



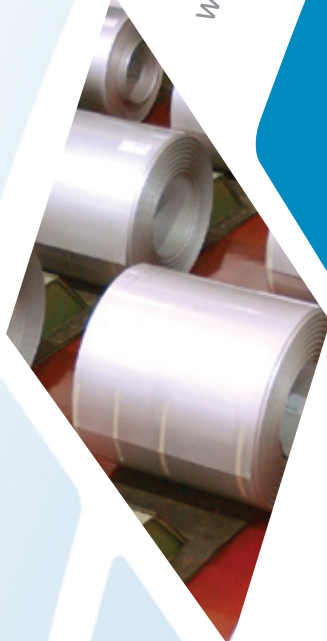
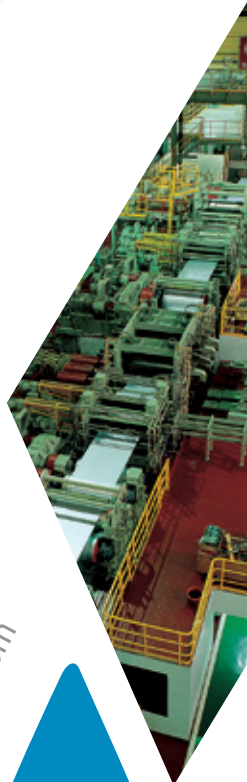
BAOSTEEL

创享改变生活

Al-Zn Alloy-Coated

热 镀 铝 锌

www.baosteel.com



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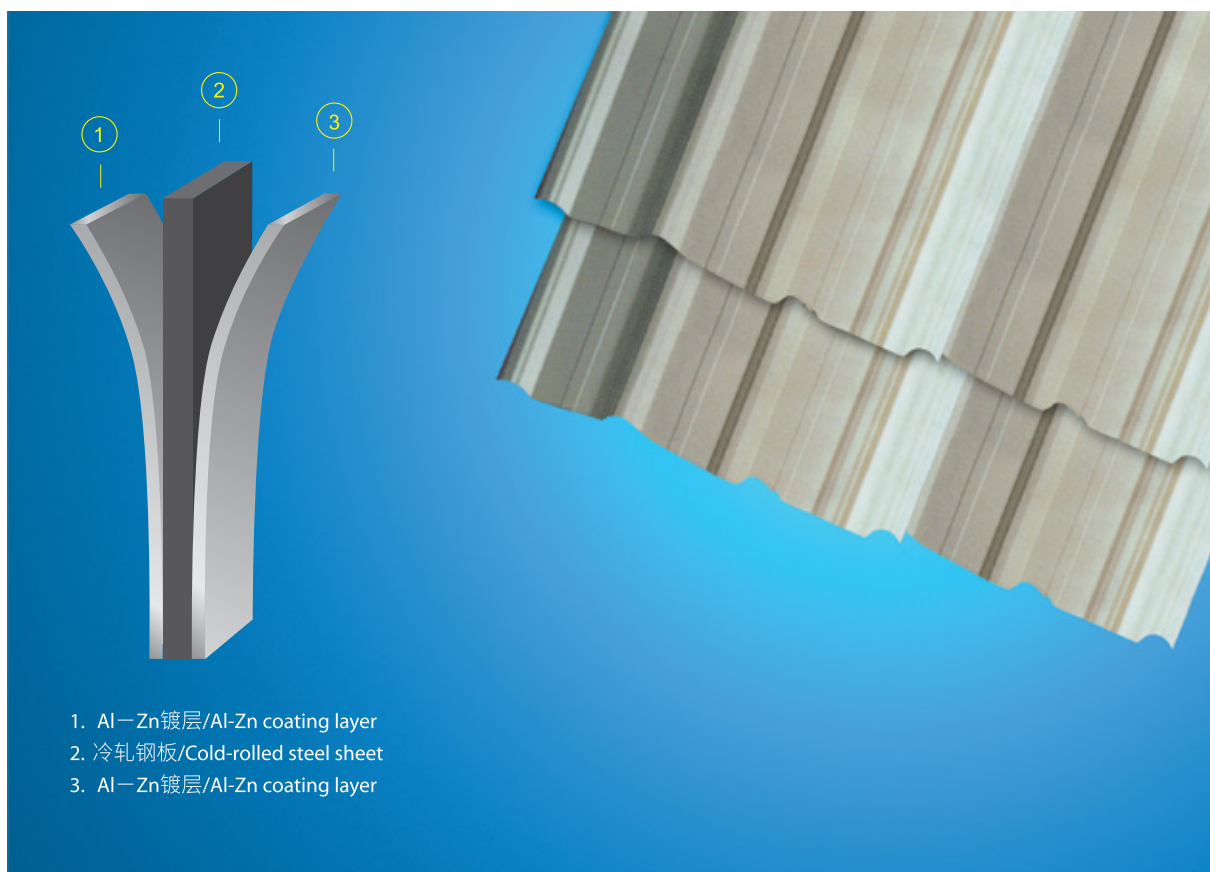
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热镀铝锌钢板的定义

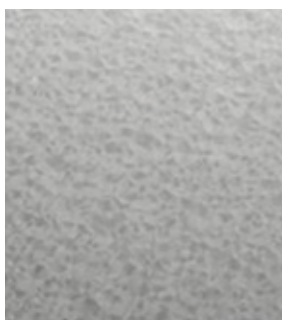
Definition of the hot-dip Al-Zn coated steel sheet

→ 热镀铝锌钢板是以各种强度和厚度规格的冷轧钢板为基材，在双面热镀一层Al-Zn镀层所得到的预镀层钢板，镀层成分中质量百分比约为55%Al、1.6%Si、43.4%Zn。融合了Al的物理保护和高耐久性以及Zn的电化学保护特性。此外，在表面呈具有高装饰性的光亮银灰色泽及规则的花纹，并具有浮凸感。

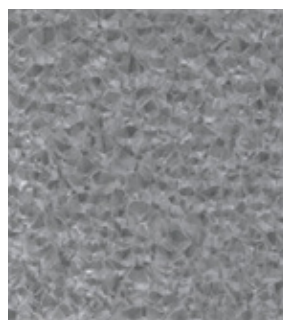
The hot-dip Al-Zn coated steel is a kind of coated steel. With the cold rolled steel of different strength and thickness as substrate, it is produced through applying Al-Zn coat on both faces by hot dip process. In its coating, Al accounts for about 55%, Si 1.6%, Zn 43.4%. It enjoys both the physical protective feature and durability of Al and the electrochemical protective property of Zn. And its surface has bright silver color and regular embossed-like figure, which are highly decorative.



正常 (不平整) 锌花
Normal (non-skinpassed) spangle



平整锌花
Skinpassed spangle



常规锌花
Regular spangle



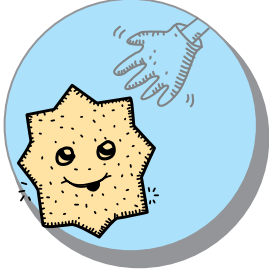
小锌花
Minimized spangle

Introduction to the hot-dip Al-Zn coated steel sheet

热镀铝锌钢板介绍

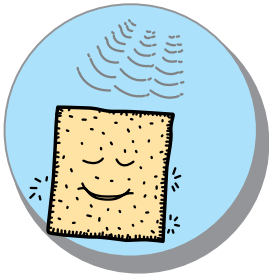
■ 热镀铝锌钢板的特性

Characteristics of the hot-dip Al-Zn coated steel sheet



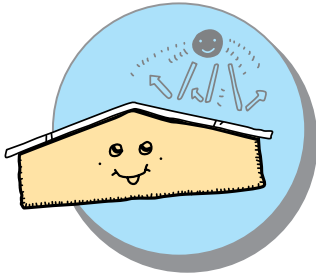
成型性 Machinability

- 满足辊压冲压成形、弯曲和其它形式的加工要求。
It can satisfy the processing requirements of rolling, coiling and others processes alike.



耐热性 Thermal resistance

- 普通热镀锌产品通常使用温度不超过230°C, 250°C时会变色, 镀铝锌板可在315°C环境下长期使用。
Common HDG steel plate normally works under 230°C, and has its color changed at 250°C, however, hot-dip Al-Zn coated steel plate can sustain the environment at 315°C for long time.

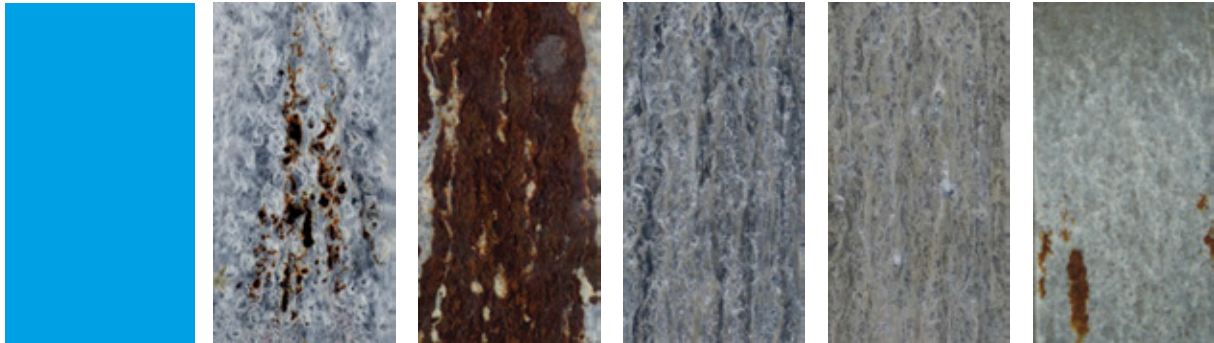


高反射性 High reflectivity

- 反射热和光的能力是热镀锌钢板的2倍, 反射率大于0.70, 优于EPA Energy Star规定的0.65, 是节能的理想建筑材料。
Reflection ability of heat and light is twice as much as those of hot-dip zinc steel sheet, and its reflectivity is more than 0.70, exceeding 0.65 (required by the EPA Energy Star Standard), which is an ideal construction materials of saving energy.

盐雾试验

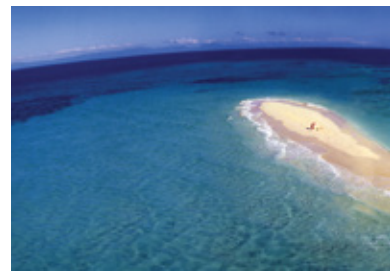
Salt spray test



试验时间 Test duration	240 小时/hours	1200 小时/hours	240 小时/hours	1200 小时/hours	4000 小时/hours
镀层种类及重量 Type & weight of coating	GI, (镀锌/Zn coated) 90/90g/m ²		GL, (镀铝锌/Al-Zn coated) 75/75g/m ²		
试验标准 Standard of test	ASTM B117				

耐蚀性

Resistance to corrosion



→ 比同等厚度的热镀锌钢板有优异的耐腐蚀性, 使用寿命是普通镀锌钢板的2-6倍。

Al-Zn coated steel sheet has better performance in corrosion resistance than GI sheet of the same thickness and its service life is 2-6 times longer than general GI sheet.

Introduction to the hot-dip Al-Zn coated steel sheet

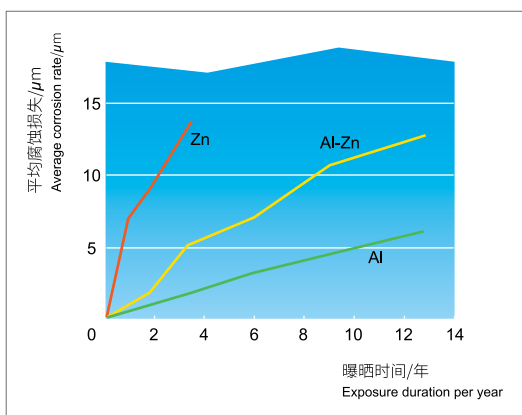
热镀锌钢板介绍

热镀锌钢板的特性

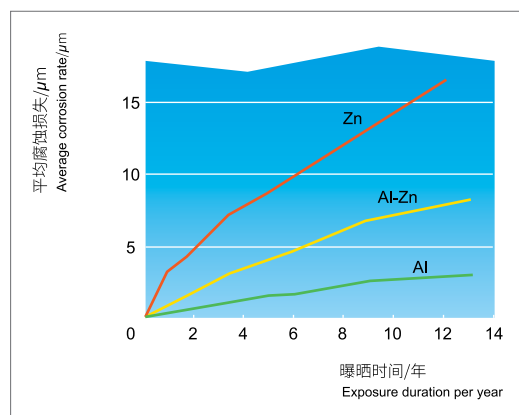
Characteristics of the hot-dip Al-Zn coated steel sheet

大气曝晒试验

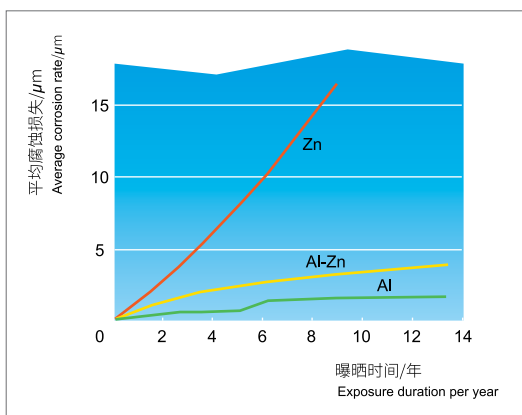
Exposure test



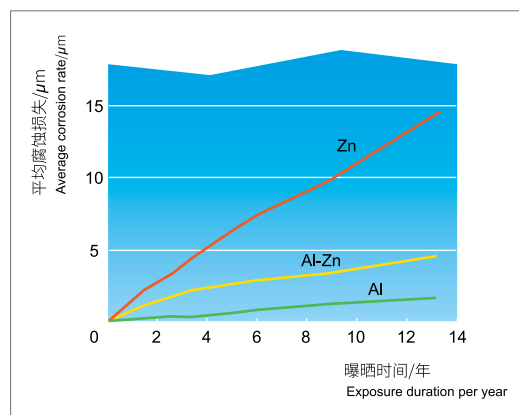
苛刻海洋性气候
Tough marine climate



中等海洋性气候
Moderate marine climate



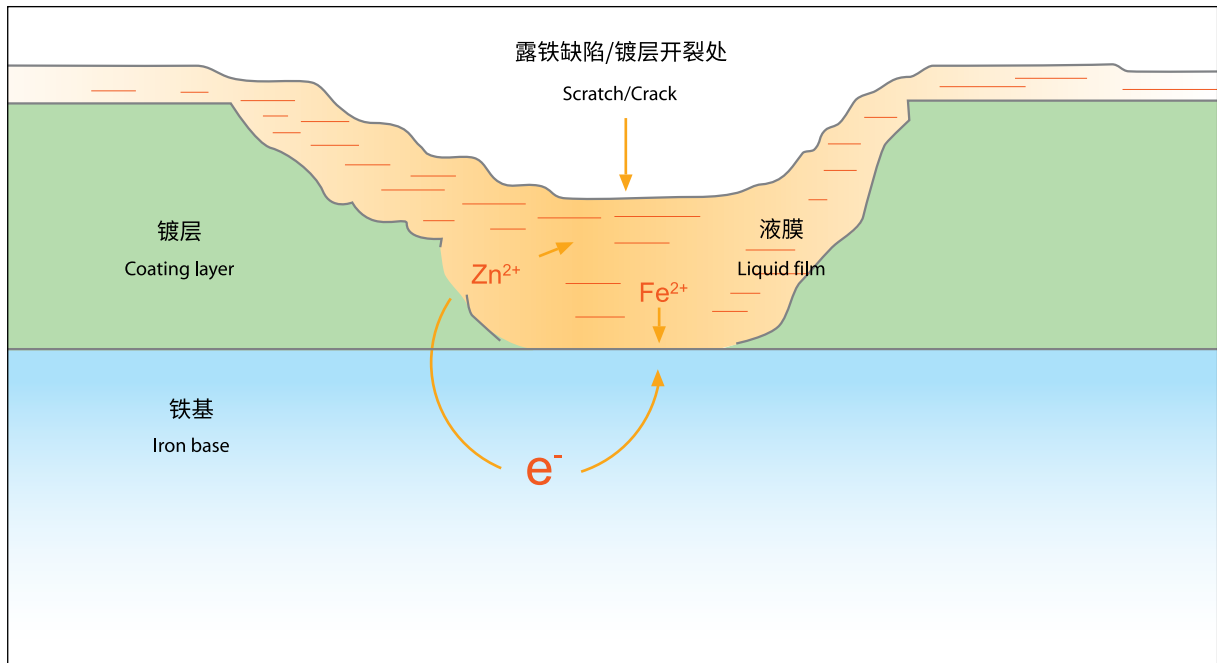
工业性气候
Industrial climate



乡村气候
Countryside climate

铝锌镀层对钢板具有良好的电化学保护作用

The Al-Zn coated layer has a good electrochemical protection to the steel sheet.



→ 缺陷处发生了电化学保护反应：

阳极反应： $Zn - 2e = Zn^{2+}$ (镀层失去电子，牺牲溶解)

阴极反应： $Fe^{2+} + 2e = Fe$ (铁得到电子，受到保护)

A reaction of electrochemical protection occurs at such where base metal is exposed:

anodic reaction: $Zn - 2e = Zn^{2+}$
(The alloy coating loses electron)

cathode reaction: $Fe^{2+} + 2e = Fe$
(Fe gains electron reaction, being protected)

Introduction to the hot-dip Al-Zn coated steel sheet 热镀铝锌钢板介绍

■ 热镀铝锌钢板的特性

Characteristics of the hot-dip Al-Zn coated steel sheet



Outstanding Heat-Insolation,
life always pleasing.

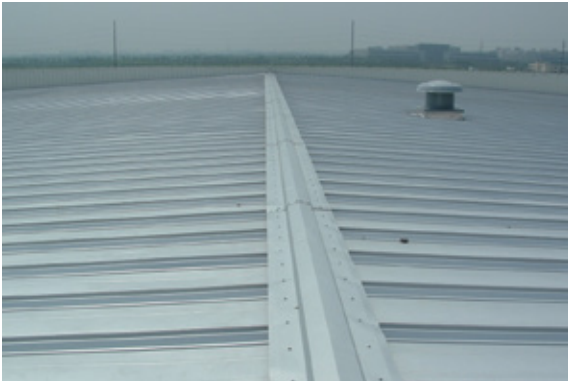
使用中的注意点

Precautions while using

- 碱性介质的使用条件下慎用镀铝锌板。
- 采用镀铝锌建筑的屋面应具有一定坡度, 有利于排水, 避免腐蚀加剧。
- 避免直接接触湿的水泥和湿的木材、铅、铜、石墨。
- 应尽可能使用切边板而避免在工地现场进行切割。
- 加工、堆放时应防止受潮和高温引起耐指纹膜发黑。
- 用于发泡粘结用途的镀铝锌钢板, 在第一次使用时要进行小批量试验, 防止粘结性能不良。
- 表面清洁不建议使用酒精类的溶剂进行擦拭、清洗, 如需使用请先进行小样试验, 避免对表面皮膜造成损伤。
- The hot-dip Al-Zn coated steel should be kept away from the alkaline medium.
- The roof made out of the hot-dip Al-Zn coated steel requires a slope to help drainage and to alleviate corrosion.
- The hot-dip Al-Zn coated steel plate should have no direct contact with foundation concrete, wet wood, steel, lead and graphite.
- Use trimmed plate rather than the plate to be cut plate at job-site.
- While the steel plate is piled and processed, its finger-print proof film should be protected from getting black due to dampness and high temperature.
- If the hot-dip Al-Zn coated steel is used for foaming and bonding application, then, small-lot test is needed for the initial use, in order to prevent the poor bonding.
- If the hot-dip Al-Zn coated steel need to be cleaned, we do not suggest to be cleaned with ethanol. If must to be used, small-lot is needed for the initial use, in order to prevent the damage of the coating.

■ 热镀锌钢板用途

Application of hot-dip Al-Zn coated steel sheet



建筑业

民用和工业用建筑的屋顶、外墙、彩涂基板、车库门、栅栏、百叶窗、通风管道等

Architecture

Roofs and outside walls of civilian and industrial buildings, garage doors, fencings and window blinds

Architecture

Industrial Instruments



工业仪表

电控柜、工业冷冻柜、自动售货机等

Industrial Instruments

Electric control cabinet, industrial refrigeration equipment, automatic vending machine

Introduction to the hot-dip Al-Zn coated steel sheet

热镀铝锌钢板介绍

■ 热镀铝锌钢板用途

Application of hot-dip Al-Zn coated steel sheet



家电业

洗衣机、冰箱、电视机、空调、烤箱、通风系统外覆盖件、防爆带钢、太阳能热水器、电器部件等

Appliances Industry

Outer clad sheets for washing machine, refrigerator, television, air conditioner and ventilation system, explosion-proof strip, solar water heater and appliance parts

Appliances
Industry

Other



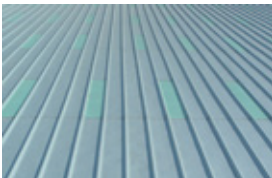
其他

汽车消音器、尾气管和催化转换器的防热罩、汽车车体底部零件、高速公路标志牌、汽车小喇叭、小五金等

Other

Muffler, heat shields of exhaust pipe and catalytic converter, auto parts & accessories under the frame, signboard in highway

■ 工程案例
Construction Case



昆明会展中心屋面
宝钢DC51D+AZ150,
0.5MM



普洛斯物流屋面
宝钢S350GD+AZ180,
0.6MM



天津西门子厂房屋面
宝钢S350GD+AZ180,
0.6MM



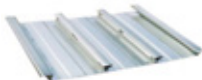





芜湖美的厂房屋面
宝钢S350GD+AZ180,
0.6MM








Introduction to the hot-dip Al-Zn coated steel sheet

热镀铝锌钢板介绍

■ 产品应用 Applications



建筑屋面 Architecture	液晶模组背板 Back panel of LCD module	空调外机底盘 Underpan of air-condition	冰箱背板 Back panel of refrigerator	干衣机内胆 Inner tank of tumble dryer	洗衣机底盘 Underpan of washing machine
					

电气柜柜体 Electrical control cabinet	电气柜面板 Front panel of electrical control cabinet	电气柜立柱 Column of electrical control cabinet	排气管隔热板 Heat insulation panel of exhaust system	发动机隔热板 Heat insulation panel of engine	喇叭 Horn of the vehicles	散热器管板 Pipe panel of radiator
						

耐指纹性能对比

Comparison of anti-finger print

性能 Performance	N5无铬耐指纹 产品-适用户内家电 Non-chromate anti-fingerprint-suitable for household appliances	N有铬耐指纹 产品-适用户外建筑 Anti-fingerprint-suitable for outdoor architecture	NW高耐蚀良加工耐指纹 产品-适用户外家电及建筑 Weathering non-chromate anti-fingerprint-suitable for outdoor appliances and architecture
耐腐蚀 Corrosion resistance	△	◎	◎
耐候性 Weathering resistance	◎	○	◎
润滑性 Lubricating property	△	○	◎
抗加工发黑性 Anti-blackening after forming	△	○	◎
耐黑变性 Anti-blackening property	○	△	◎
耐化学介质性 Chemical reagent resistance	◎	◎	◎
环保 Environment protection	◎	含Cr	◎

说明:◎ 优秀 ○ 好 △ 一般


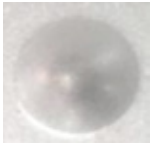

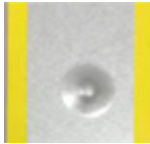

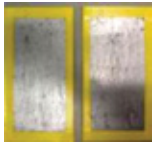





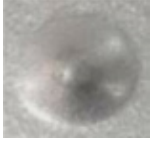
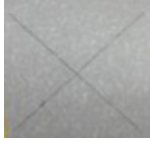


Note: ◎ Excellent ○ Good △ Normal

Introduction to the hot-dip Al-Zn coated steel sheet

热镀锌钢板介绍

耐腐蚀性 — 中性盐雾

Corrosion resistance-Salt spray test

	平板 Flat panel (240h)	杯突 6mm Erichsen (120h)	划X Cross cut (120h)	杯突 6mm+脱脂后 Erichsen after degrease (96h)	溶剂擦拭后 After wiped with solvent (120h)
高耐蚀良加工GL Weathering non-chromate anti-fingerprint					
普通无铬耐指纹GL Non-chromate anti-fingerprint					
有铬耐指纹GL Anti-fingerprint					

耐候性

Weathering resistance




紫外光老化 QUV






耐黑变性

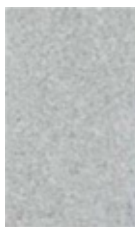

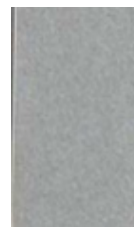
Anti-blackening property

耐碱 Alkali resistance

高耐蚀良加工GL Weathering non-chromate anti-fingerprint	普通无铬耐指纹GL Non-chromate anti-fingerprint	有铬耐指纹GL Anti-fingerprint
		
无明显变化 Without change $\Delta E^* = 0.52$	发黑 darken $\Delta E^* = 22.7$	发黑 darken $\Delta E^* = 31.5$

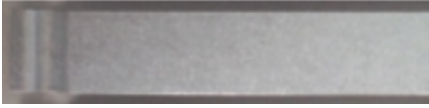





高耐蚀良加工GL Weathering non-chromate anti-fingerprint	普通无铬耐指纹GL Non-chromate anti-fingerprint	有铬耐指纹GL Anti-fingerprint
		
500h, 无变化 Without change $\Delta E^* = 1.4$	500h, 表面微白 Change white $\Delta E^* = 4.2$	500h, 表面微白 Change white $\Delta E^* = 9.3$

耐水煮 Boiling water resistance

高耐蚀良加工GL Weathering non-chromate anti-fingerprint	普通无铬耐指纹GL Non-chromate anti-fingerprint	有铬耐指纹GL Anti-fingerprint
		
$\Delta E^* = 0.5$	$\Delta E^* = 1.2$	$\Delta E^* = 2.5$

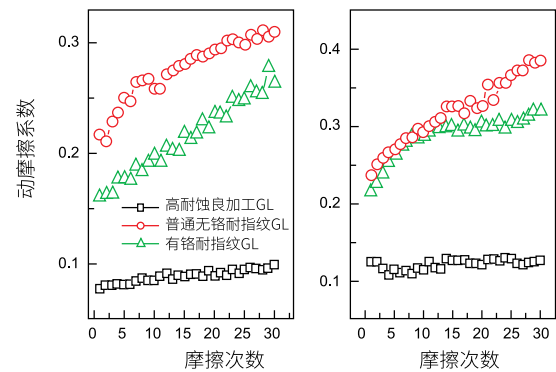
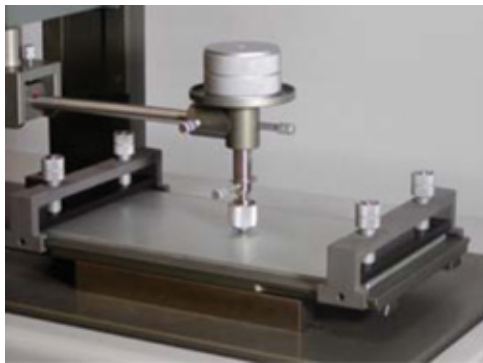
抗加工发黑性

Anti-blackening after forming

	常温 (25°C) Room temperature	高温 (100°C) High temperature
高耐蚀良加工GL Weathering non-chromate anti-fingerprint		
普通无铬耐指纹GL Non-chromate anti-fingerprint		
有铬耐指纹GL Anti-fingerprint		

润滑性——动摩擦系数

Lubricating property-sliding friction coefficient



耐化学介质等其他性能

Chemical reagent resistance and etc

	耐酒精 Anti-alcohol	耐丁酮 Anti-MEK	耐脱脂 Anti-alkali	涂装性 Paintability	导电性 Electroconductivity	环保 Pro-environment
高耐蚀良加工GL Weathering non-chromate anti-fingerprint	◎	◎	◎	◎	△	◎
普通无铬耐指纹GL Non-chromate anti-fingerprint	○	○	◎	◎	◎	◎
有铬耐指纹GL Anti-fingerprint	◎	◎	◎	◎	◎	×

◎ 优 ○ 良 △ 中 × 差

◎ Excellent ○ Good △ Normal × Bad

Specs of Baosteel's hot-dip Al-Zn coated steel sheets

宝钢热镀铝锌钢板产品规格



产线介绍

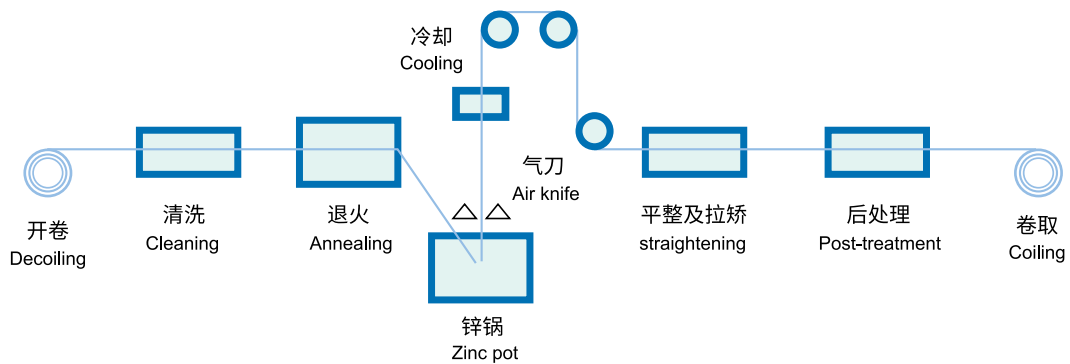
About production line

宝钢现有两条热镀铝锌机组，设计产能45万吨/年，产品厚度范围0.3-2.0mm，宽度范围700-1250mm，产品种类主要有冷成形用和结构用，可广泛应用于建筑、家电、工业仪表、汽车等行业。

Baosteel has two hot-dip Al-Zn coated steel production lines. The designed capacity totals 450,000 t/a of hot-dip Al-Zn coated steel with the specification of 0.3 ~ 2.0 mm thick and 700 ~ 1,250 mm wide. Its main products include cold forming steel and structural steel. They are widely used for such industries as the architecture, the home appliances, the industrial instruments and the automobiles as well.

热镀铝锌工艺流程

Hot-dip Al-Zn coating process



热镀锌(机组能力)

Specs of hot-dip Al-Zn coated steel sheets(Designed capability)

项 目 Item	公称尺寸 Nominal Dimension
公称厚度 Nominal Thickness	0.3-2.0mm
公称宽度 Nominal Width	700-1250mm
钢带内径 Nominal inside diameter of steel strip	508mm / 610mm

热镀锌可供钢种

Steel grades of hot-dip Al-Zn coated steel sheets

牌 号 Grade	用 途 Application
DC51D+AZ	冷成形用 Cold forming
DC52D+AZ	
DC53D+AZ	
DC54D+AZ	
S250GD+AZ	结构用 Structural
S300GD+AZ	
S350GD+AZ	
S450GD+AZ	
S550GD+AZ	

Specs of Baosteel's hot-dip Al-Zn coated steel sheets

宝钢热镀锌钢板产品规格

热镀锌力学性能

Mechanical properties of hot-dip Al-Zn coated steel sheet

牌号 Grade	拉伸试验 ^{a, b, c} Tension Test		
	屈服强度 MPa Yield strength	抗拉强度 MPa Tensile strength	断后伸长率 % 不小于 Elongation % No less than
			A _{80mm}
DC51D+AZ	190~360	270~500	22
DC52D+AZ	140~300	270~420	26
DC53D+AZ	140~260	270~380	30
DC54D+AZ	120~220	260~350	36

^a 当屈服现象不明显时采用 $R_{p0.2}$, 否则采用 R_{eL} 。

^b 拉伸试验试样为GB/T 228.1中的P6试样, 试样方向为横向样。

^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个单位; 当产品公称厚度不大于0.50mm, 断后伸长率允许下降4个单位。

^a When yield is not obvious, $R_{p0.2}$ is to be used. Otherwise, use R_{eL} .

^b The tensile test sample is same as the P6 sample in GB/T228.1. This is a transversal sample.

^c When the nominal thickness of the steel is between 0.50 mm and 0.70 mm, the specific elongation after rupture is allowed to have 2 units lowered. But, when the nominal thickness of the steel is no greater than 0.50 mm, the specific elongation after rupture is allowed to have 4 units lowered.

牌号 Grade	拉伸试验 ^{a, b, c} Tension Test			
	屈服强度 MPa 不小于 Yield strength No less than	抗拉强度 MPa 不小于 Tensile strength No less than	断后伸长率 % 不小于 Elongation % No less than	
			A _{80mm}	A _{50mm}
S250GD+AZ ^d	250	330	19	-
S300GD+AZ ^d	300	380	18	-
S350GD+AZ ^d	350	420	16	-
S450GD+AZ ^d	450	480	15	-
S550GD+AZ ^{e, f}	550	550	-	2

^a 拉伸试验试样为纵向样。

^b 屈服强度采用 $R_{p0.2}$ 。

^c 当产品公称厚度不大于0.70mm时, 断后伸长率允许下降2个单位。

^d 试样为GB/T 228.1中的P6试样。

^e 试样为JIS Z 2241规定No.5的试样。

^f 对于牌号为S550GD+AZ的产品, 当产品厚度不大于0.7mm时, 由于厚度减薄效应, 导致伸长率过低, 以致无法测得到屈服强度。此时, 屈服强度用抗拉强度代替。

^a Longitudinal sample is used for tensile test.

^b $R_{p0.2}$ is adopted for Yield strength.

^c When the nominal thickness of the steel is no greater than 0.70 mm, the specific elongation after rupture is allowed to have 2 units lowered.

^d The sample is same as the P6 sample in GB/T228.1.

^e The sample is same as the No.5 sample in JIS Z 224.

^f For the steel grade S550GD+AZ, when the product thickness is no more than 0.7 mm, due to the thickness reduction effect, the elongation is too low and the yield strength cannot be tested. For this case, the yield strength can be replaced by tensile strength.

热镀锌镀层重量

Weight of hot-dip Al-Zn coating

推荐的公称镀层重量列于下表中, 如需方有特殊要求, 经供需双方协议, 亦可提供其它镀层重量。考虑到建筑用途用钢板的使用环境, 推荐使用的最小公称镀层重量为50/50 g/m²。

注: 随着镀层重量的增加, 产品的成形性能和焊接性能可能会变差, 因此, 在确定镀层重量时, 应考虑产品加工时的成形性要求和焊接性要求。

The recommended nominal coating mass are shown in table. If the purchaser has special requirement, other coating mass may be provided upon agreement between the buyer and the supplier. Considering the environmental conditions of the steel sheet for the construction application, the recommended minimum nominal coating mass is 50/50 g/m².

Note: As the coating mass increases, the formability and welding property will get worse. Therefore, when determining the coating mass, the formability and weldability requirements of products shall be considered in the processing.

镀层种类 Coating type	推荐的公称镀层重量 ^a g/m ² Recommended coating weight
铝锌合金镀层 Al-Zn alloy	30/30, 40/40, 50/50, 60/60, 75/75, 90/90

a: 50g/m²镀层重量, 约等于镀层厚度为13.3μm.

a: Coating mass 50g/m², equals to a coating thickness of 13.3μm approximately.

热镀锌表面结构和表面处理

Surface finish and treatment of hot-dip Al-Zn coated steel sheet

项目 Item	分类 Classification	代号 Symbol
镀层种类 Coating type	铝锌合金镀层 Al-Zn alloy	AZ
镀层表面结构 Surface finish	正常锌花 Regular spangle	R
	正常小锌花 Minimized spangle	M
	平整处理 Skin passed	S
表面处理 Surface treatment	铬酸钝化 Chromate passivated	C
	无铬钝化 Non-chromate passivated	C5
	铬酸钝化+涂油 Chromate passivated + oiling	CO
	无铬钝化+涂油 Non-chromate passivated+oiling	CO5
	普通耐指纹 Anti-fingerprint	N
	无铬耐指纹 Non-chromate anti-fingerprint	N5
	无铬高耐候耐指纹 Non-chromate high weather resistance anti-fingerprint	NW
	涂油 Oiling	O
	不处理 No treatment	U

Specs of Baosteel's hot-dip Al-Zn coated steel sheets

宝钢热镀锌钢板产品规格

尺寸允许偏差

Dimension tolerance

厚度允许偏差

Thickness tolerance

钢板及钢带的尺寸和外形允许偏差应符合Q/BQB 401 的规定。牌号为S450GD+AZ、S550GD+AZ 的钢板，其厚度允许偏差应符合Q/BQB 401-2018 中（规定最小屈服强度260MPa~<360MPa）的要求，不平度最大允许偏差应符合Q/BQB 401-2018 中（规定最小屈服强度260MPa~<360MPa）的要求。

The nominal dimensions and shape permissible tolerance of the steel sheet and strip shall be in accordance with Q/BQB 401. The thickness tolerance of steel sheet and strip with steel grade of S450GD+AZ and S550GD+AZ shall be in accordance with the requirement of table (specified minimum yield strength 260MPa to 360MPa) in standard Q/BQB 401-2018, and maximum permissible tolerance of flatness shall be in accordance with the requirement of table (specified minimum yield strength 260MPa to 360MPa) in standard Q/BQB 401-2018.

规定的最小屈服强度 Specified minimum yield strength MPa	公称厚度 Nominal Thickness mm	下列公称宽度时的厚度允许偏差, mm The thickness tolerance is dedicated for the following nominal widths, mm					
		普通精度 PT.A Common precise PW.A			高级精度 PT.B High-level precision PW.B		
		≤1200	>1200~1500	>1500	≤1200	>1200~1500	>1500
<260	0.17~0.30	±0.02	±0.025	-	±0.015	±0.020	-
	>0.30~0.40	±0.03	±0.03	±0.04	±0.020	±0.025	±0.030
	>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
260~<360	>2.50~3.00	±0.13	±0.13	±0.15	±0.090	±0.100	±0.110
	>3.00~3.50	±0.15	±0.17	±0.17	±0.120	±0.130	±0.130
	0.30~0.40	±0.03	±0.04	±0.05	±0.025	±0.030	±0.035
	>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
360~420	>2.00~2.50	±0.13	±0.14	±0.15	±0.090	±0.100	±0.110
	>2.50~3.00	±0.15	±0.16	±0.17	±0.110	±0.120	±0.130
	>3.00~3.50	±0.18	±0.21	±0.21	±0.150	±0.160	±0.160
	0.30~0.40	±0.04	±0.05	±0.05	±0.030	±0.035	±0.040
	>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
>420	>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
	>2.50~3.00	±0.17	±0.18	±0.19	±0.120	±0.130	±0.140
	>3.00~3.50	±0.22	±0.25	±0.25	±0.190	±0.200	±0.200
	0.30~0.40	±0.05	±0.06	±0.07	±0.035	±0.040	±0.050
	>0.40~0.60	±0.06	±0.06	±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	
>2.50~3.00	±0.21	±0.22	±0.23	±0.150	±0.160	±0.170	
>3.00~3.50	±0.23	±0.25	±0.25	±0.190	±0.200	±0.200	

宽度允许偏差

Width tolerance

钢板及钢带的宽度允许偏差应符合下表规定

The plate or strip width tolerances should be in conformity with Table

边缘状态 Edge condition	公称宽度, mm Nominal width, mm	宽度允许偏差 (PW.A), mm Width tolerance (PW.A), mm
不切边(EM) Mille edge(EM)	600~1200	0~+5
	>1200~1500	0~+6
	>1500	0~+7

宝钢企业牌号与引用标准相近牌号的对照表

Comparison list of Baosteel's steel grade and corresponding steel grade

Q/BQB 425	QB/T 14978	AS 1397	EN 10346	ASTM A792M	JIS G 3321
DC51D+AZ	DX51D+AZ	G2+AZ	DX51D+AZ	CS type B CS type C	SGLCC
DC52D+AZ	DX52D+AZ	G3+AZ	DX52D+AZ	DS	SGLCD
DC53D+AZ	DX53D+AZ	—	DX53D+AZ	—	SGLCDD
DC54D+AZ	DX54D+AZ		DX54D+AZ		
S250GD+AZ	S250GD+AZ	G250+AZ	S250GD+AZ	SS 255	—
S300GD+AZ	S300GD+AZ	G300+AZ	—	—	SGLC400
S350GD+AZ	S350GD+AZ	G350+AZ	S350GD+AZ	SS 345 Class1	SGLC440
S450GD+AZ	—	G450+AZ	—	SS 410 SS 480	SGLC490
S550GD+AZ	S550GD+AZ	G550+AZ	S550GD+AZ	SS 550 Class1	SGLC570

宝钢可对照上表提供对应标准及对应牌号的产品

宝钢热镀铝锌产品承诺书



宝山钢铁股份有限公司
Baoshan Iron & Steel Co., Ltd.

宝钢镀铝锌产品质量承诺书

各位用户：

宝山钢铁股份有限公司郑重承诺：我公司生产的镀铝锌产品（符合BQB425 标准）自出厂之日起，在正常的加工和使用条件下，可保证达到：

1. 镀铝锌钢板（带）在10年内粉化程度不超过6级，试验及评定按 ASTM D4214 执行；
2. 在20年内不发生腐蚀穿孔。

特别说明：

正常的加工和使用条件含义如下：

1. 通常的气候条件（距海岸线1000米以内和重工业污染区除外）；
2. 必须是宝钢生产的镀层重量不小于75/75g/m²的普通耐指纹产品（代号N）或无铬高耐候耐指纹产品（代号NW）；
3. 按照宝钢镀铝锌产品技术手册要求进行安装（如安装前保持板面干燥，不能用电锯等加工，以免高温铁屑影响涂层）。

本承诺书不对下列情况造成的损伤进行保证：

1. 在加工前后或加工过程中镀层受到机械或化学的损伤；
2. 长时间的沉积物、铁屑或接触油污；

宝钢热镀铝锌产品承诺书

3. 与不匹配的材料接触（如铅、铜、石墨或不锈钢等）；
4. 与湿的原木及湿的混凝土接触；
5. 受不可控或不可预见的人为或自然灾害的影响。

用户须知：

本质量承诺自生效之日起，用户必须提供下列完整的可追溯资料：

- (1) 合同号、钢卷号；
- (2) 工程竣工验收记录；
- (3) 原始钢卷采购凭证等。

本承诺书对二〇一八年一月一日后生产的产品有效，最终解释权归宝山钢铁股份有限公司。


授权人签字(盖章)

二〇一八年四月

Product warranty of Baosteel's hot-dip Al-Zn coated steel sheets 宝钢热镀铝锌产品承诺书

宝钢热镀铝锌产品承诺书



宝山钢铁股份有限公司
Baoshan Iron & Steel Co., Ltd.

20 Years Limited Warranty for 55% AL-ZN Alloy coated steel

Dear valuable customers may be concerned:

Bao Shan Iron & Steel Co., Ltd. (hereinafter called "BAOSTEEL") certified that Baosteel's Hot dipped 55% AL-ZN alloy coated steel with anti-finger print surface treatment (Surface Treatment Symbol N) and High weather resistance anti-finger print surface treatment (Surface Treatment Symbol NW), sold for unpainted steel building roofing and siding panel usage, will meet Baosteel standard-Q/BQB425 and ASTM A792 / A792 M . Baosteel also warrants that no corrosion caused perforation under normal atmospheric conditions within a period of 20 years after shipment from Baosteel's mill. Warranty applies to Hot dipped 55% AL-ZN alloy coated steel of ASTM A792 with AZ50/AZM150 coating or heavier.

1. Products chalking in 10 years do not exceed 6 degree according to ASTM D4214.
2. Corrosion caused perforation within 20 years is not allowed.

This warranty does not apply to following conditions:

1. Sheets exposed in salt water marine or corrosive or aggressive atmospheric conditions.
2. Sheets exposed in corrosive chemicals, fumes, like heavy polluted industrial area.
3. Sheets exposed within 1 kilometer distance from coastline.
4. Sheets abnormally processed, like keeping in humid air, using high-temperature electric saw.

This warranty does not apply in the event of:

1. Mechanical or chemical damage occurred on coating before / during / after fabrication.
2. Iron slag dreg or oil spot on the sheet surface for a long time.
3. Stored nearby aggressive material such as Pb ,Cu, Graphite or stainless steel.
4. Stored nearly humid wood or wet concrete.
5. Damaged by some unforeseen disaster or force majeure.

Claim must be promptly reported to Baosteel along with all necessary information, including mill's contract number /coil number /invoice /project inspection-report /construction annual maintenance record, etc. Also Baosteel should be given a reasonable period for inspection and verification.

This warranty takes effect as of Jan 1, 2018. All rights reserved by Baosteel for above contents.
Baoshan Iron & Steel Co.,Ltd.



SGS盐雾试验报告



测试报告

No. SHAEC1500689801 Date: Feb. 10, 2015

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宝山钢铁股份有限公司
上海市宝山区漠河路 151 号

以下测试之样品是由申请者所提供及确认: N5 无铬耐指纹镀锌板(环保), NW 高耐候耐指纹镀锌板(环保)

SGS 工作编号:	SP15-001138-SH
收样日期:	2015-01-13
测试周期:	2015-01-13 – 2015-02-10
测试要求:	根据客户选择测试。
测试方法:	见后续页。
测试结果:	见后续页。

通标标准技术服务(上海)有限公司
授权签名

Marry Ma 马广媛
批准签署人



SGS 通标标准技术服务(上海)有限公司
Testing Center

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J Building, No. 889 Yishan Road, Xuhai District, Shanghai, China 200233 TEL: (86-21) 61402553 FAX: (86-21) 64863079 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21) 64800353 e sgs.china@sgs.com

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Product warranty of Baosteel's hot-dip Al-Zn coated steel sheets

宝钢热镀铝锌产品承诺书

SGS盐雾试验报告



测试报告

No. SHAEC1500689801 Date: Feb. 10, 2015

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结果总结:

序号	测试项目	测试方法	结果	结论
1	中性盐雾(NSS)试验	ASTM B117-11	见结果	/

备注: 合格: 达到要求
不合格: 未达到要求
/: 不下判定

测试项目: 中性盐雾(NSS)试验

样品描述: 金属板

测试方法: ASTM B117-11

测试条件:

沉降盐液浓度: (5±1)% NaCl(m/m)

试验箱温度: (35±2)°C

盐雾沉降率: (1.0~2.0)ml/(80cm²·h)

沉降盐液 pH 值(25°C): 6.5~7.2

暴露时间: 500 小时



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SGS 检测技术服务(上海)有限公司
Testing Service
SGS 检测技术服务(上海)有限公司
Testing Center

J3 Building No. 889 Yishan Road Kushi District, Shanghai China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

TEL: (86-21) 61402553 FAX: (86-21) 604650679 www.sgs.com.cn
HL: (86-21) 61402594 HL: (86-21) 54850035 e: sgs.china@sgs.com

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测试报告

No. SHAEC1500689801 Date: Feb. 10, 2015

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测试结果:

样品	暴露时间	样品编号	外观
N5	48 h	1#	可视黑斑和白锈, 缺陷面积: 5-10%
		2#	可视黑斑和白锈, 缺陷面积: 1-5%
		3#	可视黑斑和白锈, 缺陷面积: 1-5%
	72 h	1#	可视黑斑和白锈, 缺陷面积: 10-15%
		2#	可视黑斑和白锈, 缺陷面积: 1-5%
		3#	可视黑斑和白锈, 缺陷面积: 1-5%
	120 h	1#	可视黑斑和白锈, 缺陷面积: 10-15%
		2#	可视黑斑和白锈, 缺陷面积: 1-5%
		3#	可视黑斑和白锈, 缺陷面积: 1-5%
	168 h	1#	可视黑斑和白锈, 缺陷面积: 10-15%
		2#	可视黑斑和白锈, 缺陷面积: 1-5%
		3#	可视黑斑和白锈, 缺陷面积: 1-5%
	216 h	1#	可视黑斑和白锈, 缺陷面积: 10-15%
		2#	可视黑斑和白锈, 缺陷面积: 1-5%
		3#	可视黑斑和白锈, 缺陷面积: 1-5%
	264 h	1#	可视黑斑和白锈, 缺陷面积: 20-25%
		2#	可视黑斑和白锈, 缺陷面积: 1-5%
		3#	可视黑斑和白锈, 缺陷面积: 1-5%
	312 h	1#	可视黑斑和白锈, 缺陷面积: 20-25%
		2#	可视黑斑和白锈, 缺陷面积: 5-10%
		3#	可视黑斑和白锈, 缺陷面积: 5-10%
	360 h	1#	可视黑斑和白锈, 缺陷面积: 20-25%
		2#	可视黑斑和白锈, 缺陷面积: 5-10%
		3#	可视黑斑和白锈, 缺陷面积: 5-10%
408 h	1#	可视黑斑和白锈, 缺陷面积: 20-25%	



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SGS盐雾试验报告



测试报告

No. SHAEC1500689801

Date: Feb. 10, 2015

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456 h	2#	可视黑斑和白锈, 缺陷面积: 10-15%	
	3#	可视黑斑和白锈, 缺陷面积: 10-15%	
	1#	可视黑斑和白锈, 缺陷面积: >50%	
	2#	可视黑斑和白锈, 缺陷面积: 10-15%	
	3#	可视黑斑和白锈, 缺陷面积: 10-15%	
	500 h	1#	可视黑斑和白锈, 缺陷面积: >50%
		2#	可视黑斑和白锈, 缺陷面积: 10-15%
		3#	可视黑斑和白锈, 缺陷面积: 10-15%
	NW	48 h	无可视变化
72 h		无可视变化	
120 h		可视黑斑, 缺陷面积: <1%	
168 h		可视黑斑和白锈, 缺陷面积: 1-5%	
216 h		可视黑斑和白锈, 缺陷面积: 1-5%	
264 h		可视黑斑和白锈, 缺陷面积: 1-5%	
312 h		可视黑斑和白锈, 缺陷面积: 1-5%	
360 h		可视黑斑和白锈, 缺陷面积: 1-5%	
408 h		可视黑斑和白锈, 缺陷面积: 1-5%	
456 h		可视黑斑和白锈, 缺陷面积: 1-5%	
500 h		可视黑斑和白锈, 缺陷面积: 1-5%	

备注 :

(1)这项测试由 SGS 上海材料实验室检测



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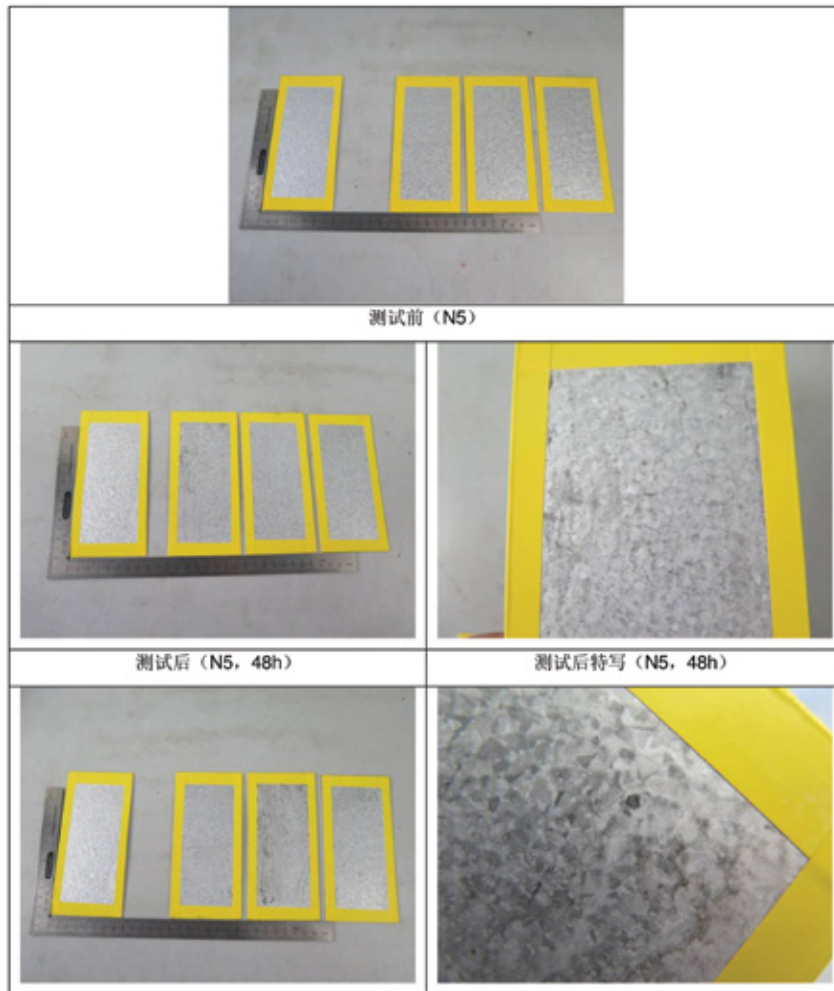


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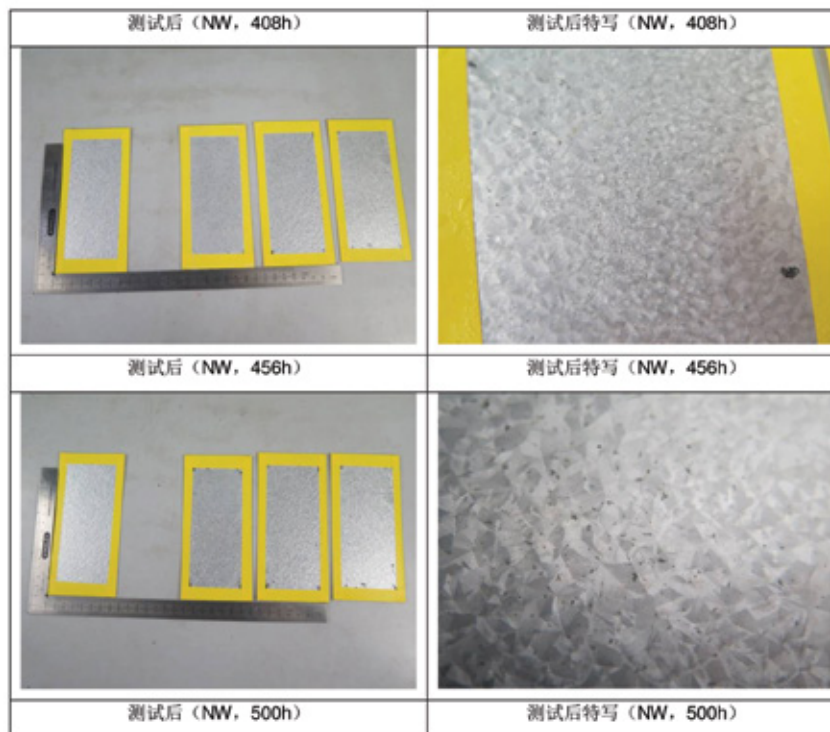
SGS盐雾试验报告



测试报告

No. SHAEC1500689801 Date: Feb. 10, 2015

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Note:The latest version of environmental certification report from SGS and system certification report from BSI can be download from the website:<http://www.ibaosteel.com>.



测试报告

No. SHAEC1808358320

日期: 2018年05月08日 第1页,共8页

宝山钢铁股份有限公司宝山基地
上海市宝山区漠河路151号

以下测试之样品是由申请者所提供及确认: 镀锌锌无铬耐指纹(镀层+涂层)

SGS工作编号: SP18-013337 - SH

样品接收日期: 2018年04月25日

测试周期: 2018年04月25日 - 2018年05月03日

测试要求: 根据客户要求测试

测试方法: 请参见下一页

测试结果: 请参见下一页

结论: 基于所送样品的指定部位进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯(DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务(上海)有限公司
授权签名

Helen Liu 刘海鹏
报告审核员

本报告是编号为SHAEC1808358319报告的中文版本。



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测试报告

No. SHAEC1808358320

日期: 2018年05月08日 第3页,共8页

测试项目	限值	单位	MDL	Q17
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND

备注:

(1) 最大允许限值引用自RoHS指令(EU) 2015/863.

IEC 62321系列等同于 EN 62321系列

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25(2) ▼ = a. 当六价格的浓度高于0.13 μg/cm²时, 样品为阳性, 即含有六价格;b. 当六价格的浓度为ND(低于0.10 μg/cm²)时, 样品为阴性, 即未检测到六价格;c. 当六价格的浓度介于0.10 μg/cm²与0.13 μg/cm²之间时, 无法直接判定是否检测到六价格, 因不同个体的样品表面差异可能会影响测定结果;

由于未获知样品的存储条件和生产日期, 样品的六价格测试结果仅能代表测试时样品含六价格的状态。

全氟辛烷磺酰基化合物(PFOS)和全氟辛酸(PFOA)

测试方法: 参照US EPA 3550C: 2007方法测定, 采用HPLC-MS进行分析。

测试项目	限值	单位	MDL	Q18
全氟辛烷磺酸(PFOS)及衍生物 ^A	1	μg/m ²	1	ND
全氟辛酸(PFOA)	-	μg/m ²	1	ND

备注:

(1) 最大允许限制引用自(EC) No. 850/2004的修订指令欧盟决议(EU) No. 757/2010.

(2) ^A=全氟辛烷磺(PFOS)及其衍生物包含全氟辛烷磺酸(PFOS), 全氟辛基磺酰胺(PFOSA), 2-(N-乙基全氟辛基磺酰胺)乙醇(EtFOSE), N-甲基全氟辛烷磺酰胺(MeFOSE), N-乙基全氟辛烷磺酰胺(EtFOSE)和2-(N-甲基全氟辛基磺酰胺)乙醇(MeFOSE)。

检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。



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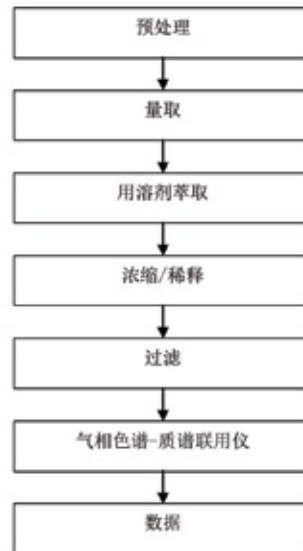
No. SHAEC1808358320

日期: 2018年05月08日 第4页,共8页

附件

Phthalates 测试流程图

- 1) 分析人员: 高仰景
- 2) 项目负责人: 黄婷



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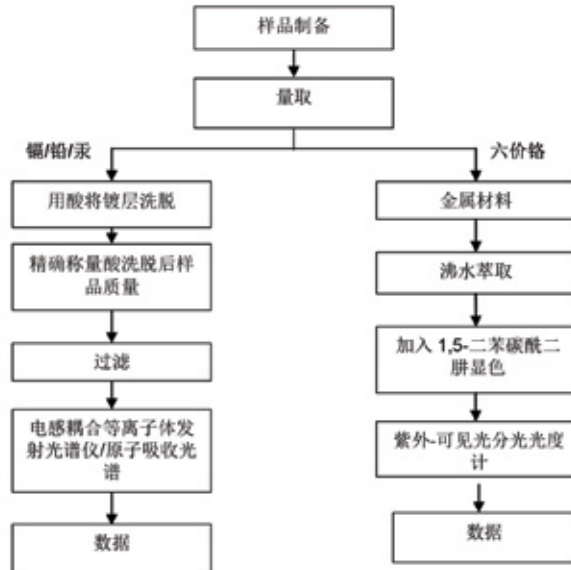
No. SHAEC1808358320

日期: 2018年05月08日 第5页,共8页

附件

镀层 Pb/Cd/Hg/Cr⁶⁺测试流程图

- 1) 分析人员: 宋珂静/杨小龙
- 2) 项目负责人: 徐亮/王晓艳
- 3) 被洗下来的镀层按照下述流程被完全消解



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宝钢股份 ISO 9001 认证书



Certificate of Registration



By Royal Charter

质量管理体系 - ISO 9001:2015


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电力的生产与供应。
The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes, coated and uncoated UOE and HFW welded pipes and heavy plates.
The production and supplying of electricity.

BSI代表:



Chris Cheung, 亚太地区 合规风险主管

首次发证日期: 2002-10-07	生效日期: 2017-12-18
最新发证日期: 2017-12-18	有效期至: 2020-12-17

Page: 1 of 3

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 英标管理体系认证(北京)有限公司 北京市建国门外大街甲24号东海中心2008室 邮编: 100004 电话: +86 10 85073000
 BSI集团公司成员。

宝钢股份 ISO 9001 认证书

持有证书: **FM 70107**

地点

宝山钢铁股份有限公司
91310000631696382C
中国
上海
宝山区
富锦路885号
邮编: 201900
Baoshan Iron & Steel Co., Ltd.
No. 885 Fujin Road
Baoshan District
Shanghai
201900
China

认证活动

钢铁产品的设计和制造, 包括钢坯、钢锭、大方坯、小方坯、圆钢、线材、热轧板卷、冷轧板卷(含涂层产品)、电工钢板卷、无缝钢管、HFW 及UOE 焊管(含涂层产品)和厚板。电力的生产与供应。
The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes, coated and uncoated UOE and HFW welded pipes and heavy plates. The production and supplying of electricity.

宝山钢铁股份有限公司
91310000631696382C
中国
上海
宝山区
江杨南路2288号
邮编: 200431
Baoshan Iron & Steel Co., Ltd.
No. 2288 Jiangyang Nan Road
Baoshan District
Shanghai
200431
China

冷轧板卷(含涂层产品)的制造。
The manufacture of cold rolled coated and uncoated sheet and coils.

首次发证日期: **2002-10-07**
最新发证日期: **2017-12-18**

生效日期: **2017-12-18**
有效期至: **2020-12-17**


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英标管理体系认证(北京)有限公司 北京市建国门外大街甲24号东海中心2008室 邮编: 100004 电话: +86 10 85073000
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Product warranty of Baosteel's hot-dip Al-Zn coated steel sheets
宝钢热镀铝锌产品承诺书

宝钢股份 IATF 16949 认证书



Certificate of Registration

质量管理体系 - IATF 16949:2016




By Royal Charter

<p>兹证明:</p>	<p>宝山钢铁股份有限公司 91310000631696382C 中国 上海 宝山区 富锦路885号 邮编: 201900</p>	<p>Baoshan Iron & Steel Co., Ltd. No. 885 Fujin Road Baoshan District Shanghai 201900 China</p>
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钢铁产品的设计和制造, 包括钢坯、钢锭、大方坯、小方坯、圆钢、线材、热轧板卷、冷轧板卷(含涂层产品)、电工钢板卷、无缝钢管。
The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes.



BSI代表:



林劲, 董事总经理, 英标管理体系认证(北京)有限公司

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- b) 本产品标准号；
- c) 牌号；
- d) 尺寸及其精度(包括厚度、宽度、长度、钢带内径等)；
- e) 不平度精度；
- f) 镀层重量；
- g) 表面处理；
- h) 表面质量；
- i) 重量；
- j) 包装方式。

Please provide the following information when making an order

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- c) Grade
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传真: 021-26645329

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