



**Metal  
Honeycomb  
Panel**





## WILLSTRONG® AHP

WILLSTRONG® AHP is an innovative composite materials in sandwich structure, composed of two thin aluminium cover sheets and hexagonal aluminium core, laminated under hot pressure by aviation-grade adhesive agent.

The structure of AHP is originated from the I-beam. The two cover sheets perform as the alar plate of the I-beam to bear normal load, while the hexagonal aluminium core as the web of the I-beam withstanding shearing strength. As consequence, the AHP offers excellent high rigidity, bending strength, and the most important light weight. Besides, it is also featured with characteristics of big size but perfect flatness, sound insulation, hot insulation, good machinability etc.. Thanks to our advanced surface coating technology, WILLSTRONG® AHP can deliver various colors and patterns in accordance with design requirements. It is therefore warmly recommended by architects for wall cladding, ceiling, train and boat interior.

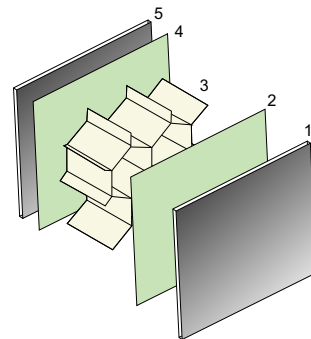
## Characteristics:

- Shapes. Non-plane panel is possible, no need further process.
- Big size, up to 1500mm\*6000mm
- Extraordinary flatness
- Continuous compositing technology
- A wide range of metal cover sheets: aluminum, copper, zinc and stainless steel, etc
- Integrated installation system
- Single panel independently dismantling
- Couple ways of jointing: open style and closed style
- Applied in wall space, roofing, cornice and column
- Excellent quality, durable for 20 years or more
- Easy to maintenance and low cost
- Good fireproof performance

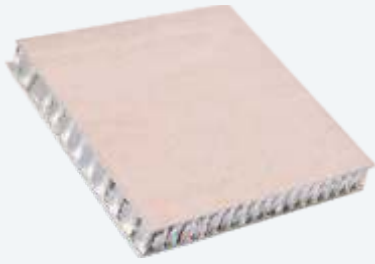


## Structure

1. Pre-painted aluminum panel, or Zinc, Stainless Steel etc..
2. Adhesive polymer
3. Aluminum honeycomb core
4. Adhesive polymer
5. Metal cover sheet



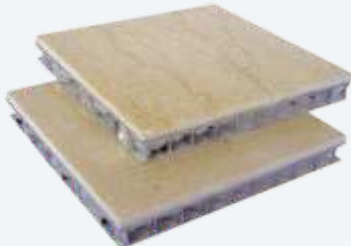
## Types Of Honeycomb Panels



Aluminum Honeycomb Panel



Ti-Zn Honeycomb Panel



Stone-Alu Honeycomb Panel



Steel Honeycomb Panel



Ultra-thin AHP

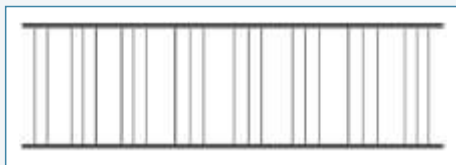


Aluminum Honeycomb Strip

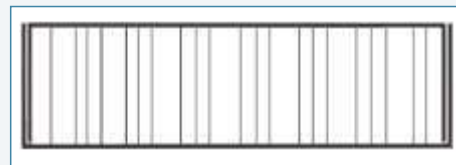
## Edge Style of Metal Honeycomb Panels

According to different metal cover sheets, there are Aluminum Honeycomb Panel, Zinc Honeycomb Panel, Copper Honeycomb Panel, Titanium Honeycomb Panel, and Stainless Steel Honeycomb Panel etc..

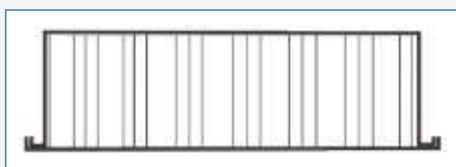
According to edge treatment, there are below styles for reference.



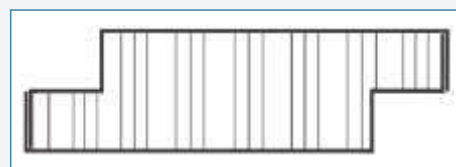
Style 1



Style 2



Style 3



Style 4

# CATEGORY & PROPERTIES

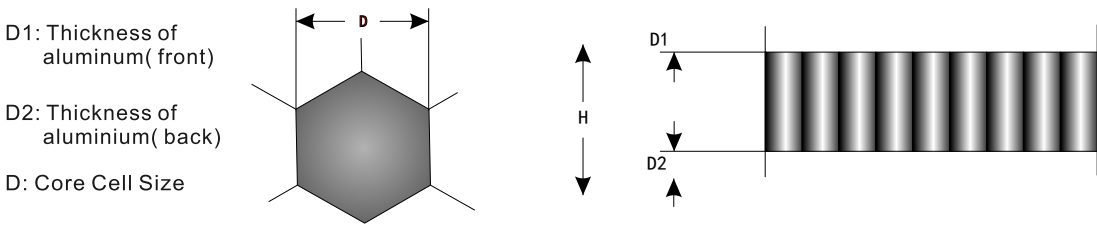
Item			Ti HP	Zn HP	SS HP	AHP	CHP
			Thickness(Cover Sheet: 0.5mm~1.0mm)				
Denisity (kg/m <sup>2</sup> )			7.87	6.73	9.59	4.48	7.59
Flatwise Tensile Strength (MPa)			≥0.6			≥0.8	≥0.6
Flat Compressive Strength (MPa)			≥0.8				
Flat compressive elastic modulus (MPa)			≥30				
Section Bending Modulus We/ ( mm <sup>3</sup> /mm )			6.742	9.57	9.51	9.51	9.55
Stiffness De/ ( N.mm <sup>2</sup> /mm )			0.92x10 <sup>7</sup>	0.88x10 <sup>7</sup>	1.90x10 <sup>7</sup>	0.647x10 <sup>7</sup>	0.793x10 <sup>7</sup>
Impact Resistance			No Obvious Deformation				
Hot Water Resistance			No Peel Off				
Thermal shock resistance							
Metal Cover Sheet	Front Cover Sheet	Yield Strength (MPa)	≥160	≥100	≥295	≥120	≥195
		Elastic Modulus (MPa)	106000	150000	200900	68200	108000
	Back Cover Sheet	Yield Strength (MPa)	≥205	≥115	≥205	≥115	≥115
		Elastic Modulus (MPa)	199920	68000	199920	68000	68000



# Specifications of WILLSTRONG® MHP

According to specific project, WILLSTRONG® MHP can offer a wide range of specifications in aspects of the metal cover sheets, aluminum honeycomb core sizes etc..

Type	Aluminum honeycomb panel	Titanium zinc honeycomb panel	Stone honeycomb panel	Steel honeycomb panel
Thickness	4mm ~ 60mm	6mm ~ 20mm	6mm ~ 25mm	8mm ~ 20mm
Width	1220mm, 1250mm, 1500mm, 2000mm	1000mm	1000mm, 1500mm	1200mm
Length	<= 9000mm	<= 6000mm	<= 3000mm	<= 6000mm
Material	Alu alloy: 0.5mm~1.0mm	Zinc /Ti-Zinc: 0.7mm	Stone:3mm ~ 5mm	Stainless Steel/ Contern Steel: 0.5 ~ 1.0mm
Edge cover ing	possible	possible	possible	possible





# TECHNICAL PERFORMANCE

Technical Data	Standard	Unit	Product based on 20mm thick AHP*
<b>Surface Material</b>			
Front Aluminum**		mm	1.0
Coating	Roller Coating		PVDF
Glossiness	JG/T 334-2012	%	3
Pencil Hardness	JG/T 334-2012		H-3H
Flexibility	JG/T 334-2012	T	2
Adhesion	JG/T 334-2012	级	0
<b>Core Material</b>			
Core Cell Size		mm	6*0.07*18
Capacity		Kg/m <sup>3</sup>	> 50
<b>Physical Properties</b>			
Flat Compressive Elastic Strength	JG/T 334-2012	MPa	50.3
Flat Compressive Strength	JG/T 334-2012	MPa	1.2
Flat Shearing Strength	JG/T 334-2012	MPa	1.0
Flat Shearing Elastic Modulus	JG/T 334-2012	MPa	6.8
Bending Stiffness	JG/T 334-2012	N·mm <sup>2</sup>	6.4*10 <sup>8</sup>
Shearing Stiffness	JG/T 334-2012	N	4.2*10 <sup>4</sup>
<b>Acoustic Properties</b>			
Sound Absorption αs	ISO 354		0.05 (AHP with punched aluminium coversheet can reach to 0.75)

▪Remarks: test is made in comply with JG/T334-2012

(\*) other thickness is available according to detailed requirements.

(\*\*) optional aluminium thickness: 0.5mm, 0.7mm or more.

# Architectural Cladding System

WILLSTRONG® AHP system shows excellent product properties such as light weight, high rigidity, one-step forming, extraordinary flatness, and are therefore recognized by architects and applied in wall cladding, roofing, cornice and column.

WILLSTRONG® AHP system has a excellent selection, advanced technology, reasonable constructure and allow variety choices in aspects of material, coating, styles, systems, thus giving contemporary architecture incomparable value and aesthetics.

## Characteristics of AHP system

### Large panel, perfect flatness

Big size, up to 1500mm\*6000mm, with perfect flatness, creating simple and decent in aesthetics effect

### Light weight but high rigidity

5-7.5kg/m<sup>2</sup>, easy for transportation and installation, helping reduce dead load of building and construction cost; can bear strong wind load and shear stress with no distortion, and therefore suitable for high rise building.

### The cassette AHP

One-step forming and seal edges, with high-precision and better weather resistance compared to rout and returned panel system.

### Bespoked system

Its good machinability and the widness of cover sheets allow a vast design space for architectural designers.

### Jointing Method

With or without silicone sealant, it depends on the aesthetic requirements. And the width and depth of the gap between cassette can be freely designed.

### Convenience in installation and maintenance

Integrated production, No need for scene processing, Independent installation for each panel is possible, Convenient in installing and maintenance.



Integrated molding seamless corner plate



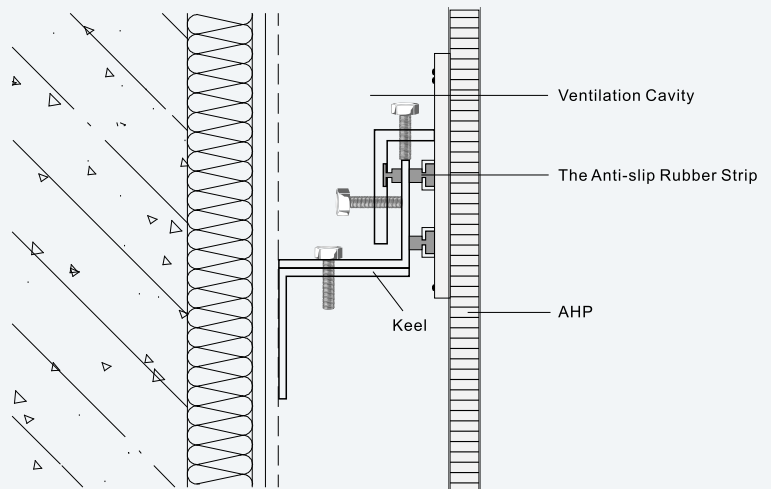
Integrated molding arc plate





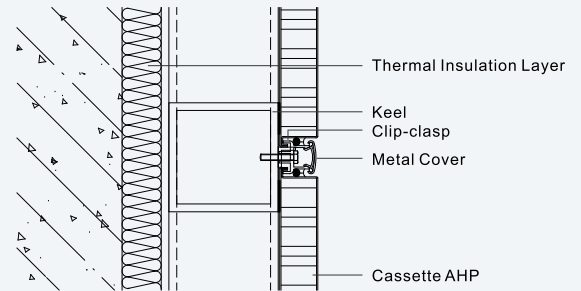
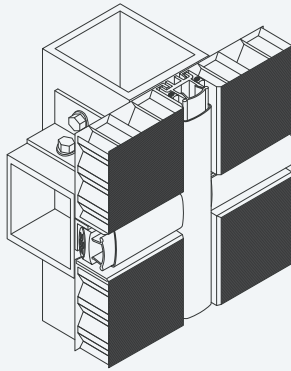


## Installation System



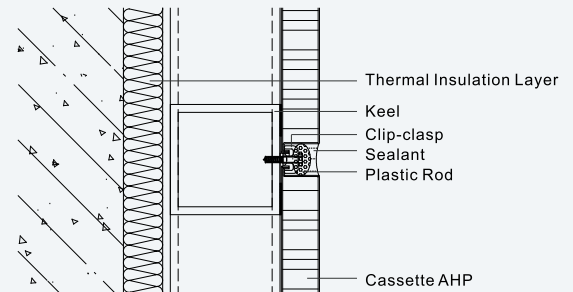
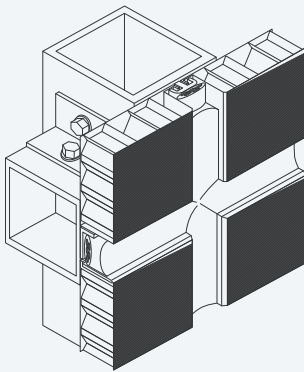
## System One

The sealant is covered by special metal pieces, making the curtain wall in consistent appearance. Recommended gap as 25mm and 15mm.



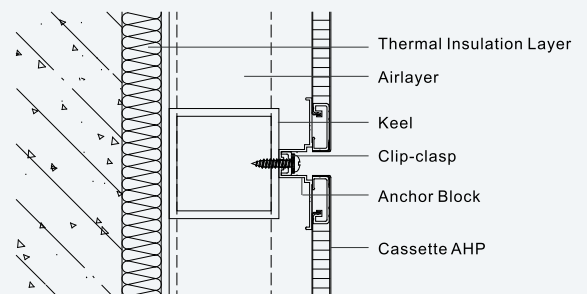
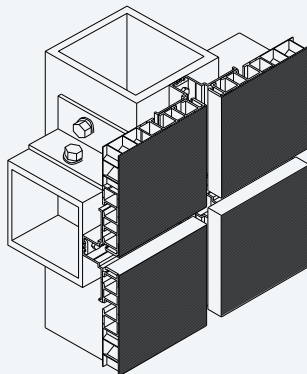
## System Two

The sealant is visible, emphasizing the wall grid and the sense of lines. Recommended gap as 20mm and 15mm.



## System Three

Instead of using silicone sealant or other fillers, keeping the gap open. Especially recommended for big size installation.





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