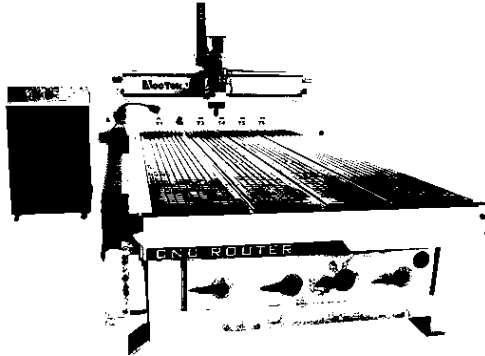




# **ALBOND PE / FR / A2**

## **FABRICATION**



**ÇORLU - 2016**

## PROCESSING WITH CIRCULAR SAWS

Albond PE and Albond FR panels can be easily cut using standart vertical or horizontal machines and hand-held circular saws.

### Saw Blades

Number of teeth : 65 – 100

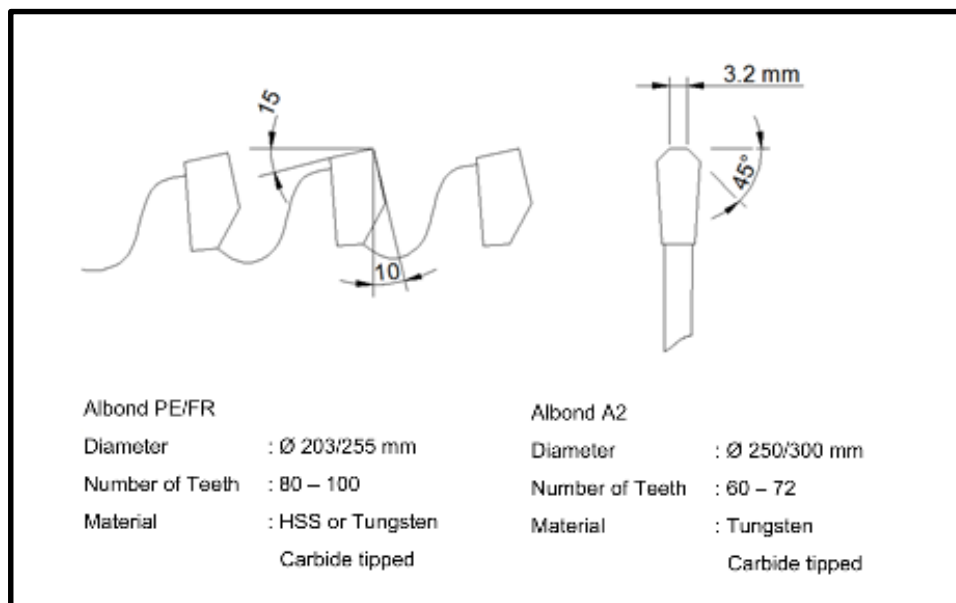
Diameter : Ø 203 – 255 mm

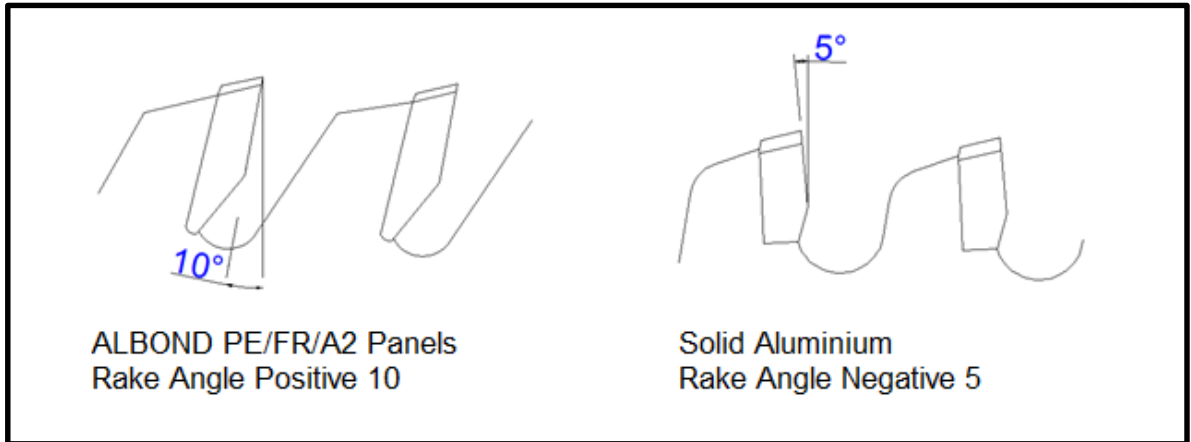
Material : HSS or Tungsten Carbide Tipped

Albond A2 panels can be cut with vertical panel saws. Saw material must be tungsten carbide tipped. Polycrystal diamond tips can also be preferred. Ø 300 mm or Ø 250 mm diameters adn 60 -72 number of teeth saw blades can be choosed according to sawing ability.

Make sure that the surface with protective film will be bottom side during cutting. If it is not at the bottom side it can cause burrs of protective film sticking on the blade during sawing and makes scratches onto the panel surface.

Sawing with blind blades will cause the burrs which is not good for the panel and edge quality. Please always check the blades.



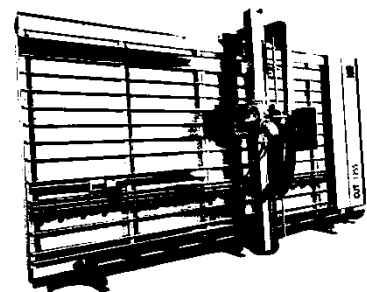


For solid aluminium it is suggested to use negative 5° rake angle for a suitable circular sawing.

For Albond PE/FR/A2 Composite Panels it is suggested to use positive 10° rake angle for a suitable circular sawing.

**FOR A GOOD CIRCULAR SAWING;**

- ❖ Sawing Geometry and angle
- ❖ Choosing circular blade diameter,
- ❖ Number of Teeth,
- ❖ Material of blade,
- ❖ Speed of saw should be suitably selected

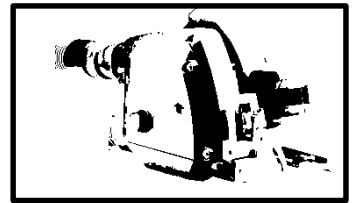


Vertical Panel Saw

CHOOSING CRITERIA <b>OK</b>	CHOOSING CRITERIA <b>NOT OK</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Clean cutting</li> <li><input type="checkbox"/> Less burrs at the corners</li> <li><input type="checkbox"/> Long life of cutter</li> <li><input type="checkbox"/> Normal heat</li> <li><input type="checkbox"/> Normal friction</li> <li><input type="checkbox"/> Vibration free cutting</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Rough cutting</li> <li><input type="checkbox"/> High amount of burrs at the corners</li> <li><input type="checkbox"/> Cutter becoming blind in a short time</li> <li><input type="checkbox"/> High heat</li> <li><input type="checkbox"/> High friction</li> <li><input type="checkbox"/> Vibration during cutting</li> </ul>

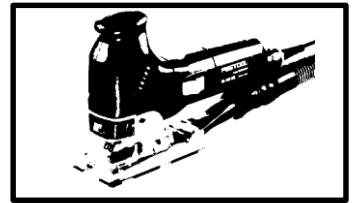
### CUTTING WITH HAND-HELD SAWING MACHINE

Albond PE/FR and A2 panels can be cut by hand-held sawing machines. It is possible to cut with a saw blade which has diameter between 200 mm – 355 mm . Material can be HSS or carbide tipped. Speed should not be over 5500 rpm..



### CUTTING WITH JIG SAW

Albond PE/FR and Albond A2 panels can be cut by Jig saws machines. High carbon steel (HCS) tipped cutters which is suitable for cutting of plastic and woods can be used for Albond PE and FR panels (e.g. Bosch, Festool). Bimetallic material which is 60 mm length and tooth pitch 1-1,5 mm can easily cut Albond A2 products.



	ALBOND PE/FR	ALBOND A2
<b>Saw Length</b>	74 mm	60 mm
<b>Tooth Pitch</b>	2,7 mm	1,2 mm
<b>Cutting Thickness</b>	2,5-6,0 mm	2,5-6,0 mm
<b>Material</b>	HCS	Bimetallic



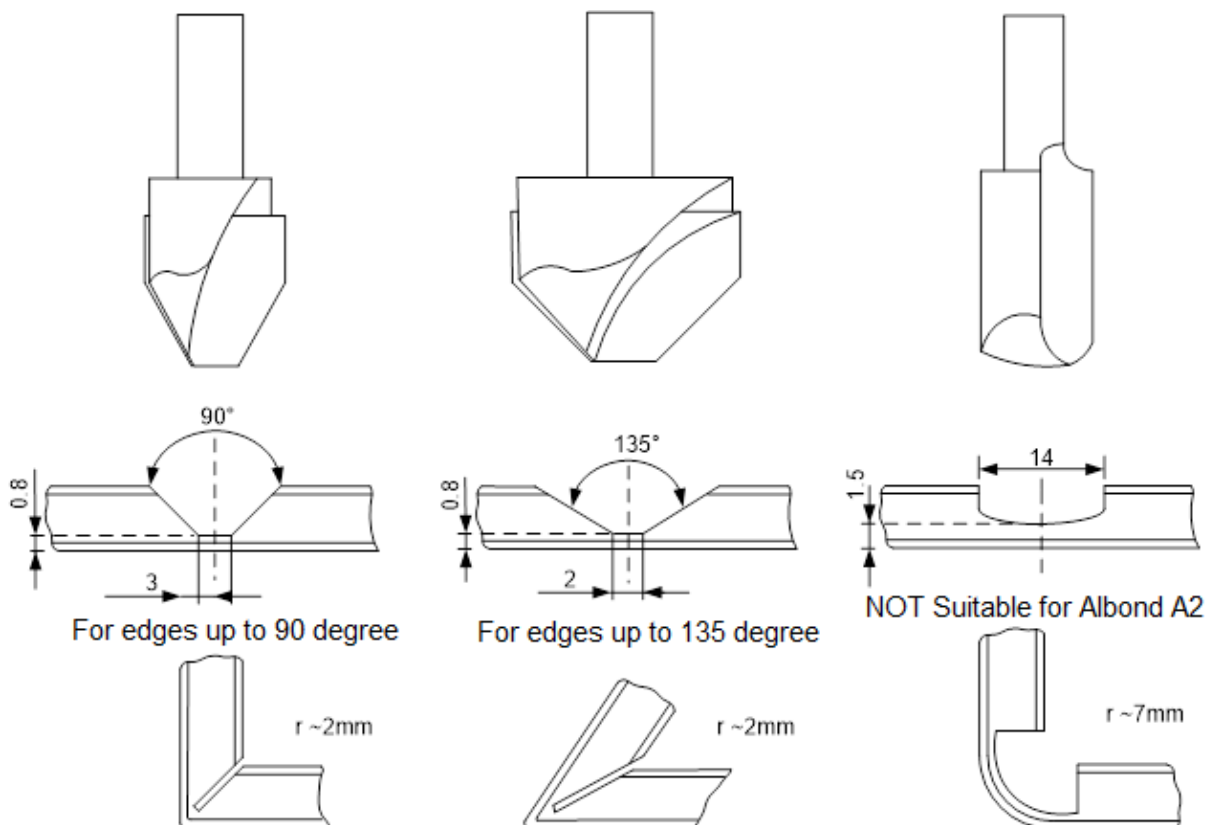
### CUT SHEAR

Albond PE/FR and Albond A2 can be cut with guillotine machines. However, there is a slight slope in the cut point at the cutting point with the guillotine. The angle is about 1° to 1.5°

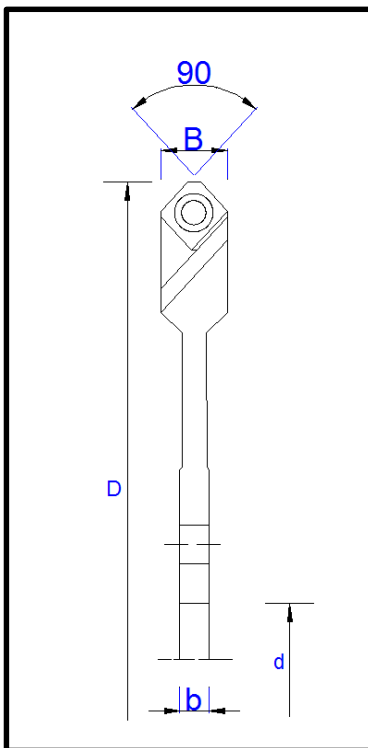
ALBOND PE/FR	SPACING BETWEEN BLADES	ANGLE
3 mm	0,04 mm	1°
4 mm	0,04 mm	1° 30'
6 mm	0,2 mm	2° 30'

## GROOVING

Albond PE/FR and A2 panels can be processed by vertical or horizontal circular machines and CNC routers. There should be 0,3 mm core material on the aluminium during grooving operation.



It is suitable to use tungsten carbide tipped cutters. For a good grooving operation feed rate should be 5 m/min and speed should be 24000 rpm. For grooving of Albond A2 panels it is recommended to use Tungsten Carbide or Synthetic Diamond (Polycrystal Diamond) cutters at both horizontal and vertical circular machines..



<b>Saw Diameter</b>	<b>ø 244 - 250 mm</b>
<b>No of teeth</b>	<b>8</b>
<b>Width of cutter</b>	<b>16,5 mm</b>
<b>Shaft dia</b>	<b>30 mm</b>
<b>Width of saw</b>	<b>6,5 mm</b>
<b>Material</b>	<b>Tungsten Carbide or Polycrystal Diamond (PCD)</b>




## GROOVING WITH HAND-HELD TOOLS

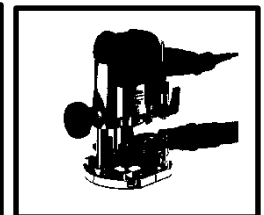
Albond PE/FR and A2 panels can be grooved with special hand-held type machines at installation site.

Motor speed	1800-5500 rpm
Depth range	0-9 mm
Max cutter dia	118 mm.



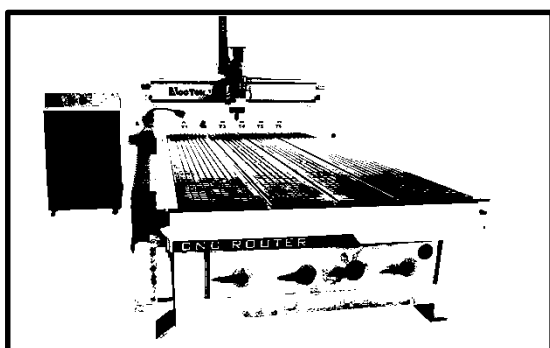
## Grooving with CNC Vertical / Hand-held Circular Machines

 <p>3 mm</p>	 <p>2 mm</p>	 <p>Ø10-15</p>
<p>Material: Carbide          Ø Mil = 8 mm          Ø d1 = 20 mm          L2 = 10 mm          L1 = 60 mm</p>	<p>Material: Carbide          Ø Mil = 8 mm          Ø d1 = 20 mm          L2 = 4,1 mm          L1 = 60 mm</p>	<p>Material: HSS          Ø Mil = 8 mm          Ø d1 = 10 mm          L2 = 20 mm          L1 = 50 mm</p>



## ROUTING

Albond PE / FR and A2 can be easily routed on conventional routing machines and CNC machining centres. High speed steel (HSS) and carbide tipped cutters are available for Albond PE and FR products. For Albond A2 products, Polycrystalline Diamond End / Synthetic Diamond End (PCD) or Aluminum Titanium Nitride finish (AlTi) tipped cutters should be preferred. Albond A2 panels can be suitably cut by the cutter which has 5 mm diameter. Cutter with a 12 mm diameter is suitable for grooving applications. For cutting of Albond A2 panels, It is recommended that the shaft speed should be between 7000-12000 rpm and the feed rate should be between 10-20 m / min, depending on the CNC machine capability.



ALBOND PE/FR	MAX SPEED (m/min)	MAX FEED (m/min)
HSS	3000	25
Carbide Tipped	5000	30

### ALBOND PE /FR Carbide Tipped Cutter

Ød	L	LG	Øs
6	20	60	6

ALBOND A2 Cutting at CNC				
Dia.	Cutting Length	Shaft Dia	Total Length	No of Teeth
Ø5	10	Ø5	55	1
Ø5	10	Ø6	55	1
Ø6	10	Ø6	55	1

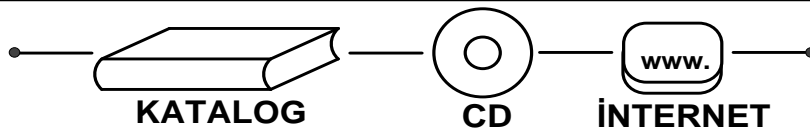
ALBOND A2 Grooving at CNC					
Ø	Depth	Ø	Length	No of Teeth	Configuration
Ø12	4,73	Ø12	70	4	Singular
Ø12	4,73	Ø12	80	4	Double



Material: PCD or AlTi



- ❖ Please do the maintenance of your machine periodically with authorized personel or company.
- ❖ For good processing; your counter, check the oscillations of your machine constantly. Check the oscillations of the material holders at regular intervals. It will not allow a good process if the oscillations is more than 0.00001 mm oscillations . Also it will cause deformation of cutter in a short time.
- ❖ Please identify the optimum mill speed and feed speed according to machine ability.
- ❖ Do not use cooling liquid when processing Albond PE/FR and A2 panels.
- ❖ Please use air cooling when processing Albond PE/FR and A2 panels
- ❖ Please prefer self cooling blades from the supplier.
- ❖ Please use required personel protective equipment for the cutting and grooving processes.



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**SİSTEM METAL YAPI REKLAM MALZEMELERİ VE İNŞ.SAN. TİC.A.Ş.**

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