



Application of Mac steel Solar Mounting System

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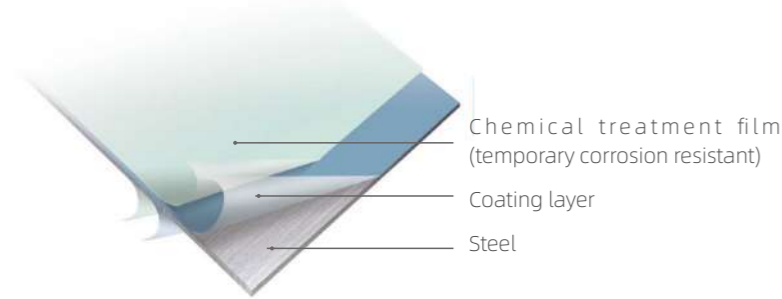
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·Corrosion Resistance ·Artistic ·Damage Resistance

What Is Mac Steel

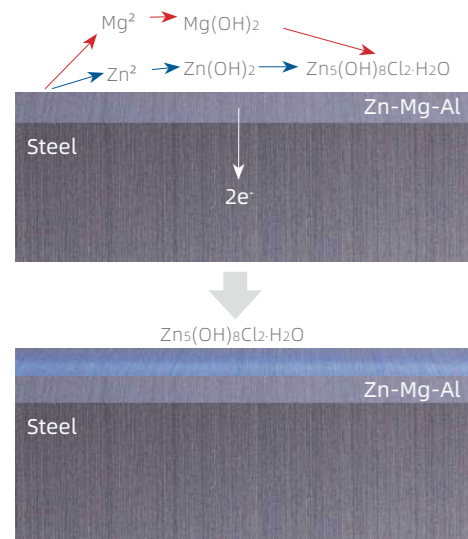
Mac steel is a pre-coated steel sheet obtained by hot-plating a layer of Mg-Al-Zn coating on both sides of a cold-rolled steel sheet having various strengths and thicknesses. The product combines the physical protection and high durability of Al, as well as the electrochemical protection properties of Zn. In addition, the surface layer has a highly decorative bright silver-gray gloss and regular patterns, and it has a raised texture.

Product configuration



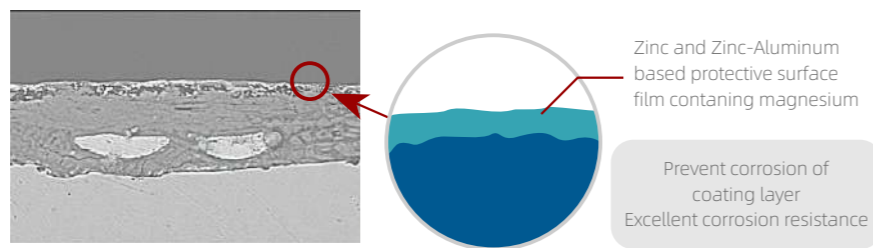
Product characteristics

- Mac Steel is a corrosion resistant products that is 5 to 10 times stronger resistance than that of a normal hot-dip galvanized steel sheet(GI, GI(H)) with the same coating weight. Mac Steel has an excellent cross-section corrosion resistance; normal thick plating products can be replaced with this product.
- The same processing, assembly and painting process can be applied to Mac Steel as one would apply to GI.



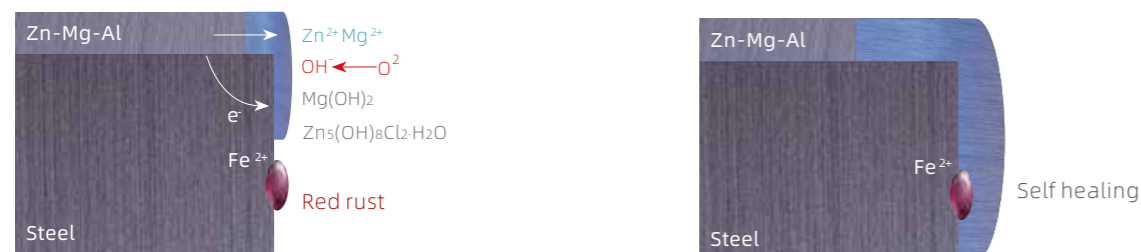
Why Mac Steel has excellent corrosion resistance

The magnesium(Mg) in Mac Steel's coating layer will accelerate the formation of a dense corrosion product called "(Zn₅(OH)₈Cl₂·H₂O)" which is extremely stable. When simonkolleite is formed on the surface of the coating layer in a film-like-form, it plays a role as a corrosion inhibitor for the base metal.



The self healing of cut edge

Excellent corrosion resistance is achieved on cut edge of Mac Steel with a fine zinc-based protective film that contains Al and Mg leaching from the coating layer.



The coating layer on the upper part of the cross-section of the steel dissolves and gradually covers the cross-section to promote the formation of a stable protective film.

In the initial stage, red rust will occur on the exposed cross-section, but the protective film will exhibit excellent corrosion resistance after the film-like covering is formed on the cross-section.

Hot-dip galvanized steel / MAC Steel in corrosion resistance on flat surfaces(SST/CCT)

SST Galvanized amount	MAC Steel		Hot-dip galvanized steel 550g/m ²		MAC Steel		Hot-dip galvanized steel 550g/m ²
	60g/m ²	300g/m ²			60g/m ²	300g/m ²	
480 Hr				1200 Hr			
720 Hr				2400 Hr			

Test method : Salt Spray Test(IOS 9227, JIS Z2371, ASTM B117)5%NaCl, 35°C。

CCT Galvanized amount	MAC Steel			Hot-dip galvanized steel			
	140g/m ²	200g/m ²	275g/m ²	120g/m ²	200g/m ²	300g/m ²	600g/m ²
10 cycle (80Hr)							
70 cycle (560Hr)							
120 cycle (960Hr)							

Test method : Cyclic Corrosion Test

CCT 1cycle (KS R1127) : Salt Spray 2Hr(5%NaCl, 35%) → Dry 4Hr(25%RH, 60°C) → Wet 2Hr(95%RH, 50°C)

·MAC steel shows 5 to 10 times the corrosion resistance compared to galvanized steel sheet on flat surfaces.

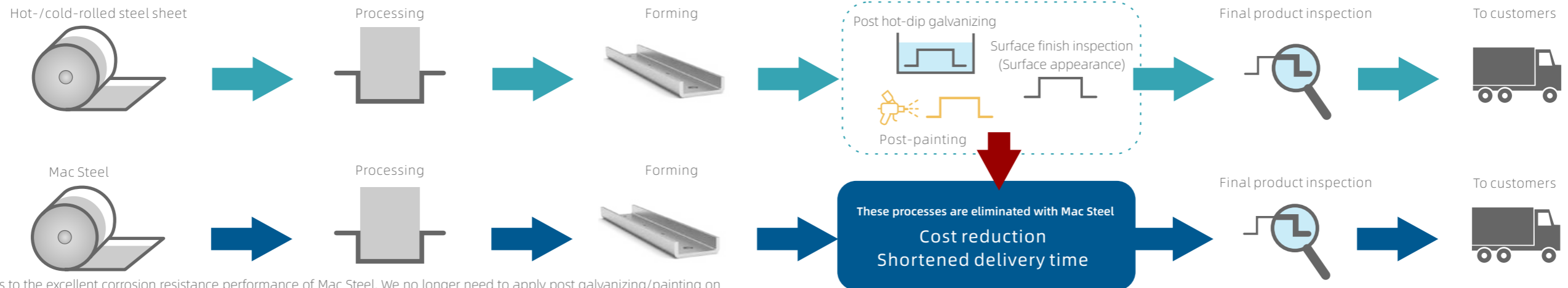
·MAC steel shows equal or greater corrosion resistance than galvalume on flat surfaces.

Comparison of the corrosion resistance of Galvanized steel and MAC steel of parts of the bracket



Test method : Salt Spray Test (SST)(JIS Z2371, 5%NaCl, 35°C), Confirm test material status every 24 hours.

Cost Reduction by Using Mac Steel



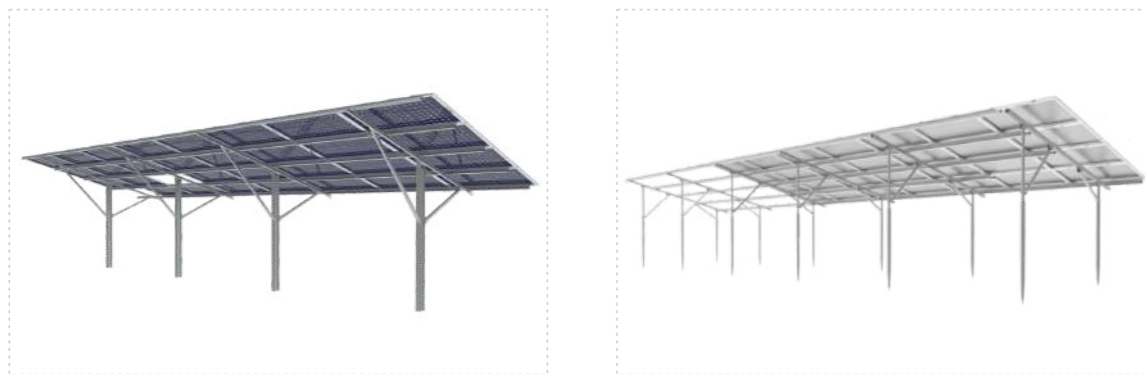
Thanks to the excellent corrosion resistance performance of Mac Steel, We no longer need to apply post galvanizing/painting on the materials to secure corrosion resistance, which contributes to omitting waste liquid treatment. By using Mac Steel, it is possible for us to omit the post galvanizing/painting process, which contributes to reducing manufacturing process and work period. The plated layer of Mac Steel is hard, which prevents damage due to handling, allowing us to manufacture products with beautiful and smooth exterior and improve yield loss.

Powerway MAC Steel Parameters

- The main material is eco-friendly MAC steel, which has the strength of steel.
- The pretreatment on the surface ensures the attractive appearance of the material.
- Compared with the traditional hot-dip galvanized steel, the deformation and manufacturing accuracy of the material in processing are significantly improved.

Product Technical Parameters

wind load	70m/s (customizable)
Area type	I, II
System layout	2*N, 4*N (customizable)
Arrangement	customizable
System height	customizable
Parts main material	MAC steel/HDG sheet
Height adjustment range	customizable
Design standards	ASTMA1046-2014/JISG3323-2012



Technical Parameters And Composition Statistics Of MAC Steel

Composition statistics of main brande MAC steel products in the world

Country	Company	Material	Coating Element Content %			
			Zn	Al	Mg	Si
Japan	Nisshin Steel	ZAM	91	6	3	/
Japan	Nisshin Steel	Super Dyma	85.8	11	3	0.2
Luxembourg	Arcelor Mittal	Magnelis	93.5	3.5	3	/
South Korea	Posco	PosMAC	94.5	2.5	3	/
China	JISCO	SCS super	85.5	11	3	0.2
China	HBIS	T-GAM	96.3	2.18	1.4	/
Taiwan	Yieh Phui	GF	95	5	/	/
china	SHOUGANG	ZM	91	6	3	/



Section Classification And Parameter Range Of Powerway MAC Steel

C-shaped

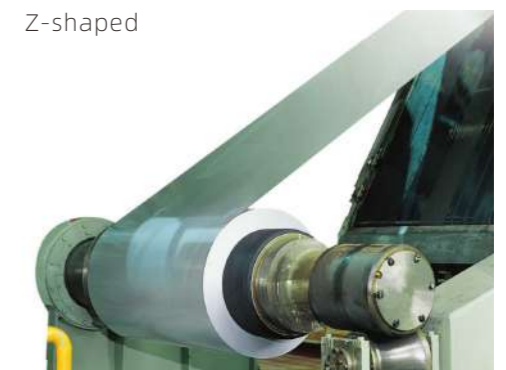
Position	Production Range
A	50-180mm
B	30-110mm
C	10-20mm
D	1.5-4.0mm

Z-shaped

Position	Production Range
A	70-120mm
B	35-60mm
C	10-20mm
D	1.5-2.5mm

Ω-shaped

Position	Production Range
A	50-120mm
B	60-100mm
C	12-20mm
D	1.5-3.0mm



Our Company

Powerway Renewable Energy Co.,Ltd.(abbreviated as 'Powerway') is one of the world's leading manufacture and solution providers of solar tracking ,solar mounting and roof solar racking systems with 11 years of manufacturing and service experience. The headquartered is located in Foshan city,China with manufacturing bases in zhaqing and Tianjin,China.The subsidiary is located in Japan.Powerway also has rich experience in manufacturing and service of large-scale projects in the fields of multifunctional PV mounting system such as Fishery-solar hybrid power station, agro-photovoltaic hybrid power station, and PV carports. In addition,Powerway has won numbers of certifications, such as BV, UL, CE, CPP, IEC, TUV and ISO9001.

So far,The installed capacity of Powerway has reached **10GW**,which over 200 projects in more than 60 countries around world.We have established strategic partnerships with many well-known PV companies, becoming a confident brand in the PV industry.

Case

