


SIAMBOND X SERIES

CLADDING
INNOVATIONS

Surely offer the best answer for truly

INNOVATIVE & EXPRESSIVE ARCHITECTURE

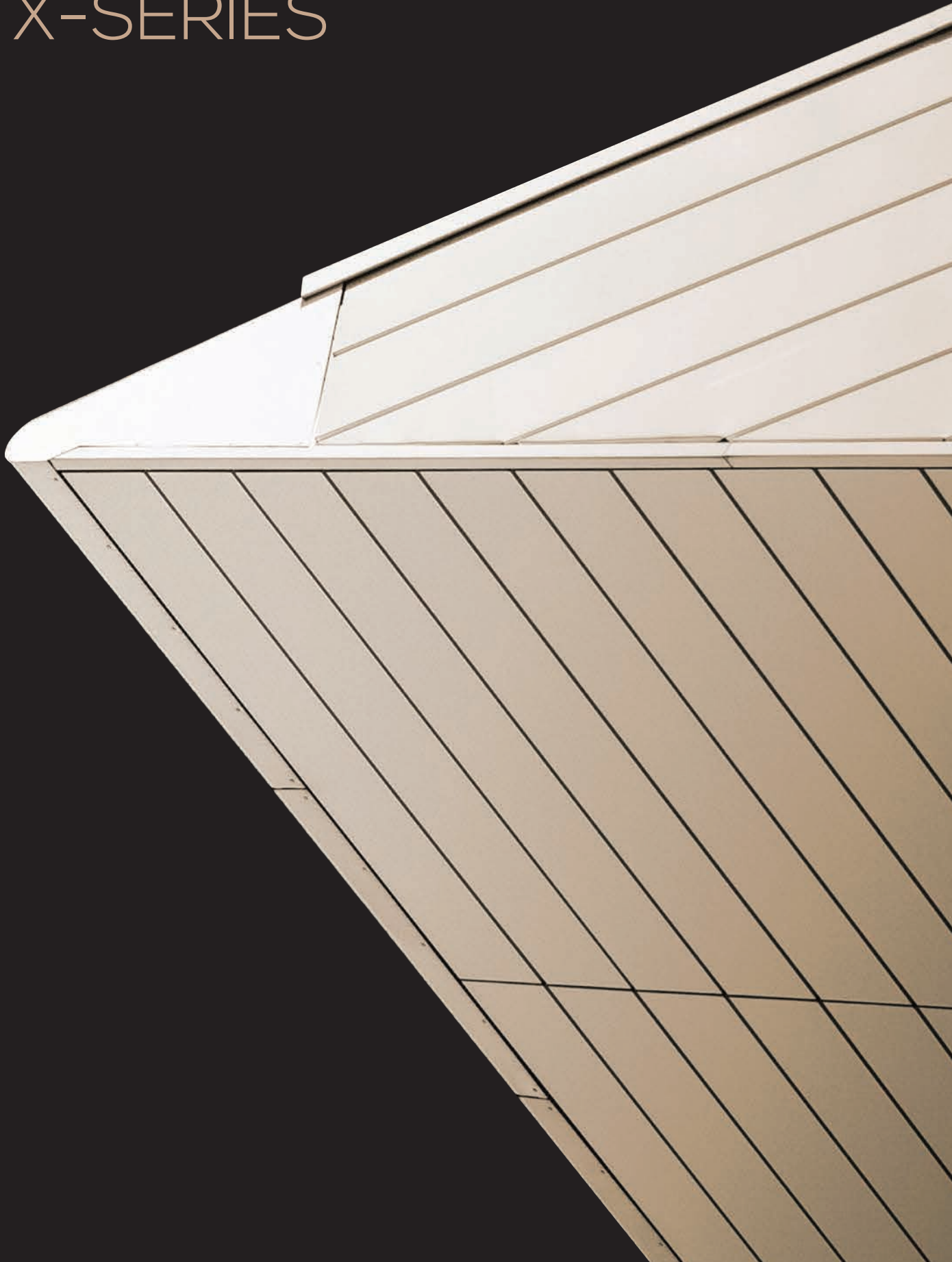




SIAMBOND^X-SERIES is a higher quality of aluminum composite material consists of two pre-coated aluminum skins thermo-bonded to a non-combustible mineral filled core (FR).

C.K.B. PLATE STEEL CO.,LTD. was established in 2003 , we are total aluminium composite manufacturer with excellent production line machines, we have become one of the highest potential aluminium composite producers in Thailand by using German technology to operate **SIAMBOND^X-SERIES**.

Why must SIAMBOND X-SERIES



1 MORE STUNNING AND DURABLE

SIAMBOND^X-SERIES uses the highest quality paints **SIAMBOND^X-SERIES** uses high quality Polyvinylidene fluoride (PVDF) paints with outstanding weather resistance for roll-coated aluminum coils. The excellent durability of PVDF has been proven in the developed countries over the past decades. Homogeneous application of PVDF gives **SIAMBOND^X-SERIES** unequaled weatherproofing and allows a wide range of color effects. As the alloy is seawater resistant, **SIAMBOND^X-SERIES** can be in extreme climate zones. The superb long-lasting of surface quality of **SIAMBOND^X-SERIES** gives building enduring architectural value. (Resource: Novelis)

2 VARIOUS COLOR TYPES AND TEXTURES

SIAMBOND^X-SERIES enables various colors and textures. There are various types of color shades selection supply, either solid colors which having the same color all over and metallic colors are color appearing to be that of a polished metal with the small metal flakes included in the paint create a sparkling effect. Pearl color, it is interesting for those who love to view buildings in a shining style of pearl and feel it as valuable gems all the time. Another of these, we similarly have optional selection of stainless colors and high gloss colors for unlimited architect's imagination who can realize whatever color and texture effects they want with us. Thus, we can surely offer the best answer for truly innovative and expressive architecture.

3 20 YEARS QUALITY ASSURANCE

With the quality of **SIAMBOND^X-SERIES** is guaranteed by Novelis Asia, the global leader in aluminum rolled products, based on the standards of the American Society for testing and materials. Assured in product quality, Novelis offers quality assurance for **SIAMBOND^X-SERIES** for up to 20 years.



4 GREEN ENVIRONMENTAL ASPECTS

SIAMBOND^X-SERIES is eco-friendly material provider. Due to our roll-coated aluminum coils are manufactured by the global leader in aluminum recycling, Novelis. Therefore, **SIAMBOND^X-SERIES** is environmentally friendly to the natural state and also the aluminum itself can be recycled endlessly.

5 COLOR COATING SYSTEM

PVDF Kynar 500 (70/30): **SIAMBOND^X-SERIES** use PVDF coil coating system, we considered the standard for high performance coating in the building construction industry, especially on account of its beauty and durability. It is perfectly appropriate to violent environments and extreme climate conditions.

SIAMBOND[®]-SERIES ADVANTAGES

- Domestic manufacturer
- Premium aluminium alloy 3105 H14
- Use **Novelis**, the world's largest rolled aluminium manufacturer
- Base Aluminium thickness 0.5/0.5 mm
- PVDF coil coating system by PPG duranar painted
- Special sizes or custom design are available
- ISO 9001 and ISO 14001 certification
- Warranty on coating thickness from 15-20 years



CONSTITUTION STRUCTURE

- Protective film
- PVDF Kynar 500 coating
- Primer coating
- Aluminium sheet by Novelis
- Macromolecular lamination film
- Non-combustible mineral filled core (FR)
- Macromolecular lamination film
- Aluminium sheet by Novelis

Protective Film

PVDF Coating

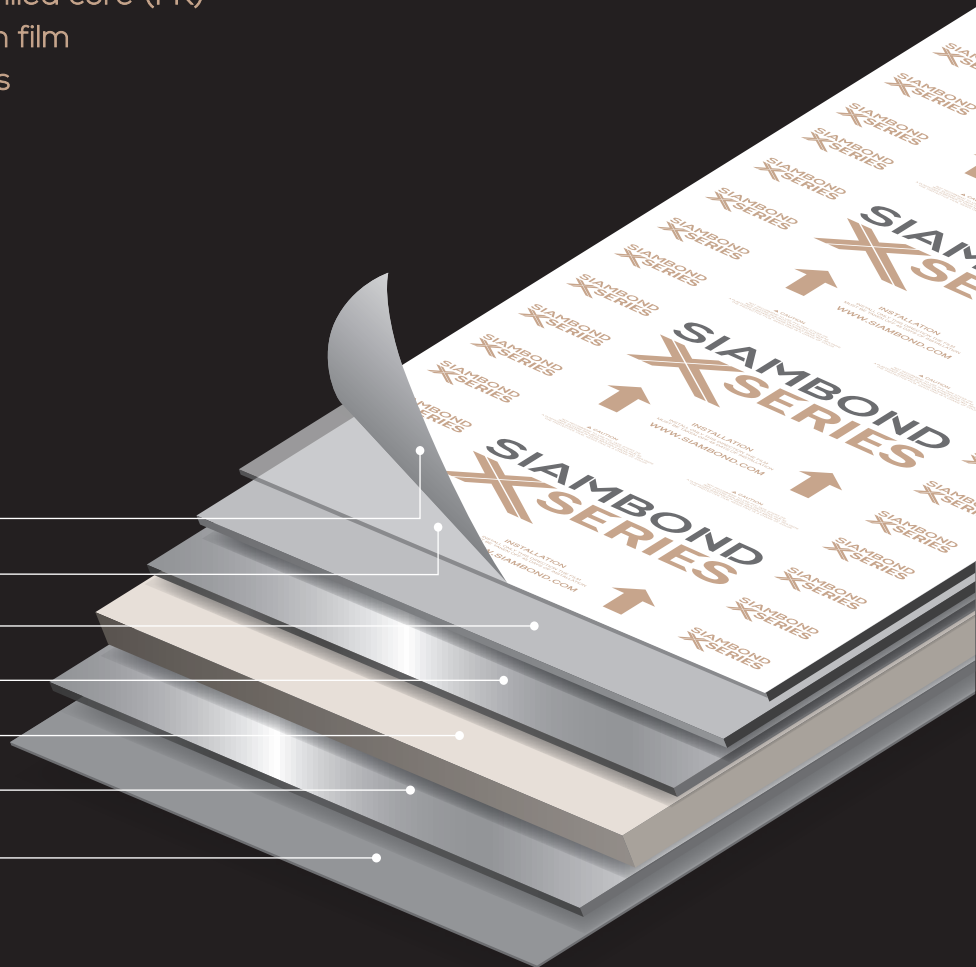
Primer Coating

Aluminium Sheet

Non-combustible
mineral filled core (FR)

Aluminium Sheet

Mill Finish or
Polyester Service
Coating



SPECIFICATIONS

ITEM	DESCRIPTIONS
Aluminium Base	Aluminium Alloy AA3105:H14 by Novelis
Core	<ul style="list-style-type: none"> FR (Non-Combustible Mineral Filled Core) PE (Polyethylene Plastic Core)
Coating System Front side / Exposed Surface Rear Side / Un-exposed Surface	<ul style="list-style-type: none"> PVDF KYNAR 500 by PPG Duranar, FEVE 2 Layers 2 Bakes 25(+/-3) Microns 3 Layers 3 Bakes 35(+/-3) Microns Epoxy Primer, Chromated, Polyester, Mill Finished
Adhesive	High Polymer Adhesive Film (Hot Melt Bonding Film)
Protective Film	Poly Film Anti-UV
Process	Thermal/Press Laminate Process system
Warrantee	15-20 years (Depending on coating thickness)
Standard Colors	<ul style="list-style-type: none"> SOLID COLORS METALLIC COLORS PEARL COLORS DUAL COLORS

SIZE

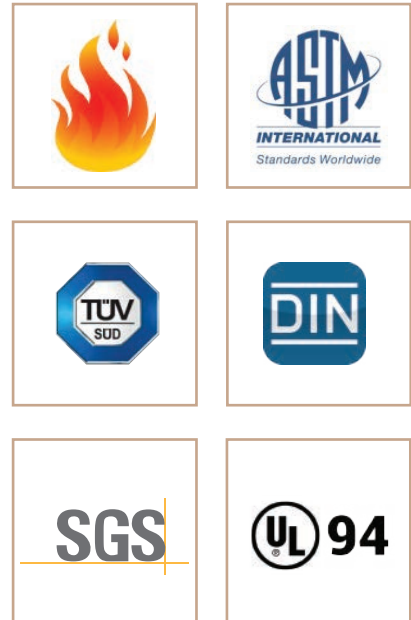
ITEM	THICKNESS (MM)	ALUMINIUM THICKNESS (MM)	PANEL WIDTH (MM)	PANEL LENGTH (MM)
Standard	4.0	0.5	1,250	2,470
Options	3.0 - 5.0	0.30 - 0.60	900, 1220, 1500	≤ 15,000

FIRE BEHAVIOR

SIAMBOND^X-SERIES retards the rapid spread of fire through the non-inflammable aluminum cover sheets which protect the poly-ethylene core without toxicity.

SIAMBOND^X-SERIES/fr is a fire-safe material with a flameretardant mineral core to prevent the proliferation of flames and restrict the development of smoke detrimental to evacuation activities. It also meets the mandatory requirements for interior and exterior use in most countries. The following technical data is from the report issued by TUV, SGS U.K. Co., Ltd & SGS U.S. Testing Company Inc, respectively.

BS: British Standard; ASTM: American Society for Testing and Materials For more details, please refer to a full set of **SIAMBOND^X-SERIES** data sheets or consult our nearest technical advisor for advice.



ITEM	TEST METHOD	RESULTS	PERFORMANCE/ TEST CONDITION
Surface spread of Flame Classification	BS-476 Part 7	Class 1	Class 1, The flame spread after 1.5 and 10 minutes must be less than 165 mm.
Fire Propagation	BS-476 Part 6	Class 0	Class 0, Total Index 0.1, Total index of performance (i ¹) to be less than 6, Lower Index then the better the resistance of a material to fire growth
Ignitability	BS-476 Part 5	Passed	None of the specimen flames for more than 10s after removal of the test flame
Reaction of Fire	DIN 4102 Part 1	Class B1	Classification of building products for the German market according to DIN 4102-1. The fire class is denoted "B1" Not easily flammable
Fire Classification	DIN EN13501	Class B-s1,d0	European classification of building products to DIN EN13501, the fire class is denoted " B-s1,d0" Difficult to ignite, no smoke, no flaming particle/droplets.
Steiner Tunnel Test	ASTM E84	Class A	The National Fire Protection Association Life Safety Code 101; Class A Being the lowest flame spread & Class C Being the highest.
Vertical Burning Test	UL-94	V-0	V-0, The specimens not burn with flaming combustion for more than 10 seconds after either application of the test flame.
Toxic fume evaluation	ISO-TR-9122-3	Passed	Not exceed the value of FTP Code Toxicity Criteria by evolution of Toxic Fumes Generated from Materials Sample During Burning

PVDF KYNAR-500 Coating Test (AAMA 2605)

We use Aluminium Color Coated Coil from Novelis with liquid paint by Duranar® PPG coil coating. Duranar® coating is fluoropolymer (PVDF KYNAR-500) coatings meet AAMA 2605 performance specifications, providing outstanding durability and performance in normal environments. Recommended for preformed aluminum components, such as storefronts, curtain walls, windows and louvers, Duranar® coatings are resistant to chalking, fading, chipping and peeling. The coatings are available in a wide range of warm, earth tones, offering excellent panel-to-panel color consistency compared to anodic finishes.



ITEM	TEST METHOD	RESULTS	PERFORMANCE/ TEST CONDITION
Color Retention	ASTM D2244	Delta E 0.30	Delta E Max 5.0 after 10 yrs. @45°, South Florida (4000 Hrs. QUV test)
Gloss Retention	ASTM D523	87%	Min 50% after 10 yrs. @45°, South Florida (4000 Hrs. QUV test)
Chalk Resistance	ASTM D4214	No.8 Chalk	Max No.8 Chalk after 10 yrs. @45°, South Florida (4000 Hrs. QUV test)
Salt Spray Resistance	ASTM B117	Passed	Less than 1/16" avg. creep age from scrip. None or Few No.8 blister, 5% salt fog @ 95°F (4000 Hrs. Test)
Adhesive Resistance	ASTM D3359	No adhesion loss	No adhesion loss, Permacel Tape, space 1mm
Pencil Hardness	ASTM D3363	2H	Min F, Mitsubishi uni pencil
Abrasive Resistance	ASTM D968	86.8L/mils	Abrasion coefficient Min 40 L/mils by Sand Test Method
Humidity Resistance	ASTM D2247	No.8 Blister	Max No.8 Blister, 100% R.H. @ 100°F (4000 Hrs. test)
Acid & Alkali Resistance	ASTM D1308	No effect	No visual Change, 5% HCl & 5% NaOH, 16 Hrs.
Impact Resistance	ASTM D2794	No effect	No crack or adhesion loss, Impact tester 18N-m, punch diameter 15.9mm.
Dry Film Thickness	ASTM D7091	35 microns	Total film thickness exceed 30 microns(1.2 mil)
T-bend Test	ASTM D4145	0T	Max 2T-Bend no pick off, Permacel 99 Tape

QUALITY ASSURANCE AND QUALITY CONTROL

SIAM BOND-X-SERIES prides itself for producing high quality aluminium composite panel sheets. QA and QC is of the utmost importance to us and no effort or resource is spared to ensure that every delivery of the raw materials to our factory and the production of the Panels Sheets are vigorously inspected by our qualified and experienced Quality Assurance (QA) and Quality Control (QC) team, who have on average over 10 years of industry experience.

Our in-house laboratory is equipped with the latest technologically advanced testing and measuring equipment. With such equipment at our disposal in our factory, along with a team of highly qualified QA and QC managers, we are able to inspect and check on all aspects of QA and QC according to various International Standards, such as ASTM, BS, GB and EN.

All the raw materials delivered to our factory by our material suppliers are inspected and verified, before they can be used in the production of an order. At every step of a production, our QA and QC managers will be physically on the production line to sign off on each batch of a production to ensure that the production meets our strict quality standards.





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MUST BE TAKEN OFF 45 DAYS OF INSTALLATION
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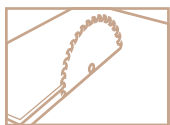
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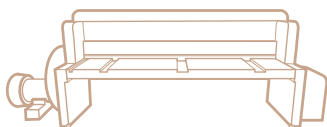
SIAMBOND[®]X-SERIES aluminium composite panels can be processed and shaped with ordinary wood and metal processing tools for cutting, sawing, milling, punching, folding and bending etc. The product can precisely be made into various kinds of shapes in accordance with the design requirements, which is incomparable for other materials.

1. CUTTING

1.1 SAW CUTTING

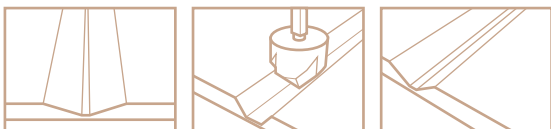


1.2 SHEAR CUTTING



2. GROOVING

2.1 ROUTER (GROOVING BY ROUTER)



2.2 USE IN MANY PANELS

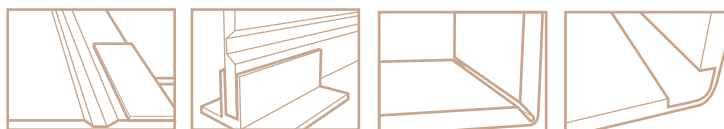


PANEL THICKNESS (MM)	CLEARANCE (MM)	CHECK ANGLE (Degree)
3	0.04	1°
4	0.04	1° 30'
6	0.20	1° 30'

Grooving PE core to V-shape with angle 110 degree by remain 0.2 to 0.4 mm. of core.

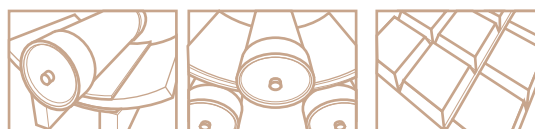
3. ASSEMBLING

3.1 FOLDING



After grooved, folding by bending equipment and bending on flat surface for ensure a straight line of bending corner. Increasing strenght and prevent water leakage by folding 25 mm. from edge. After assembling seal with silicone sealant to prevent the corner from water leakage.

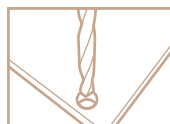
3.2 Bending



3 ROLLS BENDER

- Bending with Press Brake
- Bending by set bending radius

This method will give more bending radius than Press Brake. Groove and slit the curve before bending.



CUTTING-PUNCHING

This technology is most effective since corner can be taken off and fastening prominent inserted in one single step. We have developed a stamp for use without KS, KU, and KH system. This tool is also appropriated for drilling and for grooving (Also possible with a CNC machine).

DRILLING

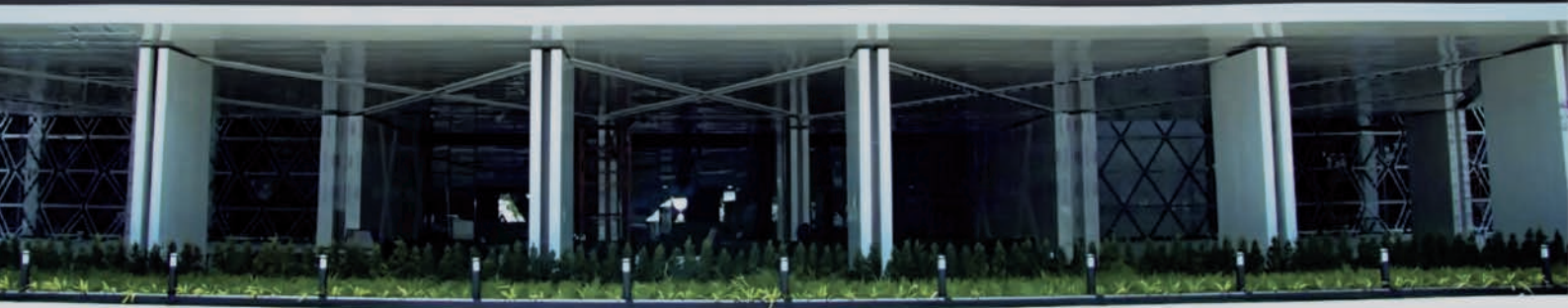
Twist drill bits designed for drilling aluminium are most suitable.

- Cutting angle: between 100° and 140°
- Helix angle: between 30° and 50°

PROJECT REFERENCES

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Surely offer the best answer for truly
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SIAMBOND X SERIES

ISO 9001:2015

ISO 14001:2015

OHSAS 18001:2007

KYNAR 500

HYLAR 5000



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