurements

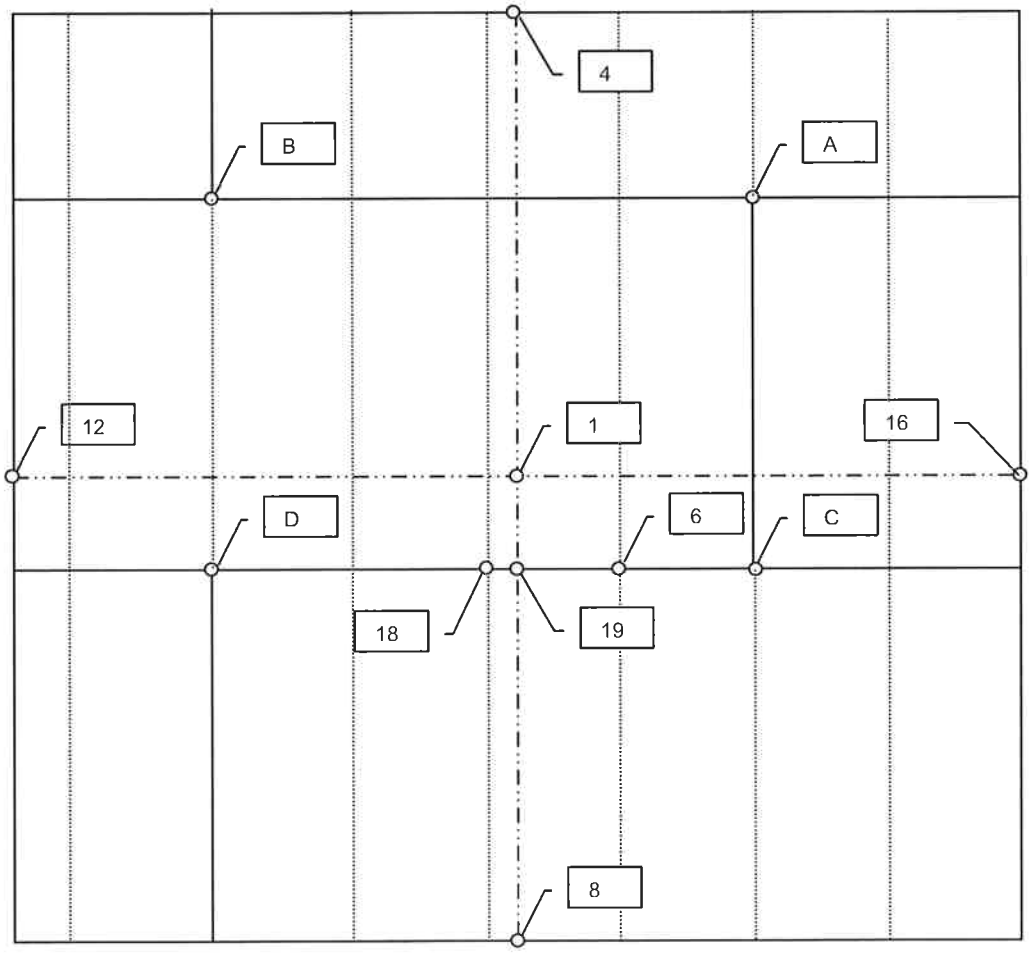
Pressure (Pa)	Deflection Location See Drawing											
	C	D	B	A	1	8	6	4	12	16	18	19
Negative	Deflection (mm)											
10 sec @ 2640	0.032	0.036	0.034	0.041	0.054	0.009	0.056	0.023	0.018	0.007	0.060	0.056
Positive												
10 sec @ 2640	-0.078	-0.040	-0.036	-0.040	-0.088	-0.015	-0.109	-0.025	-0.018	-0.016	-0.094	-0.108

Intertek ETL SEMKO

Test: **Wind Load Resistance**
Date: 20-Sep-06
Client: Rocky Mountain Stoneworks
Project No: 3091486
Product: Stone Cladding
Test Methc CCMC MF 07483 Section 5.6.2 & 6.5.6 Wind Load Resistance
ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference1

Technicians: Ivo Tanner
Adam Mantei

Exterior Gauge Locations



..... = Stud Location
-·-·- = Centre Lines

Gauge ID Numbers

A = 1465	B = 1460	C = 1008	D = 2708
1 = 1464	4 = 02749	6 = 1462	8 = D2674
12 = 32617	16 = D2725	18 = 1461	19 = 1463

Intertek ETL SEMKO

Test: **Wind Load Resistance**
Date: 20-Sep-06
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Product: Stone Cladding
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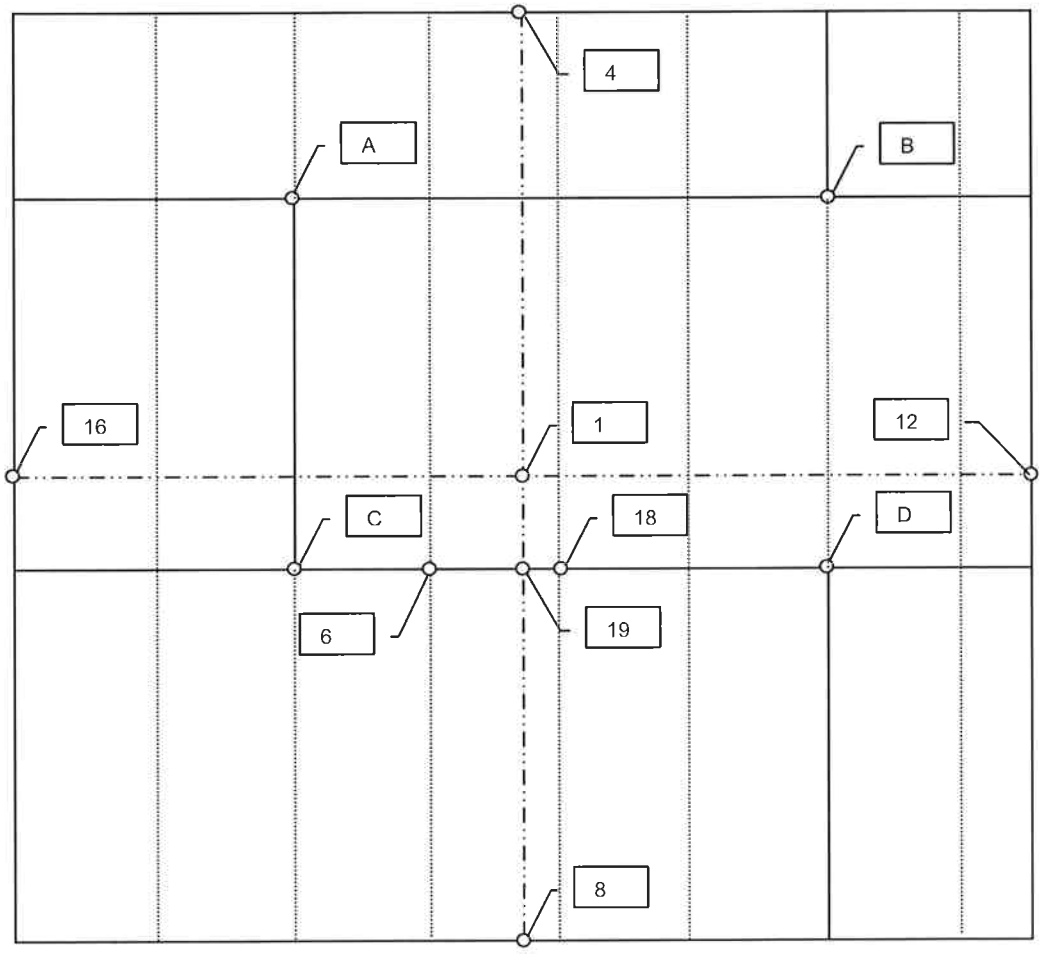
Technicians: Ivo Tanner
Adam Mantei

Interior Gauge Locations



..... = Stud Location
-·-·-·- = Centre Lines

Gauge ID Numbers

A = 02686	B = 02684	C = 02702	D = 02699
1 = 02700	4 = 02762	6 = 02701	8 = 02683
12 = 02780	16 = 02764	18 = 02768	19 = 02763