ALUCORE® ACCP

PROCESSING AND TECHNICAL DATA

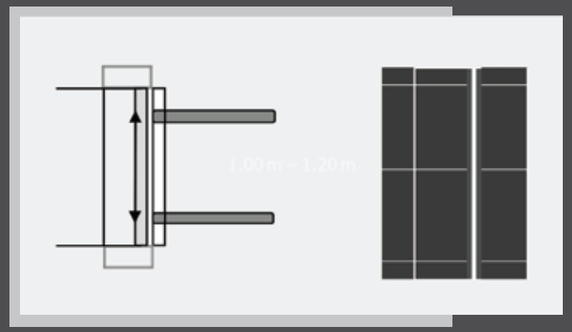
Simply original, originally simple

COMPOSITES

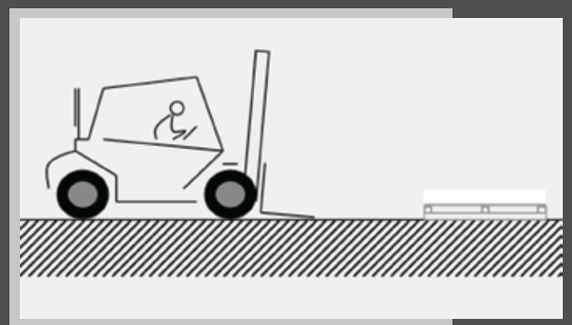
CONTENTS

CONTENTS

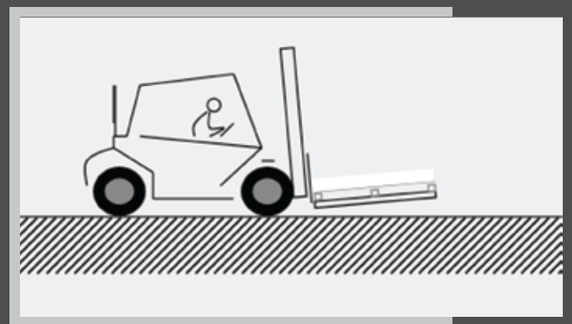
TRANSPORTATION, STORAGE



Set maximum fork width



Pick up the pallet, slightly raise the fork



Pick up the complete pallet, do not draw nor push

To protect ALUCORE® Aluminium Corrugated Core Panel (ACCP) against mechanical damages and the harmful effects of weather, especially moisture, the following information must be observed:

- The pallets must be handled carefully during transportation and unloading. (Caution: Do not handle open pallets).
- Upon delivery the pallets must be examined for any damage due to transportation and moisture
- ALUCORE® panels that have become wet must be dried to avoid any spots or corrosion forming. Any damage must be reported immediately and confirmed by the forwarding agent.
- Store the pallets away from direct sunlight in a clean and dry area so that they are protected against any wetness penetrating due to rain and spray water and avoid any condensation forming (e.g. when transporting cold panels to warmer rooms).
- Store the pallets stacked one over the other (do not store ALUCORE® panels vertically) with a maximum of 6 pallets of the same format stacked on top of each other (heavy pallets at the bottom).
- Individual panels must be lifted off the pallet by two people holding all four corners and not drawn over each other. Carry the panels vertically using hand gloves to avoid staining.
- While stacking, nothing should be put in between panels to avoid scratches and impressions.

To ensure perfect functioning of the ALUCORE® protective film, the following information should be observed:

- Storage exceeding 6 months should be avoided. Also, within 6 months, storage conditions must be followed as per mentioned in the 3rd point above.
- Severe temperature fluctuations and exposure to direct sunlight reduces the long-term durability. In this case the protective film may become very difficult to remove.
- Do not mark the protective film with inks (markers), tapes or labels. Solvent or plasticizer may penetrate the film and affect the lacquered surface.
- Should the protective film partially come off during processing or after assembly, dirtied edges can occur in the course of time, which may be difficult to remove.
- Remove the protective film as soon as possible after assembly. Protective film that remains on the panels for an extended period of exterior exposure may be very difficult to remove.
- Make sure not to remove the protective film at temperatures below 10°C.

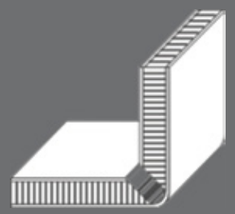
PROCESSING AT A GLANCE

PROCESSING METHODS

Sawing
- Vertical panel saw, circular saw or jig saw

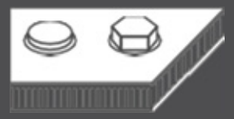
Routing
- CNC machining centres and circular panel saws

Drilling
- Drill bits with locating point for thin sheets
- Large holes with countersinks and counterbores



Folding
- Routing and folding technique or with bending press

JOINTING / FIXING TECHNIQUE

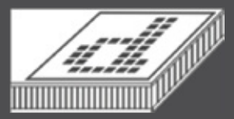


Riveting
- Using commercially available tool and blind rivets, fastening possible

Screwing
- With sheet metal screws, rivet bolts and nuts fastening possible

Glueing
- Adhesive sealing compounds
- Indoor use:
  - Metal adhesives
  - Double-sided adhesive tape

JOINTING / FIXING TECHNIQUE

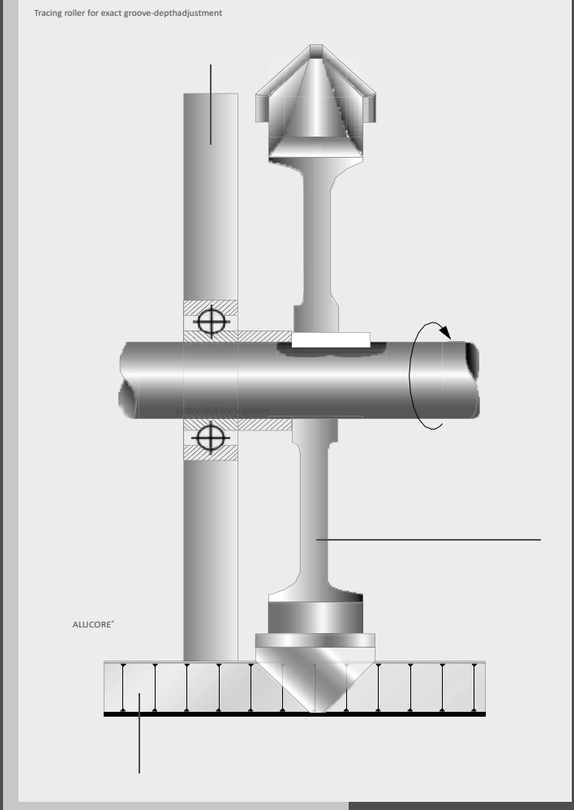


Printing
- On polyester lacquer surfaces with commercial printing inks

Laminating
- with self-adhesive foils

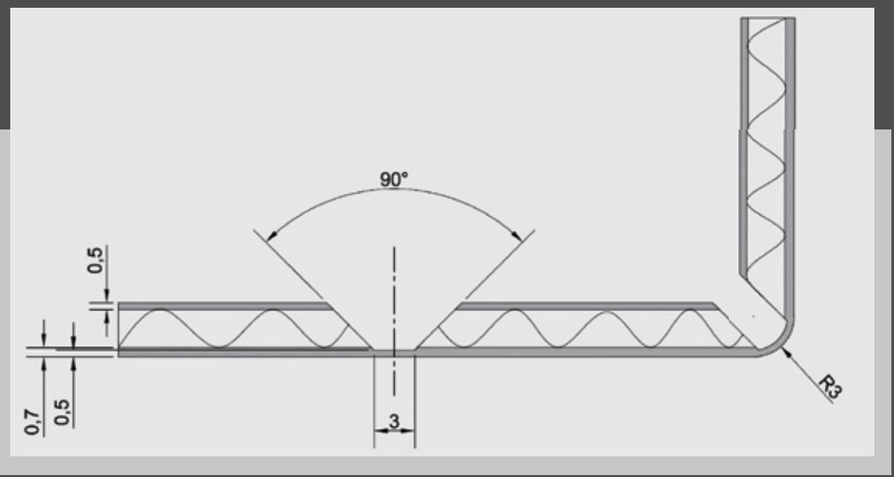
PROCESSING AT A GLANCE

FOLDING TECHNIQUES

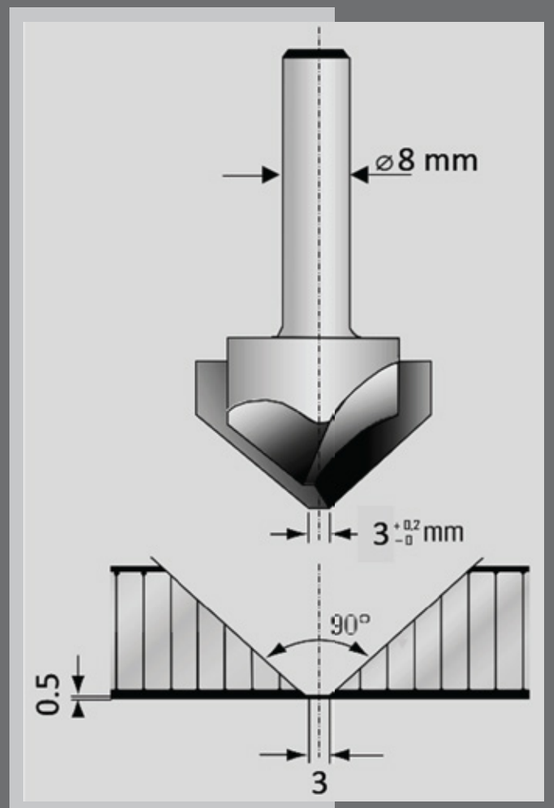


Routing and folding technique / producing corners and edges
Corners and edges can be produced simply on ALUCORE® panels using the routing and folding technique. A groove is routed on the rear of the panel into the 0.5 mm thick cover sheet at the front.

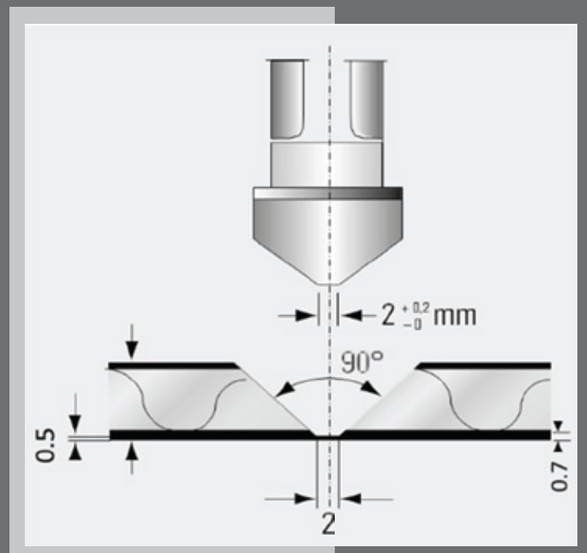
A cutter disk for V-grooves 90° is used in the appropriate width.



FOLDING TECHNIQUES



End milling cutter for V-grooves 90°



Cutter disk for V-grooves 90°

TOOLS FOR ROUTING AND FOLDING

The following points must be taken into consideration:

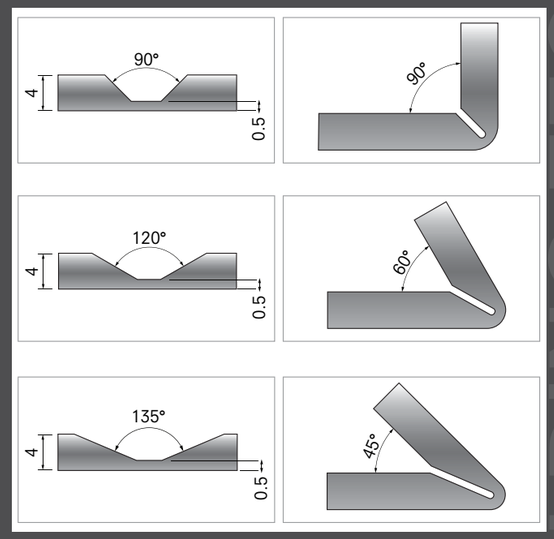
- The edges should not be bent back and folded a second time.
- The width of the base cutter edge must be 3 mm.
- The grooves should basically be routed in the 0.7 mm thick cover sheet.
- After routing the remaining metal sheet must be 0.5 mm thick.

Cutter disk for V-grooves 90°

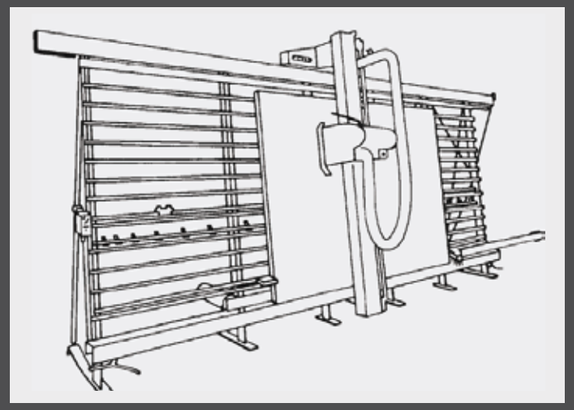
For panel thicknesses of 6 and 10 mm a milling cutter for 90° V-grooves with a cutter edge width of 20 mm must be used on circular panel saws.

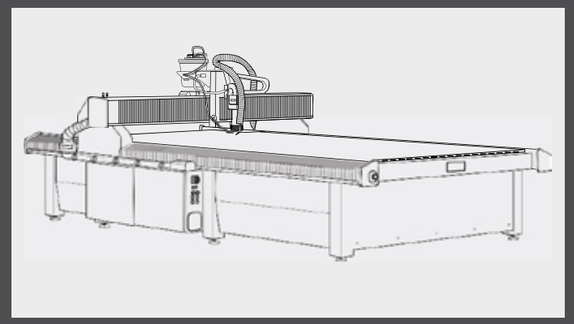
End milling cutter for V-grooves 90°

With cylindrical shank of the corresponding diameter for all panel thicknesses.



FOLDING TECHNIQUES





MACHINERY FOR ROUTING AND FOLDING TECHNIQUE

Vertical panel saws ALUCOBOND® / ALUCORE® routing device (customized accessory)

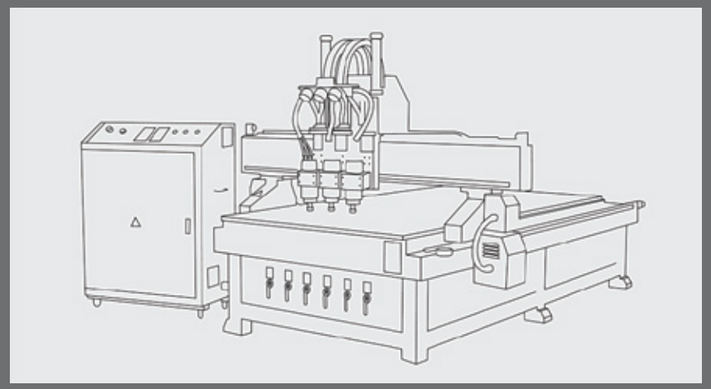
For V-shaped grooves and for rectangular grooves
Holz-Her Vertical panel saw PK 1255 ALUCOBOND®;
Striebig vertical panel saw Standard II for composite panels.
Manufacturers / Suppliers
Reich Spezialmaschinen GmbH
www.holzher.de

Striebig AG Maschinenbau
www.striebig.com

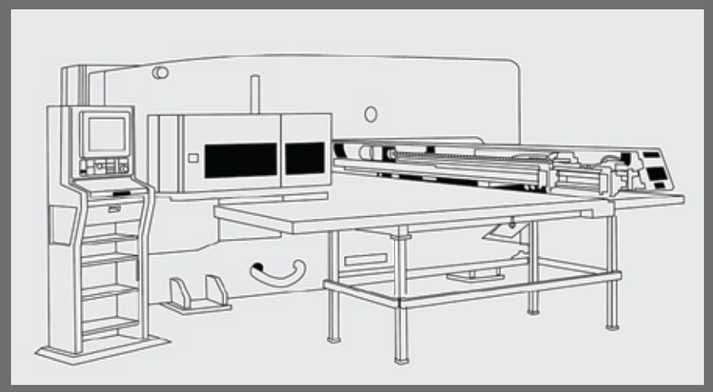
Other panel saws can subsequently be provided by the above manufacturers with an additional routing device.

MACHINES/TOOLS USED FOR PROCESSING

To cut ALUCORE® sheets to required size the following machinery is recommended:



Computer Numerical Control Router (CNC)

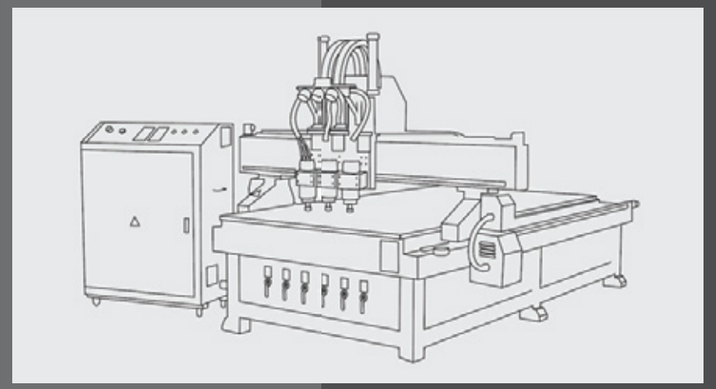


Numerical Control Turrent Punch Press (NCT)

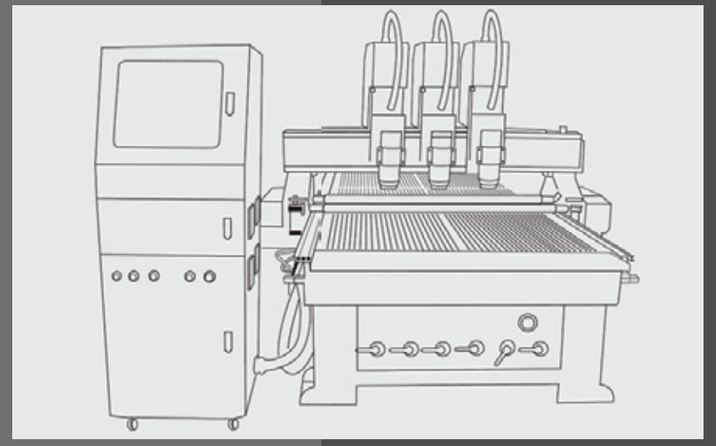
MACHINES/TOOLS USED FOR PROCESSING

MACHINES/TOOLS USED FOR PROCESSING

CNC is usually used for routing, grooving, drilling and cutting ALUCORE®.



3-Axis Simultaneous-Motioned Numerical Control Carving Machine (CNC Router) with vacuum absorption worktable (as above). Or Simultaneous-Motioned double roller compaction worktable (as below).



The 3-Axis Simultaneous-Motioned CNC has three blade holders and can change blades automatically during processing. Different blades perform separate processes, thus improving the efficiency of batch fabrication.

PROCESSING METHODS

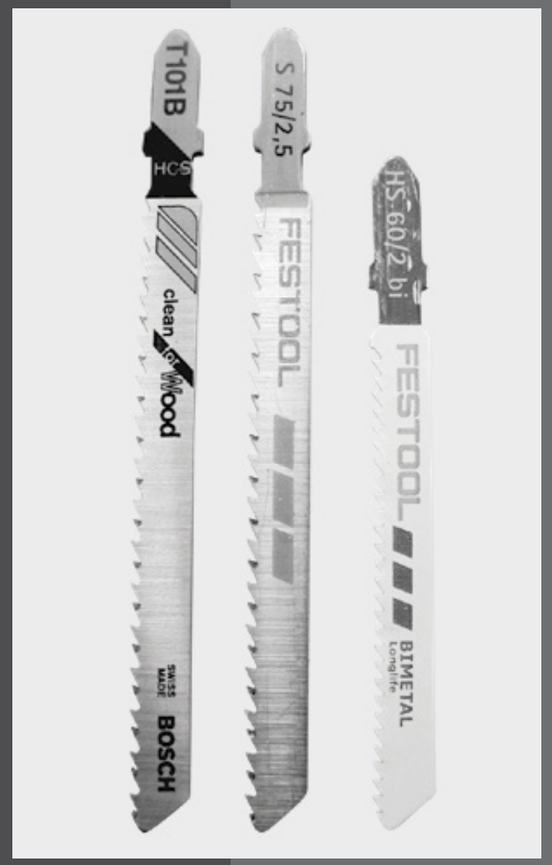
SAWING

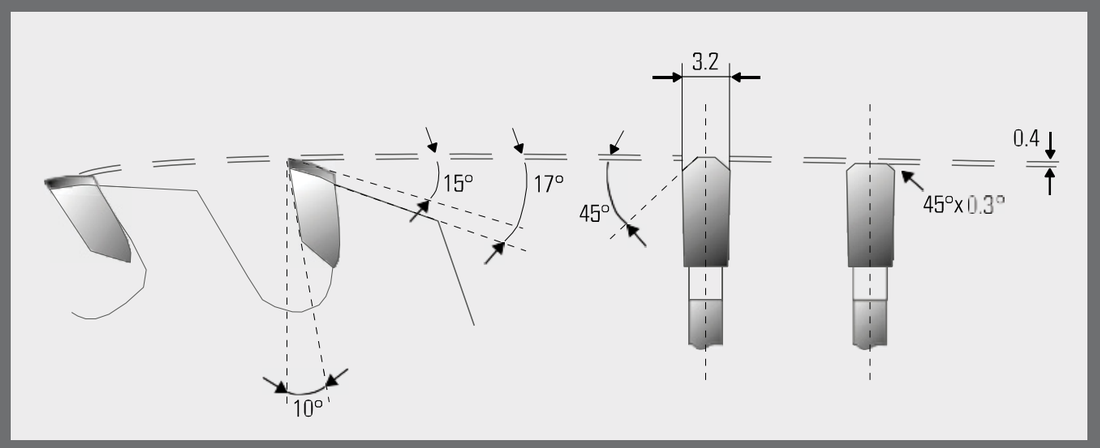
Tooth geometry	trapeze tooth / flat tooth
Pitch t	10 – 12 mm
Clearance angle α	15°
Rake angle γ	10° positive
Maximum cutting speed v	5,000 m/min
Maximum feed s	30 m/min

Carbide tipped (CT) saw blades for HOLZ-HER and Striebig circular panel saws

Trapezoid / flat tooth saw blades, flat teeth 45° chamfered for burrfree edges

Saw blade Ø	D = 300 mm (for Striebig panel saw Standard II)
Number of teeth	Z = 72 LEUCO-Code No. 181724v
Saw blade Ø	D = 250 mm (for Holz-Her panelsaw 1255 ALUCOBOND®)
Number of teeth	Z = 60 LEUCO-Code No. 181726
Bore Ø	d = 30 mm
Tooth thickness	3.2 mm
Clearance angle	15°
Rake angle	10° positive





Sketch showing edge geometry for professional resharpening

PROCESSING METHODS

PROCESSING METHODS

Single flute cutter with right hand twist

ROUTING

ALUCORE® can be easily routed on conventional routing machines and CNC machining centres. To avoid pressure marks on the surface, please use plastic or wood vice jaws when chucking the workpieces. The cutters for aluminium and plastics are also suitable for ALUCORE®.

Suitable end milling cutters for ALUCORE®:

Carbide tipped cutter Series F 113

DRILLING/COUNTERSINKING

ALUCORE® can be drilled with twist drills normally used for aluminium and plastics. Drilling without burr is possible using the following drills:

- Spot facing cutter with centre-point. e.g. Extreme 2TM HSS-G metal drill DIN 338 of De WALT, Idstein, Germany
- stainless steel drills HSS cobalt DIN 338

Countersinks are used for countersinking pre-drilled holes and for drilling out bigger holes through ALUCORE®.

SURFACE TREATMENT

PRINTING

Printing on ALUCORE® surfaces in polyester lacquer quality

Stove-lacquered ALUCORE® panels are well suited for printing. Prior to printing, please make sure to remove the protective foil and clean the surface with a lint free cloth moistened with ethyl or isopropyl alcohol. The alcohol must not be poured directly onto the panel. The lacquer coat can be damaged by the use of methylated spirit. About 10 to 15 minutes should be left between cleaning and printing.

Practice has shown that even within a given tspecification of stove-lacquer paint and printing ink there may be variances, and in view of this it is recommended that in the case of each particular application the adhesion properties of the selected printing ink should be tested.

LAMINATING

ALUCORE® can be laminated (manually or by machine) with cast or calendered selfadhesive foils. The varnish does not come off when changing the foils. The roller gap of the laminating machine should be set as per the panel thickness.

CLEANING AND MAINTENANCE

GENERAL

Expert and regular cleaning not only maintains the aesthetic and representative finish of stove-lacquered surfaces but also maintains their quality through the removal of dirt and aggressive deposits.

Cleaning intervals depend on local environmental conditions and the resulting amount of soiling. Surfaces should be cleaned either manually or with a suitable cleaning device from top to bottom. Please do not use any abrasive pads on lacquered surfaces. We recommend that the cleaning agent be tried on an unobtrusive part of the object to be cleaned to check whether the surface is affected.

Do not clean hot surfaces (> 40° C) as the quick drying process may cause blemishes.

CLEANING AGENT

Please observe the manufacturer's cleaning and safety instructions! For further information such as addresses of approved and recommended cleaning companies and a list of neutral cleaning agents for organically coated or anodized aluminium components.

NON-SUITABLE CLEANING AGENTS

Please do not use any powerful alkaline cleaning agents such as potassium hydroxide, soda, caustic soda or any powerful acidic products or heavily abrasive scouring agents or lacquer-dissolving cleaning agents.

TECHNICAL DATA

Properties	Standard	Unit	Values
Panel standard thickness	Nominal	[mm]	4 / 6
Coated skin thickness, front Side	Nominal	[mm]	0.7
Coated skin thickness, rear Side	Nominal	[mm]	0.5
Weight	Nominal	[kg/m²]	4.45
Technical Properties:			
Alloy of cover sheets	ASTM B209-04		3105 / 5005
Temper of cover sheets	ASTM B209-04		H24
Modulus of Elasticity	ASTM E8	[N/mm²]	70,000
Tensile Strength of Aluminium	ASTM E8	[N/mm²]	$R_m \geq 125$
0.2% Proof Stress	ASTM E8	[N/mm²]	$R_{p0.2} \geq 90$
Elongation	ASTM E8	[%]	$A_{50} \geq 4$
Surface:			Coil Coating
Lacquering			FEVE / PVDF
Gloss (initial value)	ASTM D523		As per the approved shade
Pencil hardness	ASTM D3363	[%]	HB ~ F
Thermal Properties:			
Temperature Range		[°C]	-40 to +80
Fire Properties:			
Fire Classification	EN 13501-1		Class A2 - s1, d0
Environment & Health Aspects :			
:Environment Management System			ISO 14001:2015
:Occupational Health and Safety Management System			ISO 45001:2018
:Quality Management System			ISO 9001:2015
Dimensional Tolerances:			
Panel thickness		[mm]	± 0.2 mm
Thickness of coated skins		[mm]	± 0.05 mm
Weight		[kg/m²]	± 5%
Width		[mm]	Upto 1250 mm + 2mm
Length		[mm]	< 4000 mm + 6 mm
			Above 4000 mm +10 mm

TECHNICAL DATA

Boundless possibilities.

ALUCORE®

3A COMPOSITES