



**ALUCOBOND®**

PERFORATION: A VALUE ADDED SERVICE FROM ALUCOBOND®

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# ALUCOBOND®

THE WORLD LEADER IN ALUMINIUM COMPOSITE MATERIALS



## AN INTRODUCTION

### WHAT

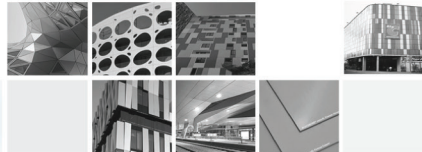
- Series of piercings, holes/patterns done on a given material usually to enhance the aesthetics of the application.
- Aluminium composite materials, ideal choice for architectural applications due to its numerous advantages over other materials.

### WHERE

- Application of an perforated ACM could be for:
  - Exterior cladding, Solar-Shading, LED screens
  - Interior walls, ceilings, and
  - Acoustics barriers (often used with sound absorption materials)

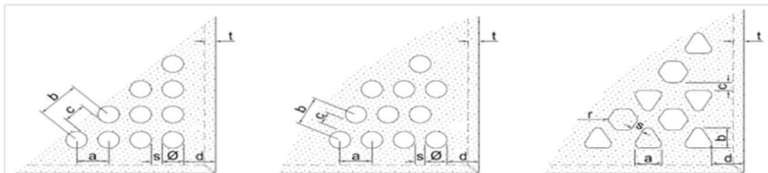
### HOW

- Precision is the key hence the perforations should be done using:
  - CNC (Computerized Numerical Control)
  - NCT (Numerical Control Turret punching press)



## APPLICATION – EXTERIORS (REGULAR PATTERNS)

The minimum diameter of milling of hole to be  $\varnothing 4$  mm at the min, spacing (the “s” dimension as below drawings) 4mm, and  $s \geq t$  ( thickness of panel )

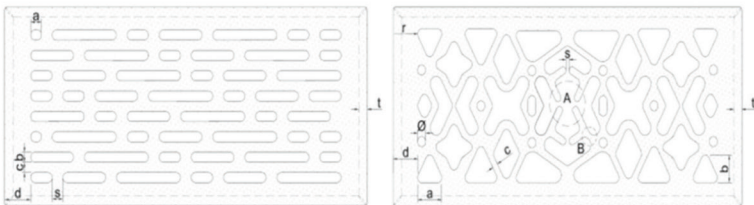


Regular Holes and Pattern

Panel Thickness	Milling by CNC			Punching by NCT		
	3 mm	4 mm	6 mm	3 mm	4 mm	6 mm
Availability	PE / Plus / A2			PE / Plus / ( A2* )		
Processing Confine	$\varnothing \geq 4$ mm $a \geq 8$ mm $b \geq 8$ mm $c \geq 4$ mm $d \geq 12$ mm $r \geq 2$ mm $s \geq 4$ mm	$\varnothing \geq 4$ mm $a \geq 8$ mm $b \geq 8$ mm $c \geq 4$ mm $d \geq 15$ mm $r \geq 2$ mm $s \geq 4$ mm	$\varnothing \geq 4$ mm $a \geq 10$ mm $b \geq 10$ mm $c \geq 6$ mm $d \geq 18$ mm $r \geq 2$ mm $s \geq 6$ mm	$60 \text{ mm} \Rightarrow \varnothing \geq 4$ mm $a \geq 8$ mm $b \geq 8$ mm $c \geq 4$ mm $d \geq 25$ mm $r \geq 1.5$ mm $s \geq 4$ mm	$\varnothing \geq 4$ mm $a \geq 10$ mm $b \geq 10$ mm $c \geq 6$ mm $d \geq 25$ mm $r \geq 1.5$ mm $s \geq 6$ mm	
Max. Perforation Rate	$\leq 50\%$	$\leq 45\%$	$\leq 40\%$	$\leq 45\%$	$\leq 40\%$	$\leq 40\%$
Min. Curved Radius	$\geq 200$ mm	$\geq 250$ mm	$\geq 300$ mm	$\geq 200$ mm	$\geq 250$ mm	$\geq 300$ mm



## APPLICATION – EXTERIORS (RANDOM PATTERNS)

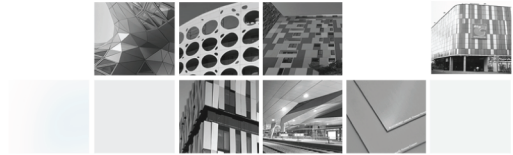


**Slot & Random Holes and Pattern**

Panel Thickness	Milling by CNC			Punching by NCT		
	3 mm	4 mm	6 mm	3 mm	4 mm	6 mm
Availability	PE / Plus / A2		PE / Plus	PE / Plus / ( A2* )		PE / Plus
Processing Confine	ø ≥ 4 mm			ø ≥ 4 mm		
	a ≥ 4 mm			a ≥ 6 mm		
	b ≥ 4 mm			b ≥ 6 mm		
	c ≥ 6 mm			c ≥ 6 mm		
	d ≥ 18 mm			d ≥ 25 mm		
	r ≥ 2 mm			r ≥ 1.5 mm		
	s ≥ 6 mm			s ≥ 6 mm		
Max. Perforation Rate	≤ 50%		≤ 40%	≤ 45%		≤ 40%
Min. Curved Radius	≥ 300 mm			≥ 350 mm		

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## ALUCOBOND® PERFORATION

- Due to the wind load pressures and exposure to weathering care needs to be taken on the designing and processing. Recommended perforation to be 35-40%.
- The perforated ALUCOBOND® ACM panel can be curved by roll bending machines, and also can be applied in curved shapes. It can be fixed using various systems such as – Hook on, SZ-20, Frame 90 and Cover Strip Joint systems.
- The minimum radius and maximum height of the folding edge need to be tested prior to any bending of the tray panel. The minimum bending radius of perforated A2 panels are 50mm (more than PE and plus)
- ALUCOBOND® A2 panels can be punched using NCT machines. Due to high mineral filled core, the edges may not be as smooth as PE, plus.

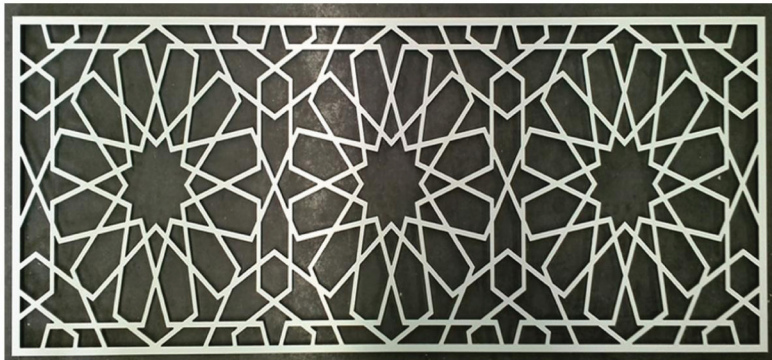
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## APPLICATION (INTERIORS)

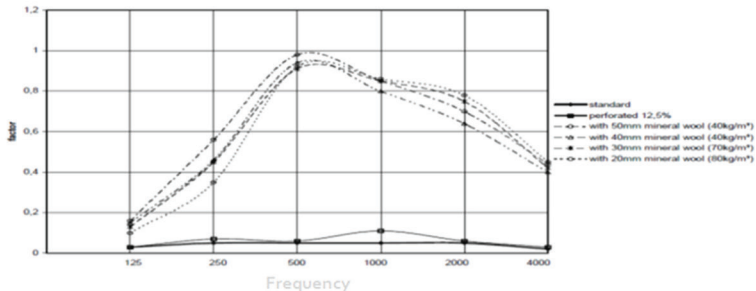
- Since there is less structural stress, weathering stress or wind load pressure, the maximum perforation can be upto 60%-70%.
- The minimum bending radius can be 200mm.





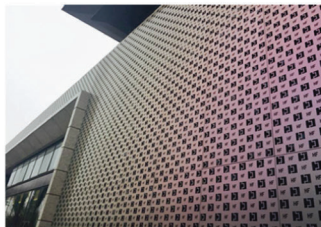
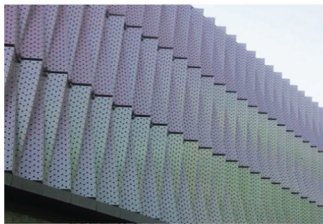
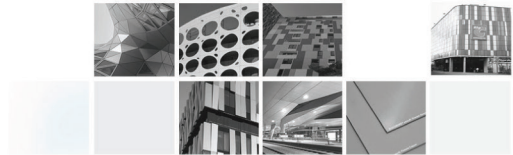
## APPLICATION – ACOUSTICS

- Perforated ALUCOBOND® can be used for acoustics purpose
- These panels needs to be supported with mineral wool, glass fiber or fabric
- For acoustics interior linings/ ceilings – should have large panel sizes and relatively small perforations.
- Used mainly at airports, exhibition centers, cinema theaters, conference rooms amongst others



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THANK YOU!!