UKAS PRODUCT CERTIFICATION
6762

THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

In accordance with UKAS accreditation to ISO 17065

Certification is Hereby Granted

to

Sistem Metal Yapi Reklam Malz. Ve Insaat
San. Tic. A.S
Hatip Mah. Ali Osman Celebi Bulvari No. 140
59860 – Corlu, Tekirdag, Turkey

for

"ALBOND A2"
4.0 mm thick Aluminium Composite Material
Non-Load-bearing Exterior Wall Cladding System
Test Method: NFPA 285-2012 Edition
(System Designation: A113061-4)

which, subject to limitations described on the following pages and continued listing on www.tbwcert.com, complies with Product Certification Scheme *SD03 Exterior Wall Assemblies, Cladding, Curtain Walls, Building Materials, Products, and Assemblies*

In witness whereof, this Certificate is issued this 4th day of July 2018

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS
100537
CERTIFIED

Thomas F. Bell-Wright
Certification Director

Nick Purcell
Certification Manager

Certificate Number: TBW0300340

Initial registration: July 04, 2018
File Name: RD101 Sistem Metal

Issued: July 04, 2018

Expiration: July 03, 2021
Save Date: 04/07/18 02:04 PM

This certificate and schedules are held in force by regular Factory Inspections by Thomas Bell-Wright International Consultants (TBWIC). Refer to **www.tbwcert.com** or contact TBWIC Fire Compliance Division to validate the current status of Certification. This certificate remains the property of THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS, PO BOX 26385, DUBAI, UAE.
Tel: +971 4 333 2692, Email: certification@bell-wright.com. Web: www.bell-wright.com F 19 Scheme Certificate Issue 5. Dec 2016

"ALBOND A2" 4.0 mm thick Aluminium Composite Material Non-load-bearing Exterior Wall Cladding System
(System Designation: A113061-4)

A. Certification is given for "ALBOND A2" 4.0 mm thick Aluminium Composite Material Non-Load-Bearing Exterior Wall Cladding System which has **successfully met** the requirements for fire propagation characteristics when evaluated against NFPA 285-2012 Edition, subject to the limitations below. Readers of this document should be familiar with Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components and the requirements of ISO/IEC 17065:2012. The Certification will be listed on www.tbwcert.com, while it remains current. This Certification is not valid if this product is not so listed.

B. The product is approved on the basis of TBWIC Product Certification Scheme SD03 for Exterior Wall Assemblies, Cladding, Curtain Walls, Building Materials, Products and Assemblies which includes pre-test sampling, evidence of performance (under ref: TBWIC Test Report No. RD104-1), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/ Audits.

C. Limitations:

C.1. This Certification covers the fire propagation characteristics of a non-load-bearing exterior wall cladding system when evaluated against the ANSI/NFPA 285-2012 Edition. The wall cladding assembly has been evaluated for fire propagation characteristics as specified in the following*:

(a) The ability of the wall assembly to resist flame propagation over the exterior face of the wall assembly*;

(b) The ability of the wall assembly to resist vertical flame propagation within the combustible components from one story to the next*;

(c) The ability of the wall assembly to resist vertical flame propagation over the interior surface of the wall assembly from one story to the next*; and,

(d) The ability of the wall assembly to resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces*.

C.2. This Certification covers the performance of the non-load-bearing exterior wall cladding system when exposed to fire from an interior room that reaches flashover, breaks exterior windows and exposes the building façade. It is not intended to address fire exposures that originate from the building's exterior*.

C.3. This Certification covers the non-load-bearing exterior wall cladding system in its entirety. Individual components that comprise the wall cladding system (on their own) are not covered under this certification.

C.4. The actual field installations of the non-load-bearing exterior wall cladding system covered under this certification shall not limit the use of the methods and materials employed to seal the gap between the edge of the floor slab and the interior surface of the test specimen during the test, provided approved sealing methods and materials are used in the field*.

NFPA 285 2012 Edition

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Nick Purcell

Certificate number: TBW0300340

Seal number: 100537

Issued: 04 Jul. 2018
Valid to: 03 Jul. 2021

C.5. The design of the non-load-bearing exterior wall cladding assembly covered under this certification including the exact specification of the components, a method of fixing and condition of such component which was subjected to the fire test shall be duplicated when installing on the site. The design and components of the non-load-bearing exterior wall cladding assembly are not intended to be substituted, eliminated or interchanged unless recognized and approved by this certification.

C.6. The system shall be installed with an airgap of approximately 66 mm.

C.7. The test (and Certification) do not address the following:

(a) Air and Water Permeability
(b) Measurement of heat transmission
(c) Classification or definition of material as noncombustible
(d) Any Resistance to Fire rating
(e) Toxicity level of smoke developed during combustion
(f) Effect of aggravated flame spread behavior of an assembly resulting from the proximity of combustible materials.
(g) Effects of combustible accessories installed or fixed on the surface of exterior cladding material such as laminates, banners, signage and alike.

D. System Configuration

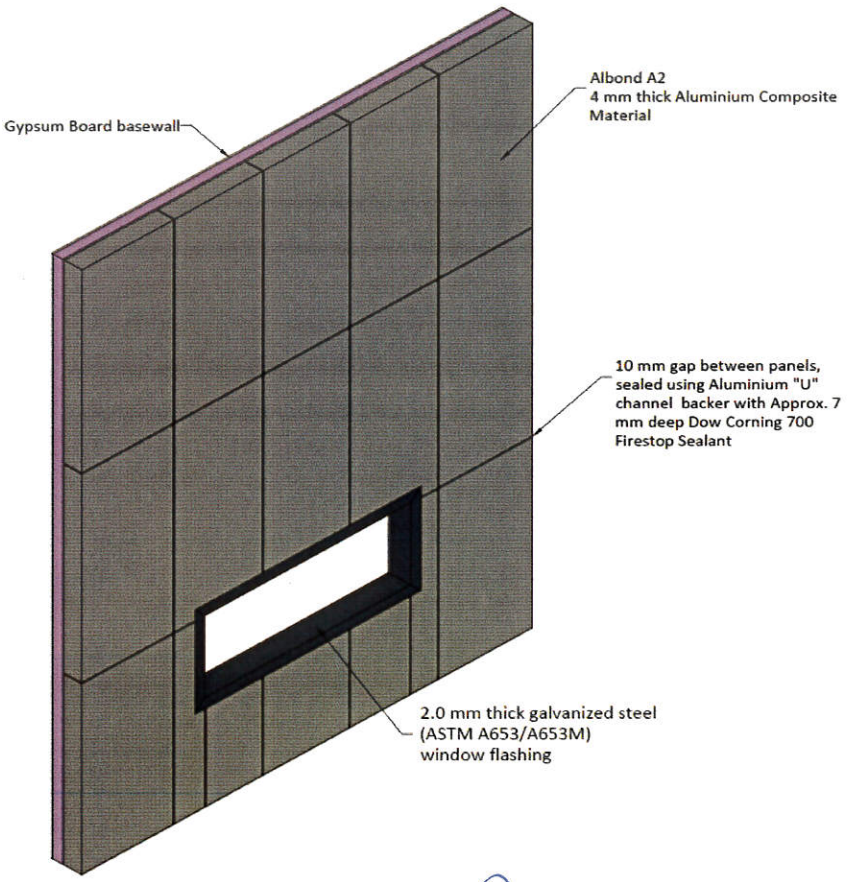

Figure 1. *"ALBOND A2" 4.0 mm thick Aluminium Composite Material Non-Load-Bearing Exterior Wall Cladding Assembly*

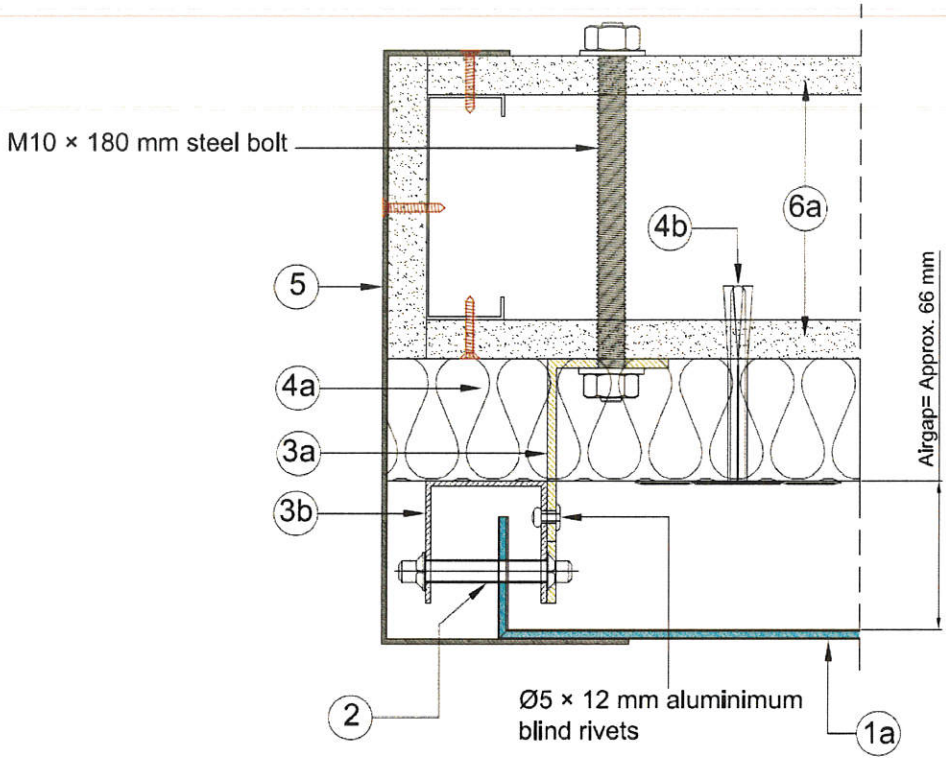

Figure 2. *"ALBOND A2" 4.0 mm thick Aluminium Composite Material*
"Non-Load-Bearing Exterior Wall Cladding Assembly horizontal section details

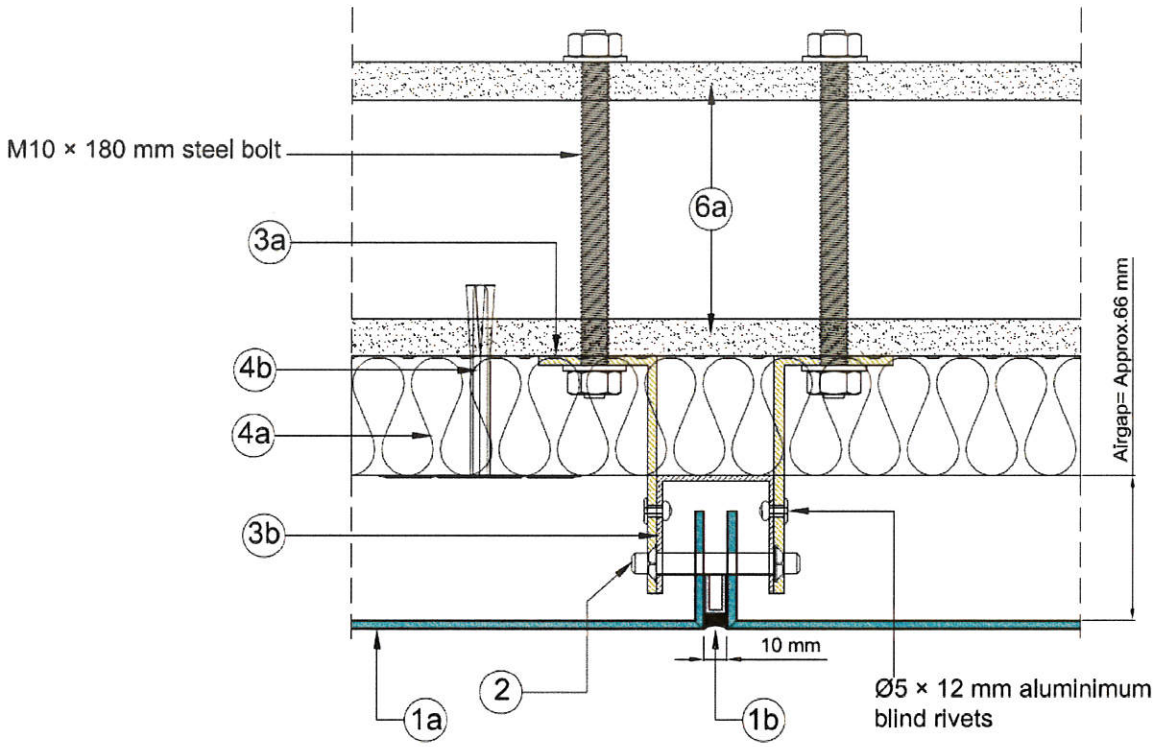

Figure 3. *"ALBOND A2" 4.0 mm thick Aluminium Composite Material*
Non-Load-Bearing Exterior Wall Cladding Assembly vertical section joint details

Certification Manager
Nick Purcell

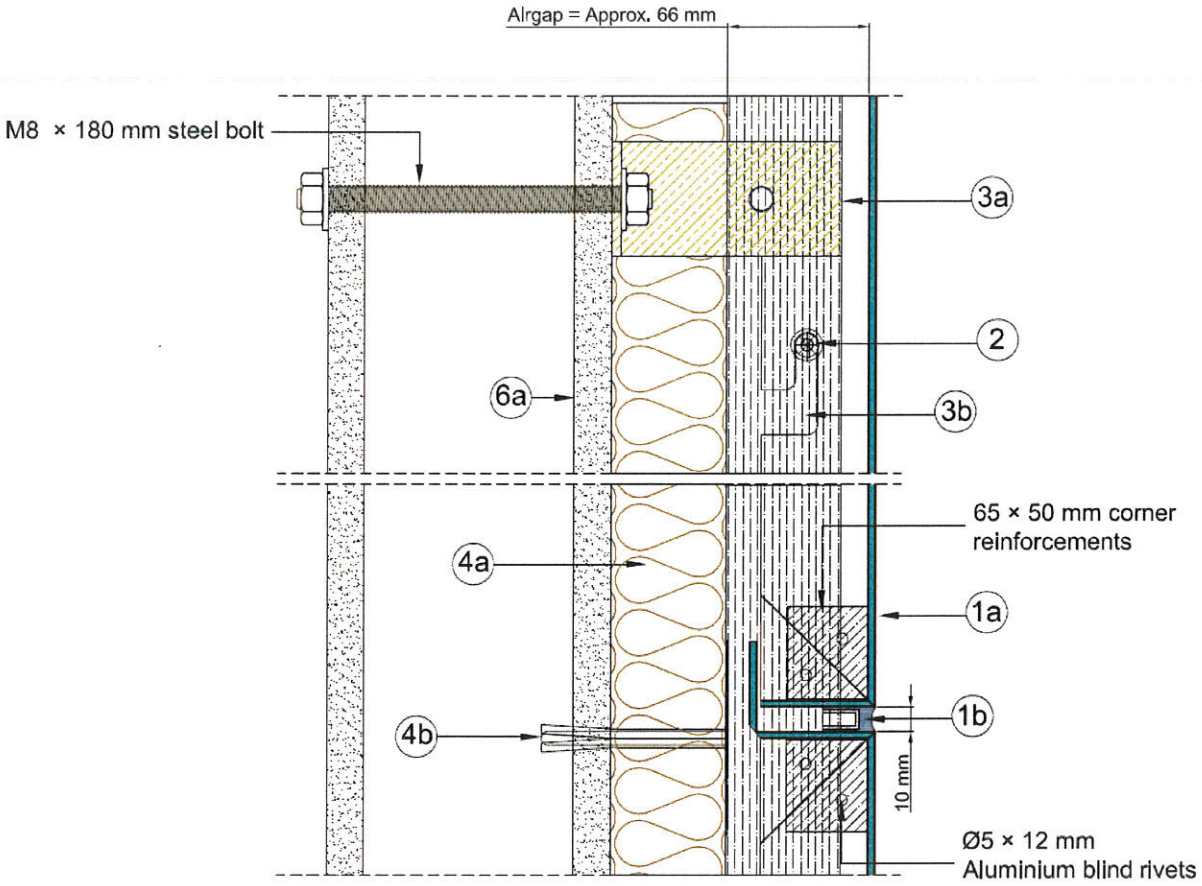

Figure 4. *"ALBOND A2" 4.0 mm thick Aluminium Composite Material Non-Load-Bearing Exterior Wall Cladding Assembly vertical section details*

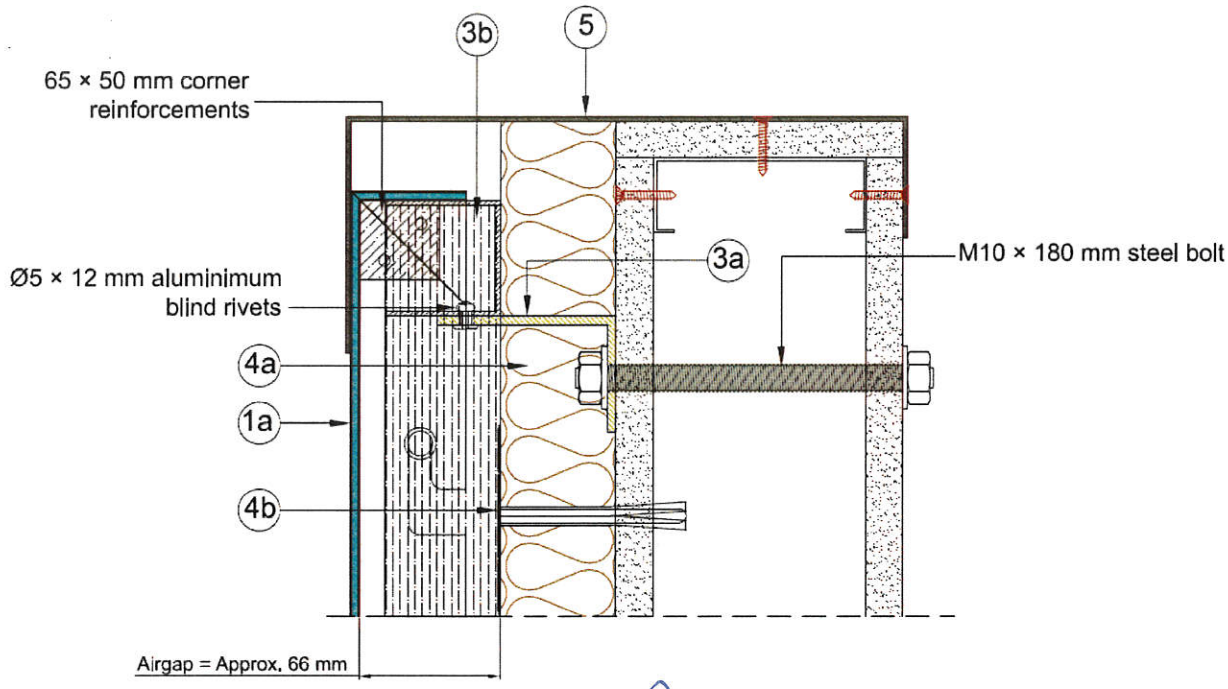

Figure 4. *"ALBOND A2" 4.0 mm thick Aluminium Composite Material Non-Load-Bearing Exterior Wall Cladding Assembly vertical window section details*

1. Cladding Element

1a. Aluminium Composite Panel

"Tray Profile" Aluminium Composite Panels with 50 mm flange with 40 mm leg bend on the top edge. The corners were reinforced with 65 × 50 × 4 mm (length × width × thickness) ACP cut-outs fixed using Ø5 × 12 mm aluminium blind rivets. The panels were hung to the stainless-steel hangers through Ø10 mm notches cut on the vertical flanges of the panel at 102 mm from the corners to the centre of the notch and 434 mm centres subsequent spacing. The panels are overlapped by the succeeding panel on the top edge by 28 mm. A 10 mm wide gap was maintained on the horizontal and vertical joints between the panel which was sealed using aluminium "U" channel and silicone sealant.

The panels were 4 mm thick "Albond A2" Aluminium Composite Material with 0.5 mm thick PVDF coated Aluminium facing, Alloy 3105-H24 on the exterior and 0.5 mm thick PE coated Aluminium Alloy Alloy 3105-H26interior facing.

Table 1. "ALBOND A2" Panel Details (as tested)

Weight	8.2 kg/m² ± 10%
Top Skin (exterior skin)	0.5 mm thick, Aluminium Alloy 3105-H24, PVDF finish, 25 ± 4 microns paint thickness
Bottom Skin (interior skin)	0.5 mm thick, Aluminium Alloy 3105-H26, Polyester Paint (PE) finish, 5 microns maximum paint thickness
Panel Thickness	4 ± 0.2 mm
Maximum Panel Width	909 mm
Minimum Panel Width	296 mm
Maximum Panel Height	1940 mm
Minimum Panel Height	830 mm

1b. Panel Joint Sealing

Aluminium "U" channel (Aluminium Alloy 6063-T6) 8.5 × 16 × 1.5 mm (width × height × thickness) with Dow Corning 700 Firestop Sealant applied over the channel, extruded smoothly at a depth 7 mm and flush with the exterior face of the ACP cladding.

2. Cladding Fixing

The panels were hung to the stainless-steel shaft through Ø10 mm notches cut on the vertical flanges of the panel at 102 mm from the corners to the centre of the notch and 434 mm centres subsequent spacing. The panels are overlapped by the succeeding panel on the top edge by 28 mm. The shaft was inserted across into the holes across the vertical runners and held in place using retaining rings fixed on both ends.

Material: Stainless Steel Grade AISI 304 with retaining rings
Dimension: Ø9 mm × 70 mm (diameter × length)

Certification Manager
Nick Purcell

3. Sub-Frame

3a. Wall Brackets

Aluminium "L" profile bracket, 50 × 100 × 50 × 4 mm (base × height × width × thickness) Aluminium Alloy 6063-T5. The brackets were fixed to the basewall in pairs with the long legs adjacent to each other accommodate the width of the vertical runner using M10 × 180 mm steel bolts with nut and washer. The brackets were fixed at a vertical spacing of 706 to 1092 mm and horizontal spacing of 789 to 793 mm.

3b. Vertical Runners

Aluminium "U" channel, 48 × 50 × 48 × 3 (leg × web × leg × thickness) Aluminium Alloy 6060-T5. The aluminium "U" channel was fixed to the wall brackets using Ø5 × 12 mm aluminium blind rivets.

4. Exterior Insulation

4a. Mineral Wool

A single layer of 50 mm thick mineral wool slabs without facing fixed to the substrate using metal insulation stainless steel insulation anchors. An airgap of approximately 66 mm was maintained between the exterior insulation and the back of the ACP panel.

Manufacturer: **Eryap Grup**
Minimum Density: 150 kg/m^3
Reference: Bonus Premium R CS 50

4b. Insulation Fastener

Metal insulation fasteners, "forfiks" Fixing System, reference:2271, 5 nos. used per slab.

5. Window Flashing

2 mm thick galvanized steel sheet (ASTM A653/A653M- Commercial Grade) fixed into the window aperture using stainless-steel self-tapping screws Ø4 × 12 mm spaced at 300 mm centres. The flashing overlaps the ACP by 102 mm. The flashing was fixed against the exterior face of the ACP using Ø5 × 12 mm rivets.

6. Substrate

6a. Interior & Exterior Gypsum Board

1220 × 2400 × 15.9 mm (width × length × thickness) FR gypsum board by KNAUF fixed on 1.2 mm thick galvanized steel studs and tracks using Ø3.5 mm × 35 mm zinc coated drywall screws with the long edge along the vertical joints. The board joints were covered with KNAUF joint tape and KNAUF Readygips jointing compound. Screw heads were covered with jointing compound.

6b. Steel Studs and Tracks

1.2 mm thick galvanized steel (ASTM A653/A653M- Commercial Grade) studs, 93 × 32 × 34 × 9 × 1.2mm (web × flange × flange × lip × thickness) and tracks, 95 × 32 × 32 × 1.2 mm (web × flange × flange × thickness) welded directly to the test frame.

E. Approved Manufacturing Location

Hatip Mah. Ali Osman Celebi Bulvari No. 140
59860 – Corlu, Tekirdag, Turkey

F. Trademark

ALBOND

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