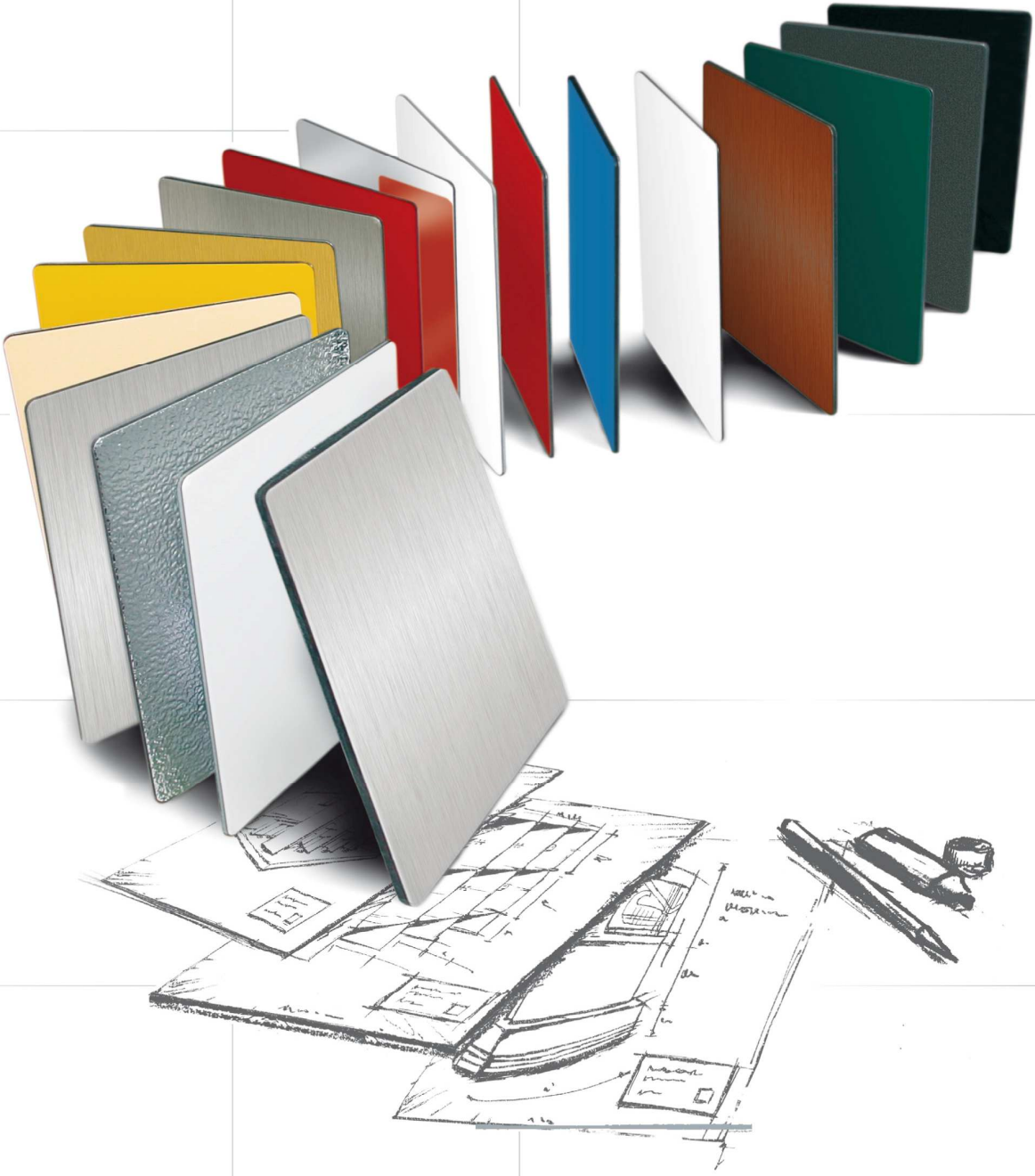


DIBOND®



PROCESSING INSTRUCTIONS

CONTENTS

PROCESSING INSTRUCTIONS

GENERAL INFORMATION

- 3 General information – before working with DIBOND®

SHAPING PROCESSING

- 4 Sawing
5 Drilling
6 Shearing
7 Contour cutting, contour milling
8 Punching
9 Fettling

SHAPING

- 10 Routing and folding
11 Bending

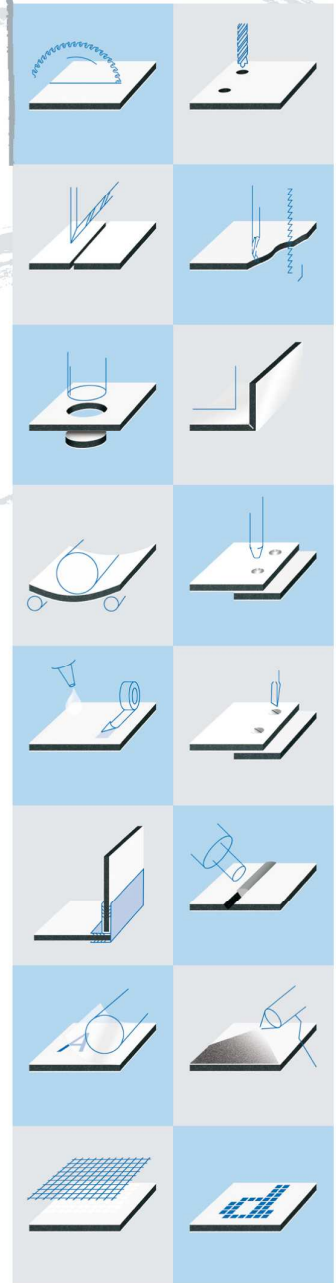
JOINTING AND FIXING TECHNIQUES

- 12 Riveting
13 Glueing
14 Screwing
15 Clamp connections
16 Hot air welding

SURFACE TREATMENT

- 17 Lamination and photo mounting with adhesive foils
18 Overlacquering – varnishing
19 Screen Printing
20 Digital Printing

TECHNICAL DATA



GENERAL INFORMATION

PLEASE READ CAREFULLY BEFORE WORKING WITH DIBOND®



Installation

To avoid possible reflection differences (for metallic colours or DIBONDbutlerfinish®) we recommend installing the panels in the same direction as marked on the protective film.

Batch identity

We strongly recommend using material of the same production lot to reach an ideal result with a uniform colour shade.

Protective film

The protective film on both sides protects the lacquered DIBOND® surfaces against damages that can occur during transportation, storage, processing or installation. We recommend removing the protective film from the sheets as soon as possible after installation in order to avoid residuals of glue sticking to the surface due to radiation and outdoor exposure. The protective films and the panel surfaces may not be marked using ink (marker), adhesive tapes or stickers, as the lacquered surfaces could be damaged by solvents or plasticizers.

Handling

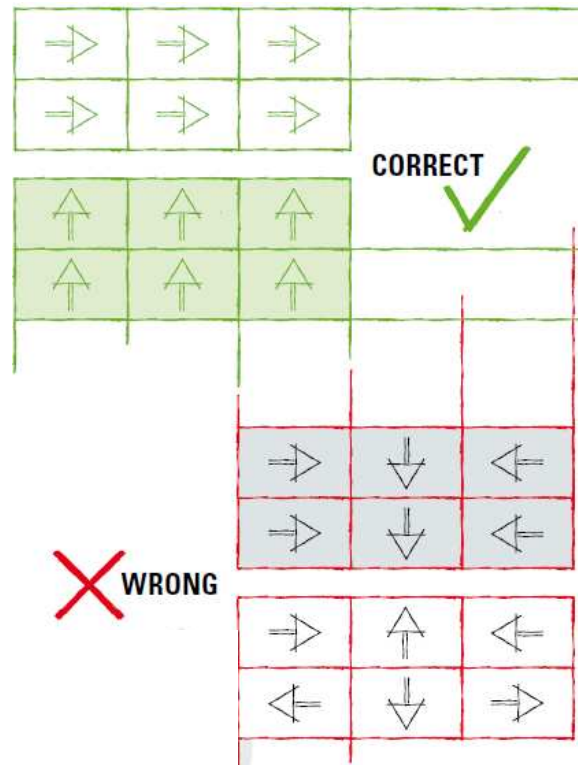
The pallets need to be handled carefully during transport and unloading. Especially for the handling of large formats the individual panels should only be lifted off the pallet by two people holding all four corners. The panels may not be drawn over each other. We recommend carrying the panels vertically and wearing gloves to avoid staining.

Storage

DIBOND® pallets of the same size can be stacked however only with a maximum of 6 pallets stacked on top of each other.

A storage exceeding 6 months should be avoided. It is important to protect DIBOND® pallets against rain, wetness, spray water and condensation (e.g. when transporting cold panels to warmer rooms) at any time while storing.

Prior to any processing steps the panels should go through an intermediate storage for 24 hours at temperatures between 18°C and 20°C. For short term storage between two processing steps we recommend underlying the sheets with polystyrene or foam wedges.



GENERAL INFORMATION

PLEASE READ CAREFULLY BEFORE WORKING WITH DIBOND®



Cleaning and maintenance

Regular cleaning and the removal of dirt and aggressive deposits will not only maintain the aesthetic look of stove-lacquered surfaces but also their value and quality. DIBOND® surfaces should be cleaned either manually or with a suitable cleaning device from top to bottom. Abrasive pads may not be used on lacquered surfaces. Any powerful alkaline cleaning agents such as potassium hydroxide, sodium carbonate or caustic soda, or any powerful acidic products or heavily abrasive scouring agents would harm the lacquered surface and may therefore not be used. After the cleaning the surfaces should be washed with cold water in order to remove cleaning residues.

Cleaning of mirror like surfaces:

Even though DIBOND® is handled with care, dirt and impureness such as finger prints can occur. Specific Vilene or other fleece material for mirror surfaces with no liquid additives are suitable for cleaning. In case the dry cleaning should not be sufficient, water with a low surface tension can be used for pre-cleaning. The drying should again be done with a fleece cloth.

Any liquid cleaning agent should be pH-neutral and may not be abrasive. Cleaning agents for glass can be used if they correspond to the a.m. criteria.

We advise you to test the cleaning agent on an unobtrusive part of the DIBOND® panel to check the usability.

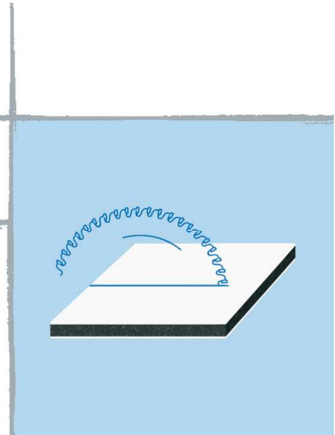
Do not clean hot surfaces ($> 40^{\circ}\text{C}$) as the quick drying process may cause blemishes.

Expansion of DIBOND® sheets

As DIBOND® is applied at temperatures between -50°C and $+80^{\circ}\text{C}$ it is subject to thermal expansion or shrinking which needs to be considered when choosing the fixing system, fasteners and sealing. The linear thermal expansion of DIBOND® is determined by the aluminium cover sheets and can be exactly evaluated.

SAWING

PROCESSING INSTRUCTIONS



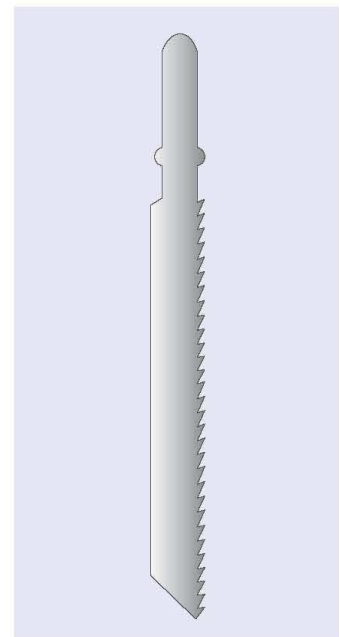
Carbide tipped (CT) saw blades

Blade geometry	Tooth thickness approx. 2 – 4 mm, tapered to the inside to prevent jamming
Tooth geometry	trapeze tooth / flat tooth
Pitch t	10 – 12 mm
Clearance angle α	15°
Rake angle γ	10° positive
Maximum cutting speed v	5000 m/min
Maximum feed s	30 m/min

Carbide tipped (CT) saw blades for HOLZHER and Striebig circular panel saws

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

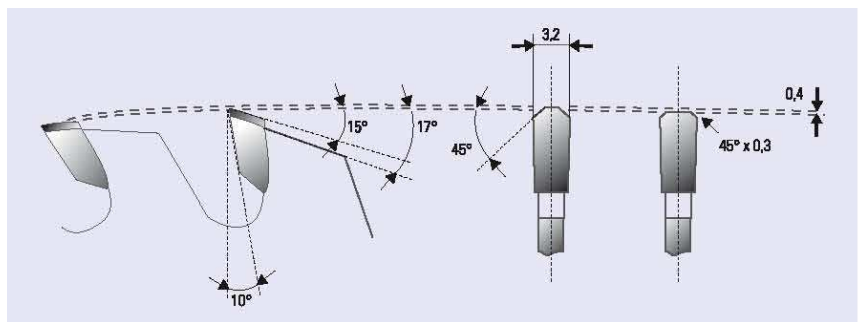
Saw blade dia.	D = 300 mm (for Striebig vertical panel saw Standard II)
Number of teeth	t = 72 (for cuts of up to 5 panels) LEUCO Code No. 188389 t = 96 (for single cuts without burrs) LEUCO Code No. 188390
Saw blade dia.	D = 250 mm (for Holz-Her vertical panel saw PK 1255 ALUCOBOND®)
Number of teeth	t = 60 (for cuts up to 5 panels) LEUCO- Code No. 188939 t = 80 (for cuts without burrs) LEUCO- Code No. 188940
Bore dia.	D = 30 mm
Tooth thickness	3.2 mm
Clearance angle	15°
Rake angle	10° positive



Jig saw blades

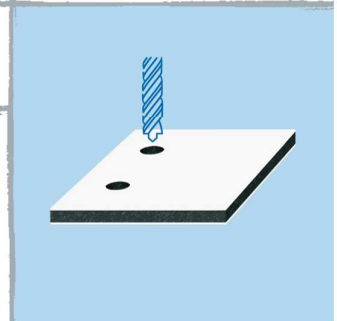
for wood or plastics, e.g. T101 B (Bosch), tooth thickness 2.5 mm for precision cuts

Sketch showing the edge geometry for professional resharpening:



DRILLING

PROCESSING INSTRUCTIONS



DIBOND® can be drilled with twist drills normally used for aluminium and plastics on machines common for metals.

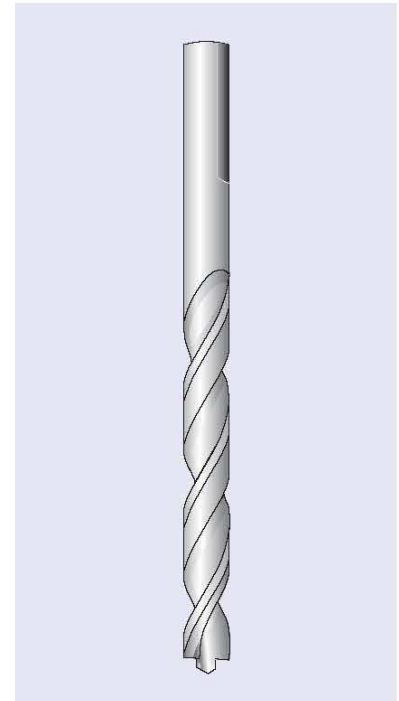
Drill material: High-speed steel (HSS)

Tool geometry:

Lip angle: 100° - 140° or spot facing cutter with centre-point.

Angle of twist: 30° - 45°

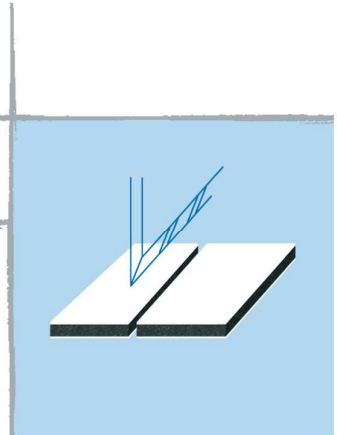
e. g. Extreme 2TM HSS-G Metal drill DIN 338 of De WALT, D-Idstein



SHEARING

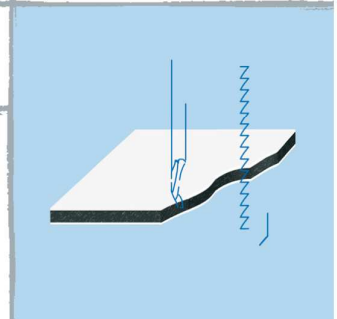
PROCESSING INSTRUCTIONS

DIBOND® is easily sheared with a guillotine. A slight drawing of the aluminium cover sheet caused at the impact side should be noted. The clamp on the shear should be fitted with a shock-absorbing rubber pad to prevent damage to the cover sheet.



CONTOUR CUTTING / CONTOUR MILLING

PROCESSING INSTRUCTIONS



Contour cutting

DIBOND® can be cut to size with jig saws, CNC machining centres and water torches. Please cut abrasively when using a water torch. Pre-drilling of the panels is necessary when starting the cut in the middle of a panel as it is not possible to drill through with a water torch.

Contour milling

DIBOND® can be easily routed on conventional routing machines and CNC machining centres.

To avoid pressure marks on the DIBOND® surface, please use plastic or wood vice jaws when chucking the work pieces.

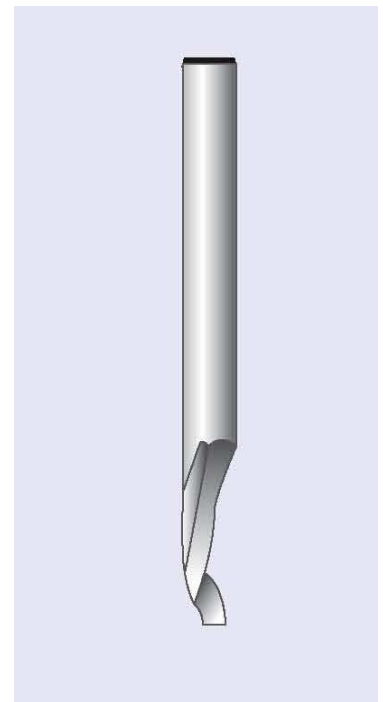
High-speed steel or carbide tipped cutters suitable for aluminium and DIBOND® have a wide tooth pitch, radiused and smooth grooves and small lip angles.

They produce perfect cuts, e.g. under the following conditions:

- High-speed steel (HSS),
max. cutting speed 3000 m/min.,
max. feed 25 m/min.
- Carbide tipped (CT),
max. cutting speed 5000 m/min.,
max. feed 30 m/min.

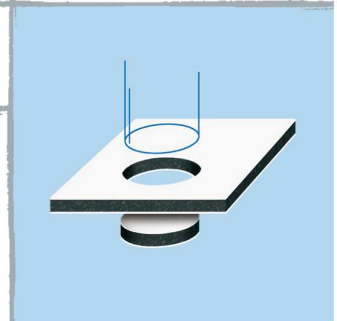
Suitable end milling cutters for DIBOND®:

- HSS end milling cutter, shank dia. 8 mm
Dim. 5 x 12 x 60 mm, Art. No. 100 56 0008
Dim. 3 x 12 x 60 mm, Art. No. 100 36 0008
- Carbide end milling cutters series F 113



PUNCHING

PROCESSING INSTRUCTIONS



DIBOND® panels of any thickness can be punched with conventional sheet punching machines. For clean cuts please use evenly ground tools and the narrowest possible cutting gap. This punching method also causes a slight drawing of the panel cover sheet.

Holes of a minimum diameter of 4 mm can be punched. The minimum width of web between hole edges is also 4 mm.

DIBOND®

FETTLING

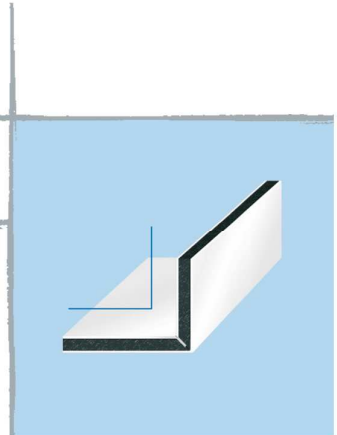
PROCESSING INSTRUCTIONS

We recommend a fettling tool with rotary blades or an abrasive pad for cleaning or deburring the edges of DIBOND®.



ROUTING AND FOLDING

PROCESSING INSTRUCTIONS



Method

DIBOND® composite panels can be shaped by means of a simple processing technique. This procedure, the routing and folding technique, enables a variety of shapes and sizes to be manufactured.

V-shaped or rectangular grooves are routed on the rear of the panels with disk or end milling cutters, whereby the aluminium cover sheet at the front and part of the polyethylene core are retained. The small thickness of the remaining material then allows folding by hand. A folding machine is not required. The groove shape determines the radius of the bend.

The grooves can be produced with both a panel saw with routing device for DIBOND®, on a CNC machining centre, with a panel routing machine or a hand routing machine. The routing and folding technique can be used for composite panels of all standard surfaces.

Advantages

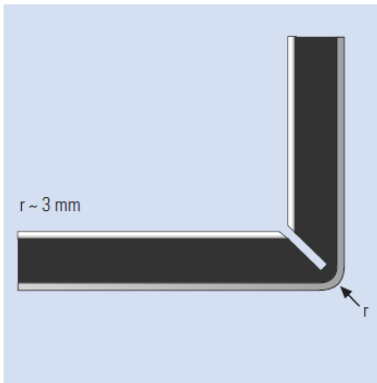
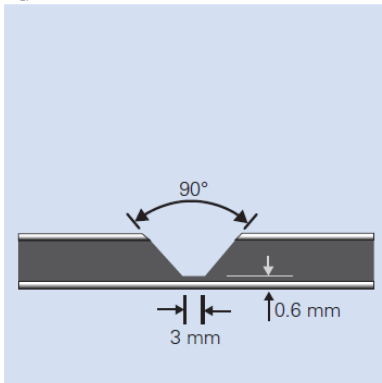
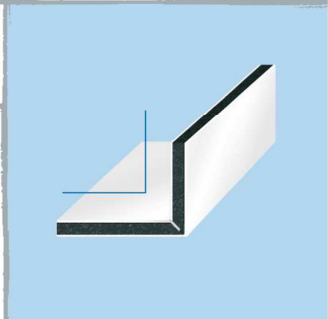
The convincing advantages of the routing and folding techniques are:

- Minimum investment
- Simple operating technique
- Folding needs not to be done in the workshop, it can be done directly on site; this means low transport and storage costs
- Low-cost manufacturing of preshaped decorative elements, advertising boards, large signboards
- Versatile formability
- Good economy
- Shapes are not restricted by machine dimensions

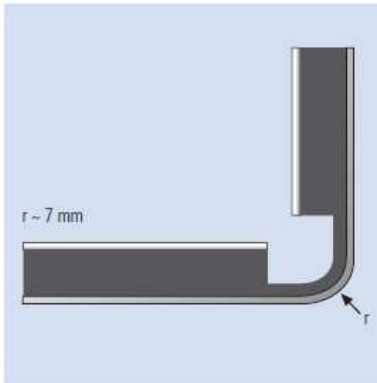
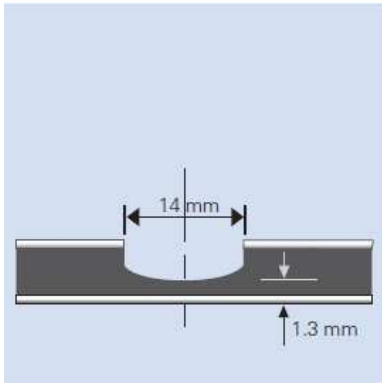


ROUTING AND FOLDING

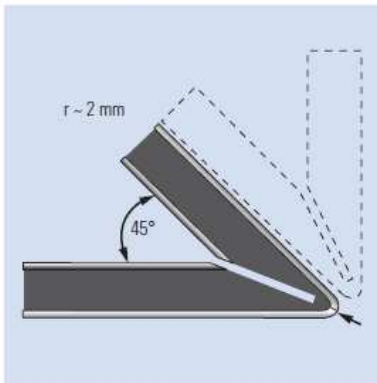
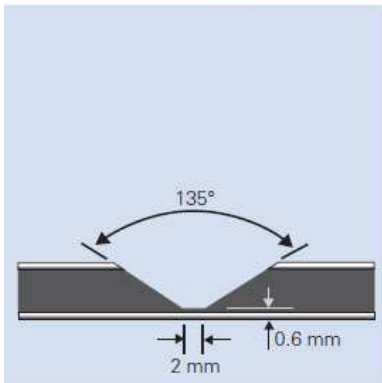
PROCESSING INSTRUCTIONS



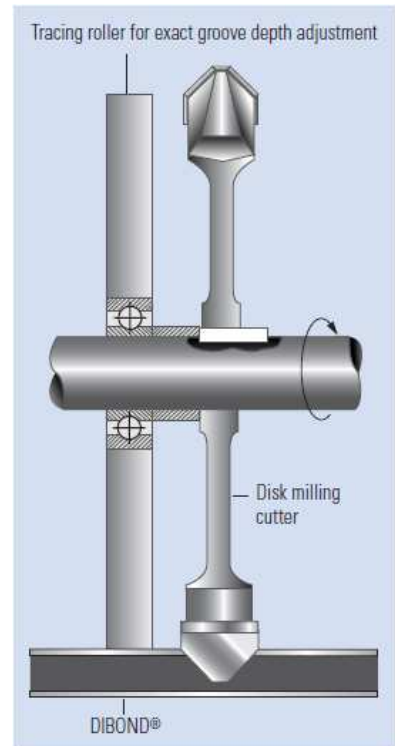
Groove (V-shaped) for edges up to 90°



Rectangular groove for edges up to 180° depending on panel thickness

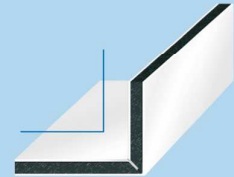


Groove 135° (V-shaped) for edges up to 135°



ROUTING AND FOLDING

PROCESSING INSTRUCTIONS



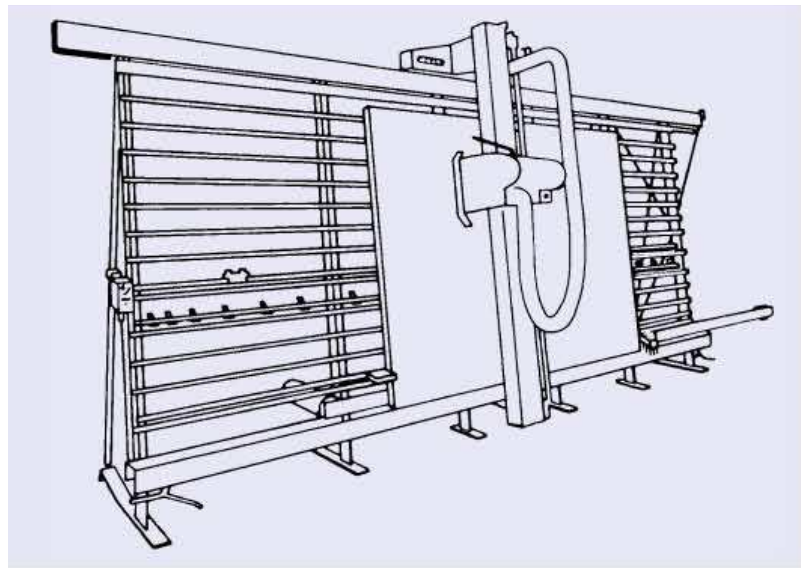
Tools and machinery for routing and folding technique

Panel saws DIBOND® routing device (special accessory)

Holz-Her vertical panel saw
PK 1255 ALUCOBOND®
Code No. 278.6133

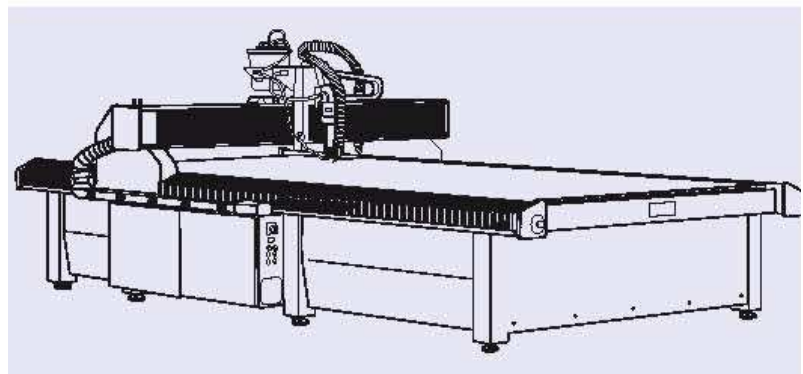
Striebig Vertical panel saw
Standard II for composite panels

Other panel saws can subsequently be provided by the manufacturer with an additional routing device. Please ask for details.



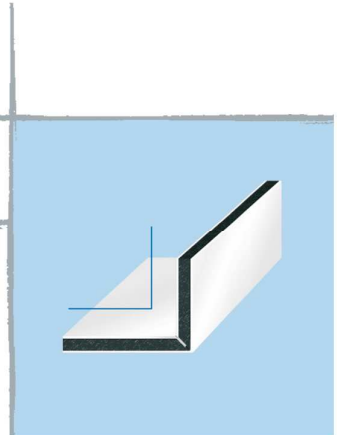
CNC machining centres

Manufacturers / suppliers:
On request.



ROUTING AND FOLDING

PROCESSING INSTRUCTIONS



Panel routing machine PF 1200 E-Plus DIBOND® (Fig. 1)

Supplied with:

- Tracing roller to fit 3 mm
- Disk milling cutter for V-grooves 90°
- Adjustment template
- Transport box



Hand routing machines (Fig. 2)

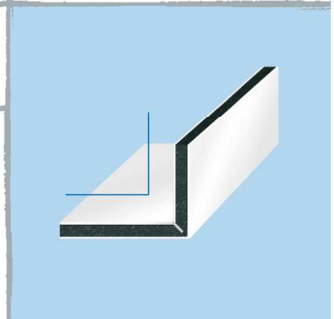
Commercially available hand routing machines with a minimum rating of 800 W are suitable.

Collet chucks 8 mm dia.



ROUTING AND FOLDING

PROCESSING INSTRUCTIONS



Carbide tipped disk milling cutters for panel saws

The diameters of tracing rollers and cutter disks are adjusted so as to leave a residual core thickness of 0.3 mm (V-groove) or 1 mm (rectangular groove). The dimensions given in the drawings show the cover panel thickness of 0.3 mm plus the corresponding residual core thickness.

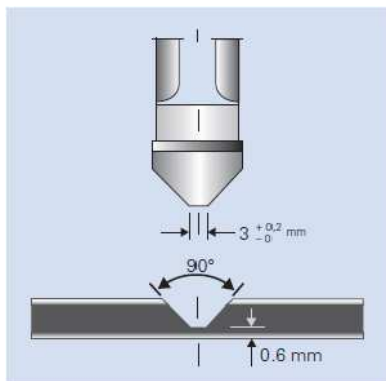
Please address all enquiries relating to

- new machines with accessory parts for milling of DIBOND®
- possible retrofitting of existing machines (stating machine type/No. and year of construction)
- accessories such as cutter disks, tracing rollers, etc.

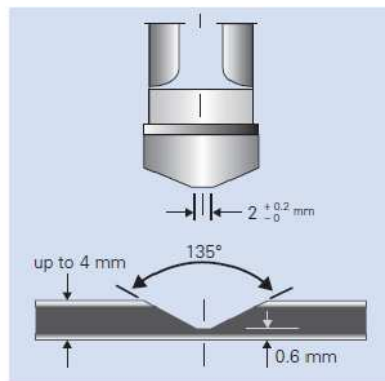
directly to the manufacturer of the panel saws.

Important:

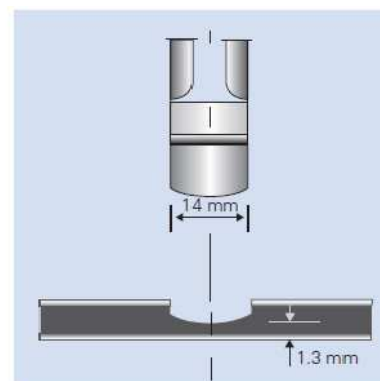
Please state the following in your enquiry or order "for processing DIBOND® composite panels".



Disk milling cutter for V-grooves 90°



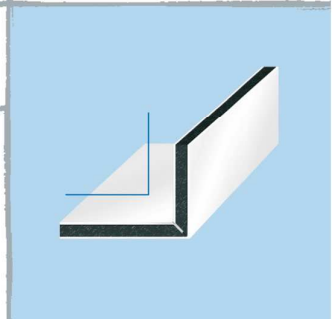
Disk milling cutter for V-grooves 135°



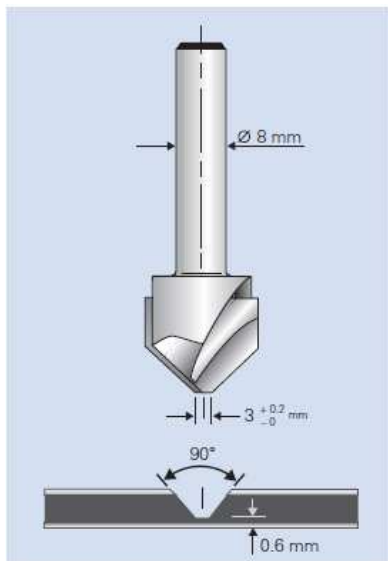
Disk milling cutter for rectangular grooves

ROUTING AND FOLDING

PROCESSING INSTRUCTIONS



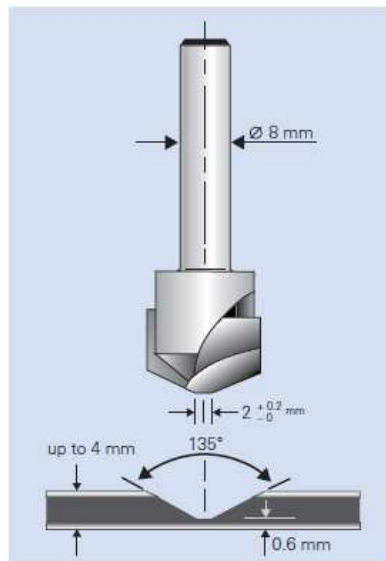
Milling cutters with cylindrical shank for hand routing machines



End milling cutter for V-grooves 90°

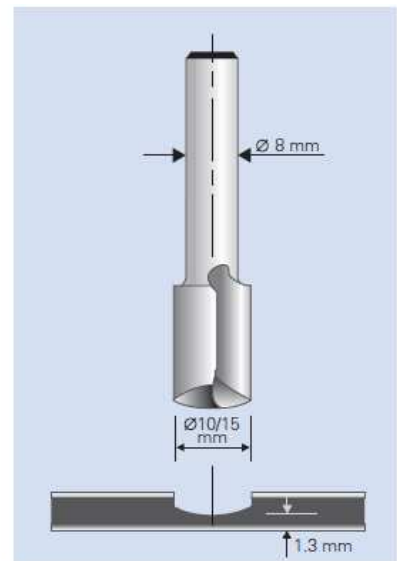
CT cutter No. 79 803 (KWO)

HSS cutter No. 201 00 83 08 (MAWEX)



End milling cutter for V-grooves 135°

CT cutter No. 79 804 (KWO)



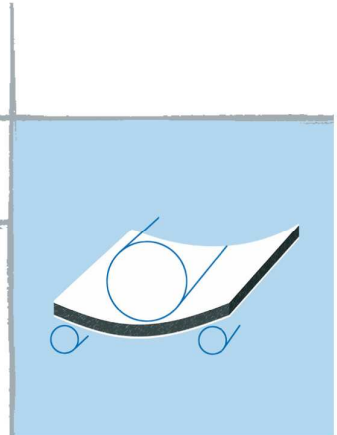
End milling cutter for rectangular grooves

HSS cutter Ø 10 mm No. 79 800 (KWO)

HSS cutter Ø 15 mm No. 79 801 (KWO)

BENDING

PROCESSING INSTRUCTIONS



Bending

DIBOND® can be formed by conventional metal and plastic fabrication methods. Certain specific points should be noted relating to the multilayer structure combining materials of different characteristics.

- The minimum radius is $r = 15 \times t$
 t = panel thickness

The spring-back effect experienced when folding sheet metal is larger with DIBOND®. For production series a prototype should be made.

The surface should be protected from damage by affixing plastic film or inserting polyethylene of 1 – 2 mm thickness or plastic film strips during processing.

Bending with a bending press (Fig. 1)

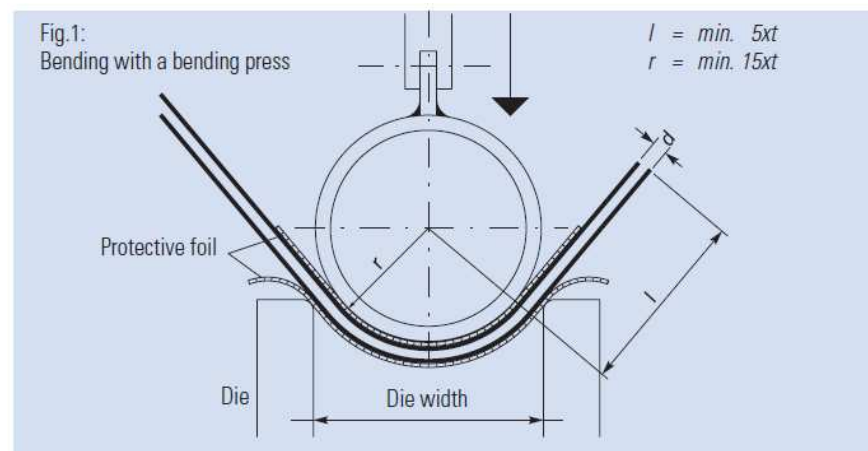
DIBOND®, like sheet metal, is easily formed with a bending press. The air-bending process is used when forming with a brake press.

The DIBOND® panel rests on the edges of the die (rails, channels) and is bent by the punch (tube or shaft). The bending angle is determined by the width of the die and the stroke of the punch. The die edges should be rounded and smooth.

Ideal die width:

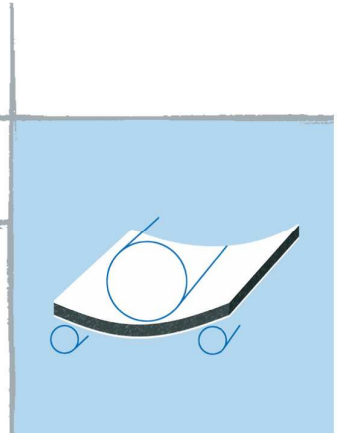
$2 \times t + 2 \times \text{protective foil thickness} + \text{punch diameter} + 15 \text{ mm}$

The minimum side length of the bent part should be 5 times the DIBOND® thickness.



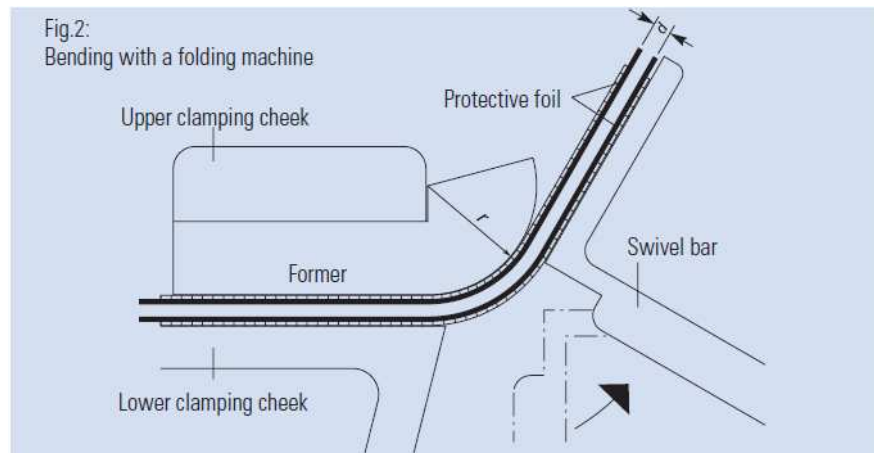
BENDING

PROCESSING INSTRUCTIONS



Bending with a folding machine (Fig. 2)

When working with folding machines, the panel to be bent is clamped between two cheeks. The projecting edge is bent around the upper clamping cheek and former using the movable swivel bar. The bending radius is determined by interchangeable formers attached to the upper clamping cheek.



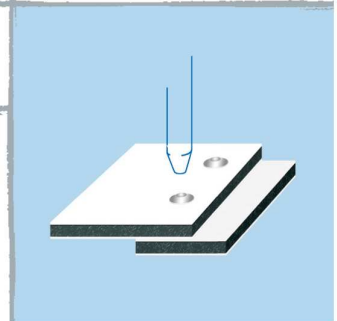
Bending with a roll bending machine

DIBOND® can be bent with sheet metal roll bending machines – mainly with three and four-roll machines. Please make sure that the feeder does not exert too much pressure.

Bending rolls which are also used for bending other metals must be thoroughly cleaned from swarf before processing DIBOND®. We recommend ground rolls to avoid damaging the cover sheets.

RIVETING

PROCESSING INSTRUCTIONS



DIBOND® panels can be fastened together or joined to other materials with rivets common to aluminium constructions.

For outdoor use and for use in areas of high humidity, aluminium blind rivets with stainless steel mandrils should be used to prevent ugly corrosive edges. When using aluminium blind rivets with steel mandrils, the mandril should drop out after riveting (detachable version). Countersunk rivets are suitable for indoor use only.

For outdoor use please note:

- For outdoor use aluminium blind rivets with a 5 mm shaft diameter and an attachment head diameter of 11 or 14 mm are used.
- Please take the thermal expansion of the panel into account (2.4 mm/m/100°C). To avoid jamming, the hole in the panel must be large enough to allow for expansion.
- With the shaft of the rivet fitting closely to the edge of the hole, the attachment head must cover over 1 mm of the area surrounding the hole.
- Multi-step drills or sleeves having corresponding diameters are used for centrically drilling holes into the panel and the substructure and for centrically fitting the rivet.
- Rivet attachment jigs are used for fitting blind rivets without jamming allowing for a tolerance of 0.3 mm. Make sure to use rivet attachment jigs and rivets from the same manufacturer, as the height of the attachment head according to DIN 7337 may vary.
- The clamping thickness results from the thickness of the material to be riveted plus an additional value of 2 mm to ensure that the closing head is perfectly formed. In accordance with this clamping thickness the corresponding shaft length is determined in the tables provided by the rivet manufacturers.
(L_{min.} = 14 mm)

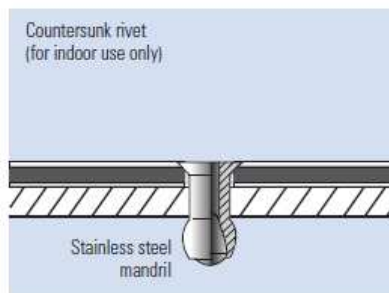
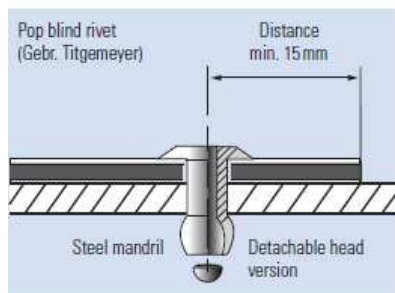
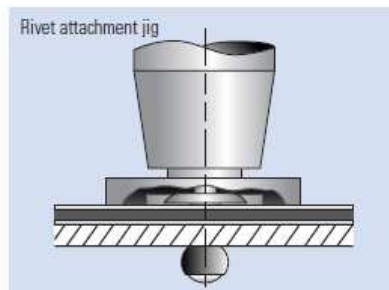
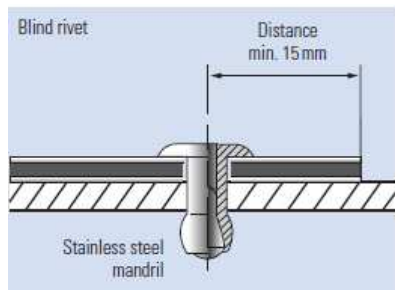
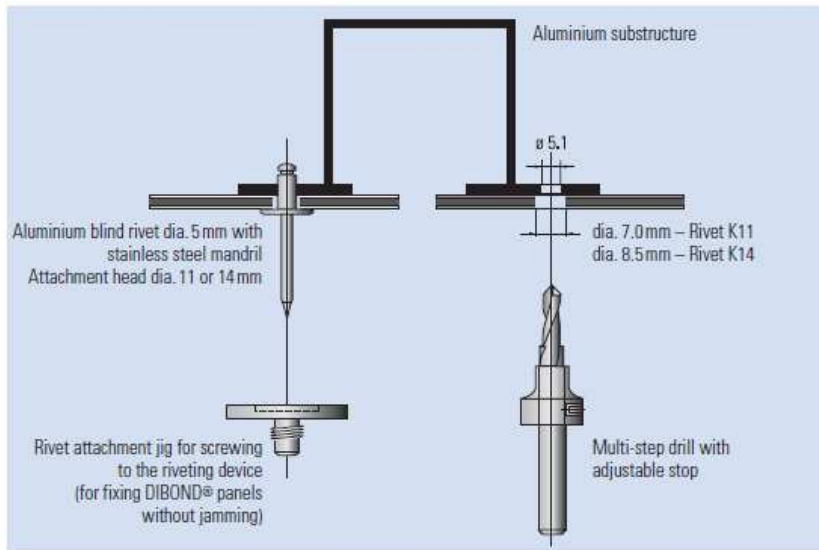
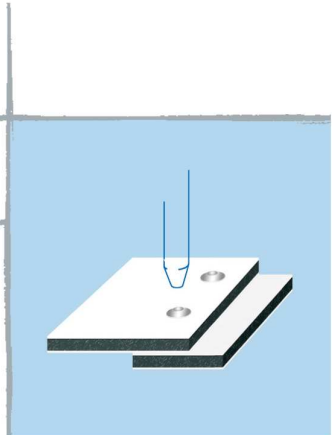
Important:

Since during riveting many factors may have an influence on the exact tolerance of the rivets of 0.3 mm (e.g. rivet head tolerance), we recommend that you make a test on a panel.

Please always remove the protective foil in the riveting area prior to riveting.

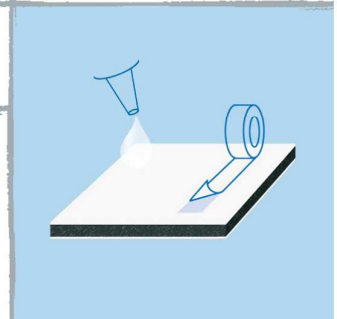
RIVETING

PROCESSING INSTRUCTIONS



GLUEING

PROCESSING INSTRUCTIONS



Tapes / Velcro tapes

Double-sided tapes (such as the 3M-VHB high capacity jointing systems) can be used for the above applications with low tensile or transversal strength requirements. Velcro tapes are available for detachable joints, for example SCOTCHMATE or tapes marketed under the Dual Lock trademark.

Both products are also available from
3M Deutschland GmbH
Carl-Schurz-Straße 1
D-41460 Neuss
Phone +40 2131 14-0
Fax +49 2131 14 34 70
www.3m.com

Adhesive sealing compounds

For high-strength and elastic connections we recommend the following one-component adhesive sealing compound:

Sika Bond-T2
(polyurethane base)
Sika Chemie GmbH
Stuttgarter Straße 117
D-72574 Bad Urach
Phone +49 71 25 9 40 – 0
Fax +49 71 25 9 40 – 7 10
www.sika.de

For outdoor use, this adhesive can be used for fastening parts of minor static importance.

Metal adhesives /Universal adhesives

For indoor use such as trade fair/exhibition stand structures and machines, most metal or universal adhesives are suitable.

Important:

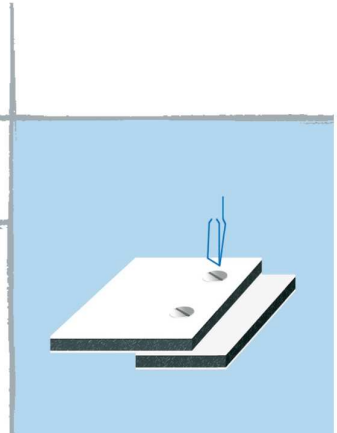
Please observe the manufacturer's instructions regarding the application and use of adhesives/tapes.

Adhesives and sealing compounds do not adhere to the DIBOND® plastic core (cut edges).

Laminating of DIBOND® panels to other materials may result in deformation of the laminates (differing expansion / bimetal effect).

SCREWING

PROCESSING INSTRUCTIONS



Threaded fasteners for outdoor use

Please take the thermal expansion of the panel into account when using threaded fasteners outdoors. To avoid jamming, the hole diameter in the panel must allow for the expansion.

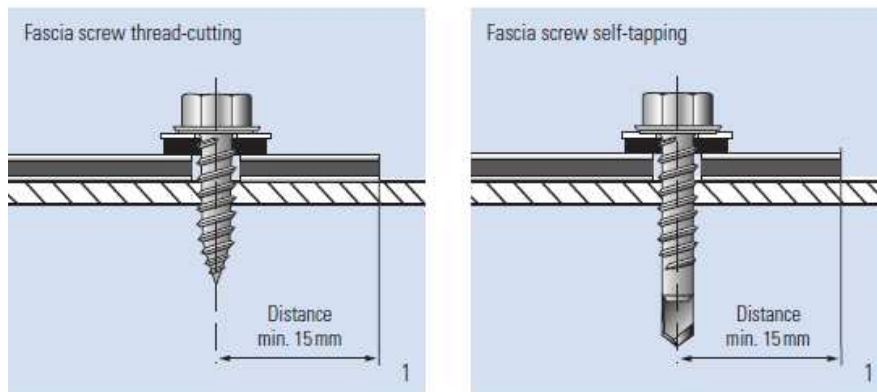
Fastening without jamming is possible with fascia screws made of stainless steel with sealing washer (Fig. 1). The screws must be suitable for the corresponding substructure (please note the information given by the manufacturer). The screws should be tightened with a torque wrench or screwdriver so that the sealing washer is placed on the panel for sealing the bore hole without exerting pressure onto the panel.

Multi-step drills or sleeves having corresponding diameters are used for centrally drilling holes into the panel and the substructure and for centrally fitting the rivet.

Important:

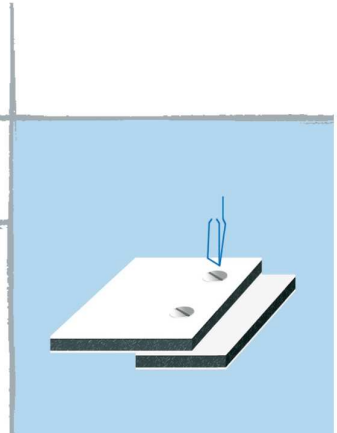
Make sure to remove protective foil prior to screwing.

Fascia screws for metal substructures



SCREWING

PROCESSING INSTRUCTIONS

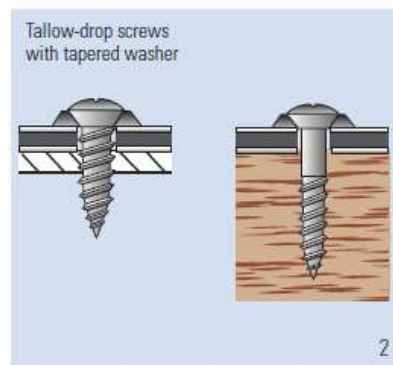
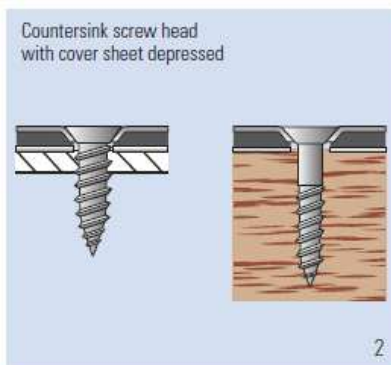
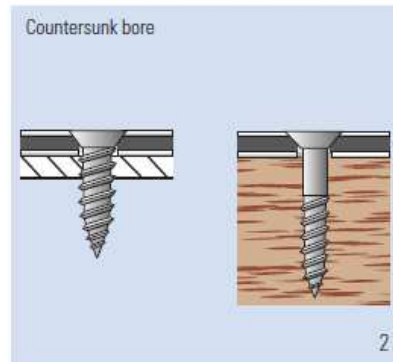
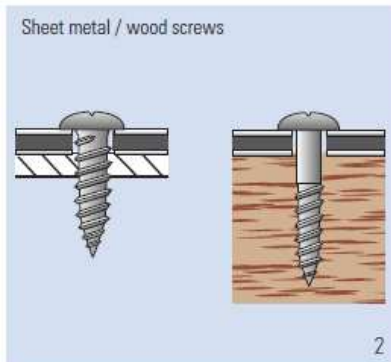


Threaded fasteners for indoor use

Screws for sheet metal and wood with different head-shapes are suitable for indoor use (Fig. 2). They do not normally allow for any panel expansion.

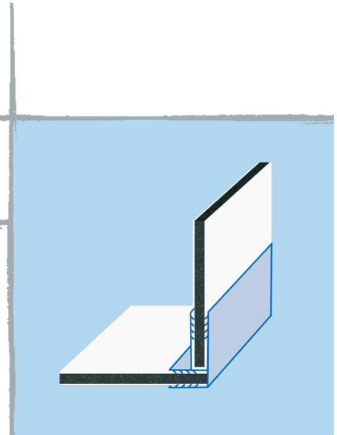
Countersunk screws can be inserted by the usual countersinking method or by depressing the aluminium surface into the panel. When depressing the aluminium surface, the hole diameter in the panel must be larger than the screw diameter.

Screws for indoor use – no outdoor use



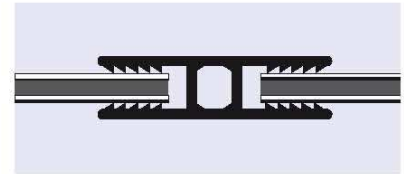
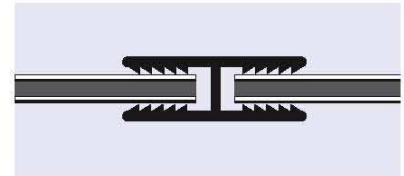
CLAMP CONNECTIONS

PROCESSING INSTRUCTIONS



Clamp connections incorporating aluminium or plastics are particularly suitable for DIBOND®. They generally consist of two parts with the clamping effect achieved by bolting.

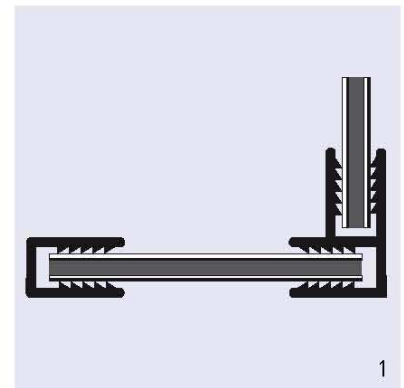
Various designs of clamping elements are used for display and store fitting purposes (no outdoor use).



Any suitable connection or shock-resistant frame can easily be built with aluminium sections.

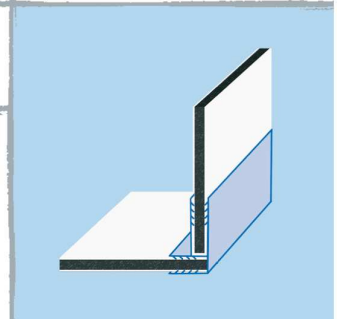
The inevitable tolerances signify different retention forces. A uniform and solid fit of the sections is obtained by pressing the section sides together prior to inserting the panels.

Butt joint, corner and edge sections are available for panels of 3, 4 and 6 mm (Fig. 1). Please ask for our stock list.



CLAMP CONNECTIONS

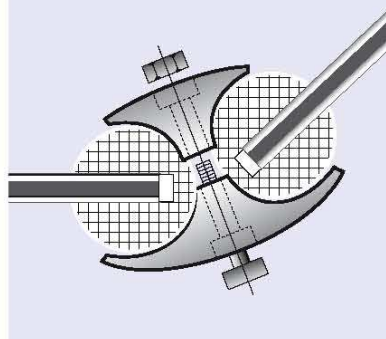
PROCESSING INSTRUCTIONS



Suppliers:

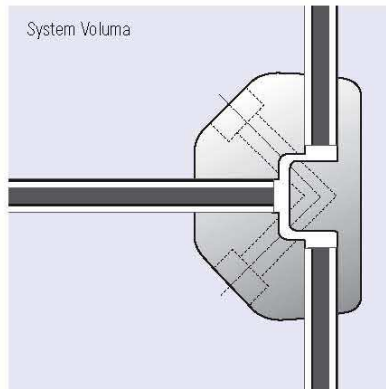
"Klemetric" system:
KlemProducts®
Gesellschaft für Werbemittel mbH
Talangerstrasse 3a
D-82152 Krailing/München
Tel. +49 89 857 72 80
Fax +49 89 895 83 48
www.klemproducts.com

System Klemetric



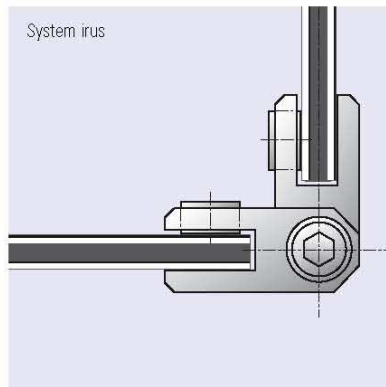
"Voluma" system:
Voluma GmbH
Tel. +49 (0) 30 7201 6030
Fax +49 (0) 30 7722 759
www.voluma.net

System Voluma



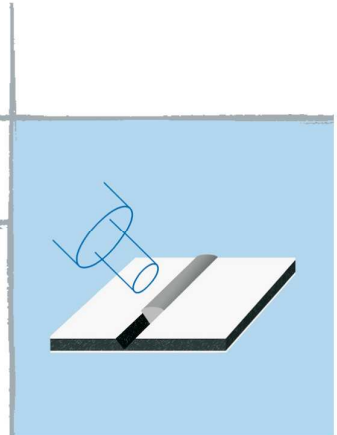
"irus" system:
Irus-System
Kirchstrasse 15
D-78176 Blumberg
Tel. +49 77 02 36 85
Fax +49 77 02 90 45
www.irus-system.com

System irus



HOT AIR WELDING

PROCESSING INSTRUCTIONS

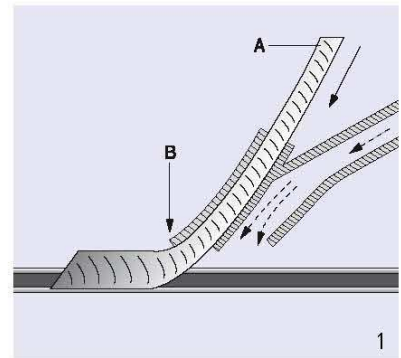


Hot-air welding has proved to be useful for joining thermoplastic plastics and for welding DIBOND®. The plastic core and the plastic welding rod are heated and welded with electrical hot-air welding sets. The following conditions are essential for good results:

- Well prepared welding joint
- Good quality welding rod
- Clean hot air
- Correct temperature
- Correct contact pressure
- Welding speed

Welding with rapid welding nozzle (Fig. 1)

The rapid welding nozzle method ensures steady heating of the core material and the welding rod and thus results in a better welding quality. Rod A is inserted manually through nozzle tongue B. By applying constant pressure to the nozzle tongue, the rod is pressed into the joint.

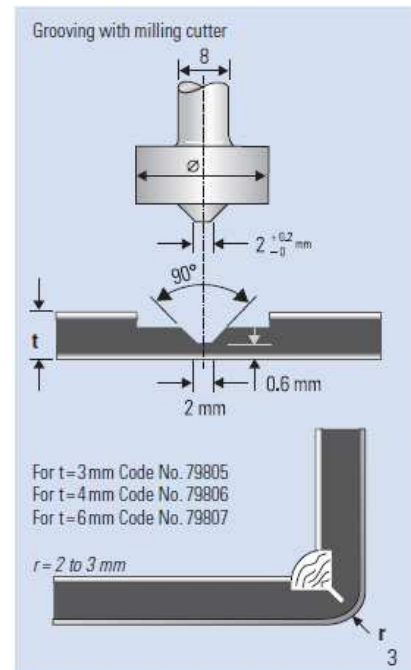
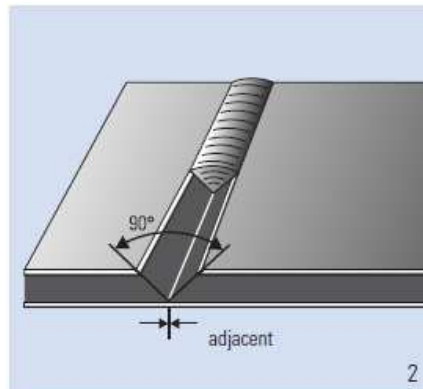


Preparation of welding joint

For butt-welding, the edges of the DIBOND® panels must be chamfered (Fig. 2).

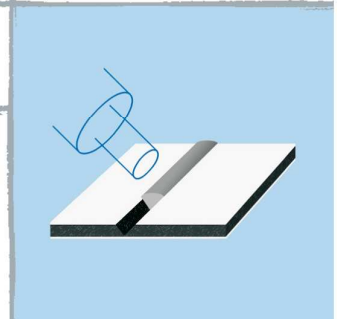
Before folding and welding DIBOND® panels, grooves have to be routed into the panels using corresponding milling cutters (Fig. 3).

As the plastic core oxidizes relatively quickly when exposed to air, welding should be completed within 24 hours after chamfering.



HOT AIR WELDING

PROCESSING INSTRUCTIONS



Welding rod

Please use the following quality:

Polyethylene, soft, Type: 1800-h, colour: black, diameter: 3-4 mm

The outer layer (oxide layer) of the welding rod should be removed with emery cloth immediately before welding. Please chamfer the starting end of the rod to approx. 45°.

Temperature

The following air temperature is required for hot-air welding: 265°C +/- 5°C

The temperature must be continuously adjustable and is measured with a mercury thermometer or bimetal measuring unit 5 mm from the nozzle point. To measure the temperature, please take off the rapid welding nozzle.

Contact Pressure

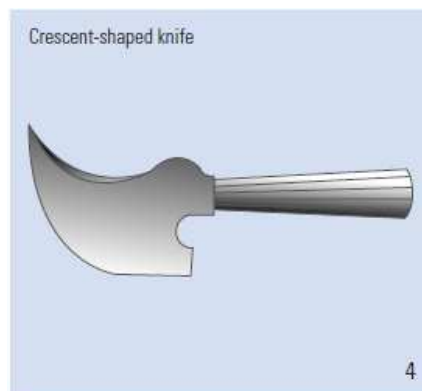
The required pressure to the nozzle shoe (rapid welding nozzle) should be approx. 3 kp.

Hot-air welding sets

We recommend using the Leister hot-air welding set, Type DIODE PID, in connection with the ventilator, Type MINOR.

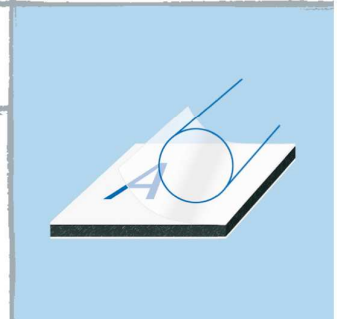
Skimming the welding seam

A scraper blade or knife is used at a very flat angle to shave the welding seam as soon as it has cooled down. For visible welding joints, the seam on butt and corner welds is removed using a crescent-shaped knife (Fig. 4).



LAMINATION / PHOTOMOUNTING

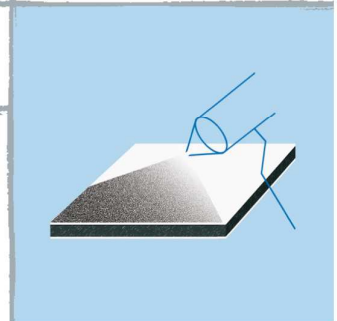
PROCESSING INSTRUCTIONS



DIBOND® can be laminated (manually or by machine) with cast or calendered self-adhesive foils. The varnish does not come off when changing the foils. Foto mounting is either done with adhesive films or wet with dispersion adhesive. The panels must be clean and free of dust and grease prior to applying foils or fotos.

OVERLACQUERING

PROCESSING INSTRUCTIONS



Overlacquering (spray painting) of stove-lacquered DIBOND® surfaces of polyester lacquer quality

The aluminium treatment and priming carried out at the factory in a continuous process with continuous quality control is advantageous to the overlacquering of the stove-lacquered DIBOND® surface.

DIBOND® overlacquering procedure

- Pre-cleaning of the panels using methylated spirit
- Grinding the surfaces with wet abrasive paper (grain size 360)
- Removing grinding dust with a lintfree cloth moistened with spirit
- For the top coat, please follow the instructions of the top coat suppliers

Any information given with regard to overlacquering does not apply to DIBOND® SR panels.

Please note:

- **The maximum permissible temperature of the material (DIBOND® panels) must not exceed 70°C when applying fast-drying methods. During the drying process at high temperatures the DIBOND® panels must be positioned with great care to prevent deformation.**
- DIBOND® cut edges should not be in contact with organic solvents for a prolonged period of time to avoid weakening the bond.
- DIBOND® panels lacquered or overlacquered at a later stage should not be bent or folded. The lacquer in the bends or folds may be damaged due to the low elasticity of the top coat.
- Only inferior lacquer adhesion can be achieved on core material exposed at cut edges.
- Please make a test prior to overlacquering and follow the instructions of the lacquer suppliers.

Lacquering of mill-finish DIBOND® surfaces

The composition of lacquer coating for DIBOND® is basically the same as that for mill finish aluminium surfaces. However, it is advisable to be familiar with coating systems and materials as well as with working methods for aluminium.

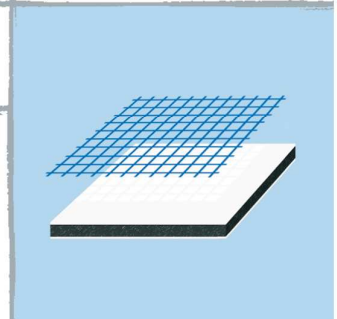
Additional information

- For general information on painting, lacquering and coating of aluminium we recommend the leaflets on "02, 03, 012, 015 surfaces" issued by

GDA
Am Bonnheshof 5
D-40474 Düsseldorf
www.aluinfo.de

SCREEN PRINTING

PROCESSING INSTRUCTIONS



Screen printing on DIBOND® surfaces of polyester lacquer quality

Stove-lacquered DIBOND® panels are well suited for screen printing.

Prior to printing make sure to remove the protective foil and clean the surface using ethyl alcohol or isopropyl alcohol and a fluff-free cloth. The alcohol must not be applied directly to the panel. If methylated spirit is used it could etch the lacquer coat. Between cleaning and printing make sure to allow approx. 10 – 15 minutes for the alcohol to evaporate.

Practice has shown that even within a given specification 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.

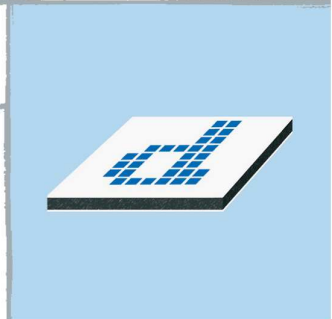
In order to achieve certain surface characteristics or to improve mechanical or chemical resistance it may be useful to laminate the print.

Please follow the instructions of the printing ink suppliers.

The above information does not apply to DIBOND® SR panels.

DIGITAL PRINTING

PROCESSING INSTRUCTIONS



In extensive tests DIBOND® has proved suitable for direct digital printing.

All DIBOND® standard colours can be printed. After printing with solvent inks, folding and bending of DIBOND® is still possible.

Prior to printing make sure to remove the protective foil and clean the surface using ethyl alcohol or isopropyl alcohol and a fluff-free cloth. The alcohol must not be applied directly to the panel. If methylated spirit is used it could etch the lacquer coat. Between cleaning and printing make sure to allow approx. 10 – 15 minutes for the alcohol to evaporate.

TECHNICAL DATA

FOR STANDARD DIBOND® IN MATT AND HIGH GLOSS



Panel thickness	2 mm	3 mm	4 mm	6 mm
Thickness of Aluminium Layers	0.30 mm			
Weight [kg/m ²]	2.90	3.80	4.75	6.60

Technical Properties					
Section Modulus W	[cm ³ /m]	0.51	0.81	1.11	1.71
Rigidity (Poisson's ratio $\mu = 0.3$) E · I	[kNcm ² /m]	345	865	1620	3840
Alloy of Aluminium Layers		EN AW-5005 (AlMg1), H44, nach EN 485-2			
Modulus of Elasticity	[N/mm ²]	70'000			
Tensile Strength of Aluminium	[N/mm ²]	R _m 145 - 185			
Proof Stress (0.2%)	[N/mm ²]	R _{p0.2} 110 - 175			
Elongation	[%]	A ₅₀ ≥ 3			
Linear Thermal Expansion		2.4 mm / m at 100°C temperature difference			

Core		
Polyethylene, Typ LDPE	[g/cm ³]	0.92

Surface	
Lacquering	Coil Coating mod. Polyester-System
Gloss (initial value)	70 - 100%
Matt (initial value)	20 - 40%
Pencil Hardness	HB - F

Acoustical Properties					
Sound Absorption Factor α_s		0.05			
Sound Transmission Loss R _W	[dB]	23	24	25	56
Loss Factor d		0.0048	0.0057	0.0072	0.0102

Thermal Properties					
Thermal Resistance R	[m ² K/W]	0.0047	0.0080	0.0113	0.0180
Heat Transition Coefficient U	[W/m ² K]	5.72	5.61	5.50	5.30
Temperature resistance	[°C]	-50°C bis +80°C			
Water absorption DIN 43495	[%]	0.01			
Static charge		No antistatic treatment required			
Fire resistant		Class B2 according to DIN 4102-1			