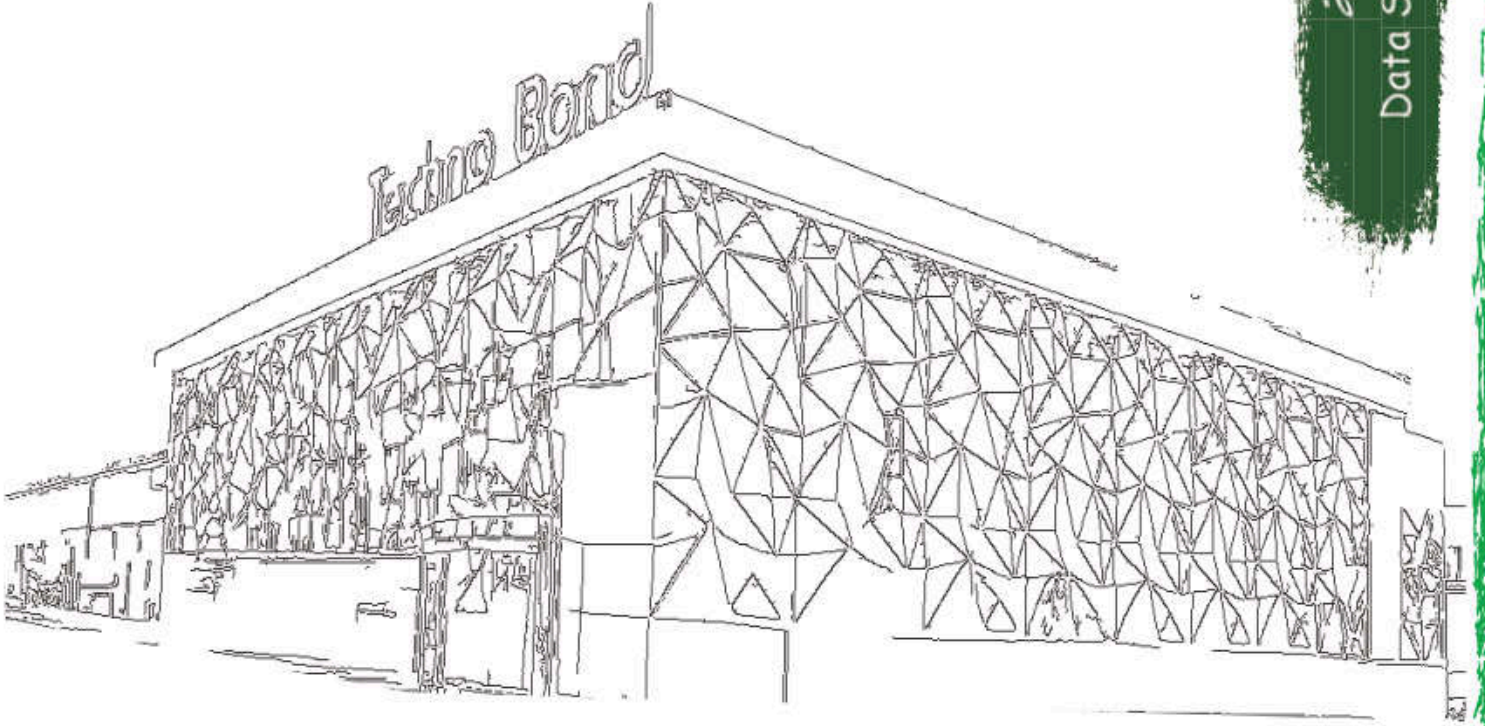


Techno Bond

شركة ألواح الخليج البيانات الفنية تصنيف النوع العادي Normal

بيانات فنية
Data Sheet - Normal



Aluminium Composite Panels-Techno Bond

Techno Bond Copyright Version 2025-2026

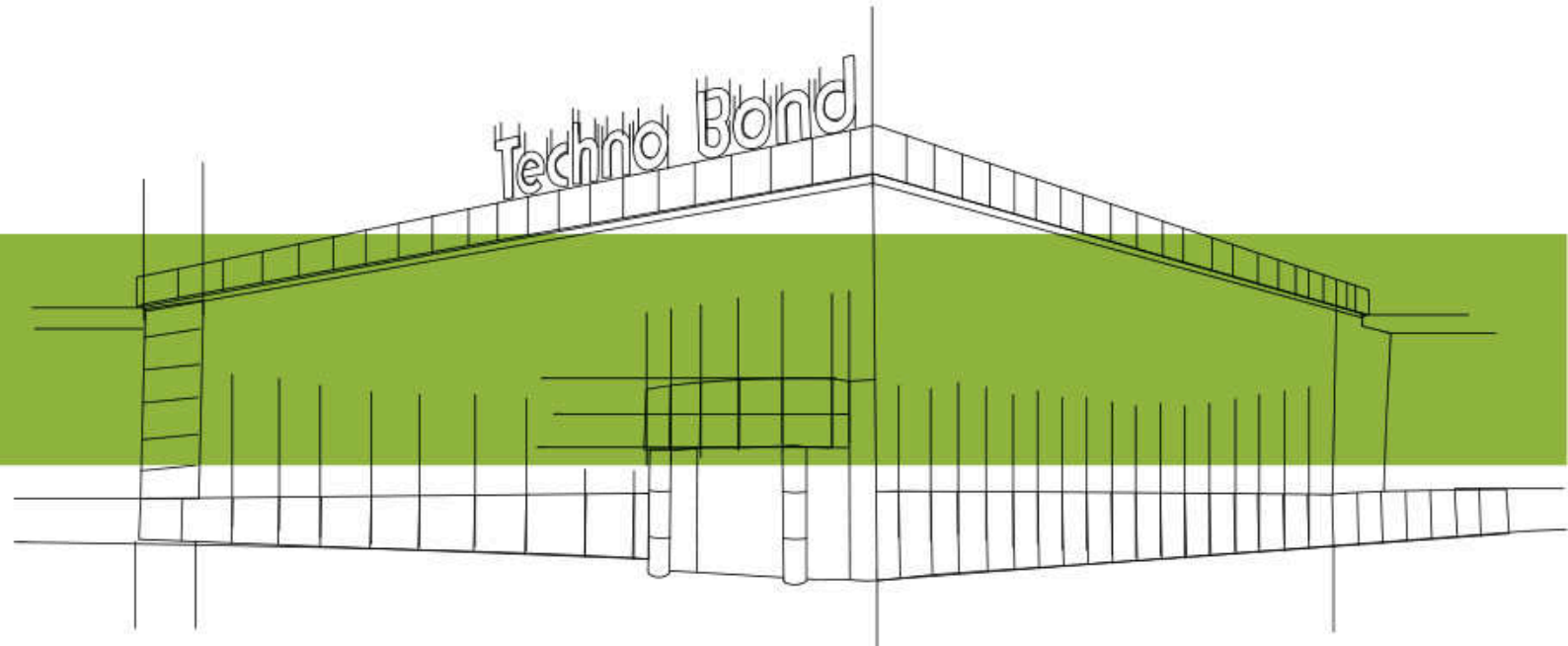


المواصفات الفنية لمنتج «تكنو بوند»
العادي
NORMAL

Techno Bond is the most widespread in the Arab and African world the largest factory for producing cladding panels in the Middle East and Africa. In addition to advanced production lines with a production capacity of 7,000,000 square meters annually, a product approved by all government authorities in the Kingdom of Saudi Arabia and other countries, and the most widespread in the Kingdom of Saudi Arabia. The factory works around the clock to provide customers' requests in the fastest time. You are guaranteed for 20 years against manufacturing defects.

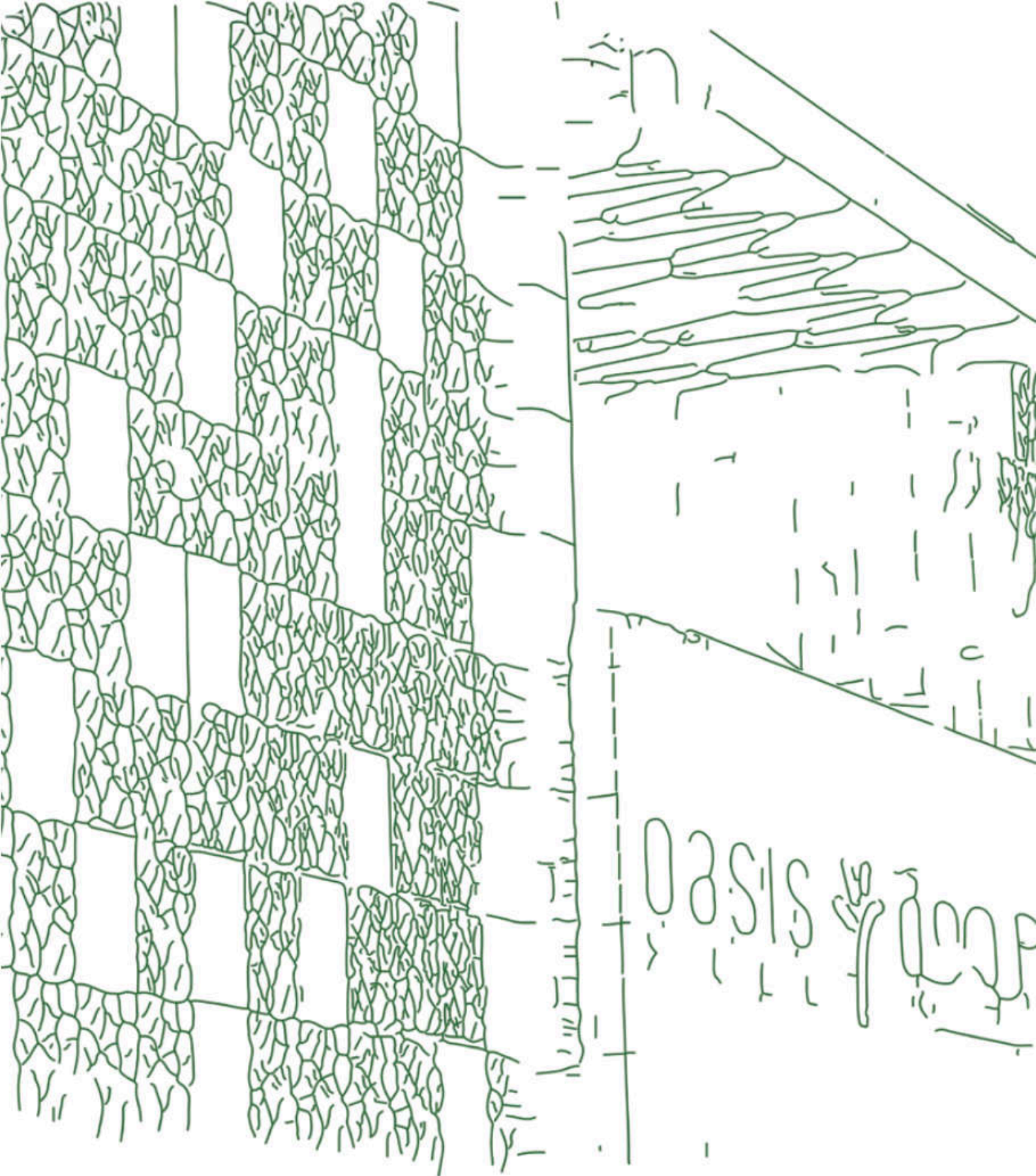
TECHNO BOND
Aluminium Composite Panels

Technical Data Sheet
NORMAL



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• Techno Bond Standard Composition -----	6
• Techno Bond PHYSICAL PROPERTIES -----	7
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11

1 | Techno Bond Product Composition

Exterior grade panel must be exact 4 mm thick composed of a Low-density polyethylene core sandwiched between two sheets of Aluminum of 0.5 mm, thickness as seen below:
Exterior / Face panel is Aluminum Sheet Coated with PVDF interior / Rear side of panel is coated with .5 to 7-micron Polyester Coated

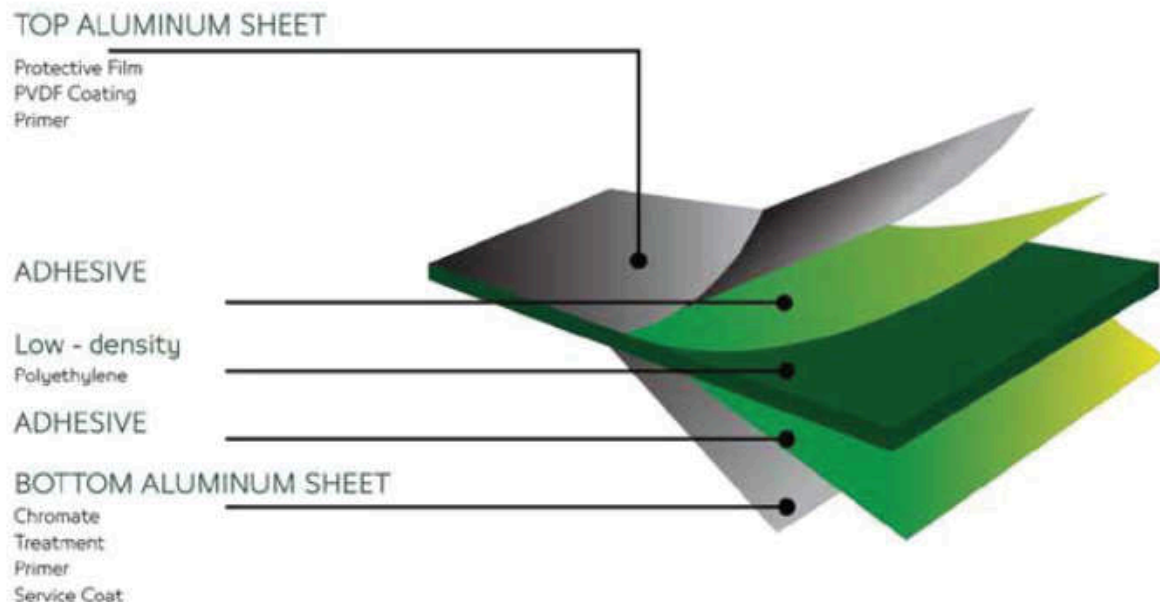
Aluminum Face Sheet:

Total Thick 4mm	Aluminum Thick	Kg/m2
LLD	0.5 mm	6.2/kg

Typical Composition of Aluminum Composite Panel
(Diagrammatic Representation)

Techno Bond Normal

Techno Bond Normal Composition



2 | Techno Bond Standard Composition

Product	Total Panel Thick (mm)	Component Thickness(mm)			Aluminum Grade	Core Material
		Top Alum Skin	Core LDPE	Bottom Alum Skin		
Techno Bond ACP-PE	4/5/6	PVDF Coated 0.5	3.20 mm	Polyester Coated 040/050/060mm	Alloy 3003/5005 series	Low Density Polyethylene Core

● Product Dimension:

Techno Bond panels are available in various dimensions; however, our standard panel size is 4 mm × 1250 mm × 5800 mm.

Other available sizes are as follows:

Dimension	Unit	Standard	Non Standard
Width	mm	1250	1000/1500/1575mm
Length	mm	5800	2440mm, 3660mm and 4200 mm Any length Available
Thickness	mm	4	3,5 & 6

● TOLERANCES

Dimensional/Standard Size (Rounded)

Thickness: 4mm 0.20 mm

Length: 0.20 mm

Width: + 2.0 mm

Panel Bow: Maximum 0.8% of any 1828 mm 72Q panel dimension.

Squareness: 3mm

Maximum deviation from panel flatness shall be 1/8" in 5'0" on panel in any direction for assembled (units. (Non-accumulative - No Oil Canning.

Panel Dimensions: Field fabrication shall be allowed where necessary, but shall be kept to an absolute minimum. All fabrication shall be done under controlled shop conditions when possible.

Panel lines, breaks, and angles shall be sharp, true, and surfaces free from warp and buckle.

PRODUCT PERFORMANCE (PHYSICAL PROPERTIES)

Bond Integrity

Bond integrity tested, (simulating resistance to panel de-lamination), there shall be neither adhesive failure of the bond.

- Between the core and the skin nor
 - Cohesive failure of the core itself below the following values:
- Peel Strength: 145.96 N mm/mm (32.8 in lb/in) as manufactured

3 | Techno Bond PHYSICAL PROPERTIES

Name	Unit	Thickness		
		3mm	4mm	6mm
Density	g/cm3	1.52	1.37	1.22
Weight	kg/m2	4.55	5.5	7.34
Thermal expansion (at 100 °C)	10-6/OC	15	25	25
Thermo-conduction (U-Value)	W/mK	0.15-0.19		
Deformation temperature	OC	115		
Sound isolation (100N3200HZ)	dB	24	26	27

• Techno Bond Comparison with Other building Materials

Physical Properties	Techno Bond	AL	FE	S. Steel	Concrete	Glass	Acrylic Sheet	Gypsum
Specific Gravity	1.2-1.35	2.71	7.9	7.9	0	2.5	1.2	0.86
Linier Thermal Expansion (1m/50°C)	1.2 mm	1.2 mm	0.6mm	0.9mm	0.63 mm	0.50 mm	3.5 mm	0
Thermal Conductivity W/(m.K)	0.4-0.5	210	45	17	1.62	1	0	0.04

• Techno Bond Comparison of weight & rigidity

Techno Bond Normal Specific Gravity: 1.9			ALUMINUM Specific Gravity: 2.			Stainless Steel Specific Gravity 7.89		
	Thick (mm)	Weight (Kg / m * 2)	Thick (mm)	Weight (Kg / m * 2)	Weight Ratio %	Thick (mm)	Weight (Kg)	Weight Ratio %
	4mm	5.50	3.30	8.9	62	2.4	18.9	29
Techno Bond	6mm	7.34	4.50	12.2	61	3.2	25.2	29

• Techno Bond Deflection Temperature

Approximate Deflection Temperature: 110 °C

(This indicates the panel's ability to resist boiling water conditions.)

Temperature Stability for Techno Bond PE Core:

From -40 °C up to +90 °C (depending on heating duration)

Recommended Heating Conditions for Panels:

Heating Duration	Maximum Temperature
Less than 30 minutes	90 °C
More than 30 minutes	70 °C

• VIBRATION DAMPING

Bond has best vibration damping effect that absorbs mechanical energy arises out of vibration to convert it into thermal energy.

4 | MECHANICAL PROPERTIES

Mechanical Properties of Aluminum Skin We are using Alloy Series 3003/5005 and temper H18/24

MECHANICAL PROPERTY	UNIT	H18-ALUMINUM AA3003
Proof stress %0.2	MPa	152
Flexural Elasticity	GPa	70

• Mechanical Properties of Techno Bond PE

Techno Bond PE exhibits the following average mechanical properties:

Mechanical Property	Unit	Techno Bond Normal	
		4mm	6mm
Tensile Strength	MPa	44	34
0.2% Proof Stress	MPa	38	30
Elongation	%	14	17
Flexural Elasticity, E	GPa	40.1	29
Rigidity, E x 1	kNmm ² /mm	138	348
Punching Shear Strength	N/mm ²	25	22

5 | BENDING LIMIT

Bending Properties – Techno Bond PE

Techno Bond PE panels can be bent using a press brake or 3-roll bending machines. The minimum bend radius refers to the smallest radius that can be applied without causing wrinkles on the panel's outer surface.

In 3-roll machines, the achievable bending diameter depends on several factors, including:

The diameter of the rolls

The length of the panel

The type and precision of the machine

Smallest bending radius (Parallel in Press Break Machine)

Thickness	Techno Bond PE
4mm	90mm

6 | THERMAL CONDUCTIVITY

Compared to solid materials, Techno Bond has lower thermal conductivity.

The table below shows a comparison of thermal conductivity values for different materials.

MATERIAL	Thermal Conductivity (W/m K)
4mm/Techno Bond Normal	0.40-0.50
6mm Techno Bond Normal	0.40-0.45
Solid Aluminum	205
Steel	50.2
Polyurethane	0.02
Glass Wool	0.04
Brick	0.28
Concrete	0.80
Gypsum Board	0.13

7 | HEAT TRANSMISSION

The Heat transfer from the outer air to the inner air. The air gap between the Panel and the wall increases the thermal insulation. The heat transmission coefficient (U Value) 4mm AC P fixed wall system is given below .

Type of panel Cladding	100 mm Air Gap 115mm Brick wall	75 mm Air Gap 25mm Rock wool 115mm brick wall
Techno Bond PE	1.46W/m ² K	0.85 W/m ² K

8 | COATING FINISHES

Aluminum Coil Coating System - Techno Bond

Techno Bond uses Aluminum Coil Alloy (3003 Series), coated with Kynar® 500-based Polyvinylidene Fluoride (PVDF), utilizing a minimum of 70% resin content, in cooperation with Becker's French Coatings. The PVDF coating system is available in two- or three-layer systems, depending on the color selection:

Metallic Colors:

Typically a three-coat system, consisting of:

Primer

Color Coat

Clear Topcoat

Standard RAL Colors:

Usually a two-coat system, composed of:

Inhibitive Primer

Color Coat

All coatings are applied in conformance with the general requirements of AAMA 620.

• Nano-PVDF Aluminium Composite Panel

TECHNO BOND Nano-PVDF aluminium composite panel is anti-graffiti and self-cleaning. It is composed of a core sandwiched between two 0.5mm aluminium skins. Coming with hydrophobic and lyophobic surface, the Nano-PVDF ACP features good water and dirt resistance. The protected object stays clean much longer and can be easily cleaned with pure water. Techno Bond ACP has high water repellence and the dirt on its surface can be easily cleaned away by a heavy rain.

Benefits of TECHNO BOND Nano PVDF composite panel

TECHNO BOND nano-PVDF panel has the following advantages.

- Excellent easy-cleaning.
- Anti Bacterial surface
- Pollution Resistance
- Oil resistance
- Good Friction Resistance
- Strong Acid & Alkali Resistance
- Outstanding weather resistance

Color

Generally, we are manufacturing ACP with various options of color coating, basically we have (Four different types of colors such as: Solid / Metallic Colors, Natural Finishes (Stone & Timber. and Sparkling Colors. Standard color as selected by the owner/architect/engineer and Custom colors as per customer requirement.

9 | PANEL CORE

The core of Techno Bond PE is one-time recycled Low-Density Poly Ethylene offers better melt flow characteristics and good flexibility than recycled HOPE. This gives more flatness and fabrication easiness to the panel.

We also add Calcium Carbonate CaCO_3 to give extra-ordinary flexibility to the core material and it makes core material UN-BREAKABLE.

10 | PANEL STRENGTH

Techno Bond PE used for the external cladding must stand the wind load. This wind load will cause deflection of the panels and if the deflection is small, the panel will not deform. The permanent deformation of the panel is calculated by 0.2% yield stress divided by the safety factor. In the calculation, we are assuming that the total strength of the panel is the strength of the Aluminum skins. If the calculated 2% proof stress is greater than the permissible, normally the panel is strength ened by giving additional stiffeners. The other factors affecting the strength of the panel are:

1. Panel thickness, width and length.
2. Supporting conditions.
3. Wind load.

We are using the Aluminum Alloy 3003/5005 series for our Techno Bond PE, Aluminum. Skins 2% proof stress is 152MPa and suitable where the wind speed is 50m/sec.

11 | JOINING HOLES/ BOLTS & NUTS

In the installation work, other important factors are the strength of the joining holes and the rivets. Normally the distance from the Hole center to the panel edge should be 2 times larger than hole diameter and to prevent the galvanic corrosion of the panels use only Aluminum or stainless-steel rivets, bolts nuts etc. if we are using dissimilar metals lay a coating to prevent the galvanic corrosion.

• STRENGTH OF SUBSTRUCTURE

Substructure Requirements for Panel Installation

The substructure on which the panels are installed must be capable of withstanding both the wind load and the weight of the panels.

The strength of the substructure depends on the type of material used and the cross-sectional profile of its components.

● RESISTANCE TO NATURAL FORCES

Lightning

If a lightning strikes, Techno Bond the electricity will be discharged to the earth through the sub-structure. Since the panel is connected to the earth through the sub structure.

12 | PRODUCT WARRANTY

Techno Bond PE brand Aluminum Composite Panels supplied by Alwah Al Khaleej Co will be warranted for a period of 20 Years from the date of supply, as per our standard warranty Policy from Alwah Al Khaleej Co. Formal Warranty Documentation will be issued in the name of Client and will be endorsed by the regional agents or the company itself.

13 | U Value

Thermal properties Techno Bond
U Value

Panel Thickness	Thermal Resistance $1/L = R$ (m ² K/W)	Heat Transmittance Coefficient U Value (W/m ² K)
3mm	0.0069	5.65
4mm	0.0103	5.54
6mm	0.0172	5.34

Thermal Conductivity (for Techno Bond) The Core is the determining Component
Core Material IPE = 0.29W/mK
Aluminium LAL 200W/mK

Quality Certification

أهم شهادات جودة شركة ألواح الخليج
« تكنوبوند » للنوع (العادي)

Normal
2025-2026



CERTIFICATE OF REGISTRATION

It is confirmed that the management system of

ALWAHA ALKHALEEJ INDUSTRIAL CO. (TECHNO BOND)

Alamid Street , Alfaisaliyah District . Exit 17 , Riyadh , Kingdom of Saudi Arabia

It has been evaluated and complies with the requirements of

ISO 45001:2018

Occupational Health & Safety Management System

This certificate is valid for the following activities

MANUFACTURING OF FIRE – RATED ALUMINUM COMPOSITE PANELS

Certificate Number: SISTEMA-KSA/AWN-O4957

Issue date: 22.12.2025

Expiry date: 21.12.2026

Date of First Surveillance: 22.11.2026

Date of second surveillance: 22.11.2027

Recertification date: 22.11.2028

Paul Kishner
Managing Director



The Organization's documentation and Implementation has been reviewed and found to comply with the relevant standard rules. This certificate of Registration is based on the evaluation of the mentioned scope and also responsible for maintaining the responsibilities of the relevant standard rules. If any changes in the Activities of the Company, this certificate invalid. The validity of certificate is subject to Successfully Completion of surveillance audit on before due dates and its only valid after successful surveillance with continuation letter issued by us. QUALITY SISTEMA Certifications and Inspections Pvt Ltd, Head-quarters: FF, SS-1914, Sector -H, LDA Colony, Kanpur Road, Lucknow-226012.



Verify the certificate:- www.sistemicerts.com



CERTIFICATE OF REGISTRATION

It is confirmed that the management system of

ALWAHA ALKHALEEJ INDUSTRIAL CO. (TECHNO BOND)

Alamid Street , Alfaisaliyah District . Exit 17 , Riyadh , Kingdom of Saudi Arabia

It has been evaluated and complies with the requirements of

ISO 9001:2015
Quality Management System

This certificate is valid for the following activities

MANUFACTURING OF FIRE – RATED ALUMINUM COMPOSITE PANELS

Certificate Number: SISTEMA-KSA/AWN-Q4955

Issue date: 22.12.2025

Expiry date: 21.12.2026

Date of First Surveillance: 22.11.2026

Date of second surveillance: 22.11.2027

Recertification date: 22.11.2028


Managing Director



The Organization's documentation and Implementation has been reviewed and found to comply with the relevant standard rules. This certificate of Registration is based on the evaluation of the mentioned scope and also responsible for maintaining the responsibilities of the relevant standard rules. If any changes in the Activities of the Company, this certificate invalid. The validity of certificate is subject to Successfully Completion of surveillance audit on before due dates and its only valid after successful surveillance with continuation letter issued by us. QUALITY SISTEMA Certifications and Inspections Pvt Ltd, Head-quarters: FF, SS-1914, Sector -H , LDA Colony, Kanpur Road, Lucknow-226012.

Verify the certificate:- www.sistemacerts.com





CERTIFICATE OF REGISTRATION

It is confirmed that the management system of

ALWAHA ALKHALEEJ INDUSTRIAL CO. (TECHNO BOND)

Alamid Street , Alfaisaliyah District . Exit 17 , Riyadh , Kingdom of Saudi Arabia

has been evaluated and complies with the requirements of

ISO 14001:2015 Environmental Management System

This certificate is valid for the following activities

MANUFACTURING OF FIRE – RATED ALUMINUM COMPOSITE PANELS

Certificate Number: SISTEMA-KSA/AWN-E4956

Issue date: 22.12.2025

Expiry date: 21.12.2026

Date of First Surveillance: 22.11.2026

Date of second surveillance: 22.11.2027

Recertification date: 22.11.2028

Earl Kishner
Managing Director



The Organization's documentation and Implementation has been reviewed and found to comply with the relevant standard rules. This certificate of Registration is based on the evaluation of the mentioned scope and also responsible for maintaining the responsibilities of the relevant standard rules. If any changes in the Activities of the Company, this certificate invalid. The validity of certificate is subject to Successfully Completion of surveillance audit on before due dates and its only valid after successful surveillance with continuation letter issued by us. QUALITY SISTEMA Certifications and Inspections Pvt Ltd, Head-quarters; FF, SS-1914, Sector -H , LDA Colony, Kanpur Road, Lucknow-226012.

Verify the certificate:- www.sistemacerts.com

- LEED CERTIFICATES



Alwiah Alkhalaf Industrial Co. Member ID#00817 | 0888 | 40421



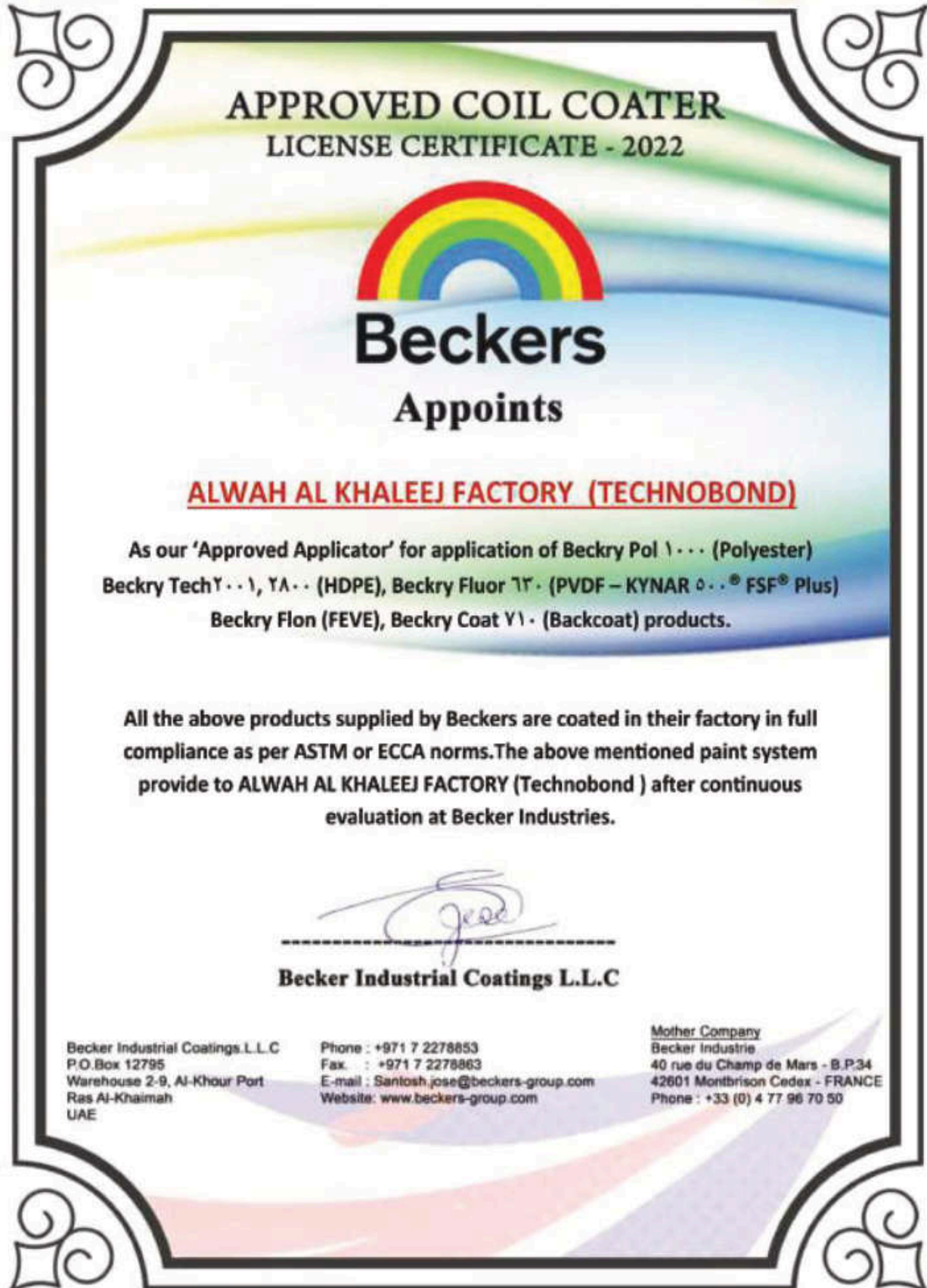
LEED

TechnoBond products directly support the LEED (Leadership in Energy and Environmental Design) Green Building Rating System developed by the U.S Green Council



Color your world

Beckers -Spectrum CERTIFICATES



ARKEMA INNOVATIVE
MATERIALS FOR
A SUSTAINABLE WORLD

KYNAR500® FSF®

POLYVINYLIDENE FLUORIDE BASED COATINGS

LICENSE CERTIFICATE



BECKER INDUSTRIAL COATINGS, L.L.C.

*Has successfully met all requirements set forth by Arkema Inc. and has
been licensed to produce coatings in United Arab Emirates with
100% KYNAR 500®FSF® PVDF resin for the year 2022.
The coating shall maintain a minimum of 70% PVDF resin content.*

Paul LAVALLEE
GLOBAL MARKET MANAGER

Kynar®, Kynar 500®, and FSF® are registered trademarks belonging to Arkema Inc. Coating formulations based on Kynar 500® FSF® PVDF resin can only be supported by Arkema Licensees. Product sold by licensee shall not include any fluoropolymer other than Kynar 500® FSF® PVDF resin.

**AGC CHEMICALS EUROPE
COMMERCIAL CENTRE**

World Trade Center
Zuidplein 80, H Tower, Level 9
1077 XV Amsterdam, The Netherlands

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Fax: +31 (0) 20 880 4188
email: enquiries@agcce.com
www.agcce.com

Date: 17-07-2018

Dear Sirs,

This is to confirm that Spectrum Dubai has been buying our Lumiflon resins since a few years. To my understanding, Spectrum do not buy FEVE resins from other producers.

It would be our pleasure to deliver our Lumiflon resins to Spectrum, for Spectrum to produce the Lumiflon based coatings for the Riyadh Metro project.

Please let me know if I can be of further help.

Best regards

Ben Runhaar

Product & Marketing Manager Lumiflon

P.P.



Exova Warringtonfire
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BS 476: Part 7: 1997



Method For Classification Of The Surface Spread Of Flame Of Products

A Report To: Becker Industrial Coatings LLC

Document Reference: 370231

Date: 11th January 2017

Issue No.: 2

Page 1

Testing
Advising
Assuring

Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH26 5PL United Kingdom. Reg No SC 70429
This report is issued in accordance with our terms and conditions, a copy of which is available on request.



0249



Date : 31/8/2016

PVdF 2-COAT AAMA 2605-05 COMPLIANCE CERTIFICATE

ARCHITECTURAL MATERIAL SPECIFICATIONS - PROPRIETARY COATING PAINT IN PVdF	
The BeckryFluor630 PVdF system is formulated with 70:30 ratio of PVdF: Acrylic. PVdF binder in this coating shall consist 70% Polyvinylidene Fluoride [PVdF] Kynar 500 resin for excellent outdoor durability, formability and chemical resistance. Paint system shall comply to American Architectural Manufacturers Association (AAMA) 2605-05 High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates.	
COATING THICKNESS	
PVDF PRIMER	- 5 – 7 µm
PVDF TOP COAT	- 18 – 20µm
TOTAL THICKNESS	- 23 – 25µm

ARCHITECTURAL MATERIAL SPECIFICATIONS - PROPRIETARY COATING PAINT IN PVdF (PERFORMANCE SPECIFICATIONS)		
Tests	AAMA 2605-05 Requirements	BeckryFluor 630 PVdF coating System Performance
Colour Uniformity (ASTM D2244)	Consistent with colour range	Complied
Specular Gloss (ASTM D523 @ 60°)	Low, Medium, to High	Gloss Range : 25 - 35 unit
Pencil Hardness (ASTM D3363) Berol Eagle Turquoise	HB minimum hardness	Complied
Film Adhesion (11 x 1 mm cross hatch)		
1) Dry Adhesion (18°C - 27°C)	100% Adhesion	Excellent - No Removal
2) Wet Adhesion (38°C @ 24 hours)	100% Adhesion	Excellent - No Removal
3) Boiling Water Test (99°C - 100°C @ 20 mins	100% Adhesion	Excellent - No Removal
Reverse Impact Resistance : Adhesion Impact	Load = 1.5 * metal thickness	Excellent - No Removal
Coating Flexibility : T-Bend (ASTM 4145)	2T NR, Minute cracking permissible	Complied
Abrasion Resistance (ASTM D968)	Abrasion Coeff : 40 lts/mil minimum	Complied
Chemical Resistance		
1) Muriatic Acid Resistance (15mins Spot Test)	No blister and visual change	Complied
2) Mortar Resistance (24 hours Pat Test)	No adhesion loss or visual change	Complied
3) Nitric Acid Resistance (30 min Vapour Test)	Delta E ≤ 5.0 (Hunterlab)	Complied
4) Detergent Resistance (72 hours Immersion Test)	No adhesion loss or visual change	Complied

Beckers Group
Becker Industrial Coatings LLC
P.O BOX : 12785
Al-Khail Port - Ware House 2 -B
Ras Al Khaimah, U.A.E.

Phone : +971 (0)7 2278853
Fax : +971 (0)7 2278883
info-uae@beckers-group.com
www.beckers-group.com



Date : 31/8/2016

PVdF 3-COAT AAMA 2605-05 COMPLIANCE CERTIFICATE

ARCHITECTURAL MATERIAL SPECIFICATIONS - PROPRIETARY COATING PAINT IN PVdF	
The BeckryFluor630 PVDF system is formulated with 70:30 ratio of PVdF: Acrylic. PVdF binder in this coating shall consist 70% Polyvinylidene Fluoride (PVdF) Kynar 500 resin for excellent outdoor durability, formability and chemical resistance. Paint system shall comply to American Architectural Manufacturers Association (AAMA) 2605-05 High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates.	
COATING THICKNESS	
PVDF PRIMER	- 5 - 7 µm
PVDF TOP COAT	- 18 - 20µm
PVDF CLEAR COAT	- 13 - 15µm
TOTAL THICKNESS	- 36 - 42µm

ARCHITECTURAL MATERIAL SPECIFICATIONS - PROPRIETARY COATING PAINT IN PVdF (PERFORMANCE SPECIFICATIONS)		
Tests	AAMA 2605-05 Requirements	BeckryFluor 630 PVdF coating System Performance
Colour Uniformity (ASTM D2244)	Consistent with colour range	Complied
Specular Gloss (ASTM D523 @ 60°)	Low, Medium, to High	Gloss Range : 25 - 35 unit
Pencil Hardness (ASTM D3363) Berol Eagle Turquoise	HB minimum hardness	Complied
Film Adhesion (11 x 1 mm cross hatch)		
1) Dry Adhesion (18°C - 27°C)	100% Adhesion	Excellent - No Removal
2) Wet Adhesion (38°C @ 24 hours)	100% Adhesion	Excellent - No Removal
3) Boiling Water Test (99°C - 100°C @ 20 mins)	100% Adhesion	Excellent - No Removal
Reverse Impact Resistance : Adhesion Impact	Load = 1.5 * metal thickness	Excellent - No Removal
Coating Flexibility : T-Bend (ASTM 4145)	2T NR, Minute cracking permissible	Complied
Abrasion Resistance (ASTM D968)	Abrasion Coeff : 40 ltrs/mil minimum	Complied
Chemical Resistance		
1) Muriatic Acid Resistance (15mins Spot Test)	No blister and visual change	Complied
2) Mortar Resistance (24 hours Pat Test)	No adhesion loss or visual change	Complied
3) Nitric Acid Resistance (30 min Vapour Test)	Delta E ≤ 5.0 (Hunterlab)	Complied
4) Detergent Resistance (72 hours Immersion Test)	No adhesion loss or visual change	Complied

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www.beckers-group.com



Date : 23/8/2016

PVdF 4-COAT AAMA 2605-05 COMPLIANCE CERTIFICATE

ARCHITECTURAL MATERIAL SPECIFICATIONS - PROPRIETARY COATING PAINT IN PVdF	
The BeckryFluor630 PVdF system is formulated with 70:30 ratio of PVdF: Acrylic. PVdF binder in this coating shall consist 70% Polyvinylidene Fluoride (PVdF) Kynar 500 resin for excellent outdoor durability, formability and chemical resistance. Paint system shall comply to American Architectural Manufacturers Association (AAMA) 2605-05 High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates.	
COATING THICKNESS	
PVDF PRIMER	- 5 – 7 µm
PVDF BARRIER COAT	- 18 – 20µm
PVDF TOP COAT	- 18 – 20µm
PVDF CLEAR COAT	- 18 – 20µm
TOTAL THICKNESS	- 59 – 67µm

ARCHITECTURAL MATERIAL SPECIFICATIONS - PROPRIETARY COATING PAINT IN PVdF (PERFORMANCE SPECIFICATIONS)		
Tests	AAMA 2605-05 Requirements	BeckryFluor 630 PVdF coating System Performance
Colour Uniformity (ASTM D2244)	Consistent with colour range	Complied
Specular Gloss (ASTM D523 @ 60°)	Low, Medium, to High	Gloss Range : 30-40 unit
Pencil Hardness (ASTM D3363) Berol Eagle Turquoise	HB minimum hardness	Complied
Film Adhesion (11 x 1 mm cross hatch)		
1) Dry Adhesion (18°C - 27°C)	100% Adhesion	Excellent - No Removal
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3) Boiling Water Test (99°C - 100°C @ 20 mins)	100% Adhesion	Excellent - No Removal
Reverse Impact Resistance : Adhesion Impact	Load = 1.5 * metal thickness	Excellent - No Removal
Coating Flexibility : T-Bend (ASTM 4145)	2T NR, Minute cracking permissible	Complied
Abrasion Resistance (ASTM D968)	Abrasion Coeff : 40 ltrn/mil minimum	Complied
Chemical Resistance		
1) Muriatic Acid Resistance (15mins Spot Test)	No blister and visual change	Complied
2) Mortar Resistance (24 hours Pat Test)	No adhesion loss or visual change	Complied
3) Nitric Acid Resistance (30 min Vapour Test)	Delta E ≤ 5.0 (Hunterlab)	Complied
4) Detergent Resistance (72 hours Immersion Test)	No adhesion loss or visual change	Complied

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DATAT SHEET (NORMAL)



Date: 28/06/2018

To,

M/s Alwah Alkaleej Factory
Riyadh,
Kingdom of Saudi Arabia.

Dear Sir,

Spectrum Industries is a leading and specialized paint manufacturer in the Middle East for Coil, Can, Extrusion and Ultratec coating systems. Spectrum Industries has been established in 2004, as an organization we are a part of Ghobash group.

Spectrum Industries is the first global licensee for Kynar Aquatec-Arkema USA and also the first and only licensee for Kynar Aquatec in EMEA with exclusivity for Middle East and India. We are the first paint company in the Middle East to have KYNAR500 FSF license to produce PVDF coatings from Arkema USA.

Spectrum Industries has a state of art manufacturing facility in Dubai Investment Park and has specialized itself in the production of Coil Coatings, Can Coatings, Extrusion Coatings and Ultratec Coatings. The plant is well equipped and has a total Production Capacity of 10,000.00 Tons/annum and also five dispensing units at various customer sites.

Spectrum Industries meets the international standards of coating systems for coil coating application as set by ECCA (European Coil Coating Association) , ASTM, AAMA and NCCA (National Coil Coating Association). The company is set up with state-of-the-art testing laboratory in order to ensure the compliance of our products to set standards.

Following are some of our prestigious and iconic projects where we have supplied PVDF paints,

- Riyadh Metro
- Jeddah Airport
- Dubai Metro
- Dubai Airport
- Qatar Metro
- Grand Mosque Abu Dhabi

Regards,



Chandrashekar Nayak,
Spectrum Industries LLC





TECHNICAL DATA SHEET

PVDF ULTRANAR TOPCOAT BLUE (3-COAT) (SI - 14124)

Ultramar 500 Coatings is a poly vinylidene di fluoride resin (KYNAR 500 FSF) based finish containing high performance pigments. It has excellent resistances against weathering, corrosion, hardness, chemicals and abrasion. Meets or exceeds the requirements of AAMA 2605 - 98 specification. It is specially designed for roller (Coil) coating application.

Paint - Liquid Properties:

Viscosity	100 - 140 secs Ford 4 cup @ 30°C	ASTM D 1200 - 94
Specific Gravity	1.14 - 1.24 gm/cm ³	ASTM D 1475 - 98
Solids by weight	46 - 54 %	ASTM D 2369 - 98
Solid by Volume	30 - 36 %	Internal Calculation Method
Coverage	240 - 290 SqM / Kg / μ	Internal Calculation Method
Storage	6 months	

Application:

Primer	PolyUrethane Primer, CPU 701
Primer Dry Film Thickness	5 - 8 microns
Cure Temperature range	232°C - 241 °C
Topcoat	PVDF ULTRANAR TOPCOAT BLUE - SI- 14124
Topcoat Dry Film Thickness	19 - 21 microns
Cure Temperature range	241°C - 249 °C

Clear Coat

Clear coat Dry Film Thickness	FEVE CLEAR COAT
Cure Temperature range	14 - 16 microns
	232°C - 241 °C

Substrates	Pretreated Aluminum
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***Film Properties:

*Solvent Resistance	> 100 MEK double rubs	ASTM D 5402
*T - Bend Test	No Tape Off., 1T - 2T	ASTM D 4145
*Pencil Hardness	Mitsubishi Uni Pencil Minimum "F"	ASTM D 3363
*Cupping	> 6 mm, NTO**	ECCA - T6
*Cross Cut Adhesion	100/100 NC, NTO**	ASTM D - 3359 - 97
*Reverse Impact	No Tape Off 40 - 80 Inch Lbs	ASTM D 2794
*Gloss @ 60°	75 - 85 Units	ASTM D 523
*Acid Resistance(5% HCl)	24 Hrs, Pass	AAMA620
*Alkali Resistance(5% NaOH)	24 Hrs, Pass	AAMA620
QUV - B, Resistance(2000 Hrs)	Color Diff. DE<2	ASTM 4587-91
QUV - B, Resistance(2000 Hrs)	Gloss Retention > 85%	ASTM 4587-91
Humidity Resistance (1000 Hrs)	Pass	ASTM D 2247
Salt Spray (1000 Hrs)	Pass	ASTM B 117

* Depending on substrate gauge, quality & Number of Coating Layers

** NC : -- No Crack ; NTO : -- No Tape Off

***Film properties are tested on Spectrum Primer, CPU701 with "SPECTRUM - CF - 101 ULTRANAR PVDF TOPCOAT + FEVE CLEARCOAT"

† Suggested Application Layers might change based on the project location and other requirements.

The statements in this publication are based on our present knowledge and experience. Due to the number of possible influences in the processing and application of our products, these statements do not exempt the user from making his own tests and experiments. They cannot be taken as legally binding assurance regarding certain properties or suitability for the particular application. Any possible patent rights as well as existing laws and provisions must be observed as the responsibility of the user.



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TECHNICAL DATA SHEET

PVDF ULTRANAR TOPCOAT RED (3-COAT) (SI - 14115)

Ultramar 500 Coatings is a poly vinylidene di fluoride resin (KYNAR 500 FSF) based finish containing high performance pigments. It has excellent resistances against weathering, corrosion, hardness, chemicals and abrasion. Meets or exceeds the requirements of AAMA 2605 - 98 specification. It is specially designed for roller (Coil) coating application.

Paint - Liquid Properties:

Viscosity	100 - 140 secs Ford 4 cup @ 30°C	ASTM D 1200 - 94
Specific Gravity	1.14 - 1.24 gm/cm ³	ASTM D 1475 - 98
Solids by weight	46 - 54 %	ASTM D 2369 - 98
Solid by Volume	30 - 36 %	Internal Calculation Method
Coverage	240 - 290 SqM / Kg / μ	Internal Calculation Method
Storage	6 months	

Application:

Primer	PolyUrethane Primer, CPU 701
Primer Dry Film Thickness	5 - 8 microns
Cure Temperature range	232°C - 241 °C
Topcoat	PVDF ULTRANAR TOPCOAT RED - SI- 14115
Topcoat Dry Film Thickness	19 - 21 microns
Cure Temperature range	241°C - 249 °C
Clear Coat	FEVE SPARKLE CLEAR COAT - SI - 14117
Clear coat Dry Film Thickness	14 - 16 microns
Cure Temperature range	232°C - 241 °C
Substrates	Pretreated Aluminum

***Film Properties:

*Solvent Resistance	> 100 MEK double rubs	ASTM D 5402
*T - Bend Test	No Tape Off., 1T - 2T	ASTM D 4145
*Pencil Hardness	Mitsubishi Uni Pencil Minimum "F"	ASTM D 3363
*Cupping	> 6 mm, NTO**	ECCA - T6
*Cross Cut Adhesion	100/100 NC, NTO**	ASTM D - 3359 - 97
*Reverse Impact	No Tape Off 40 - 80 Inch Lbs	ASTM D 2794
*Gloss @ 60°	75 - 85 Units	ASTM D 523
*Acid Resistance(5% HCl)	24 Hrs, Pass	AAMA620
*Alkali Resistance(5% NaOH)	24 Hrs, Pass	AAMA620
QUV - B, Resistance(2000 Hrs)	Color Diff. DE<2	ASTM 4587-91
QUV - B, Resistance(2000 Hrs)	Gloss Retention > 85%	ASTM 4587-91
Humidity Resistance (1000 Hrs)	Pass	ASTM D 2247
Salt Spray (1000 Hrs)	Pass	ASTM B 117

* Depending on substrate gauge, quality & Number of Coating Layers

** NC : - - No Crack ; NTO : - - No Tape Off

***Film properties are tested on Spectrum Primer., CPU701 with "SPECTRUM - CF - 101 ULTRANAR PVDF TOPCOAT + FEVE CLEARCOAT"

† Suggested Application Layers might change based on the project location and other requirements.

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TECHNICAL DATA SHEET

ULTRAFLO SPRAKLE FEVE CLEAR COAT (SI - 14117)

Ultraflon Coatings is a specialized Fluoro Carbon resin based finish containing high performance pigments. It has excellent resistances against weathering, corrosion, hardness, chemicals and abrasion. Meets or exceeds the requirements of AAMA 2605 - 98 specification. It is specially designed for roller (Coil) coating application.

Paint - Liquid Properties:

Viscosity	90 - 110 secs Ford 4 cup @ 30°C	ASTM D 1200 - 94
Specific Gravity	1.02 - 1.10 gm/cm ³	ASTM D 1475 - 98
Solids by weight	40 - 48 %	ASTM D 2369 - 98
Solid by Volume	30 - 36 %	Internal Calculation Method
Coverage	320 - 350 SqM / Kg / μ	Internal Calculation Method
Storage	6 months	

Application:

Primer	PolyUrethane Primer, CPU 700
Primer Dry Film Thickness	5 - 8 microns
Cure Temperature range	232°C - 241 °C
Topcoat	PVDF ULTRANAR TOPCOAT - SI - 14115
Topcoat Dry Film Thickness	18 - 20 microns
Cure Temperature range	241°C - 249 °C
Clear Coat	ULTRAFLO FEVE SPRAKLE CLEAR COAT - SI - 14117
Clear Coat Dry Film Thickness	15 - 18 microns
Cure Temperature range	232°C - 241°C
Substrates	Pretreated Aluminum

***Film Properties:

*Solvent Resistance	> 100 MEK double rubs	ASTM D 5402
*T - Bend Test	No Tape Off., 1T - 2T	ASTM D 4145
*Pencil Hardness	Mitsubishi Uni Pencil Minimum "F"	ASTM D 3363
*Cupping	> 6 mm, NTO**	ECCA - T6
*Cross Cut Adhesion	100/100 NC, NTO**	ASTM D - 3359 - 97
*Reverse Impact	No Tape Off 40 - 80 Inch Lbs	ASTM D 2794
*Acid Resistance(5% HCl)	24 Hrs, Pass	AAMA620
*Alkali Resistance(5% NaOH)	24 Hrs, Pass	AAMA620
QUV - B, Resistance(2000 Hrs)	Color Diff. DE<2	ASTM 4587-91
QUV - B, Resistance(2000 Hrs)	Gloss Retention > 85%	ASTM 4587-91
Humidity Resistance (1000 Hrs)	Pass	ASTM D 2247
Salt Spray (1000 Hrs)	Pass	ASTM B 117

* Depending on substrate gauge, quality & Number of Coating Layers

** NC : -- No Crack ; NTO : -- No Tape Off

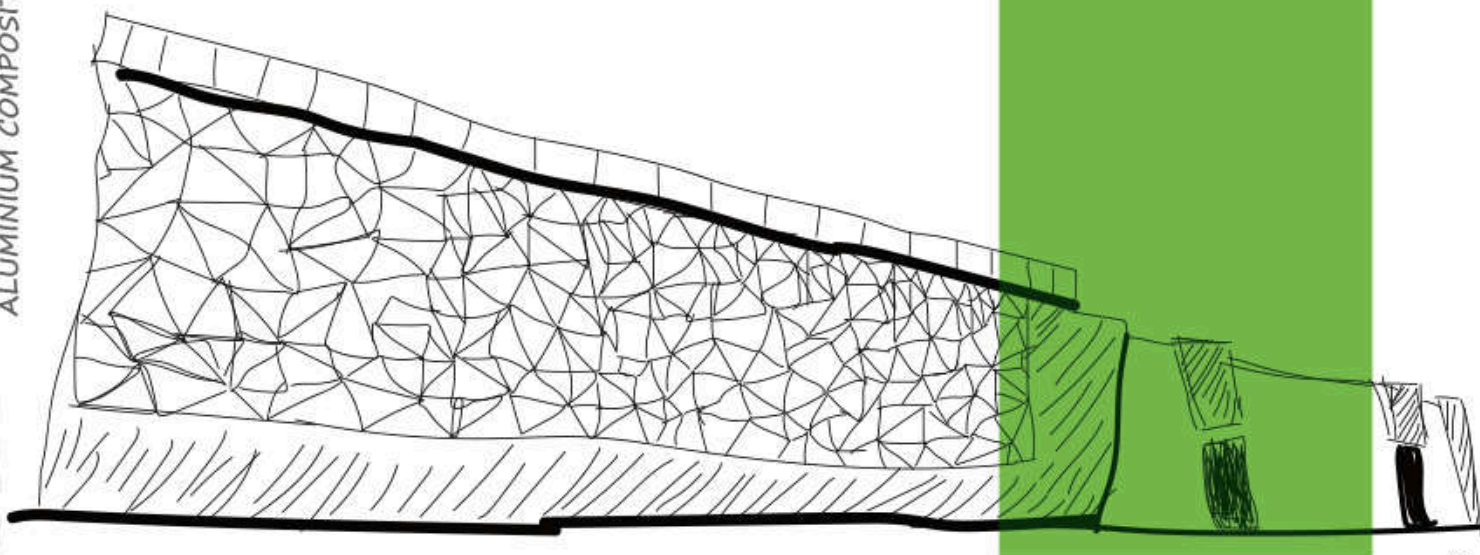
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14 | WARRANTY CERTIFICATE

ALUMINIUM COMPOSITE PANELS-TECHNO BOND





شهادة ضمان لمدة عشرين عام Normal

شركة ألواح الخليج (Techno Bond)



المكرم _____

رقم اللون/ _____

التاريخ : / / _____

السيد السادة/ _____

رقم الفاتورة/ _____

الكمية/ _____

xxx

تقر شركة ألواح الخليج (تكنوبوند) أن منتجها (Normal) مطابق للمواصفات العالمية و أنه مقاوم للحريق ومقاوم لتغير اللون و تفكك شرائح الألمنيوم ، و جميع عيوب الصناعة على مدار عشرين عاماً من تاريخ تسليم المنتج للعميل

Techno Bond Company acknowledges that (Normal) product is identical to the international standards besides resisting to Fire, color change or any manufacturing defects along twenty years.

xxx









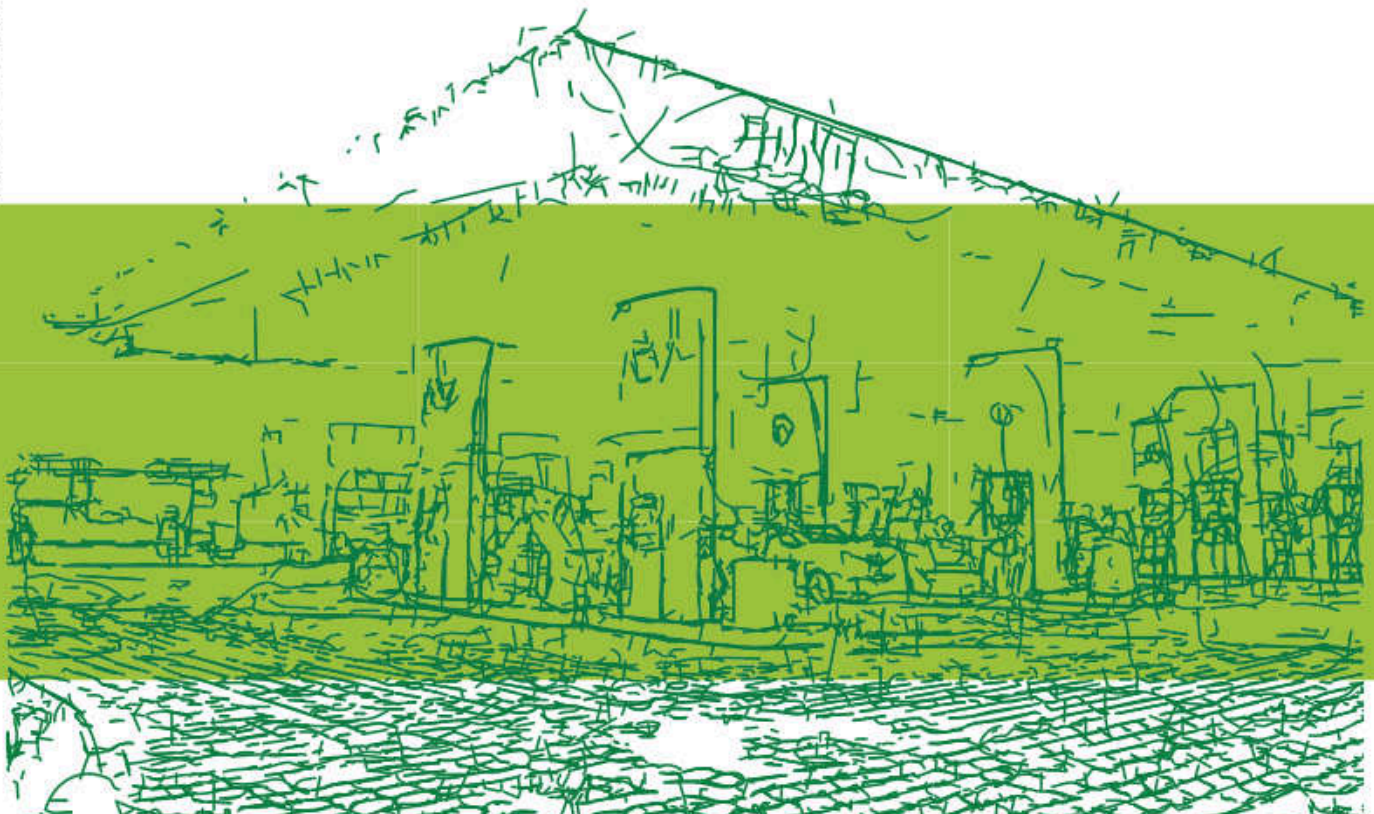

● Techno Bond

Is deservedly the largest Cladding Factory in the middle east & Africa.

Our company has continued to invest in cutting edge technology, offering an outstanding performance, durability and costly wise products over time. Technobond adequately meets with all the official standards and specific criteria, naturally making it one of the most leading competitors in the market today.

The factory works around the clock to provide customers' requests in the fastest time. You are guaranteed for 20 years against manufacturing defects.

ANELS-TECHNO BOND





Techno Bond



بيانات فنية
Data Sheet - Normal



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