THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

UKAS PRODUCT CERTIFICATION 6762

In accordance with UKAS accreditation to ISO/IEC 17065
Certification is Hereby Granted

to

Alucopanel Middle East LLC

National Industries Park, P.O. Box 18022,
Dubai, United Arab Emirates

for

"Alucopanel® A1"

4 mm thick Aluminium Composite Material
Exterior Wall Cladding System
Test Method: NFPA 285-2019 Edition
(System Designation: A014B61-4)

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, Curtain Walls, Building Materials, Products & Assemblies*

In witness whereof, this Certificate is issued this 5th day of October 2023

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS 101770 CERTIFIED

Sandy Dweik
Chief Executive Officer

Nicholas Purcell
Director of Certification

Certificate Number: TBW0300672

Initial registration: December 17, 2020 Issued: October 5, 2023 Expiration: October 4, 2026
File Name: XG146_CRT_SD03FP_A1_Issue2_672_(f) Issue 2

"Alucopanel® A1"
4 mm thick Aluminium Composite Material
Exterior Wall Cladding System
(System Designation: A014B61-4)

A. Certification is given for the "Alucopanel® A1" 4 mm thick Aluminium Composite Material Exterior Wall Cladding System, which has **successfully met** the requirements for fire propagation characteristics when evaluated against NFPA 285-2019 Edition – "Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components", subject to the limitations below.

B. Readers of this document should be familiar with the fire test standard 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 it is not so listed.

C. The product is approved on the basis of TBWIC Product Certification Scheme SD03 Exterior Wall Assemblies, Curtain Walls, Building Materials, Products & Assemblies (Issue 11), which includes pre-test sampling, evidence of performance (under report reference(s): UB033 Rev.0), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/ Audits.

D. Limitations:

D.1. This Certification covers the fire propagation characteristics of exterior wall assembly when evaluated against the NFPA 285-2019 Edition fire test method. The exterior wall 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*;
d. The ability of the wall assembly to resist lateral flame propagation from the compartment of fire origin to adjacent compartments or spaces*.

D.2. This Certification covers the performance of the exterior wall assembly 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 the effect of exterior radiation from nearby fires but is relevant to fires that start at the exterior wall assembly*.

D.3. This Certification covers the exterior wall assembly in its entirety. It does not extend to individual components that comprise the exterior wall assembly (on their own).

D.4. The actual field installations of the 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*.

D.5. The design of the exterior wall assembly covered under this certification, including the exact specification of the components, method of fixing and condition of such component which was subjected to the fire test, shall be duplicated when installed on the site. The design and components of the exterior wall cladding assembly are not permitted to be substituted, eliminated or interchanged unless recognised and approved by this certification.

** NFPA 285-2019 Edition*

Certificate Number: TBW0300672

Director of Certification
Nicholas Purcell

Seal number: 101770

Issued: 05 Oct 2023
Valid to: 04 Oct 2026

D.6. The method used to seal the gap in the joints between the panels and the components used was evaluated and certified as part of the exterior wall cladding for fire propagation characteristics only. Physical performance, such as (but not limited to) resistance to weathering, resistance to impact/movement, adhesion, mechanical resistance and stability, or thermal properties, are not considered.

D.7. This Certification does not address the following:

a. Air and Water Permeability
b. Measurement of heat transmission
c. Classification or definition of material as non-combustible
d. Any Resistance to Fire rating
e. The toxicity level of smoke developed during combustion
f. Effect of aggravated flame spread behaviour 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
h. Effects of radiation from nearby fires

E. System Configuration

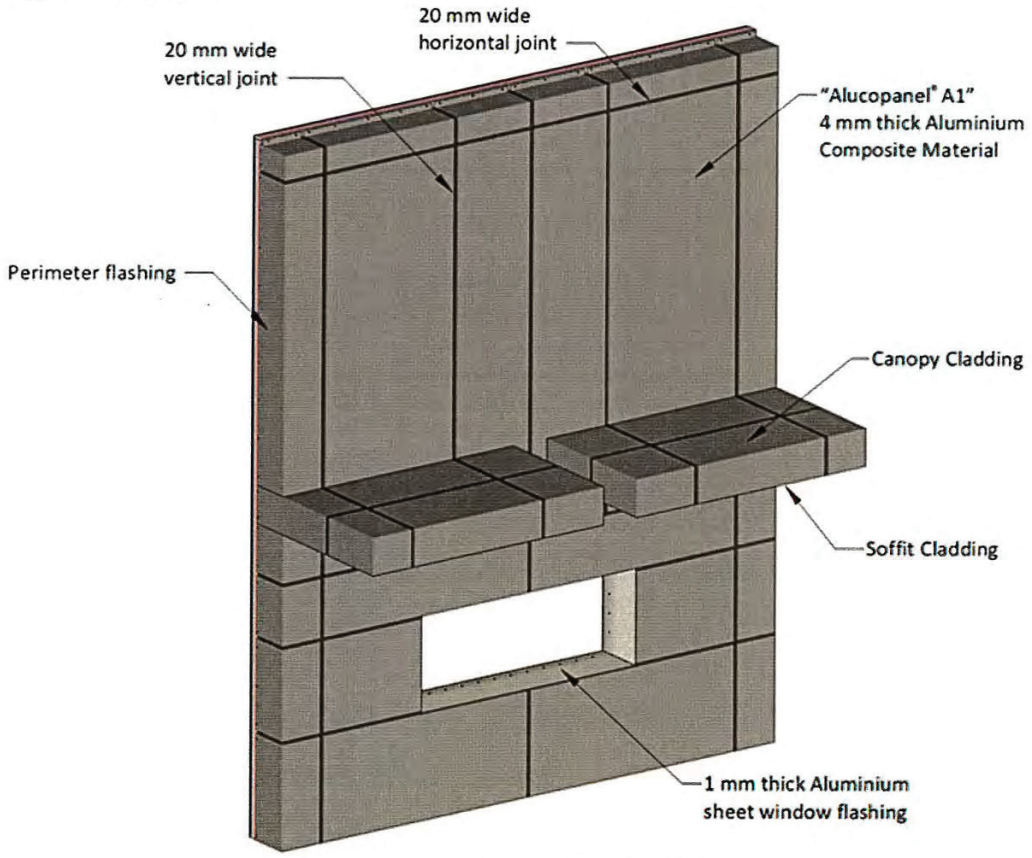

Figure 1. *Aluminium Composite Material Exterior Wall Cladding System*

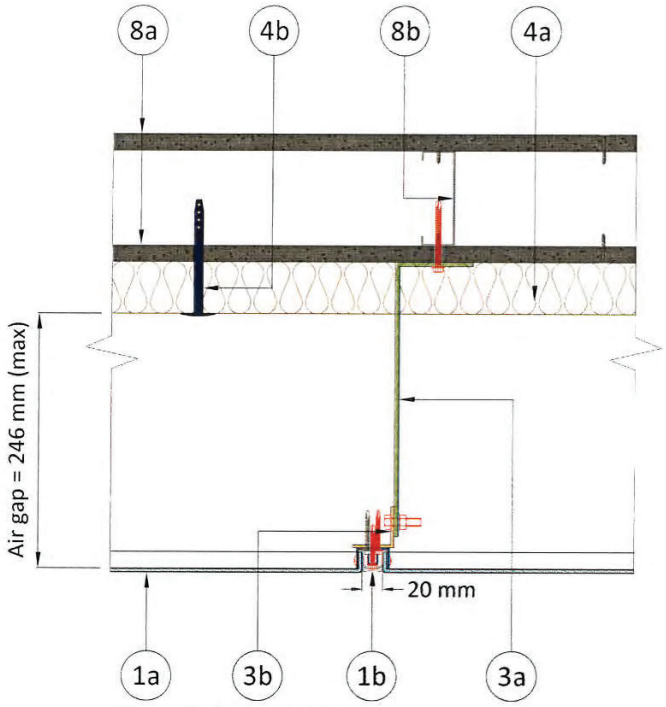

Figure 2. *Horizontal Section – Joint Details*

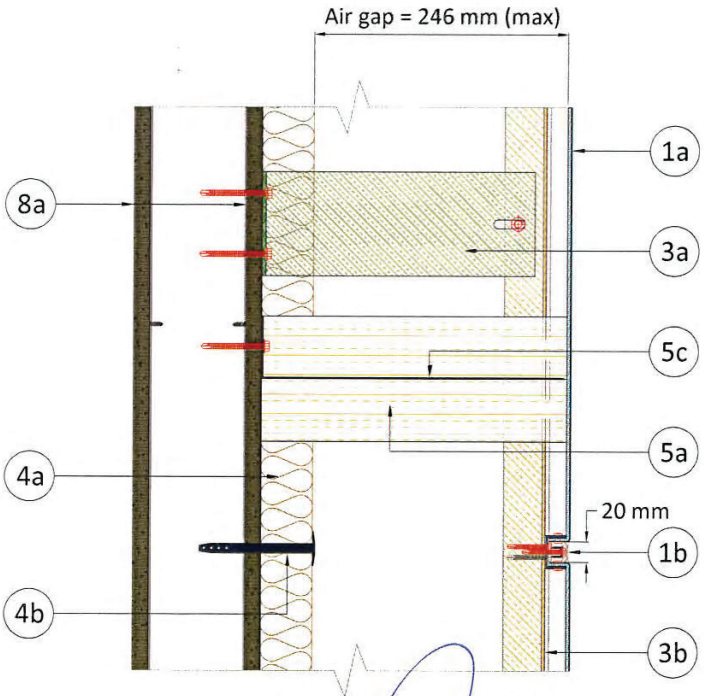

Figure 3. *Vertical Section – Joint Details*

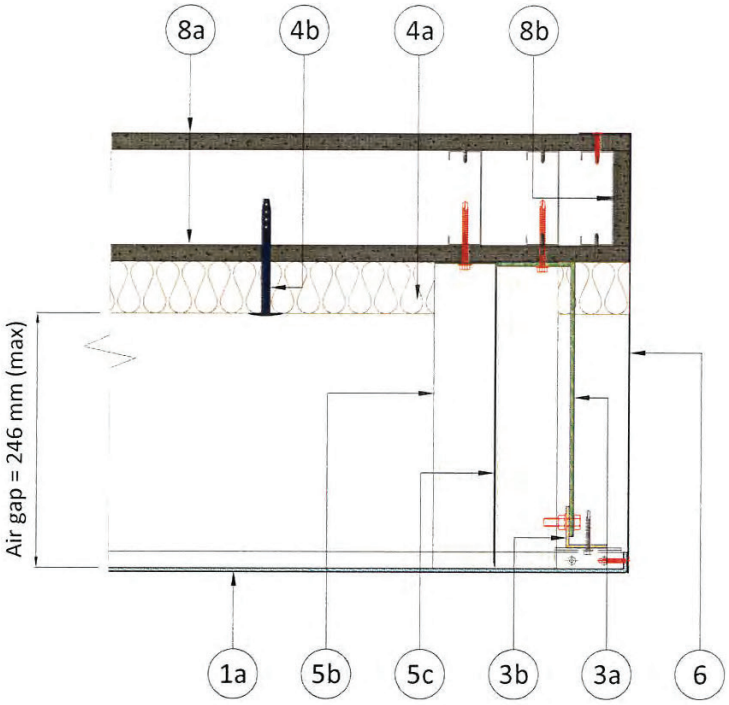

Figure 4. *Horizontal Section – Window Details*

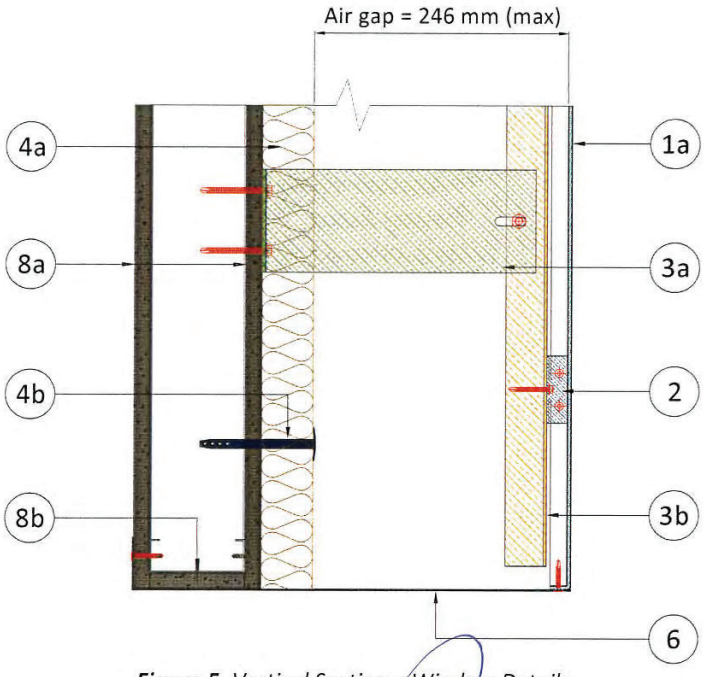

Figure 5. *Vertical Section – Window Details*

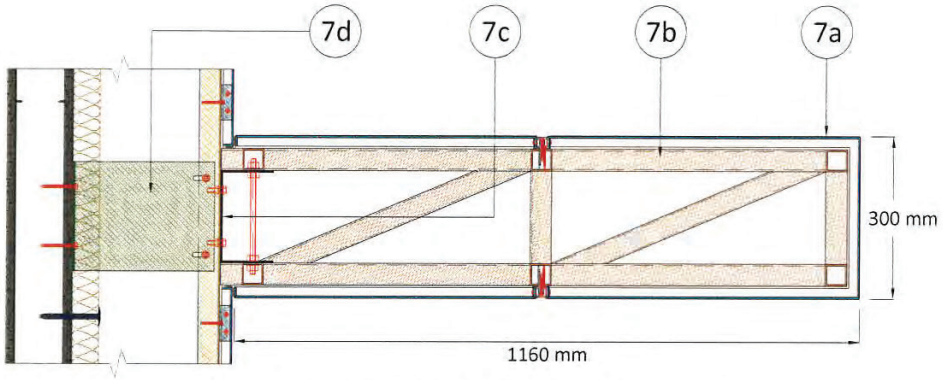

Figure 6. *Vertical Section – Canopy and Soffit Details*

1. Cladding Element

1a. Aluminium Composite Panel

Tray profile" Aluminium Composite Panel with 20 mm deep flanges. The panel corners shall be reinforced with ACP trimming splices (30 × 16 × 4 mm, length × width × thickness), which shall be fixed to the flanges using 2 nos. Ø4 × 21 mm aluminium blind rivets. The details of the ACP are as follows:

Table 1. *Aluminium Composite Panel Details*

Reference	"Alucopanel® A1"
Weight Per Unit Area	7.8 ± 0.5 kg/m²
Panel Thickness	4 ± 0.2 mm
Exterior Facing (Top Skin)	0.5 ± 0.02 mm thick Aluminium Alloy 3105-H16, 25-27 microns thick Polyvinylidene Fluoride (PVDF) coating
Interior Facing (Bottom Skin)	0.5 ± 0.02 mm thick Aluminium Alloy 3105-H16, 5-7 microns thick Polyester (PE) coating
Adhesive	Material: Polyethylene-based film Thickness: 30 ± 2 microns Density: 920 ± 10 kg/m³
Core	Material: Inorganic modified mineral core Thickness: 3 ± 0.1 mm Density: 1600-1900 kg/m³
Maximum Panel Width	3149 mm
Minimum Panel Width	200 mm
Maximum Panel Height	1880 mm
Minimum Panel Height	358 mm

1b. Panel Joint Seal

A maximum gap of 20 mm, maintained between the panel joints, shall be fitted with a 10 × 10 × 1.4 mm (web × flange × thickness) Aluminium U-channel (Alloy 6063-T6) using Ø4.8 × 38 mm stainless steel self-drilling hex head screws and capped with "DOWSIL™ 813C" Silicone-based sealant, applied at a nominal depth of 6 mm, extruded smoothly and flush with the exterior surface of the ACP cladding.

2. Cladding Fixing
   Aluminium angles (Alloy 6063-T6), 20 × 20 × 65 × 1.5 mm (leg × leg × width × thickness) shall be fixed on the flanges of the tray using 2 nos. of Ø4 × 21 aluminium blind rivets at a nominal spacing of 150 mm from the corners and 300 mm centres. The angles shall be fixed to the runners using Ø4.8 × 38 mm stainless steel self-tapping hex washer head screws.

3. Sub-Frame

   3a. Wall Bracket
   Mild Steel (Grade: S275, EN 10025) angle brackets, 75 × 265 × 100 × 4 mm (leg × leg × width × thickness), fixed against the base wall using 2 nos. of Ø6 × 63 mm stainless steel self-drilling hex head screw. The brackets shall be fixed at a nominal spacing of 486 to 1350 mm vertically and 350 to 600 mm horizontally.

   3b. Runner
   Aluminium (Alloy 6063-T6) angles, 40 × 40 × 3 mm (leg × leg × thickness), shall be fixed vertically against the wall brackets using Ø8 × 20 mm stainless steel hex head bolts and nuts.

4. Exterior Insulation

   4a. Insulation Material
   A single layer of mineral wool with Foil Scrim facing on one side, fixed to the base wall using metal insulation fasteners. A maximum air gap of 246 mm shall be maintained between the exterior insulation and the back of the ACP panel. The joints between slabs shall be sealed using a 50 mm wide Aluminium foil tape.
   Reference: "S2XX"
   Manufacturer: Fujairah Rockwool Factory
   Nominal Density: 50 kg/m^3
   Nominal Thickness: 50 mm
   Dimension: 600 × 1200 mm (width × length)

   4b. Insulation Fastener
   Material: Galvanised Steel
   Reference: "MBA-08090"
   Dimension: Ø8 × 90 mm
   Manufacturer: Rawlplug SA
   Fixing Details: 5 nos. fixed for each slab

5. Cavity Fire Barrier

   5a. Horizontal Cavity Fire Barrier
   A full-seal cavity fire barrier shall be mechanically secured to the base wall using steel fixing brackets. The cavity fire barrier shall be installed horizontally at every floor slab termination.
   Material: Pre-compressed Stonewool Lamella with an integral foil facing
   Reference: "Siderise® CH-120/120"
   Dimension: 120 × 300 mm (thickness × depth)
   Nominal Density: 75 kg/m^3
   Manufacturer: Siderise Insulation Ltd – UK

   5b. Vertical Cavity Fire Barrier
   A full-seal cavity fire barrier shall be mechanically secured to the base wall using steel fixing brackets. The cavity fire barrier shall be installed vertically 40 mm from the vertical edges of the window opening and extended at full height.

Material: Pre-compressed Stonewool Lamella with an integral foil facing
Reference: "Siderise® CW-FS120"
Dimension: 120 × 310 mm (thickness × depth)
Nominal Density: 75 kg/m^3
Manufacturer: Siderise Insulation Ltd – UK

5c. Cavity Barrier Bracket
Material: Galvanised steel
Reference: "B195 G"
Dimension: 320 × 25 × 1 mm (total length × height × thickness)
Manufacturer: Siderise Insulation Ltd – UK
Fixing: Fixed to the base wall at a nominal spacing of 300 mm from the ends and 600 mm centres using Ø4.6 × 38 mm stainless steel self-drilling hex head screws

5d. Foil Tape
Material: Aluminium Foil Tape
Reference: "Siderise RFT120"
Manufacturer: Siderise Insulation Ltd., UK
Width: 120 mm
Application: Used to seal the gaps between cavity fire barrier slabs

6. Window Flashing
The window perimeter shall be covered with a pre-bent 1 mm thick Aluminium sheet (Alloy 3105-H34), overlapping the interior of the base wall by 50 mm. The window flashing shall be fixed to the base wall using Ø4.8 × 19 mm stainless steel self-drilling hex washer head screws at a nominal spacing of 152 mm.

7. Soffit and Canopy
Two canopies, with a nominal spacing of 304 mm, shall be projected beyond the outer planar surface of the wall by a nominal projection of 1160 mm, as shown in Figure 6. The canopies shall be located along the 1st floor slab.

7a. Soffit and Canopy Cladding
Aluminium Composite Panels (Item 1a) shall be bent to cover the framing system on all sides. The panels shall be fixed to the framing system using cladding fixings (Item 2). The cladding fixings shall be fixed to the flanges of the panels using 2 nos. of Ø4 × 21 mm aluminium blind rivets.

7b. Sub-Frame
The structural frame of the canopy, with overall dimensions of 2113 × 1175 × 250 mm (length × width × height), shall be comprised of welded Aluminium (Alloy 6063-T6) square hollow section (SHS) profiles, 40 × 40 × 3 mm.

7c. Frame Fixing
Aluminium (Alloy 6063-T6) U-channel, 175 × 65 × 65 × 40 × 4 mm (web × flange × flange × width × thickness) shall be fixed to the soffit frame using Ø9 × 210 mm threaded stainless steel rod with nuts. The U-channels shall be fixed to the runners using 2 nos. of Ø8 × 25 mm hex head bolt and nut.

7d. Canopy Bracket
Mild Steel (Grade: S275, EN 10025) angle brackets, 75 × 265 × 200 × 4 mm (leg × leg × width × thickness), fixed against the base wall using 2 nos. of Ø6 × 63 mm stainless steel self-drilling hex head screw. The brackets shall be fixed at a nominal horizontal spacing of 350 to 600 mm.

8. Base Wall

8a. Interior & Exterior Gypsum Board
1220 × 2400 × 15.9 mm (width × length × thickness) Type X gypsum boards shall be fixed vertically onto 1.2 mm thick galvanised steel studs and tracks using Ø3.5 × 35 mm zinc-coated drywall screws at 300 mm centres vertically. The board joints shall be covered with glass fibre multi-purpose self-adhesive plasterboard jointing tape and jointing compound. The screw heads shall also be covered with the jointing compound.

8b. Steel Studs and Tracks
Galvanised steel (ASTM A653/A653M- Commercial Grade) studs, 92 × 32 × 32 × 9 × 1.2 mm (web × flange × flange × lip × thickness) and tracks, 95 × 25 × 25 × 1.2 mm (web × flange × flange × thickness) welded directly to the test frame.

F. Approved Manufacturing Location

Sublease Plot # TP010105B,
National Industries Park,
P.O. Box 18022, Dubai,
United Arab Emirates

THOMAS BELL-WRIGHT
A PHENNA GROUP COMPANY

UKAS PRODUCT CERTIFICATION 6762

In accordance with UKAS accreditation to ISO/IEC 17065
Certification is Hereby Granted

to

Alucopanel Middle East LLC

P.O. Box 416557, National Industries Park,
Dubai, United Arab Emirates

for

"Alucopanel® A1"

4 mm thick Aluminium Composite Panel Roof Covering Assembly with Mineral Wool Insulation

(Classification according to EN 13501-5:2016)

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, Curtain Walls, Building Materials, Products & Assemblies

In witness whereof, this Certificate is issued this 30th day of August 2024

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS 102144 CERTIFIED

Sandy Dweik
Chief Executive Officer

Nicholas Purcell
Director of Certification

Certificate Number: TBW0300736

Initial registration: August 19, 2021 Issued: August 30, 2024 Expiration: August 18, 2027
File Name: YF146_CRT_SD03RT_A1_736_Issue2_(f) Issue 2

"Alucopanel® A1"
4 mm thick Aluminium Composite Panel Roof Covering Assembly with Mineral Wool Insulation

A. Certification is given for **"Alucopanel® A1"** 4 mm thick Aluminium Composite Panel Roof Covering Assembly with Mineral Wool Insulation for Reaction to Fire classification according to EN 13501-5:2016 "Fire classification of construction products and building elements - Part 5: Classification using external fire exposure to roofs tests", subject to the limitations stated herein. The summary of the scope of certification is stated below.

Table 1. *Summary of the Scope of Certification*

Product Name/Reference	Reaction to Fire Performance		Report Reference
	Result	Standard	
"Alucopanel® A1" 4 mm thick Aluminium Composite Panel Roof Covering Assembly with Mineral Wool Insulation	BROOF (t4)	EN 13501-5:2016	FIRES-CR-034-21-AUPE

B. Readers of this document should be familiar with the fire test standard 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 it is not so listed.

C. The product is approved based on TBWIC Product Certification Scheme SD03 Exterior Wall Assemblies, Curtain Walls, Building Materials, Products & Assemblies (Issue 11), which includes pre-test sampling, evidence of performance (under report reference(s) in Table 1), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/Audits.

D. Limitations

D.1. This Certification covers the specifications of the products as described in Sections E.

D.2. The test standard covered under this Certification was used to measure the response of materials, products, or system assemblies to heat and flame under controlled conditions. The results described in each particular test report on its own shall not be used as the sole criteria for fire-hazard or fire-risk assessment of the materials, products, or system assemblies under actual fire conditions.

D.3. No variations are allowed in material composition and manufacturing process unless recognised and approved by this Certification.

D.4. This Certification is valid only for the fire performance of roof assembly when subjected to external fire exposure. Internal fire exposure is not considered.

D.5. Panels shall be fastened to structural supports with panel joints secured with fasteners.

D.6. The classification is valid for the following configurations:

a. Roof pitch: 45° to 70° inclination from the horizontal plane
b. Deck type: Installations without continuous deck
c. Supporting structure: Aluminium profile supports (non-combustible)

D.7. This Certification does not address the following:

a. Air and Water Permeability
b. Measurement of heat transmission
c. Effect of aggravated flame spread behaviour of an assembly resulting from the proximity of combustible walls and ceilings
d. Classification or definition of material as non-combustible
e. Any Resistance to Fire rating
f. The toxicity level of smoke developed during combustion
g. Fire propagation characteristics when tested as large-scale façade cladding assembly

E. System Details

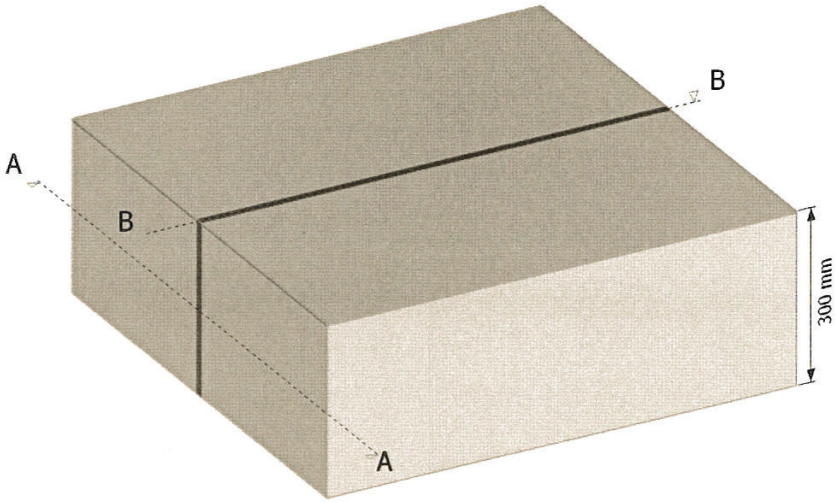

Figure 1. *Exterior Roof Covering Assembly*

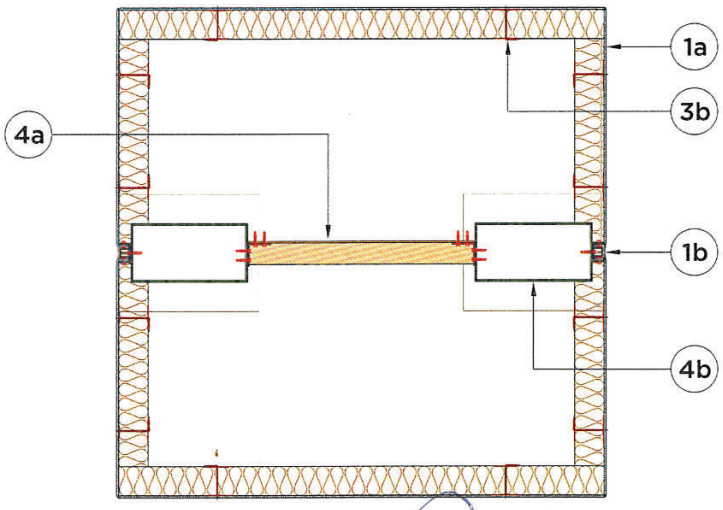

Figure 2. *Section A-A*

Certificate No.: TBW0300736

Director of Certification
Nicholas Purcell

Seal No.: 102144

Issued: 30 Aug 2024
Valid to: 18 Aug 2027

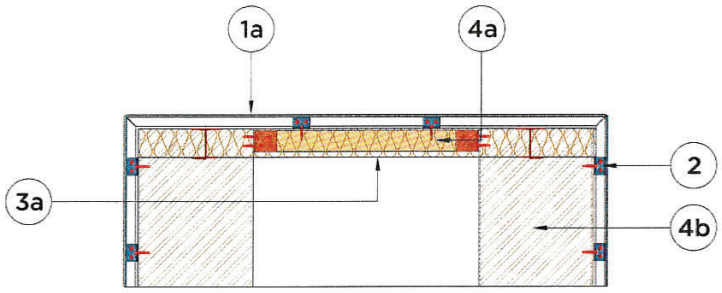

Figure 3. *Section B-B*

1. Roof Covering Element

   1a. Aluminium Composite Panel
   Aluminium Composite Panel formed into a "tray profile", with 300 mm high flanges on the exterior and 20 mm on the panel joints, shall be mechanically fixed to the structural support framing along the vertical and horizontal joints. Refer to Table 2 below for the details of the ACP panel.

Table 2. *Aluminium Composite Panel Details*

Reference	"Alucopanel® A1"
Panel Thickness	4 ± 0.2 mm
Weight Per Unit Area	7.8 ± 0.5 kg/m²
Exterior Facing (top skin)	0.5 ± 0.02 mm thick, Aluminium Alloy 3105-H16, 25-27 microns thick Polyvinylidene Fluoride (PVDF) coating
Interior Facing (bottom skin)	0.5 ± 0.02 mm thick, Aluminium Alloy 3105-H16, 5-7 microns thick Polyester (PE) coating
Core	Material: Inorganic modified mineral core Thickness: 3 ± 0.1 mm Density: 1600 – 1900 kg/m³
Adhesive	Material: Polyethylene-based film Thickness: 30 ± 2 microns Density: 920 ± 10 kg/m³

   1b. Panel Joint Seal
   A gap of 20 mm shall be maintained between the joints of the panels. The joints shall be fitted with an aluminium (Alloy 6063-T6) "U" channel, 15 × 15 × 15 × 1.3 mm (web × flange × flange × thickness), fixed with Ø4.6 × 38 mm self-drilling hex head screws and capped with Silicone-based sealant DOWSIL™ 813C, applied at a nominal depth of 6 mm, extruded smoothly and flush with the exterior surface of the ACP cladding.

2. Cladding Fixing
   Aluminium (Alloy 6063-T6) angles, 20 × 20 × 50 × 1.5 mm (leg × leg × length × thickness), shall be fixed on flanges of the tray using 2 nos. of Ø4 × 21 mm aluminium blind rivets within 100 mm from the corners and at 150 mm centres nominal spacing. The angles shall be fixed to the sub-framing using Ø4.6 × 38 mm self-drilling hex head screws. The angles shall be fixed to the sub-framing using Ø4.6 × 38 mm self-drilling hex head screws.

3. Insulation

3a. Mineral Wool
A single layer of mineral wool with an aluminium foil facing on one side shall be fixed to the rear face of the roof covering element using insulation board fasteners.
Reference: "S2XX"
Manufacturer: Fujairah Rockwool Factory
Density: 50 kg/m³
Thickness: 50 mm

3b. Insulation Fastener
Description: Self-adhesive metal pin with 50 mm x 50 mm metal base
Reference: "Self-stick insulation pins."
Manufacturer: HVAC Insulation Supplies Co., Ltd.
Fixing: 8 nos. per square metre

4. Framing

4a. Sub-frame
Description: Aluminium angle
Material: Aluminium, Alloy 6063-T6
Dimensions: 40 × 40 × 3mm (leg × leg × thickness)
Fixing:
- Fixed to the structural support using Aluminium (Alloy 6063-T6) angle, 40 × 40 × 37 × 3 mm (leg × leg × length × thickness), fastened with 4 nos. of Ø4.6 × 38 mm hex head self-drilling screws
- The intersection between sub-frames shall be fastened using Aluminium (Alloy 6063-T6) angle, 40 × 40 × 37 × 3 mm (leg × leg × length × thickness), fastened with 4 nos. of Ø4.6 × 38 mm hex head self-drilling screws

4b. Structural support
Description: Rectangular hollow section profile
Material: Aluminium, Alloy 6063-T6
Dimensions: 200 × 100 × 3 mm (width × depth × wall thickness)

F. Approved Manufacturing Location

Sublease Plot # TP010105B,
National Industries Park,
P.O. Box 416557,
Dubai, United Arab Emirates

THOMAS BELL-WRIGHT
A PHENNA GROUP COMPANY

UKAS PRODUCT CERTIFICATION 6762

In accordance with UKAS accreditation to ISO/IEC 17065
Certification is Hereby Granted

to

Alucopanel Middle East LLC

P.O. Box 416557, National Industries Park,
Dubai, United Arab Emirates

for

"Alucopanel® A1"

4 mm thick Aluminium Composite Panel Roof Covering Assembly

(Classification according to EN 13501-5:2016)

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, Curtain Walls, Building Materials, Products & Assemblies

In witness whereof, this Certificate is issued this 30th day of August 2024

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS 102145 CERTIFIED

Sandy Dweik
Chief Executive Officer

Nicholas Purcell
Director of Certification

Certificate Number: TBW0300737

Initial registration: August 19, 2021 Issued: August 30, 2024 Expiration: August 18, 2027
File Name: YF146_CRT_SD03RT_A1_737_Issue2_(f) Issue 2

"Alucopanel® A1"
4 mm thick Aluminium Composite Panel Roof Covering Assembly

A. Certification is given for **"Alucopanel® A1"** 4 mm thick Aluminium Composite Panel Roof Covering Assembly for Reaction to Fire classification according to EN 13501-5:2016 "Fire classification of construction products and building elements – Part 5: Classification using external fire exposure to roofs tests", subject to the limitations stated herein. The summary of the scope of certification is stated below.

Table 1. *Summary of the Scope of Certification*

Product Name/Reference	Reaction to Fire Performance		Report Reference
	Result	Standard	
"Alucopanel® A1" 4 mm thick Aluminium Composite Panel Roof Covering Assembly	BROOF (t4)	EN 13501-5:2016	FIRES-CR-033-21-AUPE

B. Readers of this document should be familiar with the fire test standard 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 it is not so listed.

C. The product is approved based on TBWIC Product Certification Scheme SD03 Exterior Wall Assemblies, Curtain Walls, Building Materials, Products & Assemblies (Issue 11), which includes pre-test sampling, evidence of performance (under report reference(s) in Table 1), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/Audits.

D. Limitations

D.1. This Certification covers the specifications of the products as described in Sections E.

D.2. The test standard covered under this Certification was used to measure the response of materials, products, or system assemblies to heat and flame under controlled conditions. The results described in each particular test report on its own shall not be used as the sole criteria for fire-hazard or fire-risk assessment of the materials, products, or system assemblies under actual fire conditions.

D.3. No variations are allowed in material composition and manufacturing process unless recognised and approved by this Certification.

D.4. This Certification is valid only for the fire performance of roof assembly when subjected to external fire exposure. Internal fire exposure is not considered.

D.5. Panels shall be fastened to structural supports with panel joints secured with fasteners.

D.6. The classification is valid for the following configurations:

a. Roof pitch: 0° to 10° inclination from the horizontal plane
b. Deck type: Installations without continuous deck
c. Supporting structure: Aluminium profile supports (non-combustible)

D.7. This Certification does not address the following:

a. Air and Water Permeability
b. Measurement of heat transmission
c. Effect of aggravated flame spread behaviour of an assembly resulting from the proximity of combustible walls and ceilings
d. Classification or definition of material as non-combustible
e. Any Resistance to Fire rating
f. The toxicity level of smoke developed during combustion
g. Fire propagation characteristics when tested as large-scale façade cladding assembly

E. System Details

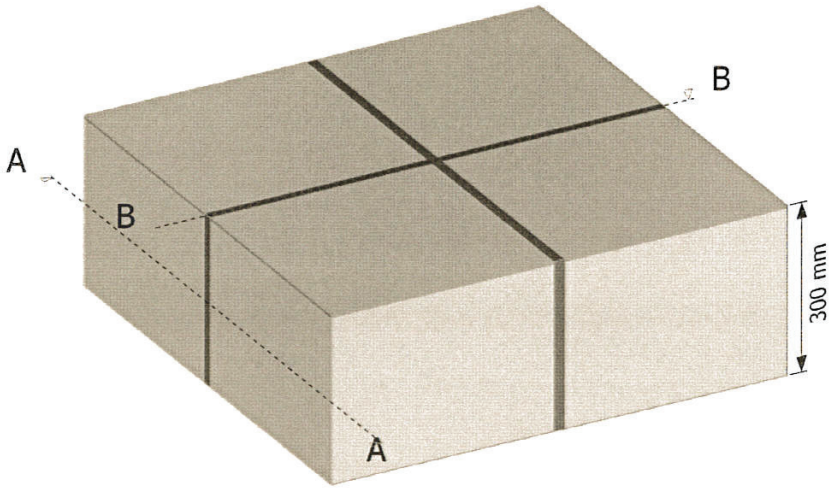

Figure 1. *Exterior Roof Covering Assembly*

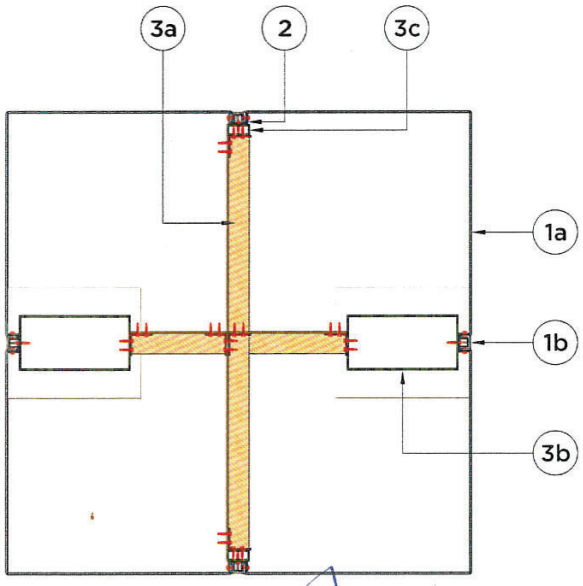

Figure 2. *Section A-A*

Certificate No.: TBW0300737

Director of Certification
Nicholas Purcell

Seal No.: 102145

Issued: 30 Aug 2024
Valid to: 18 Aug 2027

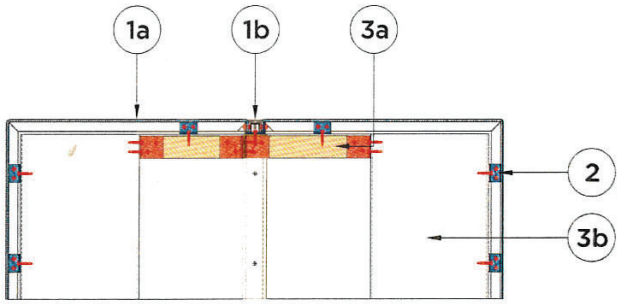

Figure 3. *Section B-B*

1. Roof Covering Element

   1a. Aluminium Composite Panel
   Aluminium Composite Panel formed into a "tray profile", with 300 mm high flanges on the exterior and 20 mm on the panel joints, shall be mechanically fixed to the structural support framing along the vertical and horizontal joints. Refer to Table 2 below for the details of the ACP panel.

Table 2. *Aluminium Composite Panel Details*

Reference	"Alucopanel® A1"
Panel Thickness	4 ± 0.2 mm
Weight Per Unit Area	7.8 ± 0.5 kg/m²
Exterior Facing (top skin)	0.5 ± 0.02 mm thick, Aluminium Alloy 3105-H16, 25-27 microns thick Polyvinylidene Fluoride (PVDF) coating
Interior Facing (bottom skin)	0.5 ± 0.02 mm thick, Aluminium Alloy 3105-H16, 5-7 microns thick Polyester (PE) coating
Core	Material: Inorganic modified mineral core Thickness: 3 ± 0.1 mm Density: 1600 – 1900 kg/m³
Adhesive	Material: Polyethylene-based film Thickness: 30 ± 2 microns Density: 920 ± 10 kg/m³

   1b. Panel Joint Seal
   A gap of 20 mm shall be maintained between the joints of the panels. The joints shall be fitted with an aluminium (Alloy 6063-T6) "U' channel, 15 × 15 × 15 × 1.3 mm (web × flange × flange × thickness), fixed with Ø4.6 × 38 mm self-drilling hex head screws and capped with Silicone-based sealant DOWSIL™ 813C, applied at a nominal depth of 6 mm, extruded smoothly and flush with the exterior surface of the ACP cladding.

2. Cladding Fixing
   Aluminium (Alloy 6063-T6) angles, 20 × 20 × 50 × 1.5 mm (leg × leg × length × thickness), shall be fixed on flanges of the tray using 2 nos. of Ø4 × 21 mm aluminium blind rivets within 100 mm from the corners and at 150 mm centres nominal spacing. The angles shall be fixed to the sub-framing using Ø4.6 × 38 mm self-drilling hex head screws.

3. Framing

3a. Sub-frame
Description: Aluminium angle
Material: Aluminium, Alloy 6063-T6
Dimension: 40 × 40 × 3mm (leg × leg × thickness)
Fixing:
- Fixed to the structural support using Aluminium (Alloy 6063-T6) angle, 40 × 40 × 37 × 3 mm (leg × leg × length × thickness), fastened with 4 nos. of Ø4.6 × 38 mm hex head self-drilling screws
- The intersection between sub-frames shall be fastened using Aluminium (Alloy 6063-T6) angle, 40 × 40 × 37 × 3 mm (leg × leg × length × thickness), fastened with 4 nos. of Ø4.6 × 38 mm hex head self-drilling screws

3b. Structural support – Type 1
Description: Rectangular hollow section profile
Material: Aluminium, Alloy 6063-T6
Dimensions: 200 × 100 × 3 mm (width × depth × wall thickness)

3c. Structural support – Type 2
Description: Rectangular hollow section profile
Material: Aluminium, Alloy 6063-T6
Dimensions: 20 × 40 × 3 mm (width × depth × wall thickness)

F. Approved Manufacturing Location

Sublease Plot # TP010105B,
National Industries Park,
P.O. Box 416557,
Dubai, United Arab Emirates
