CONSTRUCTION MATERIALS

TECHNOLOGIES

LABORATORY TEST REPORT

Report for: Max-Life Industries
1225 Chuck Taylor Lane
Salisbury, NC 28147

Attention: Mr. Jarrett Davis

Product Type: MgO Insulated Wall Panels w/ Brick Veneer	**Series:** ArmorWall w/ IQBrick
Project No.: MAX-001-02-02.01	**Source:** Max-Life Industries
Miami-Dade Notification: PRI1820527	**Revision Date:** June 26th, 2018

Specimen 1: MgO Insulated Wall Panels w/ Brick Veneer (144"x96") on 20ga Steel Studs	
Test Method Description	**Summary of Result**
TAS 201-94 (Large Missile Impact):	Pass No Penetration

Specimens 2-4: MgO Insulated Wall Panels w/ Brick Veneer (48"x96") on 20ga Steel Studs	
Test Method Description	**Summary of Result**
TAS 202-94 (Avg Passing Neg Test Pressure):	-100 psf (-4800 Pa)

Test Specification:

- Testing Application Standard (TAS) 201-94 Impact Test Procedures
- Testing Application Standard (TAS) 202-94 Impact & Nonimpact Resistance Building Envelope Components using Uniform Static Air Pressure

Test Completion Date: 03/14/2018	**Report Date:** 04/26/2018
Test Record Retention Date: 04/26/2028	

Reference must be made to PRI Report MAX-001-02-02.01 dated 04/26/2018 test specimen description and detailed results reference should also be made to PRI Report MAX-001-02-01.01, dated 04/26/2018 for limitations of MgO Insulated Panels.

I. Product Manufacturer & Location: Max-Life Industries
1225 Chuck Taylor Lane
Salisbury, NC 28147

II. Accreditated Testing Laboratory: PRI-Construction Materials Technologies, LLC
T6412 Badger Drive
Tampa, FL 33610

II.1. Testing Location: Testing was conducted at PRI-CMT located in Tampa, FL. Calibration of testing instrumentation was performed by a PRI-CMT representative in compliance with PRI-CMT In-House quality control program governed by ISO/IEC 17025-05.

III. Product Type: MgO Wall Panels with fused Polyurethane Foam and Mechanical attached IQBrick Cladding

IV. Product Series/Model: ArmorWall w/ IQBrick

V. Test Specimen Details:

V.1. Sizes:

Specimen 1:

V.1.1. Overall Unit Size:	144” wide x 96” tall (3660mm x 2400mm) 96ft^2 (8.9m^2)
V.1.1.1. Wall Panel Size:	48” x 96” x 2” (1200mm x 2400mm x 51mm)
V.1.1.2. Cladding Panel Size:	28” x 16” x 1-1/4” (711mm x 406mm x 32mm)

Specimens 2-4:

V.1.2. Overall Unit Size:	48” x 96” x 2” (1200mm x 2400mm x 51mm) 32ft^2 (3.0m^2)
V.1.2.1. Cladding Panel Size:	28” x 16” 1-1/4” (711mm x 406mm x 32mm)

V.2. Panel Description
All Specimens: MgO Board – 1/2” (13mm) thick, Polyurethane Foam – 1-1/2” (38mm) thick, 3pcf, fused together.

V.3. Cladding Description
All Specimens: Brick Cladding – 7-5/8” x 2-1/4” x 1/2” (194mm x 57mm x 13mm); Polyether Backer – 3/4” (19mm) thick, with 1/4” (6mm) tall drainage plane rib 13pcf, chemically bonded to brick, grout filled joints.

V.4. Installation:

The test specimens were installed onto nominal 2x6 (51mm x 152mm) 20ga steel studs spaced 16” (406mm) O.C. Panels were installed within 1” of the corner edges and spaced 12” O.C. thereafter. Intermediates were anchored 12” from edges and spaced 12” O.C. thereafter. All fasteners were #14-13 x 4” DP1 pancake head screws, installed thru the board and into the studs. Cladding panel anchors were installed into MgO board only with #10-9 x 2-1/8” ULP pancake head screws. See Appendix A for detail spacing of cladding anchors. All specimens were wrapped in nominal 2x12 SYP wooden test bucks.

VI. Test Results: Testing was performed at ambient condition of 23°C (73°F) with 55% Rh

Test Results – TAS 201 Large Missile Impact

Specimen 1: MgO Insulated Panel Wall Assembly w/ IQBrick (144"x96") on 20ga Steel Studs						
Impact[1]	**Missile Weight**	**Missile Length**	**Missile Velocity**	**Location of Impact[2]**	**Observation**	**Result[3]**
1	8.82 lbs (4000 g)	96" (2.4 m)	49.1 fps (15.0 m/s)	Midspan of Panel 1	Broke exterior brick, cracked interior insulation. No penetration.	**Pass**
2	8.82 lbs (4000 g)	96" (2.4 m)	50.2 fps (15.3 m/s)	Upper Left Corner of Panel 1	Broke exterior brick, cracked interior insulation. No penetration	**Pass**
3	8.82 lbs (4000 g)	96" (2.4 m)	50.0 fps (15.2 m/s)	Lower Right Corner Panel 2	Broke exterior brick, cracked interior insulation. No penetration	**Pass**
4	8.82 lbs (4000 g)	96" (2.4 m)	50.0 fps (15.2 m/s)	Midspan of Panel 2	Broke exterior brick, cracked interior insulation. No penetration	**Pass**
5	8.82 lbs (4000 g)	96" (2.4 m)	49.9 fps (15.2 m/s)	Upper Right Corner Panel 3	Broke exterior brick, cracked interior insulation. No penetration	**Pass**
6	8.82 lbs (4000 g)	96" (2.4 m)	50.9 fps (15.5 m/s)	Midspan of Panel 3	Broke exterior brick, cracked interior insulation. No penetration	**Pass**
7	8.82 lbs (4000 g)	96" (2.4 m)	50.3 fps (15.3 m/s)	Midspan of Panels 1 & 2 Intersection	Broke exterior brick, cracked interior insulation. No penetration	**Pass**

Notes:

1. The end of the cannon barrel was located 5.2 m (17') from the exterior surface of the test specimen.
2. Missile impact was within 5° of horizontal. See Appendix A sketch for impact locations.
3. Upon completion of testing the specimen met the requirements outlined in the Florida Building Code section 1626.

Test Results TAS 202 (Structural Only)

Specimens 2-4: MgO Insulated Panel Wall Assembly w/ IQBrick (49"x96") on 20ga Steel Studs						
Direction	Test Pressure (psf)[1]	Load Duration (sec)	Test Specimen			
			1	2	3	4
Negative	50	30	Pass	Pass	Pass	-
	55	30	Pass	Pass	Pass	-
	60	30	Pass	Pass	Pass	-
	65	30	Pass	Pass	Pass	-
	70	30	Pass	Pass	Pass	-
	75	30	Pass	Pass	Pass	-
	80	30	Pass	Pass	Pass	-
	85	30	Pass	Pass	Pass	-
	90	30	Pass	Pass	Pass	-
	95	30	Fail[2]	Pass	Pass	-
	100	30	-	Pass	Fail[2]	-
	105	30	-	Pass	-	-
	110	30	-	Pass	-	-
	115	30	-	Pass	-	-
	120	30	-	Fail[2]	-	-

Notes:
1. Polyethylene film and tape was utilized to seal for excessive air leakage.
2. Failure due to anchor withdraw from wall board.

Average Passing Pressure 3 Specimens[1]	100 PSF
Average Ultimate Failure 3 Specimens[1]	105 PSF

Notes:
1. Individual specimen results did not exceed ±20% of the base three average.

VII. Equipment Utilized:

VII.1. Computer controlled reversible blower with pressure transducers
VII.2. Large Missile Impact Cannon

Statement of Attestation:
Testing was conducted in accordance with methods designated in *Testing Application Standard (TAS) 202-94 Impact & Nonimpact Resistance Building Envelope Components using Uniform Static Air Pressure, and Testing Application Standard (TAS) 201-94 Impact Test Procedures.* This report does not constitute certification of this product which may only be granted by the certification program administer. The laboratory test results presented in this report are representative of the specimen supplied.

Detailed drawings showing wall thickness and installation are on file and have been compared to the sample submitted. Manufacturer's drawings are contained in Appendix A, electronic documentation will be maintained for a period of 10 years.

Signed: _____
Timothy Efaw
Manager

Date: 06/26/2018

Signed: _____
Zachary Priest - PE
Director

Date: 06/26/2018

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	04/26/2018	9	NA
Revision 1	06/26/2018	All	Changed product series/name per client request

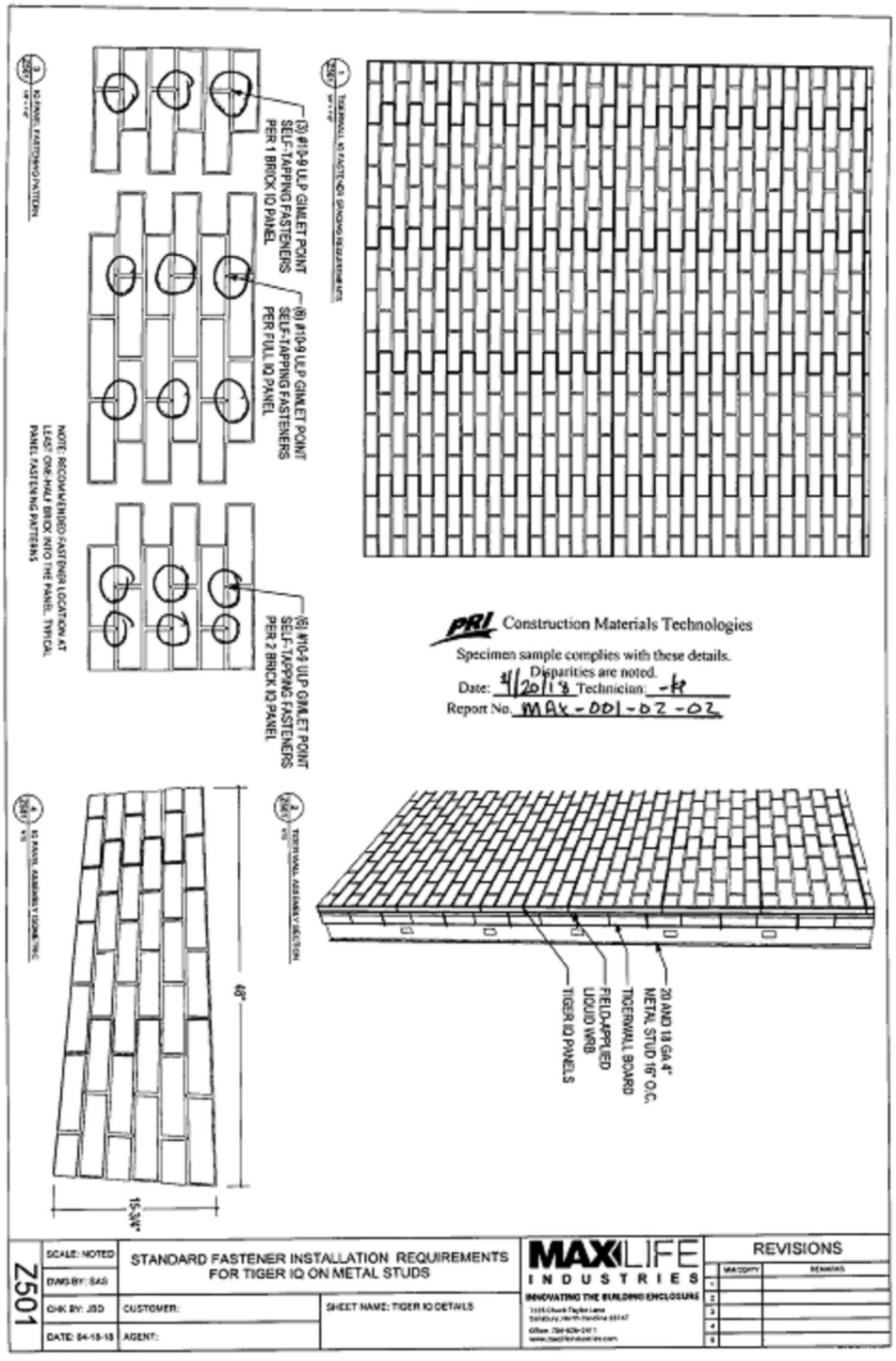
Appendix Attached

Appendix A

Manufactures Drawings / Photographs

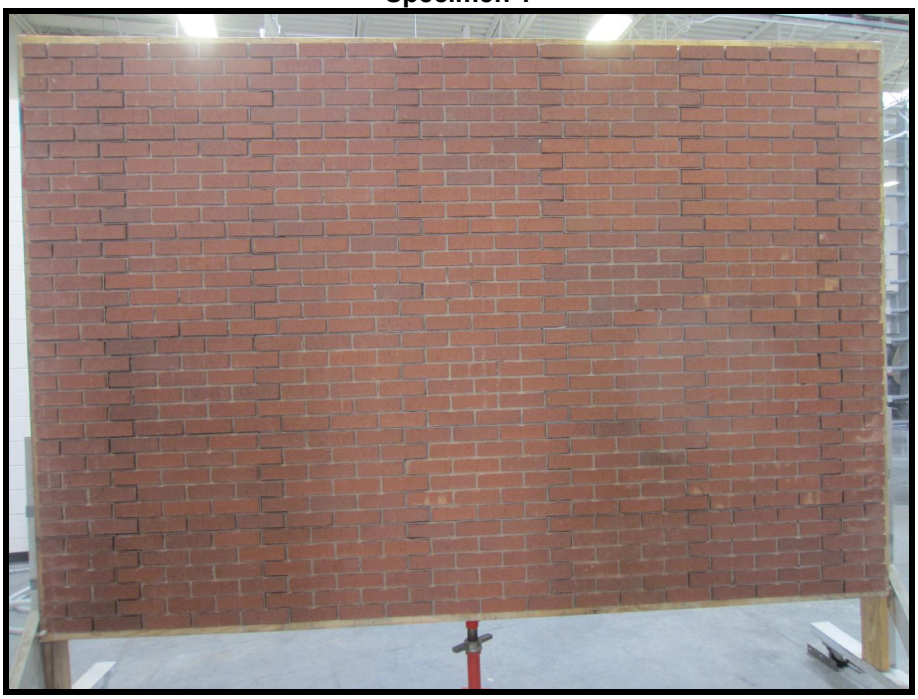
(Pages 3)

Manufacture Drawing



Specimen Photographs

Specimen 1



Typical Impact Result

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Specimens 2-4 TAS 202 Typical Failure

End of Report

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