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**▼** Weatherability

Fire-proof

**☑** Color Stable

LI II L WALL



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**1987** 

Founded, and focused on innovation of light wall and roofing materials.

**2002** 

Cooperated with GE, developed synthetic resin roof tile.

**2004** 

Drafted Industrial Standard of Synthetic Resin Tile; Be nominated to serve Beijing Olympics and Shanghai World Expo.

**≥ 2007** 

First developed solar roofing tile in domestic market.

2008

Awarded by government of China for supporting to Beijing Olympic Games. **2010** 

The first Museum of Roofing Tiles was built by Fangxing.

**2014** 

Upgraded manufacturing technology, developed lamination technology for production of resin tiles. **2016** 

Participated in editing atlas Single Layer Waterproofing Roofing Structure and Anti-corrosive Components of Construction Structure.

## **2000**

Created 3-layer co-extrusion technology which is a great contribution to the industry.

## 2003

Management of GE
Plastics visited Fangxing,
authorized Fangxing the
GELOY brand.

## 2005

The chief editor of National Building Standard for pitched roofs and synthetic resin tiles.

## 2009

Fangxing was chosen to serve roof rebuilding project for Guangzhou
Asian Games.

## 2013

Chief editor of National Building Standard for corrugated pvc roofing sheets.

## 2015

PSP Steel was created based on Fangxing's years of experience of roofing solutions.

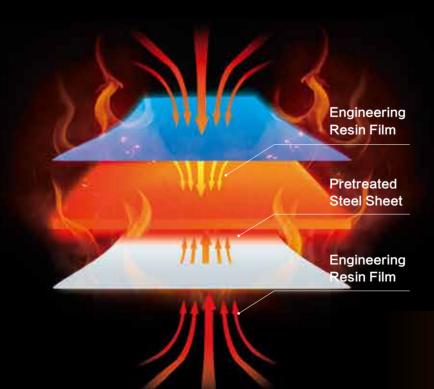
# **About PSP STEEL**

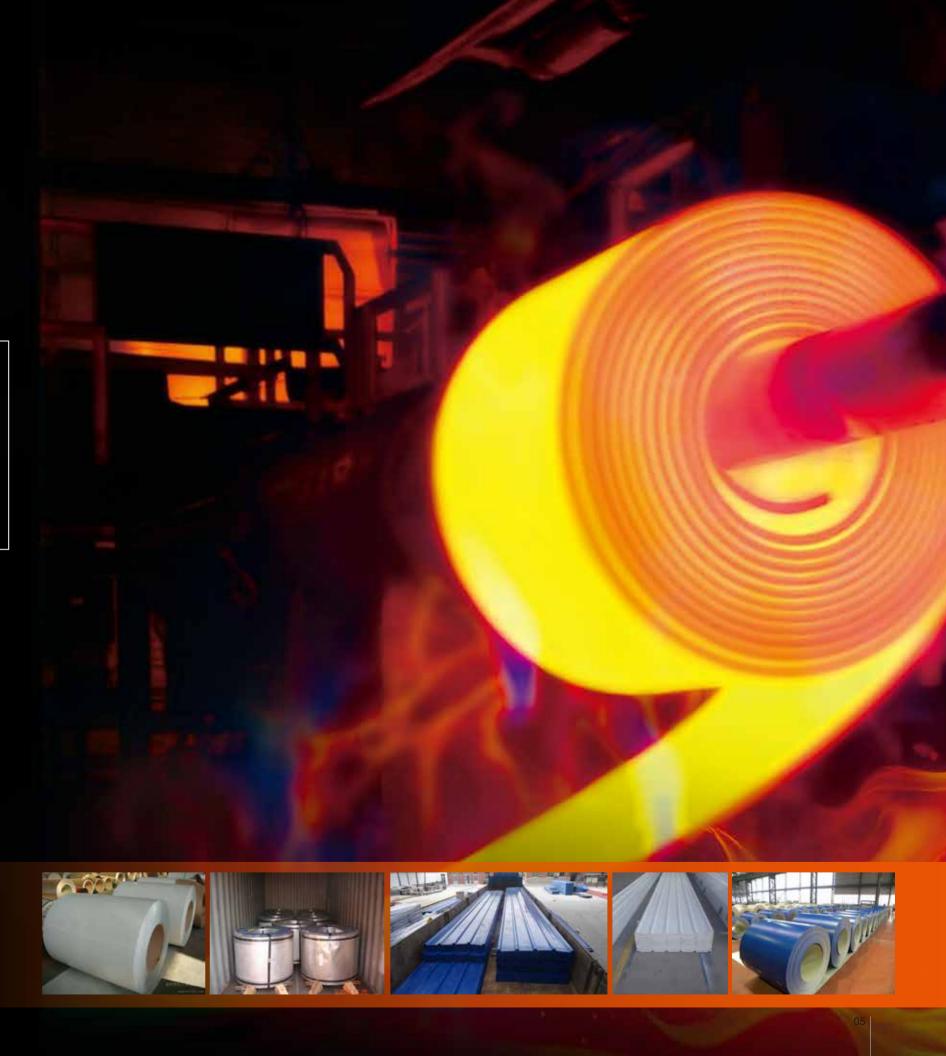
## What is PSP STEEL?

PSP Steel is pretreated steel laminated by Synthetic Resin Films on both sides via an unique pressing process at high temperature.

PSP Steel combines both the advantages of steel and resin, is an innovative material for building systems, providing long service life with high resistance to corrosion, climate and mechanical damage.







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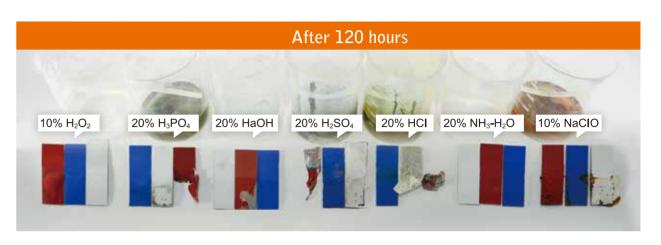
## **Features**

#### **Corrosion Resistance**

Corrosion resistance is the main advantage of PSP Steel compared with PPGI or PPGL products. PSP Steel is well protected by engineering resin films from outside corrosions and damage, giving over 30 years service life in general environment.

We did a comparative test in FANGXING laboratory for 120 hours continuously. Below is the test condition.





Solution	Performances in 120hrs					
Solution	PSP STEEL	PVDF coated steel	Acrylic coated steel			
10% H <sub>2</sub> O <sub>2</sub>	No change	No change	Paint peeled off after 65hrs			
20% H <sub>3</sub> PO <sub>4</sub>	No change	Paint peeled off after 86hrs	Fell after 41hrs Disappeared after 63hrs			
20% NaOH	No change	No change	Paint peeled off after 15hrs			
20% H <sub>2</sub> SO <sub>4</sub>	No change	Paint peeled off after 72hrs	Fell after 18hrs Disappeared after 52hrs			
20% HCI	No change	Paint peeled off after 28hrs Fell after 67hrs	Fell after 15hrs Disappeared after 58hrs			
20% NH <sub>3</sub> •H2O	No change	No change	No change			
10% NaClO	Slight red rust appeared after 70hrs	Heavy red rust appeared after 70hrs	Heavy red rust appeared after 67hrs			

H<sub>2</sub>O<sub>2</sub>: hydrogen peroxide HCI: hydrochloric acid H₃PO₄: phosphoric acid NH₃•H₂O: ammonium hydroxide

NaOH: sodium hydroxide H<sub>2</sub>
NaCIO: sodium hypochlorite

**H**₂**SO**₄: sulfuric acid

This test approves that PSP steel is suitable for most of the corrosive environments and has much better performance than color coated steel in these applications.



Fire Resistance

Tested by Fire Research Institute, PSP Steel can meet Class A requirement of fire resistance for building systems.



#### Weather Resistance

UV resistance is the inherent characteristic of ASA material. Fangxing has over 13 years experience using ASA resin, which proves its superior aging resistance performance. The material passed 15,000 hours aging test in the National Test Center for Building Materials.



#### **Heat Insulation**

The surface engineering resin material uses infra-red reflection technology, which can reflect over 30% of infra-red ray. Creating cooling effect for buildings.



#### **Color Retention**

Tested in National Test Center for Building Materials, Delta E is less than 5 after 15,000 hours UV radiation.

The color for ASA film laminated PSP STEEL can last more than 30 years.



#### Maintenance Free

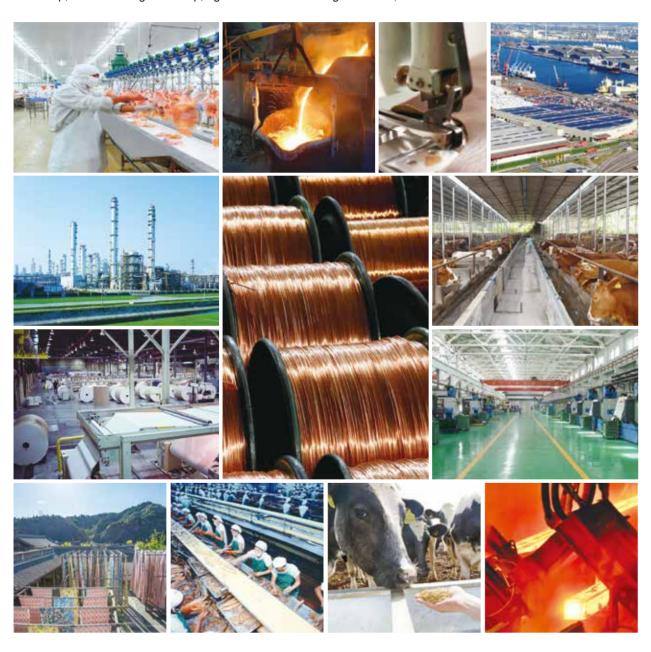
PSP STEEL is laminated by resin film which is much thicker than paint coating. The film itself is compact material, which protect the substrate steel from normal scratches. So it doesn't need re-painting after a period of time.

## **Technical Data Sheet**

Properties	Results	Test Methods
Resistance to Color Change (ASA) 15000 h Accelerated Aging Test	Delta E=2.23	GB/T 16422.2-1999
Adhesion	Grade A3	GB/T 18847-2002
Bending	No fissure, flaw, peeling	GB/T 18847-2002
Low Temperature Processing	No fissure, flaw, peeling	GB/T 18847-2002
Resistance to Heat Soaked in boling water	No fissure, flaw, peeling	GB/T 18847-2002
Resistance to Dirt Mark Pen and Kerosene	No dirt, color change or fading	GB/T 18847-2002
Resistance to Corrosion Exposure 1000h	No rusting	GB/T 18847-2002
Self-extinguishment	Flame extinguish at 1"780"	GB/T 18847-2002
Resistance to Impact Cupping Test	Maximum depression depth 11.1mm	GB/T 9753-2007
Resistance to Fire	A2	GB 8624-2012
<b>Resistance to Acid</b> 20%H <sub>2</sub> SO <sub>4</sub> , 15%HCI, 20%H <sub>3</sub> PO <sub>4</sub> , 20%HF,20%HNO <sub>3</sub> ,120h	No chalkiness, corrosion,blistering	GB/T 3857-2005
Resistance to Alkali 5% N <sub>a</sub> OH, Ammonia Water, Chlorine Water,120h	No chalkiness, corrosion,blistering	GB/T 3857-2005
Thermal Conductivity	0.601W/(m·K)	GB/T 22588-2008
Frost Resistance 30 Free/thaw cycles,-30 C~+15 C	No significance change on color, no rusting, shedding or blistering	GB/T 21086-2008

# **Applications**

PSP Steel is well applied in corrosive industries and coastal areas, serving chemical factory, electrolytic/electroplating plant, metallurgic plant, fertilizer storage, mining area, power station, printing and dyeing plant, waste plant, leather workshop, food and drug workshop, agricultural and breeding industries, etc.





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# Product Structure ASA Film 0.2mm In the 1980s, General Electric firstly developed ASA, the superior anti-climate engineering material. Modified Anti-climate UPVC Film 0.14mm

Acrylonitrile Styrene Acrylate (ASA) developed by GE in the 1980s, is a reliable superior anti-climate engineering resin. Fangxing applied ASA to roof tiles since 2003, proved its excellent weather resistance performance and color retention by over 13 years of experience.



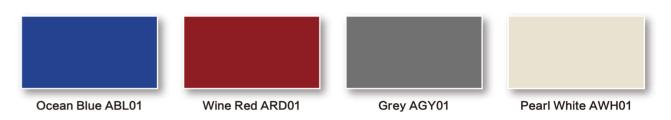
## **Product Specification**

Coil Width	1000mm, 1200mm					
	Substrate	Top layer	Bottom layer	Total thickness		
	0.4mm	0.2mm	0.14mm	0.74mm		
Thickness	0.5mm	0.2mm	0.14mm	0.84mm		
	0.6mm	0.2mm 0.14mm		0.94mm		
Application	Roofing, Wall					

Tolerance on total thickness: ±0.05mm

#### **Standard Colors**

COILS



• Only for reference, please contact us for sample to confirm the color.

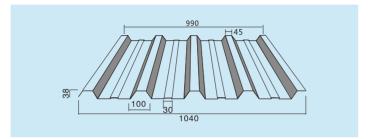


Thickness	Weight	Qty/ton	Qty/coil	Qty/20FCL	MOQ
0.74mm	3.6 kg/ m <sup>2</sup>	273 m <sup>2</sup>	819 m <sup>2</sup> ( 3 tons)	5733 m <sup>2</sup> (21 tons)	3 tons
0.84mm	4.39 kg/ m <sup>2</sup>	228 m <sup>2</sup>	684 m <sup>2</sup> (3 tons)	4788 m <sup>2</sup> (21 tons)	3 tons
0.94mm	5.17 kg/ m <sup>2</sup>	193 m <sup>2</sup>	579 m <sup>2</sup> (3 tons)	4053 m <sup>2</sup> (21 tons)	3 tons

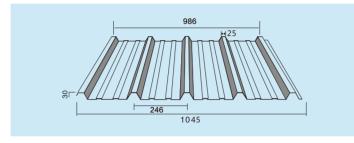
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## **Profiled Sheets**

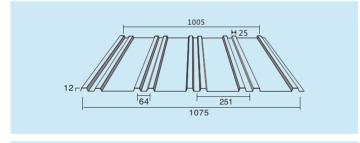




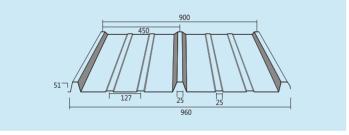




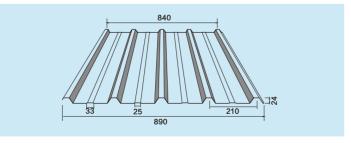












## **Technical Parameters**

#### 1040T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.74mm	1040mm	990mm	Customized	4.15 kg/ m <sup>2</sup>	5100 m <sup>2</sup>	1000 m <sup>2</sup>
0.84mm	1040mm	990mm	Customized	5.06 kg/ m <sup>2</sup>	4200 m <sup>2</sup>	1000 m <sup>2</sup>
0.94mm	1040mm	990mm	Customized	5.96 kg/ m <sup>2</sup>	3500 m <sup>2</sup>	1000 m <sup>2</sup>

#### 1045T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.74mm	1045mm	986mm	Customized	4.13 kg/ m <sup>2</sup>	5100 m <sup>2</sup>	1000 m <sup>2</sup>
0.84mm	1045mm	986mm	Customized	5.04 kg/ m <sup>2</sup>	4200 m <sup>2</sup>	1000 m <sup>2</sup>
0.94mm	1045mm	986mm	Customized	5.93 kg/ m <sup>2</sup>	3500 m <sup>2</sup>	1000 m <sup>2</sup>

#### 1075T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.74mm	1075mm	1005mm	Customized	$4.02 \text{ kg/ m}^2$	5200 m <sup>2</sup>	1000 m <sup>2</sup>
0.84mm	1075mm	1005mm	Customized	4.9 kg/ m <sup>2</sup>	4300 m <sup>2</sup>	1000 m <sup>2</sup>
0.94mm	1075mm	1005mm	Customized	5.77 kg/ m <sup>2</sup>	3600 m <sup>2</sup>	1000 m <sup>2</sup>

#### 960T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.74mm	960mm	900mm	Customized	4.5 kg/ m <sup>2</sup>	4600 m <sup>2</sup>	1000 m <sup>2</sup>
0.84mm	960mm	900mm	Customized	5.49 kg/ m <sup>2</sup>	3800 m <sup>2</sup>	1000 m <sup>2</sup>
0.94mm	960mm	900mm	Customized	6.46 kg/ m <sup>2</sup>	3200 m <sup>2</sup>	1000 m <sup>2</sup>

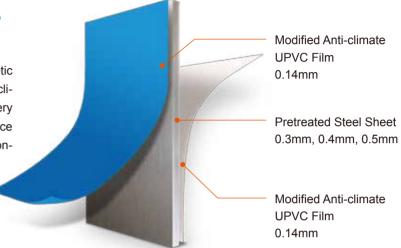
#### 890T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.74mm	890mm	840mm	Customized	4.04 kg/ m <sup>2</sup>	5200 m <sup>2</sup>	1000 m <sup>2</sup>
0.84mm	890mm	840mm	Customized	4.93 kg/ m <sup>2</sup>	4300 m <sup>2</sup>	1000 m <sup>2</sup>
0.94mm	890mm	840mm	Customized	5.81 kg/ m <sup>2</sup>	3600 m <sup>2</sup>	1000 m <sup>2</sup>



#### **Product Performance**

PVC is one of the most widely used synthetic plastic polymer. It is a kind of modified anti-climate UPVC film in PSP Steel, which has very good anti-corrosion and weather resistance performance. In general corrosive environment, the life can be more than 20 years.



## **Product Specification**

Coil Width	1000mm, 1200mm					
	Substrate	Top layer	Bottom layer	Total thickness		
Thickness	0.3mm	0.14mm	0.14mm	0.58mm		
	0.4mm	0.14mm	0.14mm	0.68mm		
	0.5mm	0.14mm	0.14mm	0.78mm		
Application	Roofing, Wall, Ceiling					

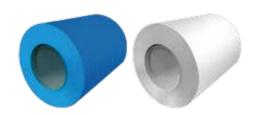
Tolerance on total thickness: ±0.03mm

#### **Standard Colors**



• Only for reference, please contact us for sample to confirm the color.





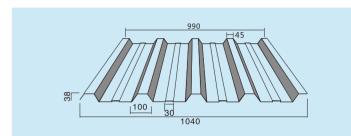
Thickness	Weight	Qty/ton	Qty/coil	Qty/20FCL	MOQ
0.58mm	2.73 kg/ m <sup>2</sup>	366 m <sup>2</sup>	1098 m <sup>2</sup> ( 3 tons)	7686 m <sup>2</sup> (21 tons)	3 tons
0.68mm	3.52 kg/ m <sup>2</sup>	284 m <sup>2</sup>	852 m <sup>2</sup> (3 tons)	5964 m <sup>2</sup> (21 tons)	3 tons
0.78mm	4.3 kg/ m <sup>2</sup>	232 m <sup>2</sup>	696 m <sup>2</sup> (3 tons)	4872 m <sup>2</sup> (21 tons)	3 tons

All loading quantity in this catalogue is based on 21tons net weight only for reference, the real loading quantity may be different order.

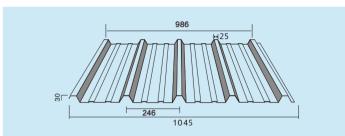


### **Profiled Sheets**

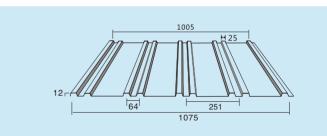




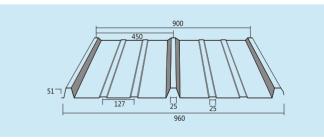




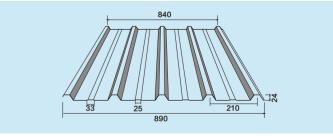












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#### **Technical Parameters**

#### 1040T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.58mm	1040mm	990mm	Customized	3.15 kg/ m <sup>2</sup>	6900 m <sup>2</sup>	1000 m <sup>2</sup>
0.68mm	1040mm	990mm	Customized	4.06 kg/ m <sup>2</sup>	5400 m <sup>2</sup>	1000 m <sup>2</sup>
0.78mm	1040mm	990mm	Customized	4.96 kg/ m <sup>2</sup>	4400 m <sup>2</sup>	1000 m <sup>2</sup>

#### 1045T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.58mm	1045mm	986mm	Customized	3.15 kg/ m <sup>2</sup>	6900 m <sup>2</sup>	1000 m <sup>2</sup>
0.68mm	1045mm	986mm	Customized	4.06 kg/ m <sup>2</sup>	5300 m <sup>2</sup>	1000 m <sup>2</sup>
0.78mm	1045mm	986mm	Customized	4.96 kg/ m <sup>2</sup>	4300 m <sup>2</sup>	1000 m <sup>2</sup>

#### 1075T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.58mm	1075mm	1005mm	Customized	3.05 kg/ m <sup>2</sup>	7100 m <sup>2</sup>	1000 m <sup>2</sup>
0.68mm	1075mm	1005mm	Customized	3.93 kg/ m <sup>2</sup>	5500 m <sup>2</sup>	1000 m <sup>2</sup>
0.78mm	1075mm	1005mm	Customized	4.8 kg/ m <sup>2</sup>	4500 m <sup>2</sup>	1000 m <sup>2</sup>

#### 960T

Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.58mm	960mm	900mm	Customized	3.41 kg/ m <sup>2</sup>	6400 m <sup>2</sup>	1000 m <sup>2</sup>
0.68mm	960mm	900mm	Customized	4.4 kg/ m <sup>2</sup>	5000 m <sup>2</sup>	1000 m <sup>2</sup>
0.78mm	960mm	900mm	Customized	5.37 kg/ m <sup>2</sup>	4000 m <sup>2</sup>	1000 m <sup>2</sup>

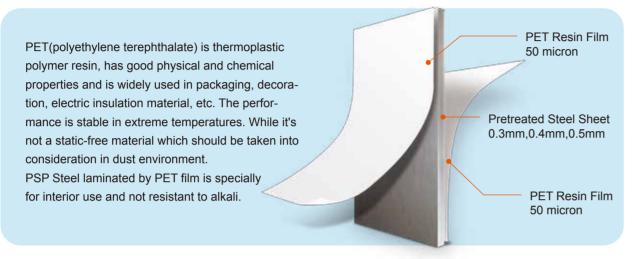
#### 890T

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Thickness	Width	Effective Width	Length	Weight	Qty/20FCL	MOQ
0.58mm	890mm	840mm	Customized	3.07 kg/ m <sup>2</sup>	7100 m <sup>2</sup>	1000 m <sup>2</sup>
0.68mm	890mm	840mm	Customized	3.95 kg/ m <sup>2</sup>	5500 m <sup>2</sup>	1000 m <sup>2</sup>
0.78mm	890mm	840mm	Customized	4.83 kg/ m <sup>2</sup>	4500 m <sup>2</sup>	1000 m <sup>2</sup>



#### **Product Performance**



## **Product Specification**

Coil Width	1000mm, 1200mm					
	Substrate	Top layer	Bottom layer	Total thickness		
	0.3mm	n 0.05mm 0.05mm		0.4mm		
Thickness	0.4mm	0.05mm	0.05mm	0.5mm		
	0.5mm	0.05mm	0.05mm	0.6mm		
Application	Ceiling, Interior wall cladding					

#### **Standard Colors**



White EWH01





Thickness	Weight	Qty/ton	Qty/coil	Qty/20FCL	MOQ
0.4mm	2.49 kg/ m <sup>2</sup>	402 m <sup>2</sup>	1206 m <sup>2</sup> ( 3 tons)	8442 m <sup>2</sup> (21 tons)	3 tons
0.5mm	3.27 kg/ m <sup>2</sup>	306 m <sup>2</sup>	918 m² (3 tons)	6426 m <sup>2</sup> (21 tons)	3 tons
0.6mm	4.05 kg/ m <sup>2</sup>	247 m <sup>2</sup>	741 m <sup>2</sup> (3 tons)	5187 m <sup>2</sup> (21 tons)	3 tons

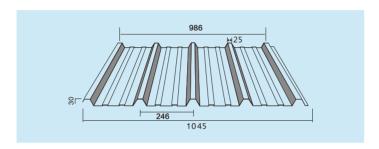
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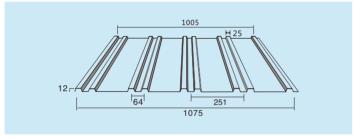
<sup>•</sup> Only for reference, please contact us for sample to confirm the color.

#### **Profiled Sheets**









#### **Technical Parameters**

#### 1045T

Thickness	Width	Length	Weight	Qty/20FCL	MOQ
0.4mm	1045mm	Customized	2.86 kg/ m <sup>2</sup>	7600 m <sup>2</sup>	1000 m <sup>2</sup>
0.5mm	1045mm	Customized	3.75 kg/ m <sup>2</sup>	5800 m <sup>2</sup>	1000 m <sup>2</sup>
0.6mm	1045mm	Customized	4.65 kg/ m <sup>2</sup>	4700 m <sup>2</sup>	1000 m <sup>2</sup>

#### 1075T

Thickness	Width	Length	Weight	Qty/20FCL	MOQ
0.4mm	1075mm	Customized	2.78 kg/ m <sup>2</sup>	7900 m <sup>2</sup>	1000 m <sup>2</sup>
0.5mm	1075mm	Customized	3.65 kg/ m <sup>2</sup>	6000 m <sup>2</sup>	1000 m <sup>2</sup>
0.6mm	1075mm	Customized	4.52 kg/ m <sup>2</sup>	4800 m <sup>2</sup>	1000 m <sup>2</sup>

# **FRP Transparent Sheet**

FANGXING supplied FRP transparent Sheet can match all profiles of PSP STEEL.



Recommanded products							
Thickness	Weight	Lifetime	MOQ				
1.5mm	Approx. 3.3 kg/m <sup>2</sup>	15 years	500 m <sup>2</sup>				
2.0mm	Approx. 4.3 kg/m <sup>2</sup>	20 years	500 m <sup>2</sup>				

The weight is only for reference, the real weight has slight difference for different profiles.

## **Accessories**

# Anti-corrosive Self-tapping Screws

Established in Australia since 1917, Buildex is the world's leading manufacturer and supplier of self-tapping screws.



**Climaseal**® is an unique anti-corrosive coating system which give exceptional corrosion protection to the screws and extend the life time of buildings.



Climaseal<sup>®</sup> 3 is used for general external use in mild and moderate industrial, and mild marine applications.



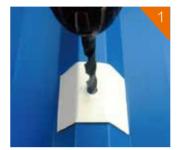
Climaseal<sup>®</sup> 4 is used in coastal areas where salt, wind, UV and moisture are prevalent, in tropical zones and industrial areas. It is particularly recommended for use in moderate and severe marine environments.

#### **Stainless Steel Screws**



Stainless Steel 304 with good corrosion resistance for most applications in severe industrial, coastal and chemical environment. Suitable for use with Stainless, Aluminium, PSP Steel roofing sheets and cladding.

## **Special Supplied Anti-corrosive Fixings**



Position and drill



Assemble expansion sleeve to the spacer



Put anti-corrosive spacer in the hole and button up



Tighten the screw to seal

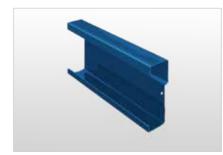




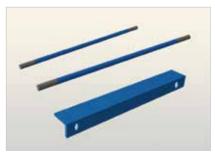


Tighten the cover

#### **Epoxy Coated Accessories**



Anti-corrosive Purlin



Anti-corrosive Braces



Anti-corrosive Brackets





All accessories are produced by epoxy coating technology at high temperature, which makes them high anti-corrosive, durable, maintenance-free and resistant to high and low temperatures.

# FAQ



Yes, PSP steel can be customized on request. Please contact our sales for details. Theoretically the MOQ for customized product is 50 tons.

## Which kind of steel do you use for the middle layer?

Pretreated SGCC . Average tensile strength 408Mpa, yield strength 339Mpa, Elongation 30%.
G550 with aluzinc coating is available on request.

## What about the adhesion between steel and resin? Will the film peel off in the long term?

Fangxing's unique production technology gives superior viscosity between different layers. No glue is used, which ensures the films will not peel off naturally. Right choice of films will ensure its best performance in long term.

## Will the film coating be affected at temperatures up to 100°C?

Production temperature of PSP Steel is over 200°C, so it is resistant to cumulative temperature up to 100°C in applications.

## How to deal with the drilling parts and the edges after cut?

FANGXING supplied fitting system is recommend to use for drilling holes in light corrosive environment. In heavy corrosive environment, it is advised to use standing seam roofing system without drilling holes. Cutting edge is recommended to be painted by proper painting according to different applications for best performance.

# How to deal with the scratch on the surface during transportation and installation?

The product can be chosen to be coated by PE protective film. It is advised to take care during handling and installation. The scratch can be filled with PVC glue for protection.

## What kind of corrosive environment can PSP STEEL be used?

PSP STEEL can be used in most of the corrosive environment. PET film laminated product is advised not to be used in alkali environment

### What about the heat insulation performance of PSP STEEL?

According to the test result, the thermal conductivity for PSP steel is  $0.601W/\ (m.K)$ , while for pre-coated steel is  $6.598W/\ (m.K)$ .

## Which type is recommended to use for exterior?

ASA film laminated product is most recommended for exterior use, which has excellent color stability. While PVC film laminated product also performs well for lower requirement for color.

## Which type is recommended to use for interior?

Both UPVC and PET work well in indoor environment. PET is cost effective, but not suitable for alkaline and powder environment.

## Do you provide any warranty to this product?

Fangxing offer warranty to all PSP steel products. Please refer to the warranty for different products.

## What's the advantage of PSP Steel compared with pre-painted steel?

PSP Steel has much better resistance against corrosion and weather compared with pre-painted steel. The airtight film protects its base steel efficiently and makes it longer-lasting.

## What's the advantage of PSP sheet compared with plastic roofing sheet?

Compared with plastic roofing sheet, PSP steel roofing has more stable performance under high temperature with higher strength, and longer purlin space. PSP steel can be used above heat insulation material directly.

## What's the difference with Plastisol coated and epoxy coated steel sheet?

Plastisol and epoxy coating are both liquid material with thinner inside. The thinner will volatilize during drying and leave crevices on the surface. The corrosive medias will penetrate the coating through these crevices which make the product corroded soon and the coating will peel off after few years. While the synthetic resin film is airtight material and it will protect the steel from corrosion.

## Do you have any special requirement for forming machine?

PSP STEEL can be formed by normal forming machine for PPGI/PPGL. Pay attention to the thickness and width of the sheet. You may have to adjust the speed of feeding until you get the final product. Please refer to the Machining part.

## What's the temperature ranges for PSP STEEL?

-40~ 100 °C

#### 77 Can PSP STEEL be recycled?

Yes.

#### 18 IS PSP STEEL eco-friendly product?

Yes, there is no waste produced during production, and no pollution to environment.

#### 19 What's your production capacity?

We have 4 production lines with production capacity of 30000 square meters per day.

## Can you supply accessories with same material with PSP STEEL?

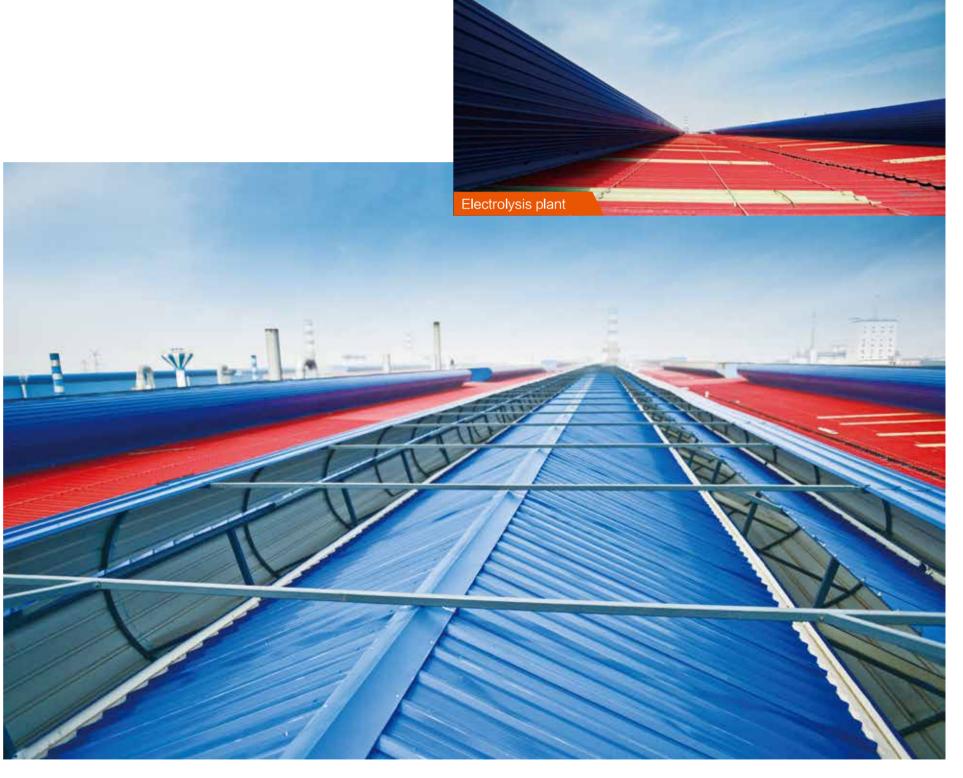
Yes, all accessories can be formed by PSP flat panel.

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# **Project Gallery**







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 $\mathbf{A}$ 

**FANGXING PSP STEEL** 



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