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ALUCOLUX®

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The Product

Page
04

Surfaces & Finishes

Page
05

Technical Data

Page
12

ALUCOLUX® Processing

Page
13

FAQ‘s

Page
20

Table of Contents

Things you need to know about

ALUCOLUX®

1. Coil-coated panels
2. Made to Measure panels (M2M)
3. Ready to install panels (R2I)
4. Custom designed perforated panels in flat form or in ready to install form
5. Curved and folded panels based on design requirements

The Product

ALUCOLUX®

Coat first – Fabricate later

Traditionally, the solid aluminium panels used for cladding applications are done using the "post painted solution"- which means that a mill finish aluminium sheet is fabricated first and then it undergoes a batch coating process either through spray or powder coating.

Some of the common issues which are seen with these batch coating processes are:

- The coating is done under less controlled environment as opposed to a highly industrial coil coating process which leads to inconsistent thickness of the paint layer across the surface resulting in color inconsistencies on the panels.
- Due to higher thickness of paint on the surface when powder coated, the panels do not qualify as non-combustible panels and are classified as A2, as per EN 13501-1 test standard as opposed to A1, which most people assume for solid sheet in general.
- There are limitations on the variety of surface finishes that you can achieve with this process, thereby limiting designers to choose from a very few range of colors and finishes.
- Since there are 2-3 different parties involved in getting the final product ready, there is a split responsibility on the quality of the final product.

3A Composites, manufacturers of **ALUCOBOND®** and **ALUCORE®,** now offers coil-coated solid aluminium panels – **ALUCOLUX®** (2 coat/3 coat multi-bake system).

ALUCOLUX® provides a solution to all the problems that come from batch coated panels.

- Color consistency:
  - High quality PVDF/FEVE coating on a continuous coil-coating line which provides consistency of coating across the surface.
  - Coating process conforms to AAMA 2605 and ECCA guidelines.
- A non-combustible panel classified as A1, as per EN 13501-1.
- **ALUCOLUX®** comes in all the surface finishes you have seen and used from **ALUCOBOND®**, giving you a large variety of surface finishes to choose from.
- Perfect flatness on the facade:
  - **ALUCOLUX®** comes in 5xxx or 3xxx series alloy.
  - As with **ALUCOBOND®**, and as part of our value added service offering, fabrication of panels can be done in-house at our manufacturing plants. This would ensures high quality of fabrication and accessories used, thereby no compromise on aesthetics and at the same time eliminating any chances of errors.
- Shapes and curves: with **ALUCOLUX®**'s value added services you can achieve designs you did not think were possible.
- Technical support: with **ALUCOLUX®** you will get support from our **ALUCOBOND®** team in recommending and designing of appropriate fixing systems or any other assistance required.
- Warranty: **ALUCOLUX®** comes with a 15 year warranty, directly from the makers of **ALUCOBOND®**.

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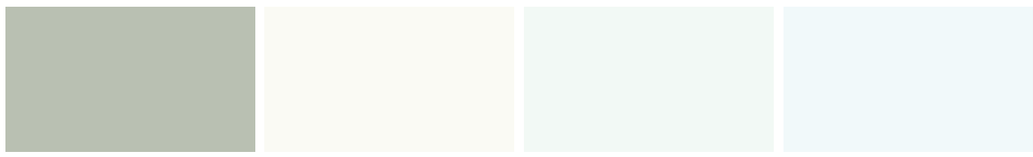
SURFACES & FINISHES

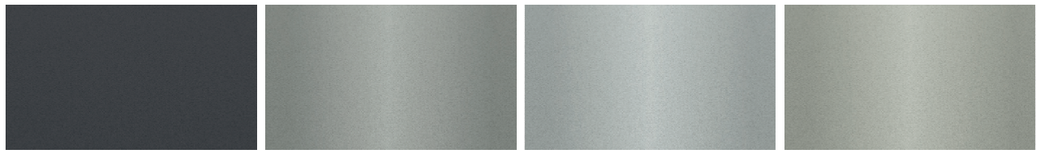
Solid Colours

Black | 326 **Anthrazit grey** | 105 **Fashion grey** | 460 **Light grey** | 104

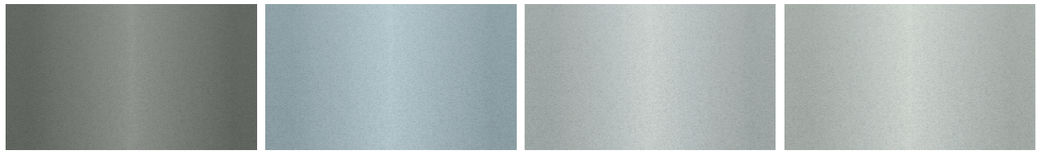


Biege | 103 **Cream** | 102 **Pure White 10** | 100 **White 16** | 101

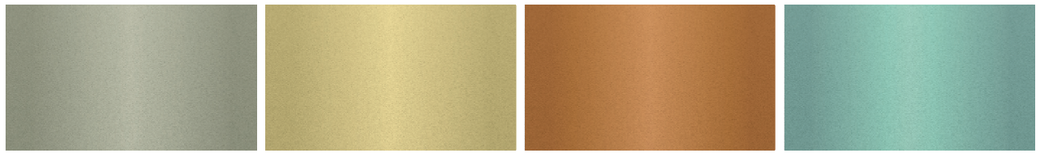
Metallic Colours



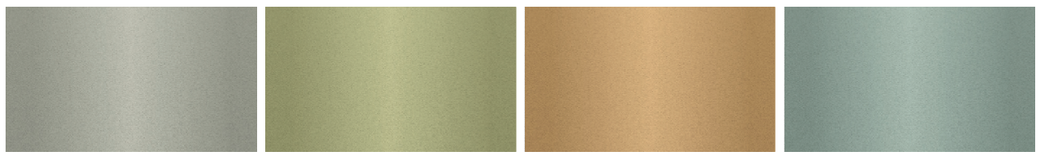
Dark grey metallic | 505 **Smoke silver metallic** | 501 **Silver metallic** | 500 **Champagne metallic** | 503



Grey metallic | 502 **Grey blue metallic** | 603 **Sunrise silver metallic** | 600 **Brilliant metallic** | 602



Bronze metallic | 504 **Daytona gold** | 8703 **Nevada copper** | 8705 **Jade green metallic** | 9329



Classic bronze metallic | 9604 **Gold metallic** | 601 **Copper metallic** | 8704 **Seafoam green metallic** | 604

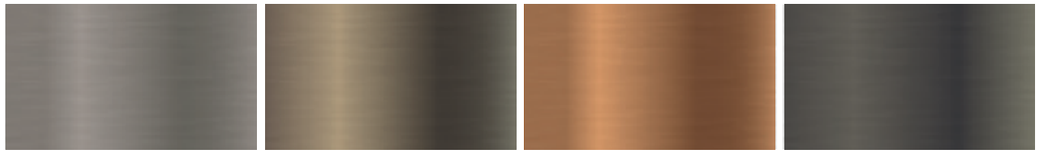
Anonized Look

Anonized Look Satin Brown | **Anonized Look** C34 | **Anonized Look** C32 | **Anonized Look** C3/EVI | **Anonized Look** C31

Spectra

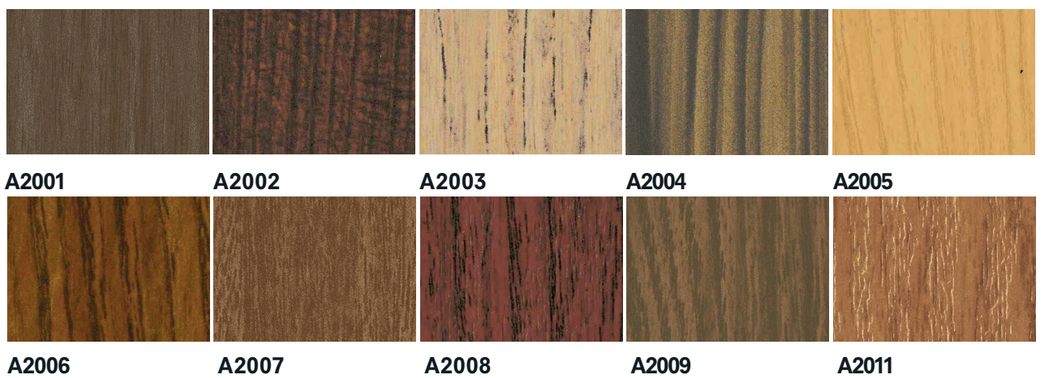
Sakura | 917 **Galaxy blue** | 918 **White gold** | 919 **Desert gold** | 921 **Cupral** | 913

naturAL



naturAL ZINC | 413 **naturAL HAVANNA** | 432 **natuAL COPPER** | 434 **naturAL MANHATTAN** | 437

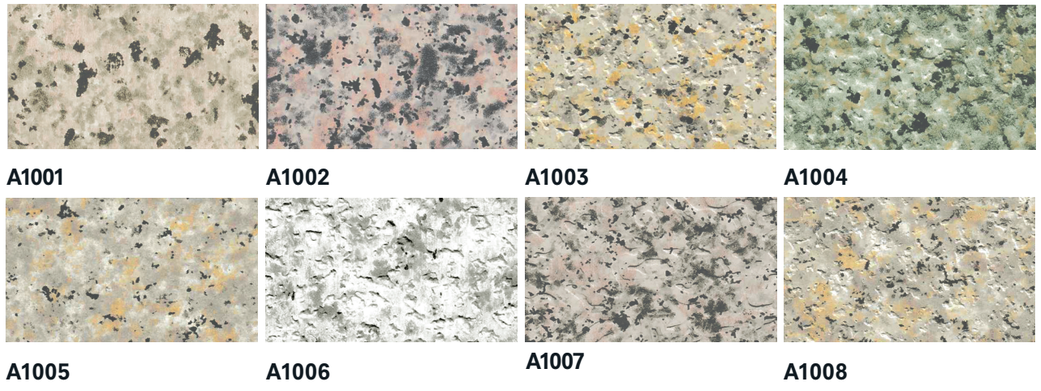
Wood Look



A2001 | A2002 | A2003 | A2004 | A2005

A2006 | A2007 | A2008 | A2009 | A2011

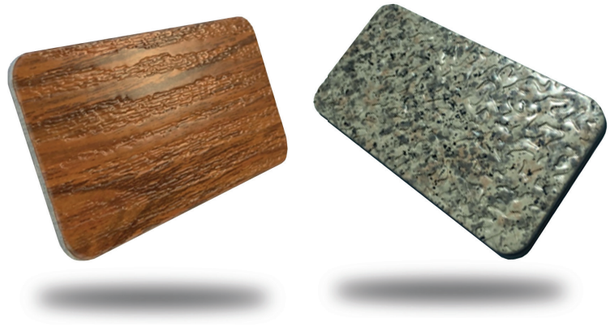
Stone Look



A1001 | A1002 | A1003 | A1004

A1005 | A1006 | A1007 | A1008

Embossed Look

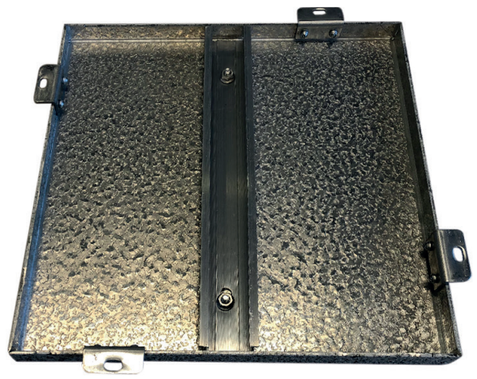


With our advanced embossing technology, we can actually do very unique patterns on the pre coated surface of **ALUCOLUX®** (6 coats system). Embossed surfaces available on request.

MADE TO MEASURE (M2M) & READY TO INSTALL (R2I)

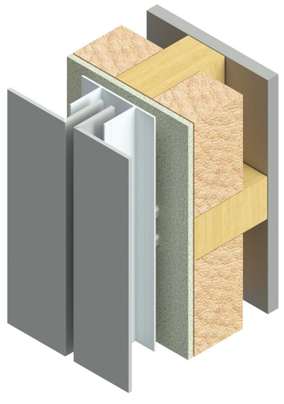
- M2M panels which comes in flat panel form can be folded and fixed on site.
- R2I panels which comes in a folded cassette form already fixed with accessories and can go directly to the job site to be installed.
- Both M2M and R2I options are available in perforated and non-perforated panels.
- 3D, Curved, or folded panels can be made based on customer's design requirements.

Below are some examples of how **ALUCOLUX®** can be fabricated at our plant, thereby providing savings on wastages and reducing the overall cost for the project.

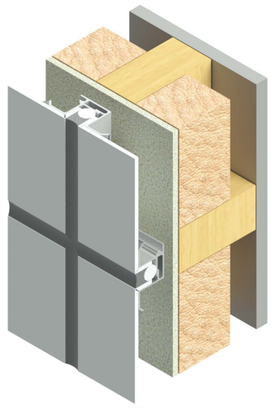


RECOMMENDED STANDARD FIXING SYSTEMS

Hook and Pin



WAB



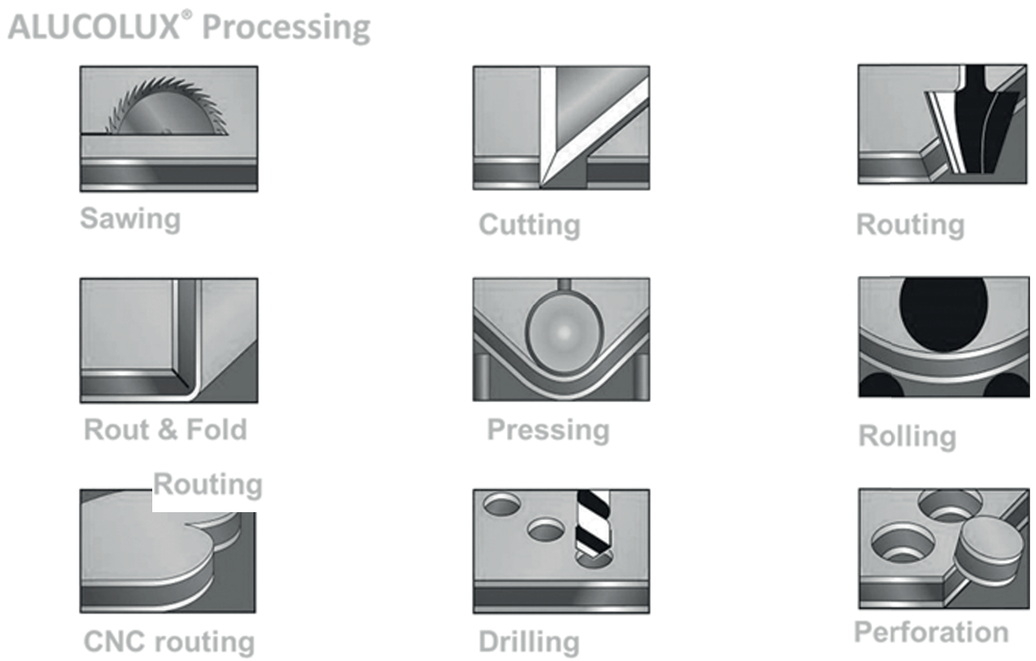
TECHNICAL DATA

Technical Properties	Standards	ALUCOLUX®	
Alloy	EN 573-3	5005	3003
Temper	EN 515	H32	H24
Standard Thickness*		3mm (Tolerance +/- 0.15mm)	3mm (Tolerance +/- 0.15mm)
Standard Widths**		1000mm, 1250mm, 1500mm	1000mm, 1250mm, 1500mm
Standard Length		</=6000mm (Tolerance +/-6mm)	</=6000mm (Tolerance +/-6mm)
Panel Weight		8.1 Kg/m2	8.1 Kg/m2
Tensile Strength	EN 485-2	140-180 Mpa	165-185 Mpa
Elongation	EN 485-2	$A_{50} \geq 9\%$	$A_{50} \geq 9\%$
Linear Expansion	EN 1999 1-1	2.4 mm/m at 100° C temperature difference	2.4 mm/m at 100° C temperature difference
Coating System		PVDF/FEVE	PVDF/FEVE
Gloss	EN 13523-2	30-80%	30-80%
Pencil Hardness	EN 13523-4	HB-F	HB-F
Coating Thickness***		28-45 microns	28-45 microns
Fire Classification	EN 13501-1	A1	A1

* Other thickness available on request
** Custom widths available on request
*** Coating thicknesses varies for different surface finishes

ALUCOLUX®
PROCESSING GUIDELINES AT A GLANCE

Below are the general guidelines on processing – **ALUCOLUX®** pre-coil coated Solid Aluminium panels.



Sawing/Cutting

To cut **ALUCOLUX®** sheets to required size, the following machinery are recommended:

Vertical Panel Saw

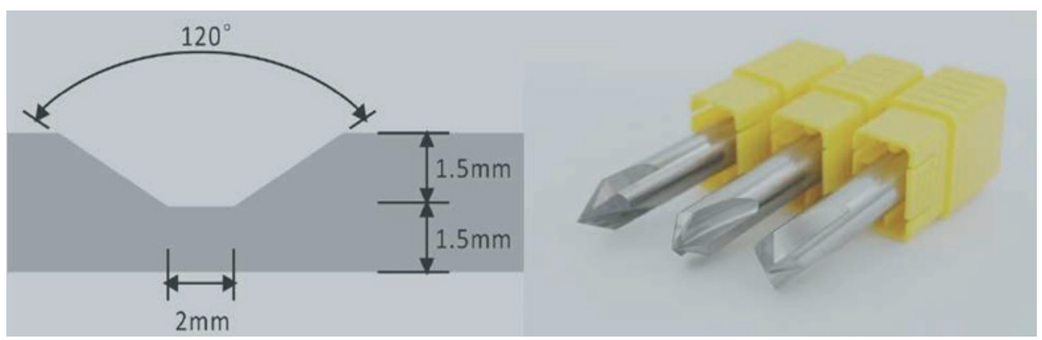
CNC Machine

Cutting/Shearing Machine

Routing/Grooving using CNC:

Recommended rotation speed of the blades at 12000-15000 rpm and the depth of the groove to kept in the range of 1.5-2.3mm in a 3mm thick panel with a flat end face of 2mm.

Feed speed to be maintained at 8 meters/min.

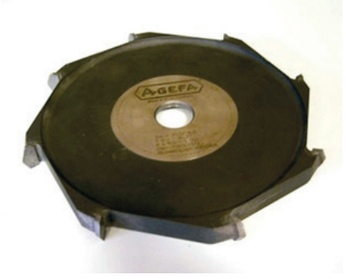


Routing/Grooving using Panel Saw:

Carbide tipped circular saw blades, trapezoid/flat tooth with a speed of 2500 rpm.

Flat teeth 45° chamfered for burr-free edges

Saw blade – 300mm for Striebig saw, type Standard II

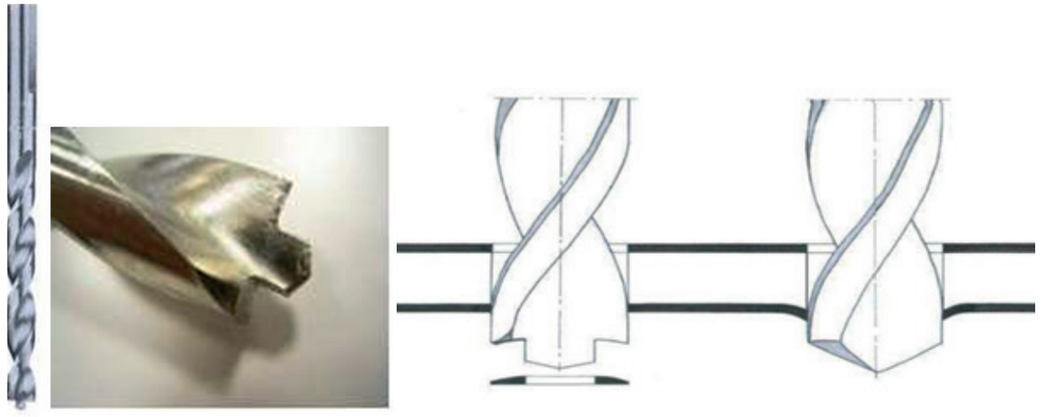


Notching/Punching:

ALUCOLUX® panels can be notched/punched using conventional sheet metal punching machines. For clean cuts, use sharp tools and dies with minimal cutting clearance (0.1mm).

Drilling:

To drill into the **ALUCOLUX®** panels, it is recommended to use Extreme 2TM HSS-G Metal drill bit.



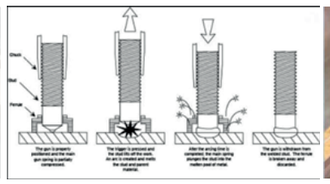
Folding:

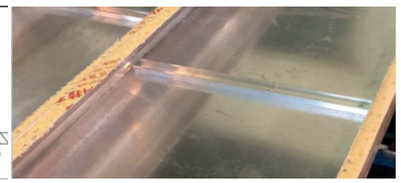
ALUCOLUX® panels need to be folded by machine (brake press) to a radius of 3mm-5mm (after routing/v groove) to form tray panels or any other shape. V grooves are routed on the rear of the **ALUCOLUX®** panels using CNC routers or Panel saw machines and then folded on the brake press/folding machines.

Stiffeners:

Stiffeners are fixed to the back of the panel based on the size of each panels and wind load calculation of the project site. The span between each stiffeners needs to be maintained at 600mm. The stiffeners can be Stud Welded or stuck using VHB tapes at the back of the panel. In case it is stud-welded then it should be done using the right stud-welding tool.

Recommended depth of the welding: Between 1.35mm-1.5mm on a 3mm **ALUCOLUX®** panel.

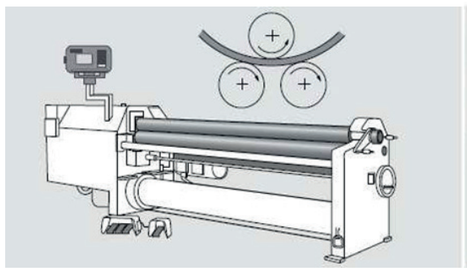


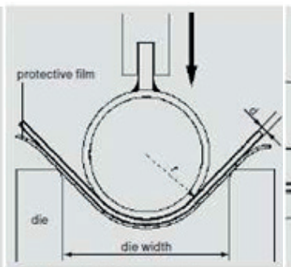


Rolling/Bending:

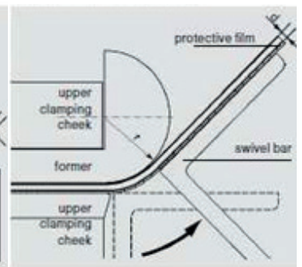
Bending of **ALUCOLUX®** panels can be done either by using a roll bending machine-mainly with three or four-roll machines. The panel to be bent is clamped between two cheeks. The projecting edge is bent around the upper clamping cheek or former using the movable swivel bar. The bending radius is determined by interchangeable formers attached to the upper clamping cheek.

Minimum bending radius: r=25Xt (t: panel thickness)





Bending with a brake press



Bending with a folding machine

Perforation:

Can be done using either CNC, NCT (punching machine) or using laser cutting machine in various design and patterns as required.

Cleaning and Maintenance:

Annual cleaning is recommended. The surfaces should be cleaned either manually using a soft brush or by means of high-pressure cleaner (maximum 50 bar) with clean water. If necessary, a mild cleaning agent (pH 6-7) may be added, up to maximum 10%. Cleaning should take place from top to bottom. After cleaning, rinse with water to remove any cleaning agent residue.

Do not clean surfaces heated by the sun (>40° C).

Do not use high alkaline cleaning agents such as potassium hydroxide, sodium carbonate, caustic soda, any strong acid products, or highly abrasive cleaning agents such as household cleaning products that corrodes paint.

Storage and Transportation:

To protect **ALUCOLUX®** panels against mechanical damages and harmful effects of weather conditions the following should be observed:

- The pallets must be handled carefully during transport and unloading.
- Upon delivery the pallets must be examined for any damages due to transportation.
- Store the pallets stacked one over the other (do not store **ALUCOLUX®** panels standing vertically) with a maximum of 3 pallets of the same format stacked on top of each other (heavy pallets at the bottom).

Installation:

Use panels from a single production batch. Special care needs to be taken for all metallic colors and high gloss finishes and must be installed in the same coating direction.

Direction instructions are printed on the protective film on the panels.

FAQ's

Q. Can we fabricate **ALUCOLUX®** despite it being already pre-coil coated?
A. Yes you can. Kindly refer to our fabrication manual or contact our representative for more information or assistance.

Q. Would the paint crack on the folded edges?
A. With **ALUCOLUX®** you do not have to worry about cracks on the edges at all because we use the highest grade of PVDF or FEVE paint on our own continues coilcoating line.

Q. Is there a need to weld the edges of cassette/tray panels?
A. There is no need to weld **ALUCOLUX®** panels. We can provide technical support on how to route and fold these panels or provide semi-fabricated (M2M) panels or fully-fabricated (R2I) panels from our plant.

Q. How deep should the routing be done to fold the panel and retain strength?
A. On a 3mm panel the routing should be ideally between 1.5mm to 2.3mm.
On a 2mm panel the routing should be ideally between 1mm to 1.3mm.
See our processing guide for more details.

Q. Is there any Warranty?
A. Yes. **ALUCOLUX®** comes with a 15 years products and surface warranty from the makers of **ALUCOBOND®**.