BAOSTEEL | 创享改变生活

BaoXM®

宝钢中铝锌铝镁镀层钢板

Baosteel Zinc-6% Aluminum-3% Magnesium Alloy Coated Steel

www.baosteel.com

CONTENTS

目录

注：本手册所指宝钢中铝锌铝镁（BaoXM®）即为符合 BQB420 标准的热镀锌铝镁产品。

Notes: Baosteel Zinc-6% Aluminum-3% Magnesium alloy coated steel (BaoXM®) mentioned in this manual refers to the hot dip Zn-Al-Mg product that conforms to the Standard BQB420.

什么是 BaoXM®
What is BaoXM® 01

平面高耐蚀机理
High corrosion resistance mechanism on flat surfaces 04

切口 & 镀层损伤处自愈合机理
Self-healing mechanism on cut edges and scratches 05

BaoXM® 平面耐蚀性
Corrosion resistance on flat surfaces 06

BaoXM® 切口耐蚀性
Corrosion resistance on cut edges and scratches 08

BaoXM® CCT 循环实验表现
Performance of CCT salt spray test 10

BaoXM® 对比不锈钢耐蚀性
Comparison of corrosion resistance between BaoXM® and stainless 11

BaoXM® 拉延变形部位耐蚀性
Corrosion resistance on drawing and bending processed parts 12

BaoXM® 耐酸、耐碱性
Acid and alkali resistance 14

BaoXM® 耐氨性
Ammonia resistance 14

BaoXM® 加工性
Processability 15

BaoXM® 焊接性 & 焊接部位耐蚀性
Weldability and the corrosion resistance of the welded sections 17

BaoXM® 涂装后的耐蚀性
Corrosion resistance of the organic coated BaoXM® 20

BaoXM® 涂装后的加工性
Processability of the organic coated BaoXM® 22

BaoXM® 后处理
Post treatment coating 23

BaoXM® 可供规格
Available specifications 25

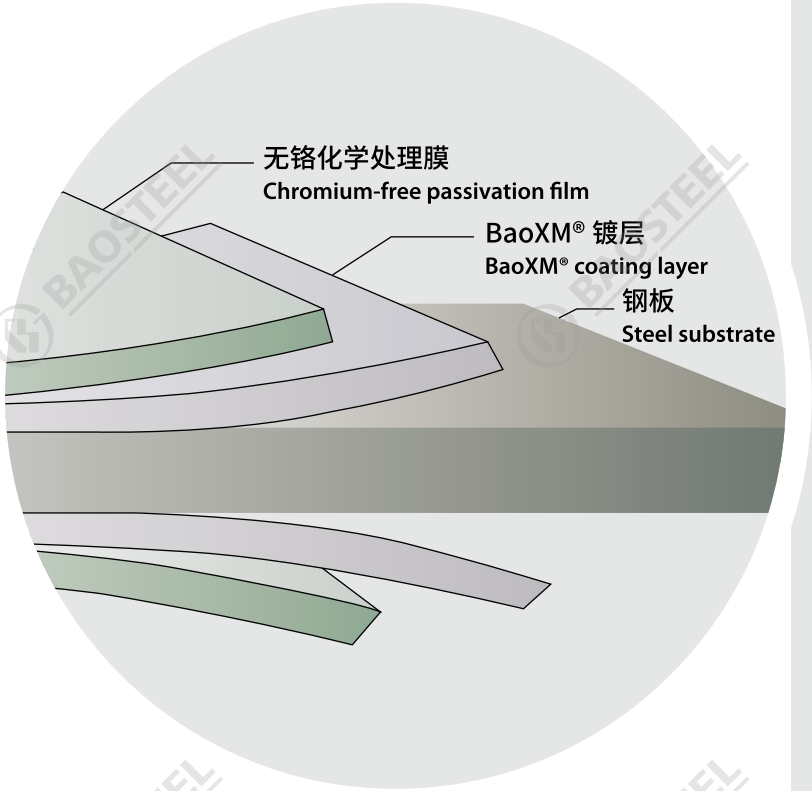
BaoXM® 注意事项
Precautions in use 31

What is BaoXM®

什么是 BaoXM®

BaoXM® 是镀覆 Zn-6%Al-3%Mg 三元高耐蚀合金镀层的钢板，是宝钢锌铝镁（GalvAluMag®）系列产品家族的一员。

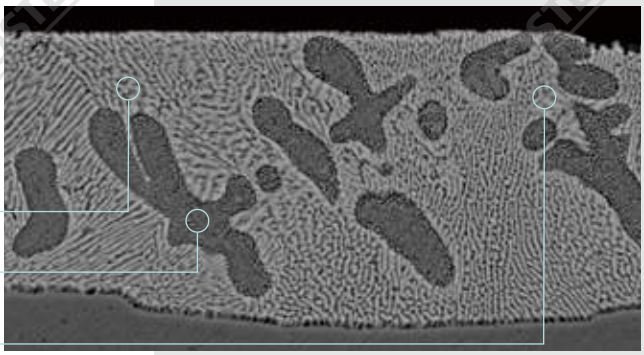
BaoXM® is a Zn-6%Al-3%Mg alloy coated steel with high corrosion resistance, and it is a member of the GalvAluMag® product family.



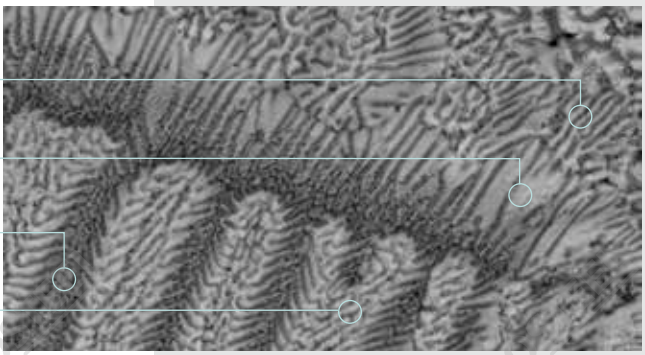
产品简介
Product introduction

- **无铬化学处理层：**致密的保护膜可阻止腐蚀介质直接接触镀层；
- **BaoXM® 高耐蚀锌铝镁镀层：**通过 Zn 层牺牲阳极的保护作用，保护 Fe 基板不受腐蚀；
- **内层钢板：**局部 Zn 层保护作用消耗殆尽，Fe 基材发生腐蚀。

- **Chromium-free passivation film:** Dense protective film can isolate the coating from the corrosive medium;
- **BaoXM® coating layer:** Protect the Fe substrate from corrosion through the Zn-Al-Mg sacrificial anode;
- **Steel substrate:** When the Zn-Al-Mg coating exhausts locally, corrosion occurs on the Fe substrate.



BaoXM® 截面组织
BaoXM® cross-sectional morphology



BaoXM® 表面组织
BaoXM® surface morphology

• 产品特点
Product Characteristics

- 耐蚀性为热浸镀锌钢板的 10-20 倍，切口耐蚀性尤其优秀；
- 硬度高，镀层钢板结合力好，具备良好的耐刮擦性与成形性；
- 适用于家电、汽车零部件、建筑、光伏等兼具高耐蚀、高成形要求的应用场合，在碱性环境中更具独特优势。

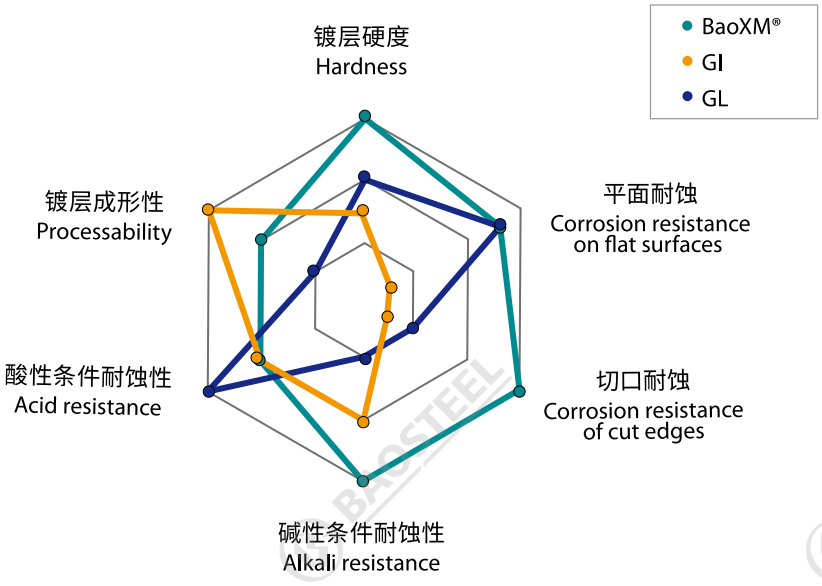
- The corrosion resistance of BaoXM® is 10-20 times better than that of GI (hot-dip galvanized steel), especially on cut edges.
- High hardness, excellent adhesive force, good scratch resistance and formability.
- BaoXM® is suitable for applications with high corrosion resistance and high formability requirments, such as home appliances,auto parts, constructions, photovoltaics etc. It has unique advantages in alkaline environments.

镀层种类/Coating types		BaoXM®	GL	GI
镀层硬度（Hv）/Hardness (Hv)		130～140	90～100	60～80
耐刮擦性/Scratch resistance		◎	○	×
耐蚀性 Corrosion resistance	平面部位/Flat surfaces	◎	◎	△
	切口部位/Cut edges	◎	○	△
	变形拉延/Drawing & bending	◎	◎	△
	碱性环境/Alkaline environments	◎	×	○
	酸性环境/Acid environments	○	◎	△
点焊性/ Spot weldability		◎	○	◎
涂装性/Paintability		○	○	○

注：×较差；△一般；○较好；◎最好

Notes: × Poor; △ Fair; ○ Good; ◎ Excellent

• 镀层综合性能对比
Comparison of overall properties of BaoXM®

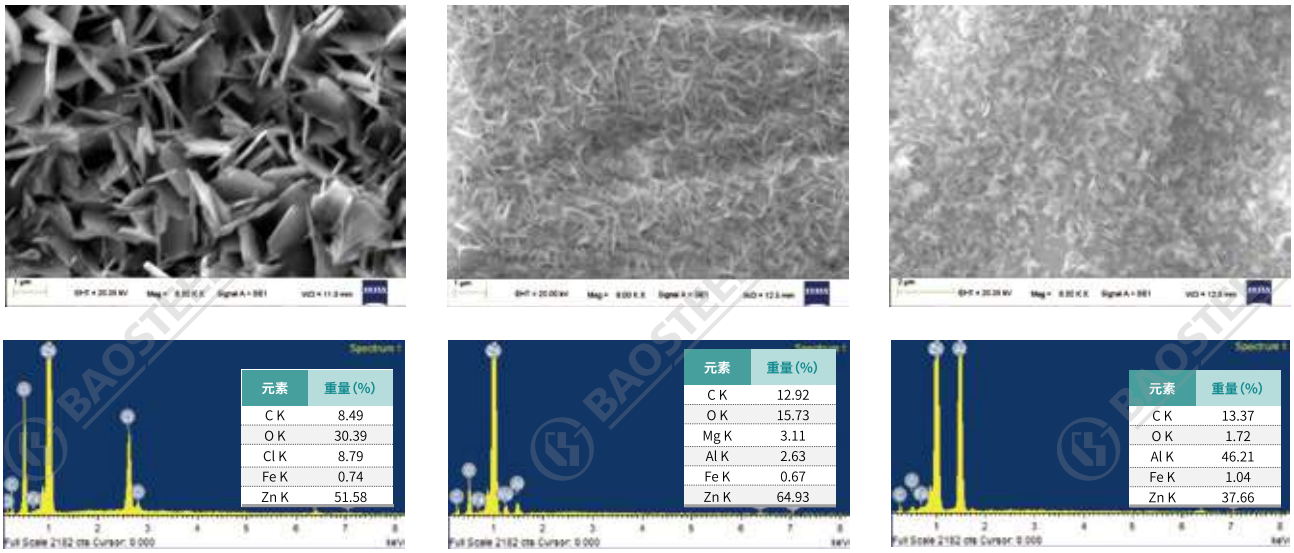


01

平面高耐蚀机理 /High corrosion resistance mechanism on flat surfaces

BaoXM® 在盐雾试验条件下形成的含 Al、Mg 腐蚀产物细小致密，有效阻碍 Cl^- 离子的富集侵蚀

In salt spray test, the corrosion products containing Al and Mg formed by BaoXM® are fine and compact, tightly adhered on the coating surface, which effectively suppress further corrosion of the BaoXM® by inhibiting the accumulation of Cl^-.



GI　　BaoXM®　　GL

SST 盐雾环境镀层表面形成的腐蚀产物形貌与成分
Morphology and composition of the corrosion products formed on the coating surface after salt spray test

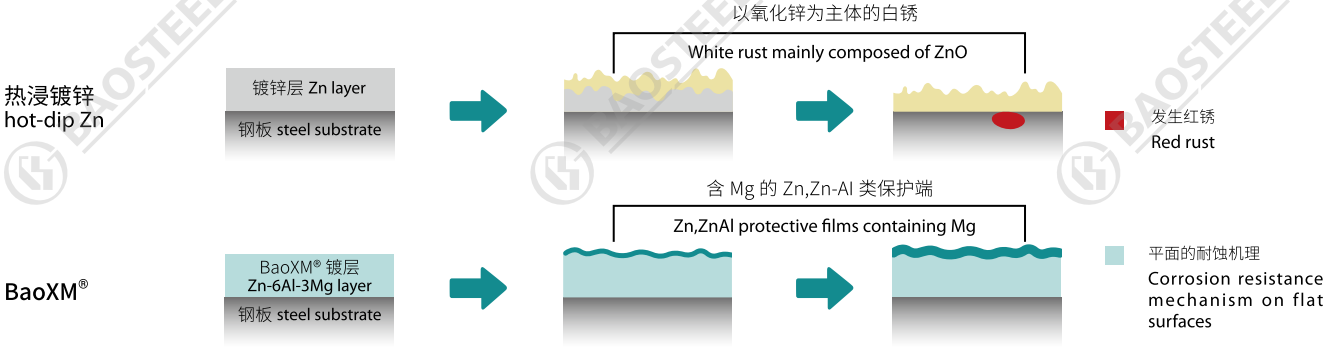
$$Zn^{2+} + 2OH^- \longrightarrow Zn(OH)_2 \xrightarrow[\text{dehydration}]{\text{脱水}} ZnO \cdot H_2O$$

$$Zn(OH)_2 + Cl^- \xrightarrow[\text{Seawater atmosphere}]{\text{海水气氛}} Zn_5(OH)_8Cl_2 \cdot H_2O$$

$$Zn(OH)_2 + CO_3^{2-} \xrightarrow[CO_2\ \text{atmosphere}]{CO_2\ \text{气氛}} Zn_4CO_3(OH)_6 \cdot H_2O$$

脱水产物，形成疏松 ZnO 为主的白锈
Dehydration products, forming white rust dominated by loose ZnO.

$Mg(OH)_2$ 促进形成致密、稳定、腐蚀电位更低的腐蚀产物，起到隔离腐蚀介质的作用
Mg $(OH)_2$ promotes the formation of dense, stable, and lower corrosion potential corrosion products, playing a role in isolating corrosion media.

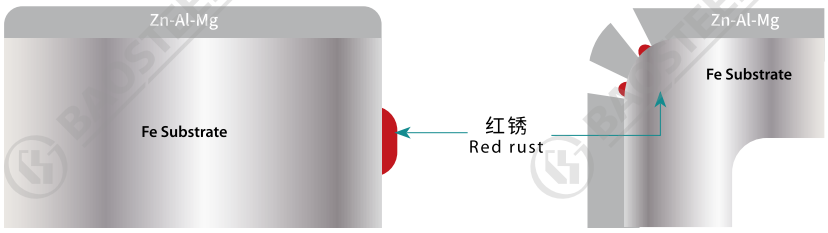


02

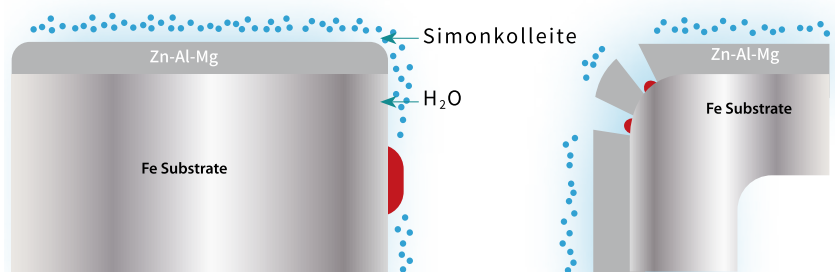
切口 & 镀层损伤处自愈合机理
Self-healing mechanism on cut edges and scratches

- **户外暴露初期：**基材暴露部分发生氧化，发生红锈
- **户外暴露中期：**形成具有一定流动性的含 Mg 致密水合 Zn 基腐蚀产物
- **户外暴露长期：**腐蚀产物完全覆盖基材裸露表面，实现切口保护

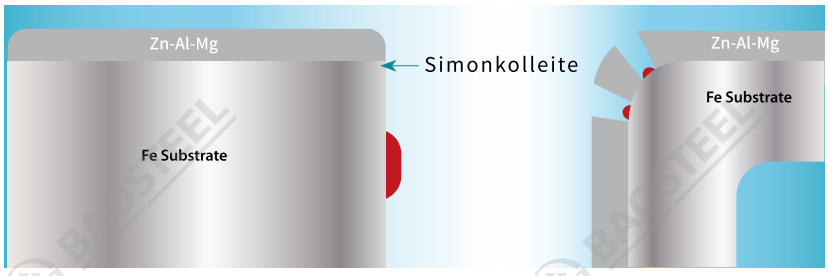
- Initial stage of outdoor exposure: Oxidation occurs in the exposed part of the substrate, red rust appears.
- Medium stage of outdoor exposure: Al, Mg containing corrosion products called Simonkolleite release from the coating surfaces, gradually flow with moisture, cover the exposed steel surfaces.
- Long-term outdoor exposure: The corrosion products produce a stable protective film, which covers the initial red rust and prevents the further corrosion of the exposed steel surfaces.



挂片时间：0.5 年
切口出现红锈
Outdoor exposure: half a year
Red rust at the exposed part



挂片时间：1 年
切口红锈基本被腐蚀产物覆盖
Outdoor exposure: one year
Red rust basically covered by corrosion products



挂片时间：2 年
切口红锈被腐蚀产物完全覆盖
Outdoor exposure: two years
Red rust completely covered by corrosion products

BaoXM® 切口保护示意图及户外挂片实际切口变化
（镀层：50/50g/m^2，基板厚度：0.5mm，挂片地点：万宁）
Schematic diagram of the self-healing mechanism on cut edges and scratches of BaoXM®and performance in outdoor exposure test
(Coating weight is 50/50 g/m^2，thickness is 0.5mm, outdoor exposure location: Wanning)

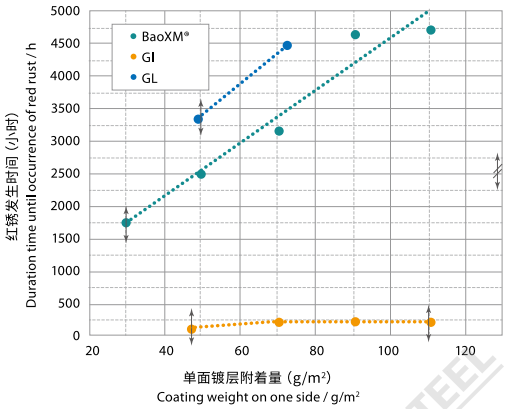
03

BaoXM® 的平面耐蚀性
Corrosion resistance on flat surfaces

- **封边切口保护条件下的平面耐蚀性**
  Mechanism of corrosion resistance on flat surfaces (Sealed cut edges)

平面耐蚀性：GL（镀铝锌）> BaoXM® > GI（纯锌）

Corrosion resistance on flat surfaces:
GL (Hot-dip Al-Zn coated steel) > BaoXM® > GI (Hot-dip galvanized)



试验条件：中性盐雾 ASTM B117-73，封边
Test conditions: neutral salt spray test (ASTM B117), sealed cut edges

镀层种类 Coating types	镀层附着量 Coating weight (g/m²)	100h	500h	1000h	2500h	3500h	5000h
GI	70/70						
GI	130/130						
GL	75/75						
BaoXM®	70/70						
BaoXM®	90/90						

试验条件：中性盐雾 ASTM B117-73，封边
Test conditions: neutral salt spray test (ASTM B117), sealed cut edges

• 无切口保护条件的平面耐蚀性
Corrosion resistance on flat surfaces (Exposed cut edges)

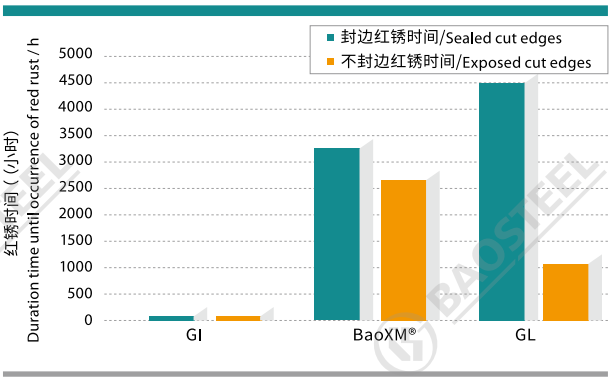
镀层种类 Coating types	板厚(mm) Thickness	镀层附着量 Coating weight (g/m^2)	1000h	1700h	3400h	4500h
GI	0.5	90/90				
GL	0.5	100/100				
BaoXM®	0.5	90/90				

试验条件：中性盐雾 ASTM B117，不封边
Test conditions: neutral salt spray test (ASTM B117), exposed cut edges

• 有无切口保护对平面耐蚀性的影响
Corrosion resistance on flat surfaces, sealed cut edges vs. exposed cut edges

BaoXM® 镀层耐蚀性受切口影响最小，切口耐蚀性较 GI、GL 更为优异

The state of cut edge has the least influence on corrosion resistance of BaoXM® and corrosion resistance on cut edges of BaoXM® is better than that of GI and GL.



试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m^2，
无后处理，中性盐雾 ASTM B117
Test conditions: thickness is 0.5mm, coating weight on one side is 70-75g/m^2, untreated, neutral salt spray test (ASTM B117)

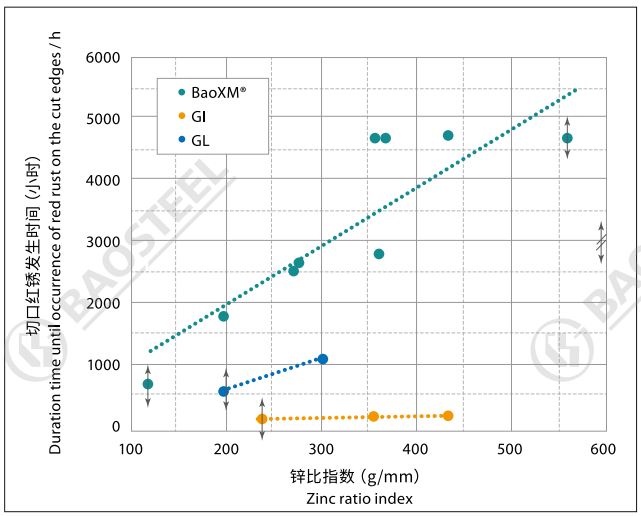
04

BaoXM® 切口耐蚀性
Corrosion resistance on cut edges and scratches

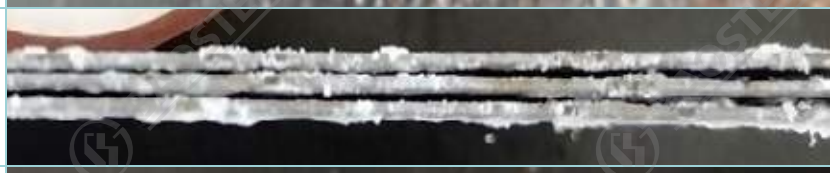
- **BaoXM® 切口耐蚀性优异**
  BaoXM® shows the excellent corrosion resistance on cut edges

锌比指数越大，BaoXM® 对裸露切口的保护能力越强

The greater the zinc ratio index, the stronger protection of BaoXM® against exposed cut edges



试验条件：中性盐雾 ASTM B117，不封边
锌比指数：双面镀层附着量 / 钢板厚度
Test conditions: neutral salt spray test (ASTM B117), exposed cut edges
Zinc ratio index: Coating weight of total both sides / Steel sheet thickness

镀层种类 Coating types	镀层附着量 Coating weight (g/m^2)	SST(h)	0.5mm
GI	90/90	1700	
		3400	
GL	100/100	1700	
		3400	
BaoXM®	90/90	1700	
		3400	
		4500	

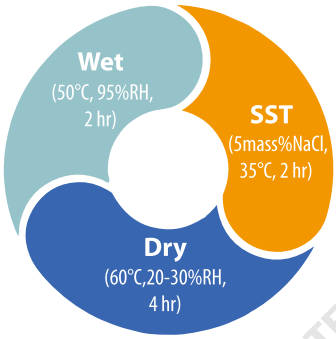
试验条件：中性盐雾 ASTM B117，不封边
Test conditions: neutral salt spray test (ASTM B117), exposed cut edges

05

BaoXM®CCT 循环实验表现
Performance of CCT salt spray test

- 在更少镀附量的前提下，BaoXM® 耐蚀性高于 GI
  Under the premise of less coating weight, BaoXM® shows higher corrosion resistance than GI

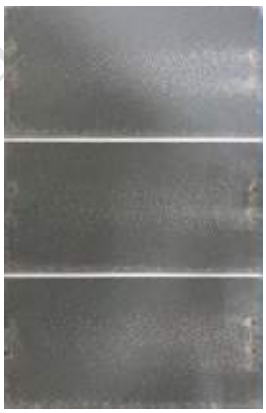
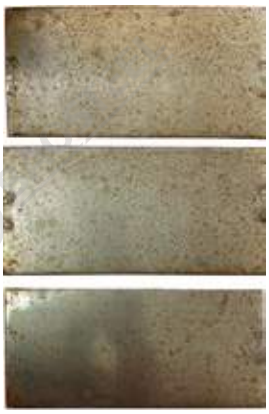
样板种类 coating types	牌号 Steel grades	厚度(mm) Thickness	镀层重量(g/m²) Coating weight
GI	DC51D+Z	0.5	70/70
BaoXM®	DC51D+XM	0.5	50/50
BaoXM®	DC51D+XM	0.5	70/70



周期 Testing cycle	GI 70g/m²	BaoXM® 50g/m²	BaoXM® 70g/m²
48			
134			

BaoXM® 对比不锈钢耐蚀性
Comparison of corrosion resistance between BaoXM® and stainless

- 在氯离子气氛较高的环境中，BaoXM® 可以替代不锈钢
  In environments of high chloride ion atmospheres,BaoXM® can replace stainless steel

	BaoXM®	304不锈钢	410不锈钢
万宁挂片 0.5年 Outdoor exposure: half a year, Wanning			
万宁挂片 1年 Outdoor exposure: one year, Wanning			
万宁挂片 2年 Outdoor exposure: two years, Wanning			

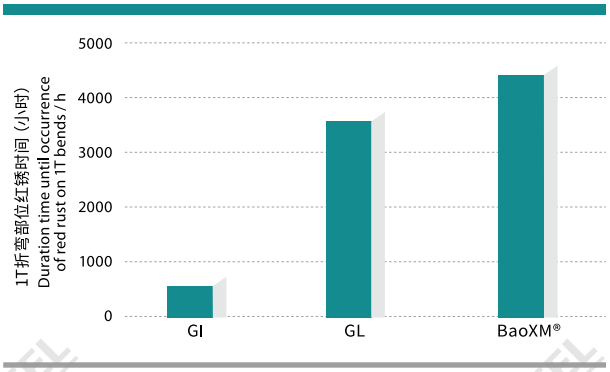
07

BaoXM® 拉延变形部位耐蚀性
Corrosion resistance on drawing and bending processed parts

• 0T 弯曲部位耐蚀性
Corrosion resistance on 1T bends

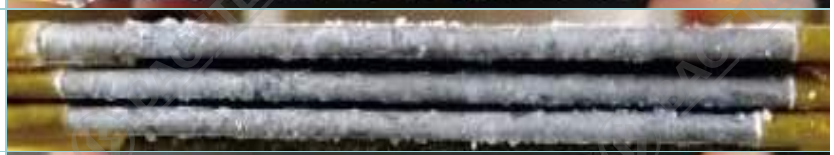
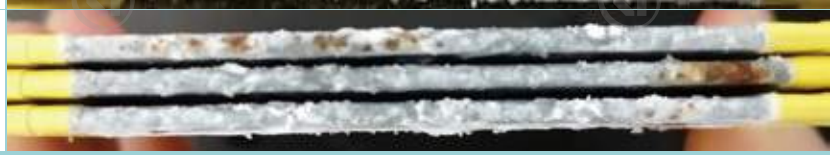
BaoXM® 镀层 0T 折弯后的耐蚀性比 GI 提升 7 倍以上

Corrosion resistance of BaoXM® is more than 7 times better than that of GI on 0T bends



试验条件：中性盐雾试验 ASTM B117，封边

Test conditions: neutral salt spray test (ASTM B117), sealed cut edges

镀层种类 Coating types	镀层附着量 Coating weight (g/m^2)	SST(h)	板厚0.5mm, 0T, 180°弯曲 Thickness is 0.5mm, 180°, 0T bends
GI	90/90	600	
		1700	
GL	100/100	1700	
		4500	
BaoXM®	90/90	1700	
		4500	

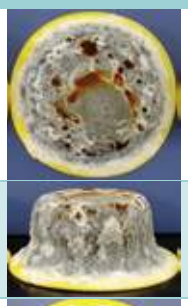
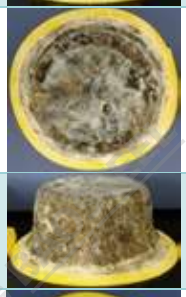
试验条件：中性盐雾 ASTM B117，封边

Test conditions: neutral salt spray test (ASTM B117), sealed cut edges

• BaoXM® 冲杯耐蚀性
Corrosion resistance on drawing processed parts

拉伸加工部位耐蚀性优异，是 GI 的 10 倍以上，略优于 GL

Corrosion resistance of BaoXM® is excellent on drawing processed parts, which is more than 10 times better than that of GI and slightly better than that of GL.

镀层种类 Coating types	镀层附着量 Coating weight (g/m^2)	350h	1000h	2800h	3900h
GI	90/90				
GL	100/100				
BaoXM®	90/90				

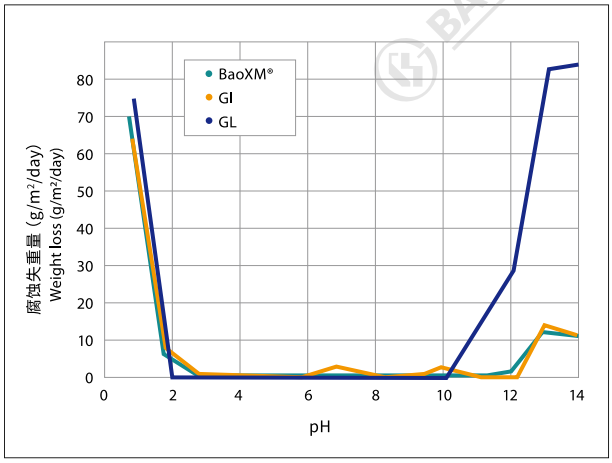
试验条件：板厚 0.5mm，镀层单面附着量 90-100g/m^2，
无后处理，中性盐雾 ASTM B117，封边

Test conditions: thickness is 0.5 mm, coating weight on one side is 90-100 g/m^2, untreated, neutral salt spray test (ASTM B117), sealed cut edges

BaoXM® 耐酸、耐碱性
Acid and alkali resistance

BaoXM® 在酸性、碱性水溶液中的腐蚀特性与 GI 类似

Corrosion behavior of BaoXM® is similar to that of GI in acidic or alkaline aqueous solutions



试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m^2，无后处理

Test conditions: thickness is 0.5 mm, coating weight on one side is 70-75 g/m², untreated

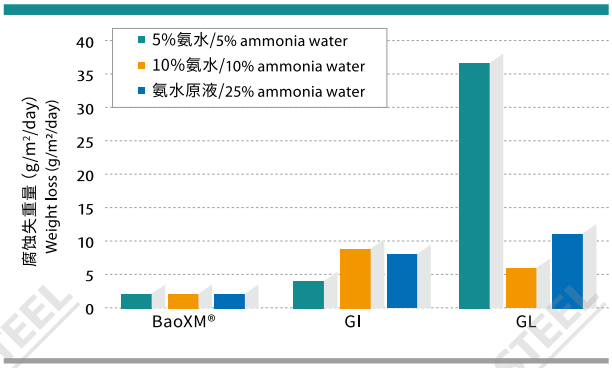
试验方法： 以含 1g/L 的 Na_2SO_4 水溶液作为试验基本溶液。采用 H_2SO_4、NaOH 调节 pH 值；在 30 °C不同 pH 值的溶液中放入试样浸渍 24h 后，测样板腐蚀失重；所有试验样品对边部采取封边保护。

Test method: 1g/L Na_2SO_4 solution was used as the base solution, the pH value was adjusted by adding H_2SO_4 on the acidic side and NaOH on the alkali side. To measure the weight loss, the test pieces were immersed in solutions with certain pH values for 24h at 30°C , the weight loss was recorded. All the cut edges of the test pieces were sealed.

BaoXM® 耐氨性
Ammonia resistance

BaoXM® 在氨水环境中腐蚀失重最低，耐氨性较 GI、GL 具有明显优势

BaoXM® shows the lowest weight loss in ammonia environment, indicating its ammonia resistance has obvious advantage over GI and GL.



试验方法： 在 20°C，5%、10%、氨水原液中浸渍 24h，样板腐蚀失重；所有试验样品对边部采取封边保护。

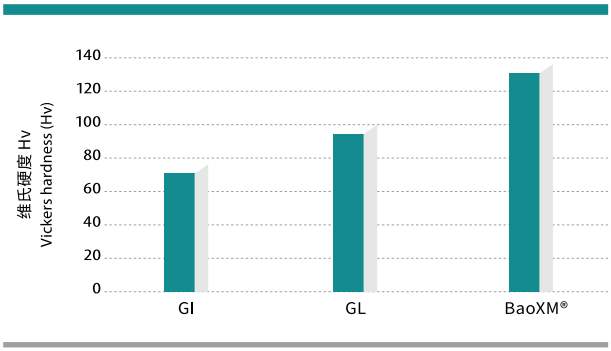
Test method: After immersed in ammonia water (5%, 10%, 25%) for 24h at 20°C , the weight loss of the test pieces was recorded. All the cut edges of the test pieces were sealed.

1.0 BaoXM® 加工性 /Processability

• BaoXM® 的硬度
Hardness of BaoXM®

BaoXM® 较 GI、GL 镀层硬度更高，具有优异的耐刮擦性

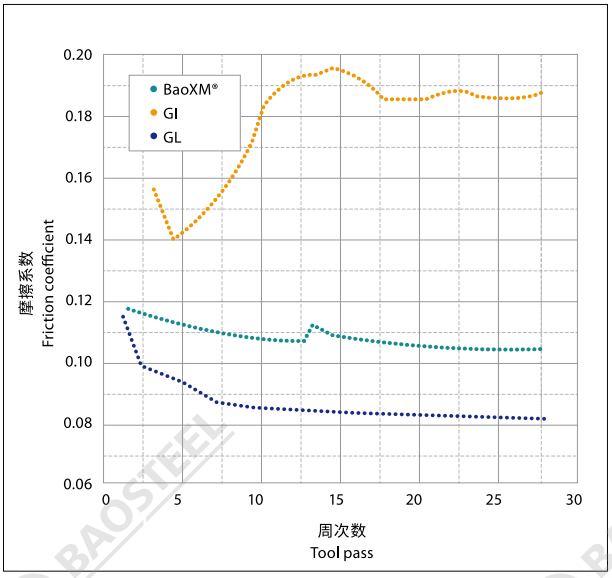
BaoXM® is harder than GI and GL, giving it excellent scratch resistance.



• BaoXM® 的滑动摩擦特性
The sliding friction characteristics of BaoXM®

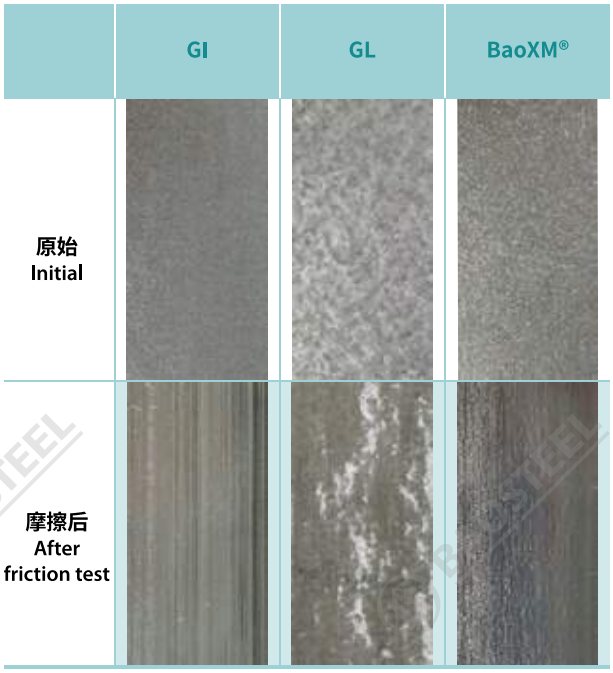
BaoXM® 摩擦系数低且稳定，可以在冲压中减少镀层磨损与拉毛

BaoXM® has low and stable friction coefficient, which can reduce coating abrasion and galling during stamping.



不同镀层裸板摩擦系数随往复摩擦次数的变化规律

Changes of friction coefficient with the tool pass for various type of untreated coatings



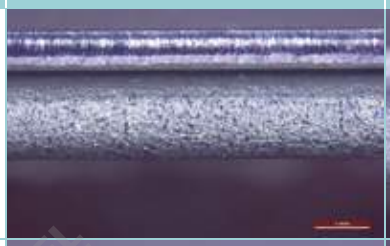
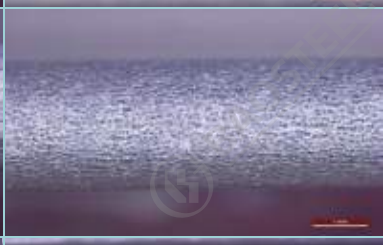
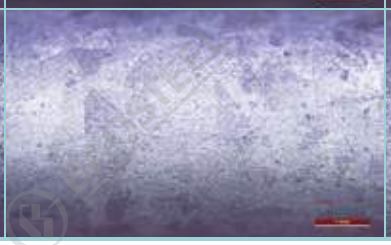
不同镀层裸板摩擦前后的表面形貌

Surface appearances of the untreated coatings before/after friction test

• BaoXM® 镀层变形能力
Deformability of BaoXM®

在相同 T 弯变形条件下，BaoXM® 镀层抗裂纹能力介于 GI、GL 之间

Under the same level of T-bending deformation, the anti-crack ability of BaoXM® is between GI and GL.

	GI	GL	BaoXM®
0T			
1T			
2T			
3T			
4T			

试验条件：板厚 1.0mm，镀层单面附着量 70-75g/m^2，无后处理

Test conditions: thickness is 1.0 mm, coating weight on one side is 70-75 g/m², untreated

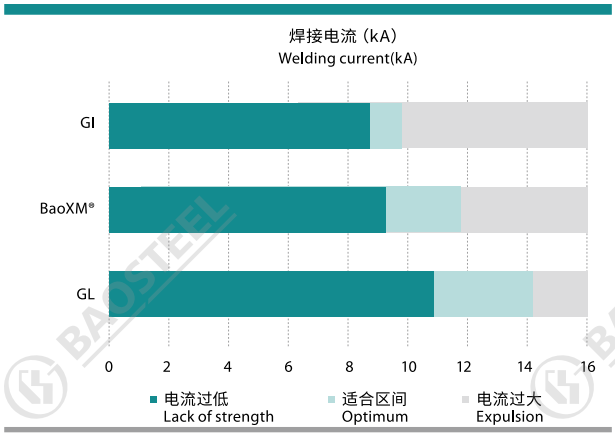
11

BaoXM® 焊接性 & 焊接部位耐蚀性
Weldability and the corrosion resistance of the welded sections

• 点焊性能
Spot welding

在同等镀层附着量的前提下，BaoXM® 所需的焊接电流介于 GI、GL 之间

With the same coating weight, the weld lobe suitable for BaoXM® is between GI and GL



	焊点截面形貌 Cross-sectional morphology of the welding spots
GI	
GL	
BaoXM®	

试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m^2，无后处理，电极压力 2600N，焊接时间 230ms，保载时间 40ms，焊机类型 MFDC 型，电极端面直径 6mm。

Test conditions: thickness is 0.5 mm, coating weight on one side is 70-75 g/m², untreated.
MFDC welder is used with the electrode pressure of 2600N, the welding time of 230 ms, the loading time of 40 ms, the electrode tip diameter of 6 mm.

• 焊点耐蚀性
Corrosion resistance of the welding spots

点焊使镀层消失（熔融、蒸发）的部位，BaoXM® 仍能提供较强的保护

BaoXM® can provide strong protection even at the position where the coating damages (melted, evaporated) caused by spot welding

	100h	600h	1000h	1300h
GI				
GL				
BaoXM®				

试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m^2，无后处理；中性盐雾 ASTM B117。

Test conditions: thickness is 0.5 mm, coating weight on one side is 70-75 g/m², untreated, neutral salt spray test (ASTM B117).

• TIG 焊
Tungsten inert gaswelding performance

BaoXM® 进行 TIG 焊，在合适的工艺下，可得到焊接无飞溅、外观无气孔的焊缝

Under appropriate welding parameters, welding seams without spatter and appearance without porosity can be obtained during TIG welding

焊点截面形貌 Cross section morphology of solder joints	焊缝拉伸试验断裂部位 Fracture site of weld tensile test
	

试验条件：板厚 1.5mm，镀层单面附着量 90g/m^2，后处理 SW，对接焊接，焊接电流 55-65A，焊接电压 9.3-11.5V，焊丝 ER50-6，Φ0.8mm。

Test conditions: thickness is 1.5mm, coating weight on one side is 90 g/m^2, SW, butt welding, the welding current of 55-65A, the welding voltage of 9.3-11.5V,the welding wire diameter of 0.8mm(ER50-6)

• TIG 焊部位耐蚀性
Corrosion resistance of welded sections

TIG 焊使镀层消失（熔融、蒸发）的焊接部位，BaoXM® 仍能提供较强的保护

BaoXM® can provide strong protection even at the sections where the coating damages (melted, evaporated) caused by TIG welding

焊接部位 welding parts	试验前 before experiment	800h	1800h	2800h
未修补 Un-repair				

焊接部位
welded sections

试验条件：板厚 1.5mm，镀层单面附着量 90g/m^2，后处理 SW；中性盐雾 ASTM B117。

Test condition: thickness is 1.5 mm, coating weight on one side is 90 g/m^2, SW, neutral salt spray test (ASTM B117).

• 激光焊性能
Laser welding performance

BaoXM® 在进行激光焊接时，在合适的工艺下，可得到焊接无飞溅、外观无气孔的焊缝

Under appropriate welding parameters,welding seams without spatter and apperance without porosity can be obtained during laser welding

焊点截面形貌 Cross section morphology of solder joints	焊缝拉伸试验断裂部位 Fracture site of weld tensile test
	

试验条件：板厚 1.5mm，镀层单面附着量 90g/m^2，后处理 SW，对接焊接，激光功率 4.5kW，焊接速度 0.065m/s

Test conditions: thickness is 1.5mm, coating weight on one side is 90 g/m^2, SW, butt welding, the laser power of 4.5kW, the welding speed of 0.065m/s

• 激光焊部位耐蚀性
Corrosion resistance of laser welded sections

激光焊使镀层消失（熔融、蒸发）的焊接部位，BaoXM® 仍能提供较强的保护

BaoXM® can provide strong protection even at the sections where the coating damages (melted, evaporated) caused by laser welding

焊接部位 welding parts	试验前 before experiment	800h	1800h	2800h
未修补 Un-repair				

焊接部位
welded sections

试验条件：板厚 1.5mm，镀层单面附着量 90g/m^2，后处理 SW；中性盐雾 ASTM B117。

Test condition: thickness is 1.5 mm, coating weight on one side is 90 g/m^2, SW, neutral salt spray test (ASTM B117).

12

BaoXM® 涂装后耐蚀性 /Corrosion resistance of the organic coated BaoXM®

- **BaoXM® 涂装后的抗划线、切口扩蚀能力**
  Anti-scribing ability and corrosion resistance on cut edges of the organic coated BaoXM®

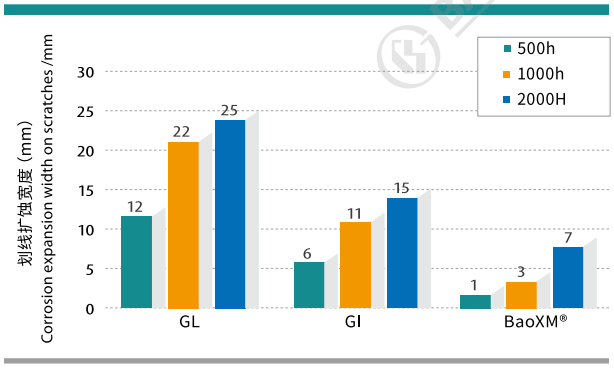
涂装后的 BaoXM® 比同等镀层重量的涂装后的 GI、GL 红锈时间延长 3 倍以上

For the same coating weight and the same kinds of polyester paints, the red rust time of the BaoXM® is more than 3 times longer than that of GI and GL.

镀层种类 Coating types	镀层附着量 Coating weight (g/m^2)	1000h	2000h	4000h	6000h	8000h
GI	70/50					
GL	75/75					
BaoXM®	70/70					
BaoXM®	50/50					

试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m^2，聚酯白灰，中性盐雾 ASTM B117，不封边。
Test conditions: thickness is 0.5 mm, coating weight on one side is 70-75 g/m^2, white-grey polyester painted, neutral salt spray test (ASTM B117), exposed cut edges.

BaoXM® 镀层涂装后具有优异的抗划线、切口扩蚀能力；
BaoXM® organic coated steel has excellent anti-scribing ability and corrosion resistance on cut edges;

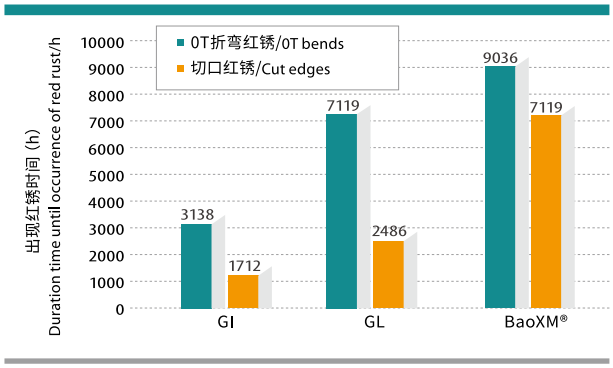


试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m²，聚酯白灰，中性盐雾 ASTM B117，不封边
Test conditions: thickness is 0.5 mm, coating weight on one side is 70-75 g/m², white-grey polyester painted, neutral salt spray test (ASTM B117), exposed cut edges.

• 涂装后的 T 弯、切口耐蚀能力
Corrosion resistance of the organic coated steel on T-bends and cut edges

BaoXM® 涂装后在 T 弯、切口部位，比同等镀层重量的 GI、GL 涂装后具有更好的耐蚀性

For the same coating weight, BaoXM® organic coated steel shows much better corrosion resistance than GI and GL on T bends and cut edges.



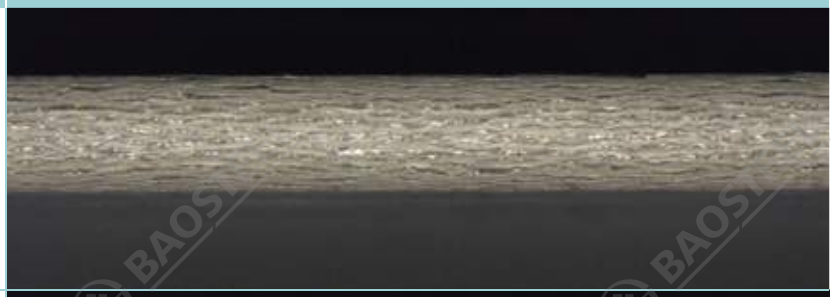
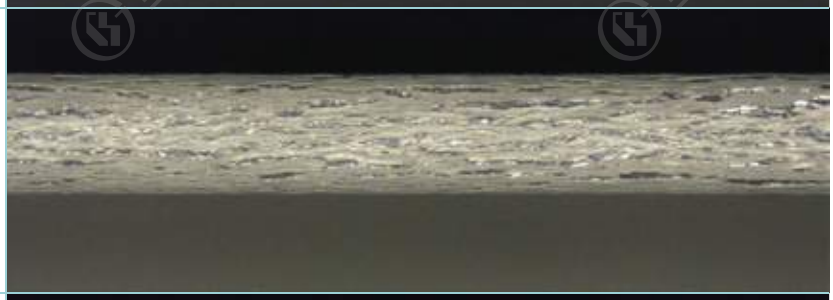
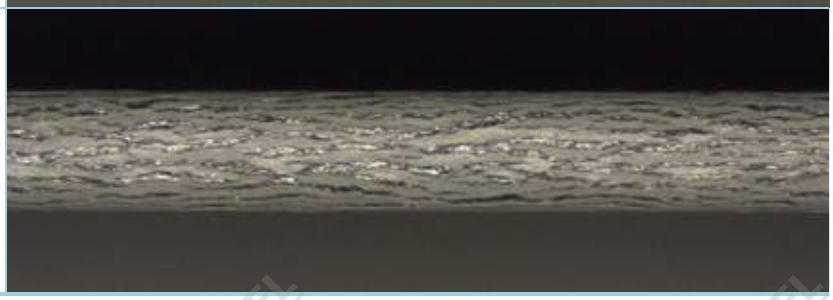
试验条件：板厚 0.5mm，镀层单面附着量 70-75g/m²，聚酯白灰，中性盐雾 ASTM B117，T 弯样板，封边保护；切口样板，不封边。
Test conditions: thickness is 0.5 mm, coating weight on one side is 70-75 g/m², white-grey polyester painted, neutral salt spray test (ASTM B117). For the T-bends test pieces, all the cut edges are sealed; for the cut edge test pieces, edges are exposed.

13

BaoXM® 涂装后加工性
Processability of the organic coated BaoXM®

涂装后，BaoXM® 的 0T 折弯裂纹与 GL 程度相当，GI 有轻微裂纹

In the 0T-bending test of organic coated steel, only GI shows slight cracks, BaoXM® and GL show the same level of cracking on 0T bends.

镀层种类 Coating types	厚度 Thickness (mm)	镀层附着量 Coating weight (g/m^2)	0T折弯后涂层形貌 Crack appearances on 0T bends
GI	0.5	70/50	
GL	0.5	75/75	
BaoXM®	0.5	70/70	

1.1

BaoXM® 后处理
Post treatment coating

- **产品名称：中铝锌铝镁无铬高耐蚀产品**
  - 后处理代码：N5
  - 产品介绍：本产品是宝山钢铁股份有限公司生产的一款不含铬的中铝锌铝镁耐指纹钢板，具有优异耐蚀性、涂装性等综合抗性。主要适用于家电等行业中对耐蚀要求较高的零件。

- **Product Name: Cr-free organic high corrosion resistant Product**
  - Post processing code: N5
  - Product Introduction: This product is a chromium free medium aluminum zinc aluminum magnesium fingerprint resistant steel plate produced. It has excellent corrosion resistance, coating resistance and other comprehensive resistance. Mainly suitable for parts with high corrosion resistance requirements in industries such as home appliances.

- **产品名称：中铝锌铝镁无机自润滑产品**
  - 后处理代码：SW
  - 产品介绍：本产品是宝山钢铁股份有限公司生产的一款不含铬的中铝锌铝镁无机后处理钢板，具有优异加工性、导电性等综合抗性。主要适用于对成形零件外观质量要求较高的行业。

- **Product Name: Cr-free inorganic self-lubricating Product**
  - Post processing code: SW
  - Product Introduction: This product is a chromium free medium aluminum zinc aluminum magnesium inorganic post-treatment steel plate produced. It has excellent processability, conductivity, and other comprehensive resistance. Mainly suitable for industries with high requirements for the appearance quality of formed parts.

- **产品名称：中铝锌铝镁自润滑产品**
  - 后处理代码：SL1
  - 产品介绍：本产品是宝山钢铁股份有限公司生产的一款无铬自润滑后处理产品，该表面处理可减少产品在运输和储存期间表面产生白锈，同时自润滑膜可较好改善钢板的成形性能。主要适用对成形零件外观质量有一定要求的行业。

- **Product Name: Self lubricating Product**
  - Post processing code: SL1
  - Product Introduction: This product is a chromium free self-lubricating post-treatment product. This surface treatment can reduce the occurrence of white rust on the surface of the product during transportation and storage. At the same time, the self-lubricating film can improve the formability of the steel plate. Mainly suitable for industries that have certain requirements for the appearance quality of formed parts.

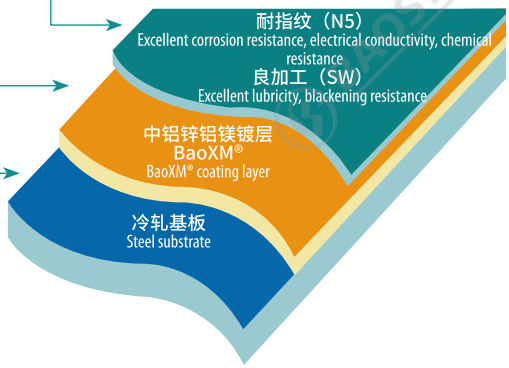
- **产品名称：中铝锌铝镁钝化产品**
  - 后处理代码：C5
  - 产品介绍：本产品是宝山钢铁股份有限公司生产的一款无铬钝化产品，该表面处理可减少产品在运输和储存期间表面产生白锈；无铬钝化处理时，对钝化膜中有害人体健康的六价铬物质进行限制。主要适用于建筑等行业。

- **Product Name: Passivation Product**
  - Post processing code: C5
  - Product Introduction: This product is a chromium free passivation product. The surface treatment can reduce the occurrence of white rust on the surface of the product during transportation and storage; When using chromium free passivation treatment, limit the harmful hexavalent chromium substances in the passivation film. Mainly suitable for industries such as construction.

- N5: 优异的**耐蚀**性、导电性、耐化学介质
- SW: 优异的**润滑**性、**抗加工发黑**性
- N5: Excellent corrosion resistance, electrical conductivity, chemical resistance
- SW: Excellent lubricity, blackening resistance

- 具有良好的**外观装饰**性
- Good decorative apperance

- 多种镀层厚度满足不同的服役环境
- 多种牌号基板满足成形及结构要求
- A variety of coating weight meet different service environments
- Various grades of steel substrates meet the requirements of forming and structure



BaoXM® 两种无铬后处理的性能
Performances of the two Cr-free film products applied on BaoXM®

No.	项　目 Classification	试验方法与指标 Test method and indicator	BaoXM® 无铬高耐蚀 N5	BaoXM®无机自润滑 SW
1	耐腐蚀性 Corrosion resistance	平板耐盐雾性能ASTM B117 Flat surface (ASTM B117)	72h, ⩾7级 72h, ≥Level 7	72h, ⩾7级 72h, ≥Level 7
		脱脂后耐盐雾性能ASTM B117 Degreased surface (ASTM B117)	72h, ⩾7级 72h, ≥Level 7	120h, ⩾7级 120h, ≥Level 7
		耐高温高湿性能：49°C、98%RH 120小时试验 Heat and humidity resistance (49°C, 98% RH, 120 h)	ΔE⩽7	ΔE⩽4
2	耐高温性 Heat resistance	马弗炉内200°C烘烤20min后测量色差 Color difference test (Baking in muffle furnace for 20 minutes at 200 °C)	ΔE⩽3	ΔE⩽3
3	耐化学介质 Chemical resistance	耐酒精：80%酒精，用细纱布在钢板表面来回擦30次 Alcohol resistance (Wipe the steel surface 30 times with 80% alcohol gauze)	外观无明显变化、不脱膜，ΔE⩽3 There is no obvious change in appearance; No film removal; ΔE≤3	外观无明显变化、不脱膜，ΔE⩽3 There is no obvious change in appearance; No film removal; ΔE≤3
		耐丁酮（MEK）：用细纱布在钢板表面来回擦20次 Butanone resistance (Wipe the steel surface 20 times with butanone fine gauze)		
		凡士林涂抹后，脱脂棉擦拭 Wipe the steel surface with absorbent cotton after applying vaseline		
		Parker FC-364S 脱脂剂 50°C 喷淋3min Spray with degreasing agent (Parker FC-364S) at 50 °C for 3 minutes		
4	耐指纹性 Fingerprint resistance	凡士林涂抹后，测试涂抹前后的色差变化 Test the color difference before and after applying vaseline	ΔE⩽3	ΔE⩽3
5	加工性 Processability	动摩擦系数：直径10mm不锈钢球，荷重1.0N，滑动速度150mm/min Dynamic friction coefficient: stainless steel ball with 10 mm diameter, 1.0 N Load, 150 mm/min sliding speed	⩽0.2	⩽0.2
6	涂装性 Paintability	粉末喷涂（60μm-80μm）Cure: 200 °C*10 min Powder spraying (60-80μm) Cure: 200°C*10min	0级 Level 0	1级 Level 1
7	导电性 Electrical conductivity	LORESTA GP表面电阻仪，ESP四探针 Surface resistance meter (LORESTA GP); Four point probe(ESP)	⩽0.1mΩ	⩽0.1mΩ

15

BaoXM® 可供规格
Available specifications

- **BaoXM® 供货规格**
  Available specifications

项目 Classification	公称尺寸 Nominal size
公称厚度 Thickness range	0.4-2.5mm
公称宽度 Width range	800-1600mm
钢带内径 Inside coil diameter	Φ508mm、Φ610mm

- **BaoXM® 镀层重量**
  Available coating weight

镀层种类 Coating types	推荐的公称镀层重量g/m² Available coating weight(g/m²)
BaoXM®	30/30，50/50，70/70，100/100，125/125， 140/140，175/175，225/225，300/300

50g/m²BaoXM® 镀层的厚度约为 8.3μm。
The thickness of 50g/m² BaoXM® coating on one side is about 8.3μm.

• BaoXM® 供货牌号
Available steel grades

牌号 Steel grades	类别/用途 Category/Purpose
DC51D+XM	低碳钢 Mild steel
DC52D+XM	
DC53D+XM	IF钢 IF steel
DC54D+XM	
DC56D+XM	
DC57D+XM	
S220GD+XM	低合金结构钢 Carbon structural steel or low alloy steel
S250GD+XM	
S280GD+XM	
S320GD+XM	
S350GD+XM	
S390GD+XM	
S420GD+XM	
S450GD+XM	
S550GD+XM	
HC180YD+XM	高强IF钢 Hihg-stremth IF steel
HC260YD+XM	
HC300LAD+XM	低合金高强钢 Low alloy high-strength steel
HC340LAD+XM	
HC380LAD+XM	
HC420LAD+XM	
HC460LAD+XM	
HC340/590DPD+XM	双相钢 Dual phase steel
HC450/500CPD+XM	复相钢 Complex phase steel
HC500/550CPD+XM	
HC550/600CPD+XM	
HD680/780CPD+XM	
BWDJ1+XM	微电机专用 Micro motor specific
BWDJ2+XM	
BWDJ3+XM	
BWDJ4+XM	

BaoXM® 力学性能
BaoXM® thickness tolerance

牌号 Steel grades	拉伸试验 [a,b,c] / Tensile test [a,b,c]			r_{90}不小于 r_{90} min.	n_{90}不小于 n_{90} min.
	屈服强度MPa Yield strength (MPa)	抗拉强度MPa Tensile Strength (MPa)	断后伸长率A_{80mm}%不小于 Elongation (A80mm%) min.		
DC51D+XM	140～300	270～500	22	—	—
DC52D+XM	140～260	270～420	26	—	—
DC53D+XM	140～220	270～380	30	—	—
DC54D+XM	120～200	260～350	34	1.4[d,e]	0.18[e]
DC56D+XM	120～180	260～350	37	1.7[d,e]	0.20[e]
DC57D+XM	120～170	260～350	39	1.9[d,e]	0.21[e]

[a] 无明显屈服时采用 $R_{P0.2}$，否则采用 R_{eL}。

[b] 试样为 GB/T 228.1 规定的 P6 试样，试样方向为横向。

[c] 当产品公称厚度大于 0.50mm，但小于等于 0.70mm 时，断后伸长率允许下降 2%；当产品公称厚度不大于 0.50mm 时，断后伸长率允许下降 4%。

[d] 当产品公称厚度大于 1.5mm，r_{90} 允许下降 0.2；当产品公称厚度大于 2.5mm，r_{90} 的规定不再适用。

[e] 当产品公称厚度小于等于 0.70mm 时，r_{90} 允许下降 0.2；n_{90} 允许下降 0.01。

[a] $R_{P0.2}$ should be used when there is no obvious yield point, otherwise R_{eL} is used.

[b] The test pieces are P6 samples that are specified in GB/T 228.1, and the direction of the sample is transverse.

[c] When the nominal thickness of the product is greater than 0.50 mm but less than or equal to 0.70 mm, the elongation is allowed to decrease by 2%; when the nominal thickness of the product is less than or equal to 0.50 mm, the elongation is allowed to decrease by 4%.

[d] When the nominal thickness of the product is greater than 1.5mm, r_{90} is allowed to decrease 0.2; when the nominal thickness of the product is greater than 2.5 mm, the provisions of r_{90} are no longer applicable.

[e] When the nominal thickness of the product is less than or equal to 0.70 mm, r_{90} is allowed to decrease 0.2 and n_{90} is allowed to decrease 0.01.

牌号 Steel grades	拉伸试验 [a,b,c,d] / Tensile test [a,b,c,d]		
	屈服强度MPa不小于 Yield strength (MPa) min.	抗拉强度MPa不小于 Tensile Strength (MPa) min.	断后伸长率A_{80mm}%不小于 Elongation (A80mm%) min.
S220GD+XM	220	300	20
S250GD+XM	250	330	19
S280GD+XM	280	360	18
S320GD+XM	320	390	17
S350GD+XM	350	420	16
S450GD+XM	450	510	14
S550GD+XM[e]	550	550	—

[a] 无明显屈服时采用 $R_{P0.2}$，否则采用 R_{eH}。

[b] 除 S550GD+XM 外，其他牌号的抗拉强度可要求 140MPa 的范围值。

[c] 试样为 GB/T 228.1 规定的 P6 试样，试样方向为纵向。

[d] 当产品公称厚度大于 0.50mm，但不大于 0.70mm 时，断后伸长率允许下降 2%；当产品公称厚度不大于 0.50mm 时，断后伸长率允许下降 4%。

[e] 对于牌号为 S550GD+XM 的产品，当产品的厚度不大于 0.70mm 时，由于厚度减薄效应，导致伸长率过低，无法测得到屈服强度。此时，屈服强度用抗拉强度代替。

[a] $R_{P0.2}$ should be used When there is no obvious yield point, otherwise R_{eH} is used.

[b] Except S550GD+XM, the tensile strength of other grades can be required within 140MPa.

[c] The test pieces are P6 samples that are specified in GB/T 228.1, and the direction of the sample is longitudinal.

[d] When the nominal thickness of the product is greater than 0.50 mm but less than or equal to 0.70 mm, the elongation is allowed to decrease by 2%; when the nominal thickness of the product is less than or equal to 0.50 mm, the elongation is allowed to decrease by 4%.

[e] For S550GD+XM, the yield strength is replaced by the tensile strength, because when the product thickness is less than 0.70mm, due to the thickness reduction effect, the elongation is very low and the yield strength cannot be measured.

牌号 Steel grades	拉伸试验 [a,b,c] / Tensile test [a,b,c]		
	屈服强度MPa Yield strength (MPa)	抗拉强度MPa Tensile Strength (MPa)	断后伸长率A_{80mm}%不小于 Elongation (A80mm%) min.
HC180YD+XM	180-240	300-360	32
HC260YD+XM	260-320	380-440	28
HC300LAD+XM	300-380	380-480	21
HC340LAD+XM	340-420	410-510	19
HC380LAD+XM	380-480	440-560	17
HC420LAD+XM	420-520	470-590	15
HC460LAD+XM	460-560	500-640	13

[a] 当屈服现象不明显时采用 $R_{P0.2}$，否则采用 R_{eL}。
[b] 除试样为 GB/T 228.1 中的 P6 试样，试样方向为横向。
[c] 当产品公称厚度大于 0.50mm，但不大于 0.70mm 时，断后伸长率允许下降 2%；当产品公称厚度不大于 0.50mm 时，断后伸长率允许下降 4%。

[a] $R_{p0.2}$ should be used When there is no obvious yield point, otherwise R_{eL} is used.
[b] The test pieces are P6 samples that are specified in GB/T 228.1,and the direction of the sample is lateral.
[c] When the nominal thickness of the product is greater than 0.50 mm but less than or equal to 0.70 mm, the elongation is allowed to decrease by 2%; when the nominal thickness of the product is less than or equal to 0.50 mm, the elongation is allowed to decrease by 4%.

牌号 Steel grades	拉伸试验 [a,b,c] / Tensile test [a,b,c]		
	屈服强度MPa Yield strength (MPa)	抗拉强度MPa不小于 Tensile Strength (MPa) min.	断后伸长率A_{80mm}%不小于 Elongation (A80mm%) min.
HC340/590DPD+XM	340-440	590	20

[a] 无明显屈服时采用 $R_{P0.2}$，否则采用 R_{eL}。
[b] 试样为 GB/T 228.1 规定的 P17 试样，试样方向为纵向。如用户有特殊要求可协商确定。
[c] 当产品公称厚度大于 0.50mm，但小于等于 0.70mm 时，断后伸长率允许下降 2%。

[a] $R_{p0.2}$ should be used When there is no obvious yield point, otherwise R_{eL} is used.
[b] The test pieces are P6 samples that are specified in GB/T 228.1, and the direction of the sample is longitudinal. If the user has special requirements, they can be negotiated and determined.
[c] When the nominal thickness of the product is greater than 0.50 mm but less than or equal to 0.70 mm, the elongation is allowed to decrease by 2%.

牌号 Steel grades	拉伸试验 [a,b,c] / Tensile test [a,b,c]		
	屈服强度MPa不小于 Yield strength (MPa) min.	抗拉强度MPa不小于 Tensile Strength (MPa) min.	断后伸长率A_{80mm}%不小于 Elongation (A80mm%) min.
HC450/500CPD+XM	450	500	15
HC500/550CPD+XM	500	550	13
HC550/600CPD+XM	550	600	11
HD680/780CPD+XM	680	780	8

[a] 无明显屈服时采用 $R_{P0.2}$，否则采用 R_{eL}。
[b] 试样为 GB/T 228.1 规定的 P17 试样，试样方向为纵向。如用户有特殊要求可协商确定。
[c] 当产品公称厚度大于 0.50mm，但小于等于 0.70mm 时，断后伸长率允许下降 2%。

[a] $R_{p0.2}$ should be used When there is no obvious yield point, otherwise R_{eL} is used.
[b] The test pieces are P6 samples that are specified in GB/T 228.1, and the direction of the sample is longitudinal. If the user has special requirements, they can be negotiated and determined.
[c] When the nominal thickness of the product is greater than 0.50 mm but less than or equal to 0.70 mm, the elongation is allowed to decrease by 2%.

牌号 Steel grades	拉伸试验 [a] / Tensile test [a]		
	屈服强度MPa Yield strength (MPa)	抗拉强度MPa不小于 Tensile Strength (MPa) min.	断后伸长率A_{50mm}%不小于 Elongation (A80mm%) min.
BWDJ1+XM	140-270	270	34
BWDJ2+XM	140-230	270	36
BWDJ3+XM	120-190	270	39
BWDJ4+XM	110-170	270	41

[a] 试样为 JIS J 2241 规定的 NO.5 试样，试样方向为纵向。如用户有特殊要求可协商确定。

[a] The test pieces are NO.5 samples that are specified in JIS J 2241, and the direction of the sample is longitudinal. If the user has special requirements, they can be negotiated and determined.

BaoXM® 厚度允许偏差
BaoXM® thickness tolerance

- A.1.1 对于规定的最小屈服强度小于 260MPa 的钢板及钢带，其厚度允许偏差应符合表 A.1 的规定。

- A.1.1 For steel strips with the specified minimum yield strength of 260 MPa, the allowable thickness tolerance should comply with the provisions of Table A.1.

表A.1/Table A.1	下列公称宽度时的厚度允许偏差[a]（单位:mm）/Allowable thickness tolerance of the following width（/mm）					
公称厚度 Nominal thickness	普通精度 PT.A/General precision PT.A			高级精度 PT.B/High precision PT.B		
	≤1200	>1200～1500	>1500	≤1200	>1200～1500	>1500
>0.40～0.60	±0.03	±0.04	±0.04	±0.025	±0.030	±0.035
>0.60～0.80	±0.04	±0.04	±0.05	±0.025	±0.030	±0.035
>0.80～1.00	±0.05	±0.06	±0.06	±0.030	±0.035	±0.040
>1.00～1.20	±0.06	±0.06	±0.07	±0.035	±0.040	±0.050
>1.20～1.60	±0.08	±0.08	±0.09	±0.040	±0.050	±0.060
>1.60～2.00	±0.09	±0.10	±0.11	±0.050	±0.060	±0.070
>2.00～2.50	±0.11	±0.12	±0.13	±0.070	±0.080	±0.090

[a] 钢带焊缝附近 10m 范围的厚度允许偏差可超过规定值的 50%，对双面镀层重量之和不小于 450g/m² 的产品，其厚度允许偏差应增加 ±0.01mm。

[a] The allowable thickness tolerance within 10 m around the steel strip weld line can exceed 50% of the specified value. For products with total both sides coating weight greater than 450g/m², the allowable thickness tolerance shall be increased ± 0.01mm.

- A.1.2 对于规定的最小屈服强度不小于 260MPa，且小于 360MPa 的钢板及钢带，其厚度允许偏差应符合表 A.2 的规定。牌号为 DC51D+XM 的钢板及钢带应符合表 A.2 的规定。

- A. 1.2 For the steel strips with the specified yield strength between 260MPa and 360MPa, the allowable thickness tolerance should comply with the provisions of Table A.2. The steel strips with grades of DC51D + XM should comply with the provisions in Table A.2.

表A.2/Table A.2	下列公称宽度时的厚度允许偏差[a]（单位:mm）/Allowable thickness tolerance of the following width（/mm）					
公称厚度 Nominal thickness	普通精度 PT.A/General precision PT.A			高级精度 PT.B/High precision PT.B		
	≤1200	>1200～1500	>1500	≤1200	>1200～1500	>1500
>0.40～0.60	±0.04	±0.05	±0.05	±0.030	±0.035	±0.040
>0.60～0.80	±0.04	±0.05	±0.06	±0.030	±0.035	±0.045
>0.80～1.00	±0.05	±0.06	±0.07	±0.035	±0.040	±0.050
>1.00～1.20	±0.06	±0.07	±0.08	±0.040	±0.050	±0.060
>1.20～1.60	±0.08	±0.10	±0.11	±0.050	±0.060	±0.070
>1.60～2.00	±0.11	±0.12	±0.13	±0.060	±0.070	±0.090
>2.00～2.50	±0.13	±0.14	±0.15	±0.090	±0.100	±0.110

[a] 钢带焊缝附近 10m 范围的厚度允许偏差可超过规定值的 50%，对双面镀层重量之和不小于 450g/m² 的产品，其厚度允许偏差应增加 ±0.01mm。

[a] The allowable thickness tolerance within 10 m around the steel strip weld line can exceed 50% of the specified value. For products with total both sides coating weight greater than 450g/m², the allowable thickness tolerance shall be increased ± 0.01mm.

- A.1.3 对于规定的最小屈服强度不小于 360MPa 且小于等于 420MPa 的钢板及钢带，其厚度允许偏差应符合表 A.3 的规定。

- A. 1.3 For the steel strips with the specified yield strength between 360MPa and 420MPa, the allowable thickness tolerance shall comply with the provisions of Table A.3.

表A.3/Table A.3	下列公称宽度时的厚度允许偏差[a]（单位:mm）/Allowable thickness tolerance of the following width (/mm)					
公称厚度 Nominal thickness	普通精度 PT.A/General precision PT.A			高级精度 PT.B/High precision PT.B		
	≤1200	>1200～1500	>1500	≤1200	>1200～1500	>1500
>0.40～0.60	±0.05	±0.05	±0.06	±0.035	±0.040	±0.050
>0.60～0.80	±0.05	±0.06	±0.07	±0.040	±0.050	±0.055
>0.80～1.00	±0.06	±0.07	±0.08	±0.050	±0.055	±0.060
>1.00～1.20	±0.08	±0.09	±0.10	±0.055	±0.065	±0.070
>1.20～1.60	±0.10	±0.11	±0.12	±0.070	±0.075	±0.090
>1.60～2.00	±0.13	±0.14	±0.15	±0.080	±0.090	±0.100
>2.00～2.50	±0.15	±0.16	±0.17	±0.100	±0.110	±0.120

[a] 钢带焊缝附近 10m 范围的厚度允许偏差可超过规定值的 50%，对双面镀层重量之和不小于 450g/m² 的产品，其厚度允许偏差应增加 ±0.01mm。

[a] The allowable thickness tolerance within 10 m around the steel strip weld line can exceed 50% of the specified value. For products with total both sides coating weight greater than 450g/m², the allowable thickness tolerance shall be increased ± 0.01mm.

- A.1.4 对于规定的最小屈服强度大于 420MPa 且小于等于 900MPa 的钢板及钢带，其厚度允许偏差应符合 A.4 的规定。

- A. 1.4 For the steel strips with the specified yield strength between 420MPa and 900MPa, the allowable thickness tolerance shall comply with the provisions of Table A.4.

表A.4/Table A.4	下列公称宽度时的厚度允许偏差[a]（单位:mm）/Allowable thickness tolerance of the following width (/mm)					
公称厚度 Nominal thickness	普通精度 PT.A/General precision PT.A			高级精度 PT.B/High precision PT.B		
	≤1200	>1200～1500	>1500	≤1200	>1200～1500	>1500
>0.40～0.60	±0.06	±0.05	±0.07	±0.040	±0.050	±0.060
>0.60～0.80	±0.06	±0.07	±0.09	±0.050	±0.060	±0.070
>0.80～1.00	±0.08	±0.09	±0.10	±0.060	±0.070	±0.080
>1.00～1.20	±0.09	±0.10	±0.12	±0.070	±0.080	±0.100
>1.20～1.60	±0.12	±0.13	±0.15	±0.080	±0.100	±0.110
>1.60～2.00	±0.15	±0.16	±0.18	±0.100	±0.110	±0.130
>2.00～2.50	±0.18	±0.19	±0.21	±0.120	±0.130	±0.150

[a] 钢带焊缝附近 10m 范围的厚度允许偏差可超过规定值的 50%，对双面镀层重量之和不小于 450g/m² 的产品，其厚度允许偏差应增加 ±0.01mm。

[a] The allowable thickness tolerance within 10 m around the steel strip weld line can exceed 50% of the specified value. For products with total both sides coating weight greater than 450g/m², the allowable thickness tolerance shall be increased ± 0.01mm.

- A.1.5 比 PT.B 更严的厚度允许偏差要求，可按 PT.C 订货或在订货时协商，并在合同中注明。

- A. 1.5 IF the thickness tolerance requirement is more sticker than that of PT.B, which can be ordered according to PT. C or negotiated during ordering, and it should be indicated in the contract.

BaoXM® 注意事项 /Precautions in use

加工搬运

- 加工使用过程应戴手套，避免汗水、指纹印污染钢板表面，留下黑色斑迹；
- 润滑油选用不当，会对镀层表面及耐蚀性造成影响，使用前应予以确认，冲压后宜采用弱碱性脱脂剂进行脱脂处理；
- 适用于家电、建筑、光伏、汽车零配件等兼具高耐蚀、高成形要求的应用场合，在碱性环境中更具独特优势。

Processing and handling

- During the processing and handling, please wear gloves to avoid sweat and fingerprint from contaminating the steel surfaces and leaving black stains.
- Improper selection of lubricating oil will cause corrosion of the coating. Check in advance before using such agents. Weak alkaline degreasing agent should be used for degreasing treatment after stamping.
- It is suitable for applications with both high corrosion resistance and high forming requirements, such as home appliances, construction, photovoltaics and auto parts, etc. Especially, it has unique advantages in alkaline environment.

存储使用

- 为了避免镀层表面黑变，应尽量缩短堆放时长，避免高温湿热环境下存放；
- 使用中注意排水，水溶液中浸泡或流水冲刷环境中使用，难以形成稳定的腐蚀产物，无法体现出 BaoXM® 相对其他锌基镀层的优势；
- 避免 BaoXM® 镀层与铜、铅、石墨发生接触腐蚀；
- 连接 BaoXM® 紧固件和金属附件，需采用不锈钢（SUS304）、铝材、后浸镀锌材料，最好使用经过绝缘涂装处理的产品。

Storage and usage

- In order to avoid the surface blackening, the stacking time should be shorten as much as possible, and storage under high temperature and humid environment should be avoided.
- It is not suitable to use in running water or underwater, in that case, it is difficult to form stable corrosion products, which cannot display the advantages of BaoXM® over other zinc-based coatings.
- Please avoid contact with copper, lead and graphite to prevent contact corrosion.
- Fasteners and metal accessories used to connect BaoXM® shall be made of stainless steel (SUS304), aluminum and post dip galvanized steel, the products with insulation coating treatment are preferred.

BaO

- **焊接**
  - 蒸发的锌会附着在电极表面，应注意固定周次进行定期清洁；
  - 较之冷轧、热轧钢板，飞溅及烟雾发生量更大，注意安全防护。

- **Welding**
  - Evaporated zinc will adhere to the electrode surface, so it should be cleaned on a regular basis.
  - Spatter and smoke occur on BaoXM® are more seriously than those on cold-rolled and hot-rolled steel sheets, so please pay attention to safety protection.

XM®

宝山钢铁股份有限公司
http://www.baosteel.com

BAOSHAN IRON & STEEL CO., LTD.
http://www.baosteel.com

冷板销售部
CRS Sales Department
地址：上海宝山漠河路151号
邮编：201999
电话：021-26642620 26641214

宝钢服务热线
Baosteel Service Hot-line
400-820-8590

宝钢慧创平台
iBaosteel
http://www.ibaosteel.com

国内贸易公司 Domestic Sales Channels

上海宝钢钢材贸易有限公司
SHANGHAI BAOSTEEL STEEL PRODUCTS TRADING CO., LTD.
TEL: 021-26640916

广州宝钢南方贸易有限公司
GUANGZHOU BAOSTEEL SOUTHERN TRADING CO., LTD.
TEL: 020-32219999

北京宝钢北方贸易有限公司
BEIJING BAOSTEEL NORTHERN TRADING CO., LTD.
TEL: 010-56512000

成都宝钢西部贸易有限公司
CHENGDU BAOSTEEL WESTERN TRADING CO., LTD.
TEL: 028-85335388

武汉宝钢华中贸易有限公司
WUHAN BAOSTEEL CENTRAL CHINA TRADING CO., LTD.
TEL: 027-84298800

沈阳宝钢东北贸易有限公司
SHENYANG BAOSTEEL NORTH-EASTERN TRADING CO., LTD.
TEL: 024-31391180

东北亚及澳洲大区 Northeast Asia and Oceania Region

宝和通商株式会社
HOWA TRADING CO., LTD.
TEL: 0081-3-32379121
FAX: 0081-3-32379123

首尔事务所
SEOUL OFFICE
TEL: 0082-2-5080893
FAX: 0082-2-5080891

BGM株式会社
BGM CO., LTD
TEL: 0082-70-44225903
FAX: 0082-31-3514558

高雄事务所
KAOHSIUNG OFFICE
TEL: 00886-7-3356606
FAX: 00886-7-3356609

宝钢澳大利亚贸易有限公司
BAO AUSTRALIA PTY LTD.
TEL: 0061-8-94810535
FAX: 0061-8-94810536

东南亚及南亚大区 South East Asia and South Asia Region

宝钢新加坡贸易有限公司
BAOSTEEL SINGAPORE PTE LTD.
TEL: 0065-63336818
FAX: 0065-63336819

宝新越南代表处
VIETNAM OFFICE
TEL: 0084-8-9100126
FAX: 0084-8-9100124

宝新泰国代表处
THAILAND OFFICE
TEL: 0066-2-6368485
FAX: 0066-2-2348989

宝新河内代表处
HANOI OFFICE
TEL: 0084-24-62694200
FAX: 0084-24-62691392

宝钢印尼钢材加工有限公司（含印尼代表处）
PT. BAOSTEEL INDONESIA STEEL SERVICE CENTER (INDONESIA OFFICE)
TEL: 0062-21-3040 8575
FAX: 0062-21-3040 8583

宝钢印度有限公司（含SANAND加工中心）
BAOSTEEL INDIA COMPANY PRIVATE LTD. (SANAND STEEL SERVICE CENTER)
TEL: 0091-22-30071700
FAX: 0091-22-30071777

宝新马来西亚代表处
MALAYSIA OFFICE
TEL: 0060-32-2016986

欧非中东大区 Europe, Africa & Middle East Region

宝钢欧洲有限公司
BAOSTEEL EUROPE GMBH
TEL: 0049-89-32709090
FAX: 0049-89-3270909130

宝钢西班牙有限公司
BAOSTEEL ESPAÑA, S.L.
TEL: 0034-93-4119325
FAX: 0034-93-4119330

宝钢中东公司
BAOSTEEL MIDDLE EAST FZE
TEL: 00971-4-8840458
FAX: 00971-4-8840485

宝欧南非代表处
SOUTH AFRICA OFFICE
TEL: 0027-11-7839985
FAX: 0027-11-7842408

宝欧土耳其代表处
TURKEY OFFICE
TEL: 0090-212-3440067
FAX: 0090-212-3440068

宝欧俄罗斯代表处
RUSSIA OFFICE
TEL: 7-499-2585602
FAX: 7-499-2585602

宝钢意大利钢材集散中心有限公司
BAOSTEEL ITALIA DISTRIBUTION CENTER SPA
TEL: 0039-010-530881
FAX: 0039-010-5308895

美洲大区 America Region

宝钢美洲有限公司
BAOSTEEL AMERICA INC.
TEL: 001-201-3073355
FAX: 001-201-3073358

宝钢巴西有限公司
BAOSTEEL DO BRAZIL LTDA.
TEL: 0055-11-26678869

宝美加拿大代表处
CANADA OFFICE
TEL: 001-905-7315888/7315885
FAX: 001-905-7315883

宝美圣地亚哥代表处
SAN DIEGO OFFICE
TEL: 001-949-7526789
FAX: 001-949-7521234

宝美墨西哥代表处
MEXICO OFFICE
TEL: 0052-55-55319506
FAX: 0052-55-55319506-201

宝美巴拿马代表处
PANAMA OFFICE
TEL: 507-382-5225

2023.12 印刷于中国上海/Printed in Shanghai China

BXM2312C

扫描二维码可直接下载本手册内容
Scan QR code to download this file