THE NEW CLADDING WONDER
RELEASES WATER WHEN HEATED

Alubond U.S.A FR-A2 is a registered brand name of American Building Technologies located in Rockford Illinois with production bases in Europe, Middle East, Oman and India with an annual production capacity of 25,000,000 M2 (Twenty Five Million square meters) and the brand ownership is now fully transfered and the brand is now owned by Mulk Holdings.
Alubond U.S.A FR-A2 is the new generation exterior fire retardant Panels with over 90% Stone core sandwiched between two layers of metal skins. Alubond U.S.A FR-A2 patented core formulation with a high percentage of Magnesium Hydroxide provides superior fire retardant capabilities making it an extremely safe cladding solution for buildings worldwide. Alubond U.S.A FR-A2 has passed stringent Fire test certifications all over the world achieving product classifications as per EN 13501 – 1 A2 S1 d0 (Over 90% Stone core content) and EN 13501 – 1 B S1 D0 (Over 70% Stone core content).
Advantages of Magnesium Hydroxide

- Filler and Flame Retardant/Smoke Suppressant in one product
- Environmentally Acceptable
- Halogen Free
- Non-Corrosive
- Reduces Smoke Density
- Non-Volatile
- Largely Inert
- Thermally Stable up to 340°C and thereafter undergoes Endothermic Decomposition releasing Water

The solid mineral magnesium hydroxide, with the chemical formula Mg(OH)$_2$, is a common alteration product of periclase in marble; a low-temperature hydrothermal vein mineral in metamorphosed limestones and chlorite schists; and formed during serpentinization of dunites. It is often found in association with serpentine, calcite, aragonite, dolomite, magnesite, hydromagnesite, artinite, talc and chrysotile.

What is Endothermic & Exothermic Reaction?

Endothermic process: a change (e.g. a chemical reaction) that requires (or absorbs) heat.

LDPE (Low density Polyethylene) is a hydrocarbon material which exhibits exothermic reaction by releasing energy when exposed to heat.

Mg (OH)$_2$ is a natural mineral which exhibits Endothermic reaction by absorbing heat when exposed to energy/heat.
# Comparison of Magnesium Hydroxide with Aluminium Trihydrate

## Properties Comparison

<table>
<thead>
<tr>
<th>Property</th>
<th>ATH (Al(OH)₃)</th>
<th>Magnesium Hydroxide (Mg(OH)₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Formula</td>
<td>Al(OH)₃</td>
<td>Mg(OH)₂</td>
</tr>
<tr>
<td>Water Content Loss on Ignition (LOI)</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Greater than 230º C</td>
<td>Greater than 330º C</td>
</tr>
<tr>
<td>Mohs hardness</td>
<td>2.5–3.5</td>
<td>2.0–3.0</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.42</td>
<td>2.36</td>
</tr>
<tr>
<td>pH</td>
<td>10.8</td>
<td>10.5</td>
</tr>
<tr>
<td>Electrical Conductivity us/cm</td>
<td>Less than 350DIN</td>
<td>53208</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td>White</td>
</tr>
<tr>
<td>Physical Properties</td>
<td>Powder</td>
<td>Powder</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>1.57</td>
<td>1.58</td>
</tr>
<tr>
<td>Particle Morphology</td>
<td>Hexagonal Platelet</td>
<td>Hexagonal Platelet</td>
</tr>
</tbody>
</table>

## Magnesium Hydroxide Structure:

GREEN : Magnesium  
RED : Hydrogen  
WHITE : Oxygen

## Aluminium Trihydrate Structure:

RED : Alumina  
PINK : Hydrogen  
WHITE : Oxygen
Some MCM Manufacturers use Aluminium Hydroxide due to the easy availability of the mineral in proximity to production plants. Alubond U.S.A FR-A2 uses Magnesium Hydroxide as its prime core mineral based on the following data.

Reactivity: Magnesium Hydroxide is much more reactive than Alumina Trihydrate (ATH), whereas ATH releases the available water over a broad range (230°C to 430°C), Magnesium Hydroxide releases the available water over a much narrower range (330°C or 630°F to 430°C). In simple terms this compares to spraying a fine mist of water over a fire (ATH) as opposed to dousing the fire with a full bucket of water (Magnesium Hydroxide). The quick release of water enhances the flame retardant properties of Magnesium Hydroxide.

Water Release: Magnesium Hydroxide releases water at a higher temperature than ATH. The higher temperature release is at a more critical point that reduces the spread of the flame.

Particle Shape: Magnesium Hydroxide particles, if viewed under a microscope, are plate-like versus the spherical particles of ATH. These plate-like particles overlap one another similar to fish scales or roofing shingles. Pound for pound these plate-like particles offer much more exposed surface area than spherical ATH particles. Therefore more particles are directly exposed to the flame. Also, the plate-like particles provide more strength, flexibility and reinforcement in the finished product as opposed to spherical particles.

Particle Integration: Magnesium Hydroxide is a natural mix of particles. There is particle penetration and integration within Magnesium Hydroxide rather than having ATH and calcium carbonate particles mixed side by side. This allows a better distribution of the fire retardant and smoke suppressant properties.

Stability: Magnesium Hydroxide has stabilizing characteristics that tend to neutralize acid and toxic smoke. ATH does not provide these benefits.

Char Ash: Magnesium Hydroxide during the burning reaction forms a “Char-Ash” in front of the flame, which suppresses the flame.

Physical Properties

- Physical properties such as viscosity cure rate, stress strain and durometer, suggest that magnesium hydroxide is virtually indistinguishable from ATH from a filler performance standpoint.
- Magnesium Hydroxide, because of its acid scavenging properties, can play a useful role in halogenated compounds by reducing acid gas emissions.
- By absorbing the heat, magnesium hydroxide prevents or delays ignition and retards combustion of polymeric materials.
Alubond U.S.A FR-A2’s formulated CORE exposed to a temperature over 332°C

**Alubond U.S.A FR-A2 - Endothermic Reaction**

\[ \text{Magnesium Oxide MgO (s)} + \text{Water (H₂O) (g)} \]
Different Types of Cores

<table>
<thead>
<tr>
<th>PERFORMANCE</th>
<th>LDPE EN 13501 E</th>
<th>OVER 70% MINERAL EN 13501 B</th>
<th>OVER 90% MINERAL EN 13501 A2</th>
<th>OVER 90% METAL HONEYCOMB EN13501 A2</th>
<th>100% METAL SOLID ALUMINIUM 13501 CLASS A1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustibility Rating</td>
<td>Combustible</td>
<td>Low Combustibility</td>
<td>Non Combustible</td>
<td>Non Combustible</td>
<td>Non Combustible</td>
</tr>
<tr>
<td>NFPA 285/ BS 8414 Pass</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ASTM E 84 Core Burning Class A</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTM D 1929 Ignition</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>EN 13501</td>
<td>E</td>
<td>B</td>
<td>A2</td>
<td>A2</td>
<td>A1</td>
</tr>
<tr>
<td>Direct Flame Over 1000°C Fire</td>
<td>20 Seconds</td>
<td>18 Minutes</td>
<td>30+ Minutes</td>
<td>55 Seconds</td>
<td>30 Seconds</td>
</tr>
<tr>
<td>Penetration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Technical Data Sheet

**Alubond U.S.A FR-A2**

(A U.A.E Civil Defense Approved Product*)

**Alloy Series:**
1) 1100 H16 / H18 2) 3105/3003 H16 3) 5005 H16/24

**Date:** 07.05.2017

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Properties</th>
<th>Standard</th>
<th>Unit/Ref</th>
<th>3mm</th>
<th>4mm</th>
<th>6mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin thickness</td>
<td>....</td>
<td>mm</td>
<td>0.5mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Weight</td>
<td>....</td>
<td>±0.5 Kg/m²</td>
<td>6.2</td>
<td>8.0</td>
<td>11.6</td>
</tr>
<tr>
<td>3</td>
<td>Standard Width</td>
<td>....</td>
<td>mm</td>
<td>1000, 1250, 1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Width</td>
<td>....</td>
<td>mm</td>
<td>±2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Length</td>
<td>....</td>
<td>mm</td>
<td>±3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Thickness</td>
<td>....</td>
<td>mm</td>
<td>±0.2</td>
<td>±0.3</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Squareness</td>
<td>....</td>
<td>mm</td>
<td>Max 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Bow</td>
<td>....</td>
<td>%</td>
<td>±0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Principal Properties

9. **Tensile strength**
   - ASTM E8 MPa or N/mm²
   - 56 43 25

10. **0.2% proof stress**
    - ASTM E8 MPa or N/mm²
    - 47 41 22

11. **Elongation**
    - ASTM E8 %.
    - 4.8 3.8 2

12. **Flexural elasticity, E**
    - ASTM C 393 GPa or kN/mm²
    - 45 38.5 26

13. **Flexural rigidity, E*I**
    - ASTM C 393 kNmm²/mm
    - 110 203 395

### Acoustical Properties

14. **Sound Transmission Loss**
    - ASTM E413 dB
    - 26 27

15. **Sound absorption factor**
    - ISO 354
    - 0.05

### Thermal Properties

16. **Deflection Temperature**
    - ASTM D 648 °C
    - 110

17. **Thermal resistance R**
    - ASTM C518 M²K/W
    - 0.031

18. **Temperature resistance**
    - °C
    - -50...+80

19. **Linear Thermal Expansion**
    - EN 1999 1-1 mm/m @100°C
    - 2.4

### Core Fire Performances

20. **Core**
    - Excellent performance Non Combustible Mineral filled core

21. **Reaction to fire**
    - EN 13501-1
    - TBW 0300154 & TBW 0300126.2
    - Class A / Class 1

22. **Surface Burning Characteristics**
    - ASTM E84
    - TBW 0300155 & TBW 0300137.2
    - Passed Various Assembly Tests(Listings Reference: MH-ATD-001 & MH-AED-003/MH-AED-004 Rev 0)

23. **Self Ignition Temp**
    - ASTM D 1929
    - Not Less than 3438°C

24. **Exterior Non Load Bearing Wall Assembly**
    - NFPA 285
    - TBW 0200165
    - 3 Hrs( Listing Reference :MH-AED-3HR-006 Rev 0)

25. **Fire Rating**
    - ASTM E119
    - TBW0200165
    - 3 Hrs( Listing Reference :MH-AED-3HR-006 Rev 0)

### Coating Performances

26. **No. of Coats**
    - AAMA 2605-13
    - Standard 2 Coat / 3 Coat/ 4 Coat

27. **Type/finish**
    - Standard PVDF / FEVE / HDPE

28. **Gloss @60°c**
    - %
    - 20-40 / 20-80

29. **Adhesion (Dry Condition )**
    - No. Adhesion loss

30. **Pencil hardness**
    - min HB
PROJECT REFERENCES
ALUBOND U.S.A FR-A2

ELITE-10, DUBAI, UAE
Consultant: Barjeel Engineering Consultant
Residential Building, Al Barsha, Dubai, UAE
Contractor: Modern Building Contracting Co. LLC
WORLD TRADE CENTRE L.L.C., DUBAI, UAE
Consultant: WSP Middle East Ltd & Hopkins Architects Dubai Ltd.
Contractor: Al Futtaim Carillion LLC
PROJECT REFERENCES
ALUBOND U.S.A FR-A2

MANARA TOWER, DUBAI, UAE
PROJECT REFERENCES
ALUBOND U.S.A FR-A2

ALOFT CITY CENTRE, DEIRA, DUBAI, UAE
Client: Majid Al Futtaim
TIARA UNITED TOWERS, BUSINESS BAY, DUBAI, UAE
Client: Zabeel Investments
NIGHT MARKET & BOARDWALK, DEIRA, DUBAI, UAE
Client : Nakheel PJSC
Consultant: AE7
RESIDENTIAL BUILDING, NAD AL HAMAR, DUBAI, UAE
Contractor: Naresco Contracting LLC
BAHWAN TOWER DOWNTOWN, DUBAI, UAE
Consultant: Arif & Bintoak Engineering Consultants
PROJECT REFERENCES
ALUBOND U.S.A FR-A2

ISUZU TRAINING CENTER FACILITY JAFZA, DUBAI, UAE
Consultant: AWAJ Engineering Consultants
RESIDENTIAL BUILDING, AL RAWADA, AJMAN, UAE
Consultant: Nakheel Engineering Consultant
Contractor: INT. Contracting
PROJECT REFERENCES
ALUBOND U.S.A FR-A2

AJMAN HADEEF TOWER, AJMAN, UAE
RAWDHAH RESIDENTIAL BUILDING, ABU DHABI, UAE
Client : Emirates Land Group
Engineering : Sinergo
Consultant : JLA International
AL WAFRA, AL REEM ISLAND, ABU DHABI, UAE
Consultant: KEO International
Contractor: SEIDCO General Contracting
FOLKART TOWERS, IZMIR
Architect: Ahmet Yağcıoğlu
ARISTA LIFE, ISTANBUL
Architect: Murat Kader
GOZTEPE HILTON HOTEL, ISTANBUL
Architect: Gökhan Tunç
BUSINESS EDUCATION ACCELERATION CENTER
EDUCATIONAL BUILDING, OLOMOUC, CZECH REPUBLIC
Architect: Ing. Arch. Ladislav Opletal
CONTINENTAL AUTOMOTIVE, ROMANIA
Architect: Adrian Corduneanu
DUMANKAYA MIKS, ISTANBUL
Architect: Tago Architects
РОССИЙСКАЯ ФЕДЕРАЦИЯ
СЕРТИФИКАТ СООТВЕТСТВИЯ
(обязательная сертификация)

ЗАЯВИТЕЛЬ: Alubond Europe d.o.o. Адрес: Nemanjina No. 130, 26320 Banatski Karlovac, Serbia, Сербия. Телефон: ++381 13 651 041 (42, 43), факс: ++381 13 652 822.

ИЗГОТОВИТЕЛЬ: Alubond Europe d.o.o. Адрес: Nemanjina No. 130, 26320 Banatski Karlovac, Serbia, Сербия. Телефон: ++381 13 651 041 (42, 43), факс: ++381 13 652 822.


ПОДТВЕРЖДАЕТ, ЧТО: Отгружаемые алюминиевые композитные панели типа "Алубонд" U.S.A FR-A2, торговой марки ALUBOND U.S.A FR-A2, отгружаются с серийным номером сертификата 1372258, с толщиной алюминиевых поперечных слоев от 0.2 мм до 0.5 мм, с огнестойкими минеральными наполнителями, выпускаемые по ГОСТ 17748-2008 и EN 13501-1. Серийный выпуск.


Руководитель (заместитель руководителя) органа по сертификации
А.А. Гомзов
Эксперт (эксперты)
А.П. Губенко

RUSSIAN GOST R CERTIFICATE
CERTIFICATION
ALUBOND U.S.A FR-A2

THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

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

to

Eurocon Building Industries FZE
(a subsidiary of MultiHoldings F.Z.C Group, Sharjah UAE)
P.O Box 12642, Hamriyah Free Zone, Sharjah, United Arab Emirates

for

“Alubond® U.S.A. FR-A2”
4.0 mm thick Aluminium Composite Material

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 16th day of October 2017

Thomas F. Bell-Wright
Certification Director

Nick Purcell
Certification Manager

Certificate Number: TBW00300154.1

Initial registration: March 15, 2017
File Name: TM011 Eurocon FR-A2 (UA) R_1. final
Issued: October 16, 2017
Save Date: 10/15/17 8:06 AM

Expiration: March 14, 2020

This certificate and schedule 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 2683, DUBAI, UAE.

Tel: +971 4333 1693 Email: certification@bell-wright.com Web: www.bell-wright.com 15 Scheme Certificate Issue 5, Dec 2016

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THOMAS BELL-WRIGHT LISTINGS: ASTM E84 - Class A,
ASTM D1929 - Self ignition more than 450°C,
EN 13501-1 : 2007-A2,S1,d0
THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

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

Eurocon Building Industries FZE
(a subsidiary of Mulk Holdings F.Z.E Group, Sharjah UAE)

PO Box 42642, Hamriya Freezone, Sharjah UAE

for

“Alubond U.S.A. FR-A2”
Aluminium Composite Material
Non-Load-Bearing Exterior Wall Cladding System

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 15th day of March 2017

Thomas F. Bell-Wright
Certification Director

Nick Purcell
Certification Manager

Certificate Number: TBW0300155

initial registration: March 15, 2017
Issued: March 15, 2017
Expiration: March 14, 2020
Save Date: 3/15/17 2:27 PM

This certificate and schedules are held in force by regular factory inspections by Thomas Bell-Wright International Consultants (TBWC). Refer to www.tbwcert.com or contact TBWC (UK) 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 2192, Email: info@bellwright.com, Web: www.bell-wright.com F 19 Scheme Certificate Issue 5, Dec 2018

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ENVIRONMENTAL PRODUCT DECLARATION
ALUBOND U.S.A.® FIRE RATED A2
FIRE RATED ALUMINUM COMPOSITE PANELS
ALUBOND TURKEY

Worldwide presence of more than 30 years, cooperation on numerous projects all over the globe, with an annual production capacity of more than 25 million m² located in 6 countries makes Alubond U.S.A.® the World’s Largest Metal Composite Brand.

Great potential of shaping, variety of finishes and highest fire resistant products, wide range of colors and possibilities of individualization makes Alubond U.S.A.® an architect’s dream material. The willingness to support sustainability and create eco-friendly products leads us toward constant improvements and innovations. Our 100% recyclable panels meet LEED certification requirements. With special Alubond Green Series® and our environment-conscious production at all units, we are committed to keep on contributing to efforts to make the World more beautiful place.

World’s Largest Aluminum Composite Panel brand

ENVIROMENTAL CERTIFICATE
# Environmental Product Declaration

**Alubond U.S.A FR-A2**

## Environmental Certificate

### Material Content

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
<th>Availability</th>
<th>Mass %</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Sheet &amp; Bottom Sheet</td>
<td>Aluminum</td>
<td>Metal Production</td>
<td>30</td>
<td>Turkey</td>
</tr>
<tr>
<td>Core Material</td>
<td>Fire Rated/Mineral Core</td>
<td>Mineral</td>
<td>50</td>
<td>Dubai</td>
</tr>
<tr>
<td>Top Sheet Coating</td>
<td>PVC</td>
<td>Polyurethane</td>
<td>1</td>
<td>Turkey</td>
</tr>
<tr>
<td>Bottom Sheet Coating</td>
<td>PE</td>
<td>Polyurethane</td>
<td>1</td>
<td>Turkey</td>
</tr>
</tbody>
</table>

### Additional Environmental Information

<table>
<thead>
<tr>
<th>Component</th>
<th>% Recycled Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Consumer Recycled Content</td>
<td></td>
</tr>
<tr>
<td>Post-Consumer Recycled Content</td>
<td></td>
</tr>
</tbody>
</table>

### Recycling or Reuse

All Alubond U.S.A FR-A2 composite panels are recyclable or reusable materials. The aluminum scrap occurs during coating activities are collected and directed to regional recycling services. The fire-rated core being the manufacturing system as rate of waste can be taken into the manufacturing system to reuse for the same production processes.

### Energy

<table>
<thead>
<tr>
<th>Energy Type</th>
<th>Value</th>
<th>U1 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energy</td>
<td>1641</td>
<td>1441</td>
</tr>
<tr>
<td>Non-Renewable Energy</td>
<td>359</td>
<td>731</td>
</tr>
</tbody>
</table>

### Manufacturer Contact Info

- **Name:** Alubond TURKEY | Aluminum Composite Panel
- **Phone:** +90 026 826 1 230
- **Email:** info@alubond.com.tr
- **Website:** www.alubond.com.tr

---

**UL Environmental Certificate**
Alubond
FR Euroclass B
FIRE RETARDANT PANELS
**TECHNICAL DATA SHEET**  
**ALUBOND U.S.A FR EUROCLASS B**

(A UAE CIVIL DEFENSE APPROVED PRODUCT)

| Alloy Series:  
1. 1100 H16 /H18  
2) 3105/3003 H16  
3) 5005 H16/24 |

---

**S.NO** | **PROPERTIES** | **STANDARD** | **UNIT/REF** | **3mm** | **4mm** | **6mm** |
---|---|---|---|---|---|---|
1 | Skin thickness | | mm | | 0.5mm |
2 | Weight | | ±0.5 Kg/m² | 6 | 7.5 | 10.5 |
3 | Standard Width | | mm | | 1000, 1250, 1500 |

**PRODUCT TOLERANCES**

| 4 | Width | | mm | | ±2 |
| 5 | Length | | mm | | ±3 |
| 6 | Thickness | | mm | | ±0.2 ± 0.3 |
| 7 | Squareness | | mm | Max 5 |
| 8 | Bow | | % | | ±0.5 |

**PRINCIPAL PROPERTIES**

| 9 | Tensile strength | ASTM E8 | MPa or N/mm² | 60 | 50 | 45 |
| 10 | 0.2% proof stress | ASTM E8 | MPa or N/mm² | 50 | 44 | 25 |
| 11 | Elongation | ASTM E8 | % | 6 | 5 | 2 |
| 12 | Flexural elasticity, E | ASTM C 393 | GPa or kN/mm² | 48 | 38 | 28 |
| 13 | Flexural rigidity, ExI, | ASTM C 393 | kNmm²/mm | 70 | 135 | 345 |

**ACOUSTICAL PROPERTIES**

| 14 | Sound Transmission Loss | ASTM E413 | dB | 25 | 26 |
| 15 | Sound absorption factor | ISO 354 | .. | .. | 0.05 |

**THERMAL PROPERTIES**

| 16 | Deflection Temperature | ASTM D 648 | °C | 115 | 116 | 108 |
| 17 | Thermal resistance R | ASTM C518 | M² K/W | 0.03 | 0.035 |
| 18 | Temperature resistance | | °C | -50…+80 |
| 19 | Linear Thermal Expansion | EN 1999 1-1 | mm/m @100°C | 2.4 |

**CORE FIRE PERFORMANCES**

| 20 | Core | |..... | Excellent performance fire Retardant Mineral filled core |
| 21 | Reaction to fire | EN 13501-1 | TBW 0300153 &TBW 0300116.2 | B, S1, d0 |
| 22 | Surface Burning Characterstics | ASTM E84 | Class A/ Class 1 |
| 23 | Self Ignition Temp | ASTM D 1929 | Not Less than 343°C |
| 25 | Fire Rating | ASTM E119 | 01.12694.01.307 | 1 Hrs 42 Mins |

**COATING PERFORMANCES**

| 26 | No. of Coats | |..... | Standard 2 Coat / 3 Coat / 4 Coat |
| 27 | Type/finish | AAMA 2605-13 | Standard PVDF / FEVE / HDPE |
| 28 | Gloss @60°c | | % | 20-40 / 20-80 |
| 29 | Adhesion (Dry Condition) | | | No. Adhesion loss |
| 30 | Pencil hardness | | | min HB |
RIBBON, MOTOR CITY, DUBAI, UAE
Consultant: Engineering Consulting Group

GREEN PLANET, DUBAI, UAE
Consultant: Rambool Middle East
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

ROVE HOTEL, DUBAI, UAE
Consultant: Arch Group
THE ATRIA TOWER BUSINESS BAY, DUBAI, UAE
Client : Deyaar Development PJSC, Consultant: AK Design
Contractor: Al Rostamani Pegel

MARSAL ALSEEF (PHASE 4), DUBAI, UAE
Client : Meraas Development, Consultant: WS Atkins & Partners Overseas
Contractor: Dutco Balfour Beatty, Architect: ATK Engineering Consultants
AL JALILA CHILDREN’S SPECIALTY HOSPITAL, DUBAI, UAE
Client: Dubai Health Authority (DHA)
Consultant: Studio Altieri Int’l. Consultant/Eng’r. Adnan Saffarini
Contractor: Al Futtaim Carillion

W HOTEL, PALM JUMEIRAH, DUBAI, UAE
Client: Nakheel
CITYWALK RESIDENTIAL BUILDINGS - PHASE 2, DUBAI, UAE  
Client: Meraas Development LLC, Consultant: Hyder Consulting (ME) Ltd.  
Contractor: Al Shafar General Contracting

PROPOSED COMMERCIAL & RESIDENTIAL BUILDING, AL BARSHA FIRST, DUBAI, UAE  
Client: Abdul Wahid Hassan Al Rostamani (AW Rostamani)  
Consultant: Eng. Adnan Saffarini, Contractor: Al Arif Contracting
SIT TOWER, DUBAI SILICON OASIS, DUBAI, UAE
Consultant: Eng. Adnan Saffarini
DOME TOWER-JUMEIRAH LAKES TOWERS JLT, DUBAI, UAE
Contractor: Construction and Re-Construction Engineering Company.
Consultant: Qhc Architects & Engineers
NEW DEIRA FISH MARKET-MIXED USE, DUBAI, UAE
Contractor: Bhatia General Contracting Company LLC
Consultant: Hyder Consulting Middle East Limited.

BLUE WATERS, DUBAI, UAE
Client: MEERAS, Contractor: AFC/HLG,
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

TAMWEEL TOWER, DUBAI, UAE
Consultant: ALEC
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

GERMAN SPORTS TOWER 1, DUBAI, UAE
Consultant: Barajeel Engineering Consultants
RAYAN COMPLEX, AL ABBAR, AFTER SAHARA CENTER, SHARJAH, UAE
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

POST OFFICE TOWERS, ABU DHABI, UAE
Consultant: Arch Group Engineers
AL SARAYA RESIDENTIAL TOWER, ABU DHABI, UAE
ALUBOND U.S.A FR EUROCLASS B

PROJECT REFERENCES

AL MAFRAQ HOSPITAL, ABU DHABI, UAE
Contractor: Al Habtoor Leighton Group

PREMIER INN HOTEL, ABU DHABI AIRPORT, UAE
Consultant: Dewan Architects & Engineers
ALOFT HOTEL, ABU DHABI, UAE
Consultant: ARUP
BAYNUNAH TOWER, ABU DHABI, UAE
Contractor: Pivot Ben Cont W.I.L
Consultant: Arkan, Subcontractor: Arabian Ind Co
CENTRO HOTEL, ABU DHABI, UAE
Contractor : Polensky & Zoellner
Consultant : Ga - Architects & Engineering
Subcontractor: Arabian Ind Co
SHEIKHA FATIMA COMMERCIAL BUILDING, ABU DHABI, UAE
Contractor : Cgc, Consultant: Heberger
Subcontractor: Arabian Ind Co
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

SHOPPING MALL AT WORKERS VILLAGE, MUSSAFAH M24, ABUDHABI, UAE
Consultant : A cg-Architectural Consulting Group
Contractor : International Construction Contracting Co. LLC
Subcontractor: Arabian Ind Co

PRoJECT REFEREnCES
alubond u.s.a Fr euroclass b
Alubond
FR Euroclass B
AL SARAYA RESIDENTIAL TOWER, ABU DHABI, UAE
Contractor : Arabian Construction Company
Consultant : Architect & Planning Group
Subcontractor: Arabian Ind Co./Reem Emirates
ARZANAH HOSPITAL, ABUDHABI, UAE
Client : Mubadala, Contractor: Habtoor Leighton
Subcontractor: Folcra Beach
CITY OF LIGHTS, REEM ISLAND, ABU DHABI, UAE
Client: Shaikh Tahnoun, Royal Group
FERRARI WORLD YAS MARINA, ABU DHABI, UAE
Contractor: SIXCO
MEENA TOWER, ABU DHABI, UAE
Consultant: Dewan Architects & Engineers
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

AMITY SCHOOL, ABU DHABI, UAE
Consultant: Dewan Architects & Engineers
PROJECT REFERENCES
ALUBOND U.S.A FR EUROCLASS B

LUSAIL SPORTS CLUB, QATAR
Consultant: KEO International Consultant
You have been awarded:

Intertek Warnock Hersey Mark for Building Panels
Certificate number: WH116 – 26553701

Organization:
Eurocon Building Industries FZE (Group of Mulk Holdings International)
P.O. Box 42642
Hamriya Free zone - Sharjah, United Arab Emirates

Product: Eurocon - Alubond USA - FR Euroclass B Aluminium Composite Panel
SPEC ID 35247
For details related to results and allowable configurations, see Appendix A (page 2 of 2 of this certificate)

Certification body: Intertek Testing Services NA, Inc.
Initial registration: December 04, 2016
Date of expiry: December 03, 2021
Issue status: 3

Dustin Behling
Certification Coordination Manager
12/04/2016

Signature
Date

Registered address:
Intertek Testing Services NA, Inc. 545 E. Algonquin Rd., Arlington Heights, IL 60005 USA

The certificate and schedule are held in force by regular annual surveillance visits by Intertek Testing & Certification Ltd and the reader or user should contact Intertek to validate its status. This certificate verifies the property of Intertek Testing & Certification Ltd and must be returned to them on demand. This Certificate is for the exclusive use of Intertek’s Client and is provided pursuant to the Certification agreement between Intertek and its Client. Intertek’s responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement. Prior to use, Intertek’s Certification mark is restricted to the conditions laid out in the agreement. Any further use of the Intertek name for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. Initial Factory Assessments and Follow-up Services are for the purpose of ensuring appropriate usage of the Certification mark in accordance with the agreement, they are not for the purposes of production quality control and do not release the Client of their obligations in this respect.

Listings: NFPA 285 - Passed, ASTM E84 - Class A, ASTM D1929 - Self ignition more than 450°C
Alubond Europe d.o.o.
Nemanjina 130
26320 Bačka Topola, Serbia
Tel: +381 13 652 852  Fax: +381 13 652 852
email: info@alubondeurope.com
website: www.alubondeurope.com

Alubond-Stone
Fire Retardant Stone Panel

This Agrément Certificate Product Sheet[1] relates to:
Alubond U.S.A FR-B PVDF Coated Composite Aluminium Cladding Sheet, for use as external cladding or internal lining.


CERTIFICATION INCLUDES:
- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED:
Strength and stability — the product can resist the surface loadings normally encountered by claddings or linings in the UK (see section 6).
Resistance to mechanical damage — the product has satisfactory resistance to mechanical damage (see section 8).
Properties in relation to fire — the product is not classified as ‘non-combustible’, but can achieve a B-s1, d0 classification to BS EN 13501-1 : 2007 (see section 10).
Weathertightness — the product has adequate resistance to the passage of moisture (see section 12).
Durability — under normal conditions the product will perform effectively as an external cladding with an ultimate life of at least 30 years. The coating will retain a good appearance for at least 20 years in non-corrosive environments and at least 15 years in severe industrial environments (see section 14).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: Simon Wroe Claire Curtis-Thomas
Originally certificated on
Head of Approvals — Materials Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

THIS IS NOT A VALID AGRÉMENT CERTIFICATE. THE BBA ACCEPTS NO RESPONSIBILITY NOR LIABILITY FOR ANY CONCLUSIONS DRAWN FROM, NOR ANY DECISIONS BASED ON, THIS DOCUMENT.

BBA LISTINGS: BS EN 13501-1 : 2007, Class B, S1, d0
CERTIFICATE OF APPROVAL
No CF 5061

This is to certify that, in accordance with
TS540 General Requirements for Certification of Fire Protection Products
The undermentioned products of

EUROCON BUILDING INDUSTRIES (MULK HOLDINGS FZC)

P.B. 42642 Hamriyah Free Zone Sharjah UAE
Tel: +97165262202 Fax: +97165262203

Have been assessed against the requirements of the Technical Schedule(s)
denoted below and are approved for use subject to the conditions
appended hereto:

CERTIFIED PRODUCT
Alubond usa FR Euroclass B
(4mm and 6mm products)

TECHNICAL SCHEDULE
TS19 Class 0 / Class 1 (BS)

See annex 1 for further product
information

Signed and sealed for and on behalf of Exova (UK) Limited trading as
Warrington Certification

Paul Duggan
Certification Manager

Issued: 1st March 2012
Valid to: 25th September 2022

This certificate is the property of Exova (UK) Limited trading as Warrington Certification.

Exova LISTING: BS 476 Part 6-class 0, Part 7 - Class 1
Dubai Civil Defense Approval

Dubai Central Laboratory Certification of Approval
THOMAS BELL WRIGHT INTERNATIONAL CONSULTANTS

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

to

Eurocon Building Industries FZE
(a subsidiary of Mulki Holdings F.Z.E Group, Sharjah UAE)
P.O.Box 42642
Hamriyah Free Zone, Sharjah, UAE (United Arab Emirates)

for

“Alubond® USA FR-Euro Class B”
4-mm thick Aluminum Composite Material

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, Claddings, Curtain Walls, Building
Materials, Products and Assemblies

In witness whereof this Certificate is issued this 27th day of February 2017

Thomas F. Bell-Wright
Certification Director

Nick J. Purcell
Certification Manager

Certificate Number: TBW0300153

Initial registration: February 27, 2017 Issued: February 27, 2017 Expiration: February 26, 2020
File Name: QL115 Eurocon Building Industries FR Euroclass B Save Date: 27/02/17 17:54 AM

This certificate and schedules are held in force by regular factory inspections by Thomas Bell-Wright International Consultants (TBWC). Refer to www.tbwcert.com or contact TBWC Fire Compliance Division to validate the current status of Certification. This certificate remains the property of THOMAS BELL WRIGHT INTERNATIONAL CONSULTANTS, PO BOX 26345, DUBAI, UAE.

Tel: +971 4821 5777, Email: certification@tbwcert.com, Web: www.tbwcert.com / JIP Scheme Certificate Issue 5, Dec 2013

This document must not be reproduced, except in its entirety, and with the express permission of Thomas Bell-Wright International Consultants.

THOMAS BELL WRIGHT LISTINGS: ASTM E 84(CLASS A), ASTM D 1929(Self Ignition More than 450°c), EN 13501-1:2007(Class B, S1,d0)
THOMAS BELL WRIGHT INTERNATIONAL CONSULTANTS

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

to

Eurocon Building Industries FZE
(a subsidiary of Malik Holdings Group, Sharjah UAE)
PO Box 12641, Hamriyah Free Zone, Sharjah UAE

for

“Alubond® U.S.A. FR-Euroclass B”
4mm thick Aluminium Composite Material
Non-Load-Bearing Exterior Wall Cladding System
(System Designation: A221.1H61-4)

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 31st day of October 2017

Thomas F. Bell-Wright
Certification Director

Nick Purcell
Certification Manager

Certificate number: TBW0300245
Initial registration: October 31, 2017
Issued: October 31, 2017
Expiry: October 30, 2020

File Name: RD109 Eurocon Building Industries NFPA 285 4mm
Save Date: 31/10/17 8:09 AM

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:+9714 821 1777 Email: certification@bell-wright.com Web:www.bell-wright.com L 19 Scheme Certificate Issue 5 Dec 2016

This document must not be reproduced, except in its entirety and with the express permission of Thomas Bell-Wright International Consultants.

THOMAS BELL WRIGHT LISTINGS: NFPA 285-Passed
FIRE PERFORMANCES

NON COMBUSTIBLE COMPOSITE PANELS
A panel burning test was conducted with direct flame at a temperature of 1500 °C on five different panels. The time the panels withstood fire was recorded as follows.

<table>
<thead>
<tr>
<th>Panels</th>
<th>Time withstood by Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDPE Core - ACP</td>
<td>20 Seconds</td>
</tr>
<tr>
<td>Solid Aluminium</td>
<td>30 Seconds</td>
</tr>
<tr>
<td>B Core -ACP</td>
<td>18 Minutes</td>
</tr>
<tr>
<td>A2 Core -ACP</td>
<td>30 Minutes</td>
</tr>
<tr>
<td>Honeycomb Core A2 -ACP</td>
<td>55 Seconds</td>
</tr>
</tbody>
</table>

![Image of panels with fire test results]
A full classification serves as the standard of evaluation for the reaction to fire of construction and building materials.

EN13501- Part 1 test consists of EN 13823 and BS EN ISO 1716 tests.
NFPA 285: 2012 STANDARD TEST
ALUBOND U.S.A (FR-A2, FR-B) WITH
ABTI SUBSTRUCTURE SYSTEM

Alubond (Alubond U.S.A A2 & Alubond U.S.A FR Euroclass B) undergoing the
NFPA 285 Test in two International Third Party Laboratories Intek USA and Thomas
Bell-Wright International Consultants, U.A.E

NFPA 285 PANEL FACES
PRIOR TO FIRE TEST.

EXTERIOR FACE AT 25
MINUTES OF THE TEST.

END OF THE TEST

WALL CAVITY IN WALL ASSEMBLY
AFTER FIRE TEST
Alubond (Alubond U.S.A FR-A2 & Alubond U.S.A FR Euroclass B) has undergone the GOST R Certification in Russia.
ASTM E84-15b: STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF ALUBOND U.S.A (FR-A2, FR-B)
OUR APPROVED SUBSTRUCTURE SYSTEMS

Information: For more Alubond USA approved systems, check the link: www.tbwcert.com (Company Name: Eurocon building industries FZE)
<table>
<thead>
<tr>
<th>S.NO</th>
<th>ALUBOND USA PRODUCTS REF</th>
<th>CERTIFIED SYSTEM REF .DETAILS</th>
<th>CHANGES OF ACCESSORIES INVOLVED IN SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4mm Thick Alubond USA FR-A2 (Mechanical closed Joint)-TK</td>
<td>TBW0300137.2</td>
<td>Sealant-Dowcorning 700, GI &quot;U&quot; Channel, insulation 50mm thick and 75 kg/m³ Density Fujairah Rock wool</td>
</tr>
<tr>
<td>2</td>
<td>4mm Thick Alubond USA FR-A2 (Mechanical closed Joint)</td>
<td>TBW0300155</td>
<td>Sealant-INCA2460, mineral wool filler, Insulation 50mm thick and 50 kg/m³ Density Fujairah Rock wool</td>
</tr>
<tr>
<td>3</td>
<td>4mm Thick Alubond USA FR-A2 (Open Joint)</td>
<td>TBW0300156</td>
<td>Special Aluminium Profiles with Insulation 50mm thick and 50 kg/m³ Density Fujairah Rock wool</td>
</tr>
<tr>
<td>4</td>
<td>4mm Thick Alubond USA FR-A2 (Mechanical closed Joint)</td>
<td>TBW0300165 (3hRS Fire rated Assembly)</td>
<td>Sealant-INCA2460, mineral wool filler, Insulation 50mm thick and 50 kg/m³ Density Fujairah Rock wool</td>
</tr>
<tr>
<td>5</td>
<td>4mm Thick Alubond USA FR-A2 (Mechanical closed Joint)</td>
<td>TBW0300232</td>
<td>Sealant-Tremco, Al &quot;U&quot; Channel, Insulation 50mm thick and 24 kg/m³ Density Knauf glass wool with Tube shape Runner</td>
</tr>
<tr>
<td>6</td>
<td>6mm Thick Alubond USA FR-A2 (Mechanical closed Joint)</td>
<td>TBW0300212</td>
<td>Sealant-Ever build 825 weather, Al &quot;U&quot; Channel, Insulation 50mm thick and 36 kg/m³ Density Knauf glass wool</td>
</tr>
<tr>
<td>7</td>
<td>4mm Thick Alubond USA FR-Euroclass B (Mechanical closed Joint)</td>
<td>TBW0300245</td>
<td>Sealant-ever build 825 weather, Al &quot;U&quot; Channel, Insulation 50mm thick and 36 kg/m³ Density Knauf glass wool</td>
</tr>
<tr>
<td>8</td>
<td>4mm Thick Alubond USA FR-Euroclass B (Open Joint)</td>
<td>TBW0300129.2</td>
<td>Special Aluminum Profiles with Insulation 50mm thick and 50 kg/m³ Density Fujairah Rock wool</td>
</tr>
<tr>
<td>9</td>
<td>6mm Thick Alubond USA FR-Euroclass B (Mechanical closed Joint)</td>
<td>TBW0300138</td>
<td>Sealant-Dow corning 700, GI &quot;U&quot; Channel, insulation 50mm thick and 75 kg/m³ Density Fujairah Rock wool</td>
</tr>
</tbody>
</table>
Cavities

- Either Part of Silicone Joints System or Created by delamination when fire burns the skin and core of ACP.
- Flames in cavities can extend 5 to 10 times original length regardless of materials present.

EXTERNAL FIRE SPREAD

- Fires allowed to develop may flash over and break out through windows.
- Flames spread up over or through the cladding.
- Flames can extend over 2m above window opening. Regardless of cladding materials.
- If fire re-enters building secondary fires may then develop.
120 MINUTES RATED FIRE WALL WITH ALUBOND U.S.A FR-A2 ACP CLADDING

![Diagram of 120 Minutes Rated Fire Wall with Alubond USA FR-A2 ACP Cladding](image-url)
High LDPE Core Panels with Insulation & Sealed Silicone System With ASTM E119 Fire Wall

Four primary reasons for spread of fire in a typical LDPE core ACP Cladded Buildings in UAE & Worldwide

• The foam backer rod is one of the first to ignite and burns the polyethylene sealant. Fire moves swiftly through the continuous sealant and backer rod aided by bitumen paint.

• The cavity caused due to sealed façade and lack of cavity barrier, creates a tunnel effect for fire to spread up the floors very quickly.

• The LDPE core of the aluminium composite panel and aluminium skin both melt and droplets contribute to further spread of fire.

• The fire spreads both from the back of the façade and front of the façade aided by winds and cavities and further fuelled by droplets of LDPE and falling debris of burning panels.

• No wonder we see buildings engulfed in fire within minutes!
Silicone Free Open Groove NFPA 285 Compliant Ventilated Substructure System Certified By Third Party

Usage of super fire retardant Alubond - Stone Panels instead of highly flammable LDPE core panels.

- Instead of Bitumen the wall is coated with fire rated moisture free paint
- ABTI system is silicon free open groove system thereby not using backer rods and sealants which aid propagation of fire.
- Cavity barrier is installed at regular intervals depending on the size of the building.

Use of Alubond U.S.A FR-A2 combined with ABTI Open Groove Ventilated substructure system provides the solution for a fire safe cladding.
ABTI - OPEN GROOVE VENTILATED SYSTEM
TYPICAL CORNER PANEL FIXING DETAILS RAIN SCREEN CLADDING

- Neoprene Packing Between Wall And Alum Bracket
- M8x65mm SS Anchor Bolt
- 50mm Rockwool 75kpa/m3 Density
- Double Slotted Alum Bracket 50x25x25x4mm
- M8x18mm Stainless Steel CSK Screw @12mm Wider Slot
- 8mm mm Allen Screw
- Panel Holder (VSO)
- 4mm Thk Alubond - A2 / B Composite Panel

ABTI - OPEN GROOVE VENTILATED SYSTEM
TYPICAL PANEL TO WINDOW PROFILE FIXING DETAILS RAIN SCREEN CLADDING

- Fire Rated Sealant
- Block Wall
- 29x20x40x2mm Aluminium Angle
- 4mm Thk Alubond - A2 / B Aluminium Composite Panel
- 50mm Rockwool 75kpa/m3 Density
- Neoprene Packing Between Wall And Alum Bracket
- M8x65mm SS Anchor Bolt
- Double Slotted Alum Bracket 50x25x25x4mm
- M8x18mm Stainless Steel CSK Screw @12mm Wider Slot
- 8mm mm Allen Screw
- Panel Holder (VSO)
ABTI - OPEN GROOVE VENTILATED SYSTEM WITH CAVITY BARRIER
TYPICAL PANEL TO WINDOW BOTTOM SIDE FIXING DETAILS RAIN SCREEN CLADDING

1mm Thick Galvanized Steel Cavity Barrier
Fire Rated Sesiant
M4x18mm Stainless Steel
C3K Screw@12mm Wider Slot
8x8 mm Alien Screw
50mm Rockwool 75Kg/m3 Density
4mm Thk Alubond - A2 / B Composite Panel
Continuous Aluminium Hat Profile
Double Slotted
Alum Bracket 50x75x75x4mm
M8x75 Stainless Steel Nut & Bolt
With Double Washer
Neoprene Packing Between Wall And Alum Bracket
M8x65mm SS Anchor Bolt
Panel Holder (VIS0)

ABTI - OPEN GROOVE VENTILATED SYSTEM WITH CAVITY BARRIER EACH FLOOR
TYPICAL PANEL VERTICAL FIXING DETAILS RAIN SCREEN CLADDING

1mm Thick Galvanized Steel Cavity Barrier
20x20x50x2mm Aluminium Cleat
M4x18mm Stainless Steel
C3K Screw@12mm Wider Slot
20x20x40x2mm Aluminium Angle
50mm Rockwool 75Kg/m3 Density
4mm Thk Alubond - A2 / B Composite Panel
Continuous Aluminium Hat Profile
Double Slotted
Alum Bracket 50x75x75x4mm
M8x75 Stainless Steel Nut & Bolt
With Double Washer
Neoprene Packing Between Wall And Alum Bracket
M8x65mm SS Anchor Bolt
CONTACT US

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Fax: 815 977 9672
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Compound, Senpati Bapat Marg,
Lower Parel,
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Fax: +91 22 4321 1444
E-mail: sales@alubond.com

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