

Equivalency Evaluation Report

Rule 61G20-3.015(4)(d) F.A.C. | Report No. 2321-EER, Rev. 4 | Project No. 422-0903 | 6/13/23 | Page 1 of 5

Product Manufacturer

Mitsubishi Chemical America, Alpolic Division
401 Volvo Parkway
Chesapeake, VA 23320

Product Name, Model and/or Description

Alpolic and Alpolic/FR Aluminum Composite Wall
Panel Systems - Series 44

Code: Current Edition of the Florida Building Code including the 8th Edition (2023) Florida Building Code

Compliance Method: 61G20-3.015(4)(d) – Equivalency of Standards

Product Name, Model and/or Designation: Products covered by this evaluation include the following.

- Mitsubishi Chemical America, Alpolic Division Alpolic and Alpolic/FR Aluminum Composite Wall Panel Systems, Series 44 Using Metal Design Systems, Inc. Aluminum Extrusions

Product Testing, Materials and Certification:

- Performance Testing per TAS 202 and TAS 203:
 - Intertek/ATI Inc. Test Report No. D9531.01-602-18 and associated laboratory drawings, dated 8/15/14, signed by Shawn Collins, PE on 8/15/14. Performance testing to TAS 202 and TAS 203 using 5/8" Exterior Grade Plywood on 16 GA. Steel Stud. **
- Material Testing:
 - Southwest Research Institute, Report No. 01-8361-320d, ASTM E84-97 for Flame Spread Index and Smoke Developed Index, 4mm Alpolic **
 - Southwest Research Institute, Report No. 01-7520-359a, ASTM E84-95 for Flame Spread Index and Smoke Developed Index, 4mm Alpolic/FR **
 - Southwest Research Institute, Report No. 01-8361-038, ASTM D1929-91a for Ignition Properties, 4mm Alpolic/FR **
 - United States Testing Co. Inc., Report No. 100727-3, ASTM D1929-91a for Ignition Properties, 4mm Alpolic**
 - ATI, Report No. 01-35789.03, ASTM E8-96 for Tensile Strength, 4mm Alpolic and 4mm Alpolic/FR **
 - ATI, Report No. 01-43055.02, ASTM E8-00 for Tensile Strength, 4mm Alpolic **

** Testing performed to specification revision levels before the current edition of the Florida Building Code

- Materials:
 - Alpolic and Alpolic/FR aluminum composite metal panel 4mm thick (0.157") as manufactured by Mitsubishi Chemical America, Alpolic Division, Chesapeake, VA. Core comprised of thermoplastic material. Face sheet comprised of 0.020" aluminum 3105-H14 alloy.
 - Aluminum extrusions (6063-T6).

Product Installation Instructions:

- MCCA/PTC PDG Drawing No. MPCA0003, Rev. 2, dated 6/13/23, Alpolic and Alpolic/FR, Mitsubishi Chemical America, Alpolic Division Aluminum Composite Wall Panel Systems, Series 44, signed and sealed by Robert. J. Amoruso, P.E. Florida No. 49752.

Engineering Analysis & Evaluation: The following evaluations, engineering and/or rational analysis/calculations have been performed.

- Product Evaluation to the current edition of the Florida Building Code as documented in PTC PDG Report No. 2321, prepared by Robert J. Amoruso, P.E. in accordance with Product Approval Rule 61G20-3.005(1)(d) – Product Evaluation Report by a Licensed Professional Engineer



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Equivalency Evaluation:

- The Appendix 1 table shows the material testing results and ASTM revision level used in testing.
- The table below shows the ASTM revision level used in testing vs. the current edition of the Florida Building Code.

Tests Conducted	Test Report No.	TAS/ASTM Used in Testing	TAS/ASTM in 2023 FBC and/or FRC
Performance Testing for AWS and Impact/Cyclic Loading	Intertek/ATI Inc. Test Report No. D9531.01-602-18	TAS 202-94 TAS 203-94	TAS 202-94 TAS 203-94
Flame Spread Index and Smoke Developed Index	Southwest Research Institute, Report No. 01-8361-320d	ASTM E84-97	ASTM E84-18b
Flame Spread Index and Smoke Developed Index	Southwest Research Institute, Report No. 01-7520-359a	ASTM E84-95	ASTM E84-18b
Ignition Properties	Southwest Research Institute, Report No. 01-8361-038 and United States Testing Co. Inc., Report No. 100727-3	ASTM D1929-91a	ASTM D1929-16
Materials Report	Spec. Data issued by Alcoa Mill Products, dated January 16, 2013 with chemical composition and mechanical properties of Aluminum Alloy 3105-H14	Mill Certification	Mill Certification
Tensile Strength	ATI, Report No. 01-35789.03	ASTM E8-96	n/a
Tensile Strength	ATI, Report No. 01-43055.02	ASTM E8-00	n/a

The ASTM specifications forming the basis for material testing of the 4mm Alpolic and 4mm Alpolic/FR panels have been reviewed against the ASTM specification revision levels currently required by the code and found that no changes exist in testing that would negate the existing test results. Therefore, compliance with the current edition of the Florida Building Code is verified.

Review of the TAS 202 and 203 testing to that required in the current edition of the Florida Building Code is verified.

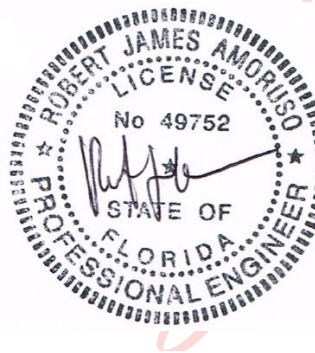


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Certificate of Independence per Product Approval Rule 61G20-3.009

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. does not have, nor will acquire, any financial interest in the company manufacturing or distributing product(s) covered by this Product Evaluation Report. PTC Product Design Group, LLC and Robert J. Amoruso, P.E. do not have, nor will acquire any financial interest in any other entity involved in the approval process or testing of the product(s) covered by this Product Evaluation Report.



Digitally signed
by Robert J
Amoruso
Date:
2023.07.05
11:14:50 -04'00'

Evaluated By:
Robert J. Amoruso, P.E.
FL P.E. License Number 49752



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Appendix 1: Testing

Materials Testing							
Tests Conducted	Test Report No.	Test Report Date	ASTM Used in Testing	ASTM in Current FBC	Result	Code Compliance	Material
Performance Testing for AWS and Impact/Cyclic Loading	Intertek/ATI Inc. Test Report No. D9531.01-602-18	8/15/14	TAS 202-94 TAS 203-94	TAS 202-94 TAS 203-94	+/-50 psf	HVHZ Non-Impact	4mm Alpolic 4mm Alpolic/FR
Flame Spread Index and Smoke Developed Index	Southwest Research Institute, Report No. 01-8361-320d	9/18/1997	ASTM E84-97	ASTM E84-13a	Flame Spread Index = 0 Smoke Developed Index = 0	Smoke Density < 450 or Flame Spread < 75	4mm Alpolic
Flame Spread Index and Smoke Developed Index	Southwest Research Institute, Report No. 01-7520-359a	9/26/1996	ASTM E84-95	ASTM E84-13a	Flame Spread Index = 0 Smoke Developed Index = 10	Smoke Density < 450 or Flame Spread < 75	4mm Alpolic/FR
Ignition Properties	United States Testing Co. Inc., Report No. 100727-3	4/30/91	ASTM D1929-91a	ASTM D1929-12	Self-Ignition Temp = 752°F Flash Ignition Temp = 716°F	Self-Ignition Temp > 650 degrees Flash Ignition Temp not code requirement.	4mm Alpolic
Ignition Properties	Southwest Research Institute, Report No. 01-8361-038	10/28/1996	ASTM D1929-91a	ASTM D1929-12	Self-Ignition Temp = 837°F Flash Ignition Temp = 811°F	Self-Ignition Temp > 650 degrees Flash Ignition Temp not code requirement.	4mm Alpolic/FR
Materials Report	Spec. Data issued by Alcoa Mill Products, dated January 16, 2013 with chemical composition and mechanical properties of Aluminum Alloy 3105-H14	1/16/2013	Mill Certification	Mill Certification	See Report in Appendix 2	Not Applicable	Aluminum Alloy 3105-H14
Tensile Strength	ATI, Report No. 01-35789.03	7/7/2000	ASTM E8-96	n/a	F _{tu} = 7452 psi	Not Applicable	4mm Alpolic
					F _{tu} = 5693 psi		4mm Alpolic/FR
Tensile Strength	ATI, Report No. 01-43055.02	3/4/2003	ASTM E8-00	n/a	F _{ty} = 5499 psi and F _{tu} = 6826 psi	Not Applicable	4mm Alpolic



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Appendix 2: Aluminum Alloy 3105-H14 Specification Data



ALCOA

Alumax Mill Products, Inc.
(an Alcoa Inc. business)
1480 Manheim Pike
Lancaster, Pa 17601

Certification of Test Results

SOLD TO

MITSUBISHI CHEMICAL FP AMERICA
ALPOLIC PLANT
401 VOLVO PARKWAY
CHESAPEAKE, VA 23320

SHIP TO

MITSUBISHI CHEMICAL FUNCTIONAL PROD
401 VOLVO PKWY BLDG #2
CHESAPEAKE, VA 23320

CERT NO 0001529739
DATE 1/16/2013
SKID NO 330351
SKID WGT 6,590
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ORDER NO	LT7125	PO NO	RM212142					CONVERSION COATED - 2 SIDES			
ITEM NO	1	PART NO	AL2041					NON ANODIZE QUALITY			
ALLOY	3105	TEMPER	H14	FORM	COIL			OUT: STANDARD MILL FINISH			
GAUGE	.01900	WIDTH	40.7500	LENGTH	0.0000			IN: STANDARD MILL FINISH			
PERMATREAT 1021B OVER PERMATREAT 1021B											
LOT: 549165 COIL: A01 DROP: 251641											
INGOT		SI	FE	CU	MN	MG	CR	NI	ZN	TI	
2516411		0.50	0.40	0.17	0.45	0.57	0.03	0.005	0.12	0.03	
HEAD ULTIMATE STRENGTH 24.2 KSI											
TAIL ULTIMATE STRENGTH 24.2 KSI											
HEAD YIELD STRENGTH (OFFSET = .2%) 23.6 KSI											
TAIL YIELD STRENGTH (OFFSET = .2%) 23.5 KSI											
HEAD ELG IN 2 IN., AT FRACTURE 2.5 %											
TAIL ELG IN 2 IN., AT FRACTURE 2.5 %											
CHEMICAL COMPOSITION ACCORDING TO ASTM E-1251-11											
CHEMISTRY EXPRESSED AS % W/W FOR EACH REPORTED ELEMENT											
MECHANICAL PROPERTIES ACCORDING TO ASTM B-557-10											
** END OF CERTIFICATION **											

We hereby certify that, unless otherwise indicated, the material covered by this report has been manufactured, inspected, and tested in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description and that samples representative of the material met the composition. Also, note that mercury is not a natural contaminant in aluminum alloys and neither it nor any of its compounds are used in the production of this product. This product was produced in the United States or a qualifying country (REF DFARS 25.872(A)). It was manufactured in the United States.

Authorized By: JEFF KREADY, LAB SUPERVISOR

These commodities, technology and software exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law prohibited. This certification complies with EN 10204/2004.

