



NUCLÉO[®]

ALUMINIUM PANELS

**FABRICATION
GUIDE**

**PREMIUM BONDED
ALUMINIUM PANEL**

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This is a general guideline for fabricators and contractors, it is not meant to be a definitive statement as circumstances frequently change and are often project specific. We recommend that you always consider the current building and safety regulations.

HVG Facades should be advised in writing of any defects detected within 24 hours of the material being delivered.

All material should be handled in a safe manner using the appropriate protective equipment. Edge protection is strongly recommended.



HANDLING AND STORAGE

In order not to damage the Nucleo[®] sheets please handle them with care by ensuring that they are supported at several points along the length. The sheets should remain on the pallet until just prior to fabrication. The pallet should be stored on a flat surface or suitable racking. Please protect corners and edges of Nucleo[®] sheets from impact damages.

Panels are sensitive to impact notably from small hard objects, i.e. swarf, gravel, wood chips, which can dent the surface due to its core construction.

Do not slide the coated surfaces against each other.

Each sheet has protective film on the coated surface. Primer coating is applied to the rear of the panel with imprint.

The protective film used on Nucleo[®] is to provide temporary protection to the coated surface against dirt, minor scratches, storage, fabrication and the installation process. It is not intended to protect against mechanical damage, corrosion, humidity or chemical damage.

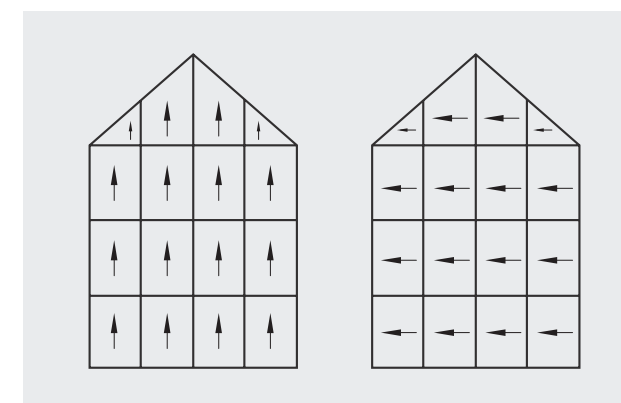
Avoid using tapes, silicone, polyurethane or permanent marks on the film as they may penetrate the film and damage the coating. The protective film must be removed within a 3-month period of fabrication and installation.

Store the material in a dry temperate environment that is not subject to significant changes in temperature. This is to ensure dimensional changes don't occur just before fabrication.

FABRICATION

It is recommended that all panels are checked for defects before the commencement of machining. Do not fabricate damaged sheets unless the affected section can be removed.

Directive arrows are printed onto the Nucleo[®] protective film and should be used to maintain the same orientation for all panels. Failure to observe this practice may result in a small difference in appearance of adjacent panels. It is necessary to take this orientation into account when considering panel optimisation.



Ensure installation accessories are compatible with aluminium to avoid the prospect of a galvanic reaction. Direct contact with metals such as copper, brass, bronze, steel or iron should be avoided, and isolation methods should be implemented.

Nucleo[®] aluminium sheets can be fabricated by using techniques and machinery that have been familiar to the facade industry over many years.

It is recommended that the fabrication is conducted in a workshop for the majority of the project, but small quantities of panel production can be conducted on site.

Transitioning from the fabrication of composite materials to bonded core panels will take some trial and error. We strongly recommend that fabricators conduct preliminary trials to determine the speeds, tooling and setting required for their machinery.

FABRICATION



GROOVING

The overall depth for V-grooving is 3.2 mm. This leaves the 0.7 mm face skin and up to 0.1 mm of adhesive film. The process should remove all of the profiled aluminium core and does not touch the 0.7 mm front skin.

Same as standard ACP, a 90-degree V-groove router bit should be used with a minimum 3.0 mm flat at the base of the V-Groove. For best results the flat should be adjusted to a slight curve.

When using Festool or wall saw, the grooving blade should remove all the profiled aluminium core and touch the adhesive layer on the rear of the face skin. Use Dibond4 depth gauge roller for Festool.

The suggested spindle rotation speed is 18,000 RPM and feed rate is 6.0-10 metres/minute. These speeds are machine dependent and should be discussed with the CNC router manufacturer. A lubricant mister may be beneficial when fabricating. Clean panel edges regularly from swarf. All swarf must be removed.



CURVING WITH ROLLERS

Nucleo® sheets can be curved with a roll bending machine to a minimum radius of 2 meters. Machines with 2 sets of rollers are preferred for best results. Ensure all rollers are perfectly clean and free from swarf prior to commencing. Always conduct a test prior to production.



FOLDING

The machining of the V-grooves on the back of the panel allows for the Nucleo® sheets to be hand folded into cassettes. It is generally recommended that the return leg is folded in one movement, closing the fold a few degrees more than the desired angle before making the exact angle.

It is recommended that a portable folding tool be used for small panels and a folding machine/bed for larger format panels. The folding should be performed in a slow continuous movement.

The folding of an edge must be conducted once, as repeated movement may damage the panel.

TECHNICAL MATERIAL DATA

Properties	Units	Values
Alloy Front Skin		5000 Series
Alloy Profiled Core		3000 Series
Alloy Back Skin		5000 Series
Standard Thickness	Mm	4.0
Painted Weight	Kg/m2	4.6
Paint Thickness	Micron (nom)	≥ 30
Tensile Strength ASTM E8/E8M-15a	MPa	172.9
Elongation	%	8.4
Tensile Strength ASTM C297/C297M-15	MPa	0.81
Facing Peel Torque ASTM D1781-g8 (2012)	Mm N/mm2	270



CLEANING

There is no specific cleaning regime required for Nucleo® outside of a 1.5km distance from salt water. If Nucleo® is installed within 1.5km of salt water, then an annual wash with fresh water is required.

The surface should be cleaned either manually using a soft brush or by means of a high-pressure cleaner (max. 50 bar) with clean water. If necessary, a mild cleaning agent (pH6-7) may be added, up to a maximum of 10%. Cleaning should take place from top to bottom and should be continuously rinsed with clean water to remove any cleaning agent residue.

Generally, we recommend trying out the cleaning agent on an obtrusive part of the building to check whether the surface appearance is affected. Do not clean surfaces in direct sunlight or if the temperature is above 40°C. The quick drying may cause marks or stains. Do not use highly alkaline products, caustic, strong acid products or abrasive cleaning agents.



NUCLEO[®]

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DEEMED
NON COMBUSTIBLE
TESTED TO AS1530.1
AND AS1530.3

15 YEAR
warranty



100% RECYCLABLE

Please seek professional advice when using Nucleo[®] on Type A and B buildings. The adhesive component is combustible and is not required to be tested under AS1530.1 and AS1530.3.

By **HVG** façades

For pricing or further information
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