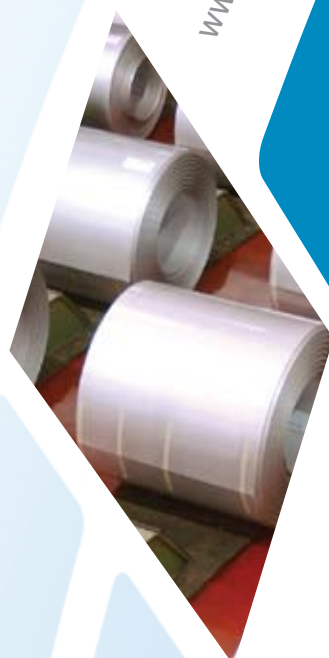


Al-Zn Alloy-Coated

热 镀 铝 锌

www.baosteel.com



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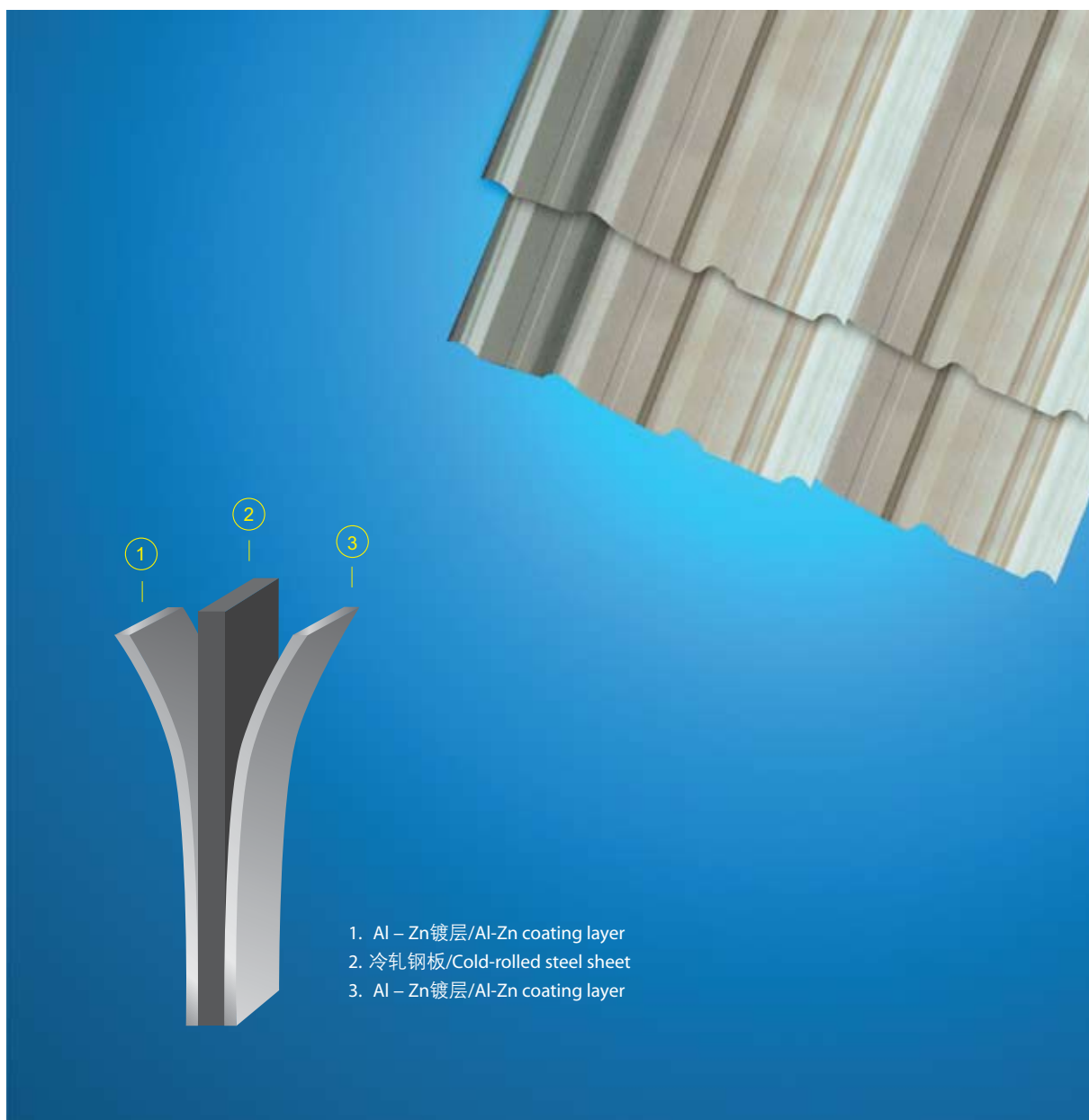
Info for order

■ 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，其余成分为锌，融合了Al的物理保护和高耐久性以及Zn的 electrochemical 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 galvalume 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%, while the remaining is Zn. 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.







Al-Zn Alloy-Coated Steel Sheet

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

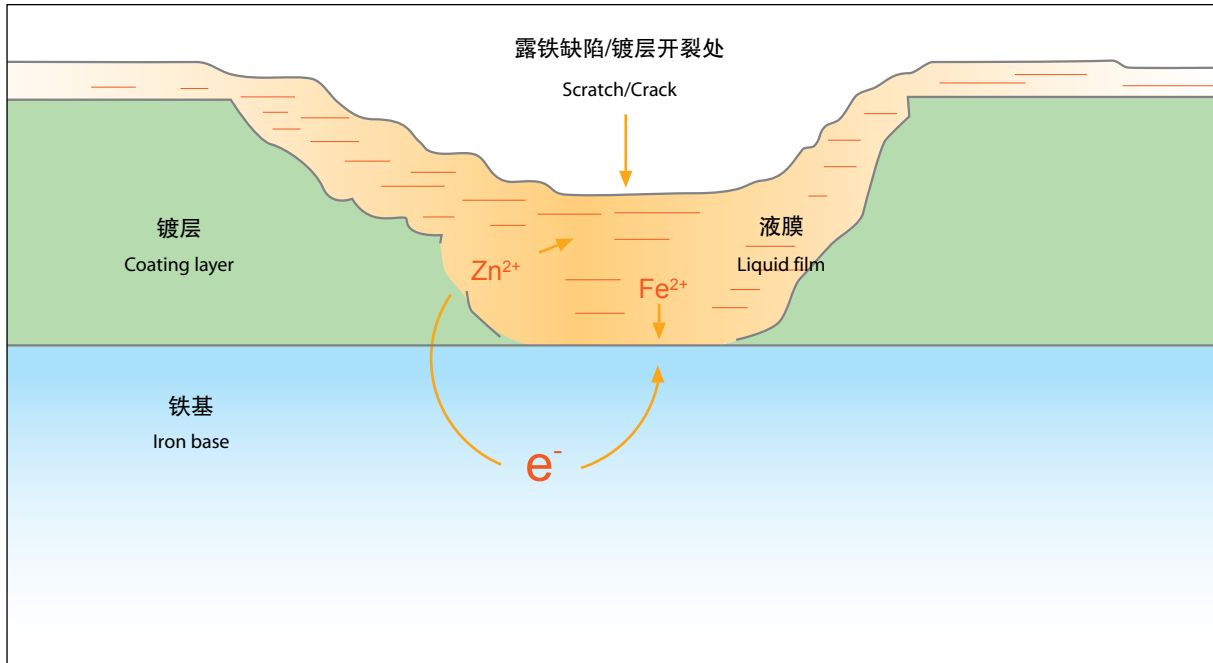
Characteristics of the hot-dip Al-Zn coated steel sheet



项 目 Item	热镀锌 GI	热镀锌铝(5%铝) GF(Zn-5%Al)	热镀铝锌 (55%铝) GALVA-LUME(55%Al-45%Zn)	铝 Al
使用寿命 Service Life	一般 Fair	一般 Fair	好 Good	好 Good
牺牲阳极保护 Electrochemical Protection	好 Good	好 Good	好 Good	无 N/A
焊接性能 Welding Performance	好 Good	一般 Fair	差 Poor	差 Poor
与潮湿混凝土适用性 Application with Wet Concrete	好 Good	差 Poor	很差 Very Poor	很差 Very Poor
耐高温 Thermal Resistance	差 Poor	差 Poor	好 Good	很好 Excellent

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

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

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

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

cathode reaction: $\text{Fe}^{2+} + 2\text{e} = \text{Fe}$
(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

耐腐蚀性

Resistance to corrosion

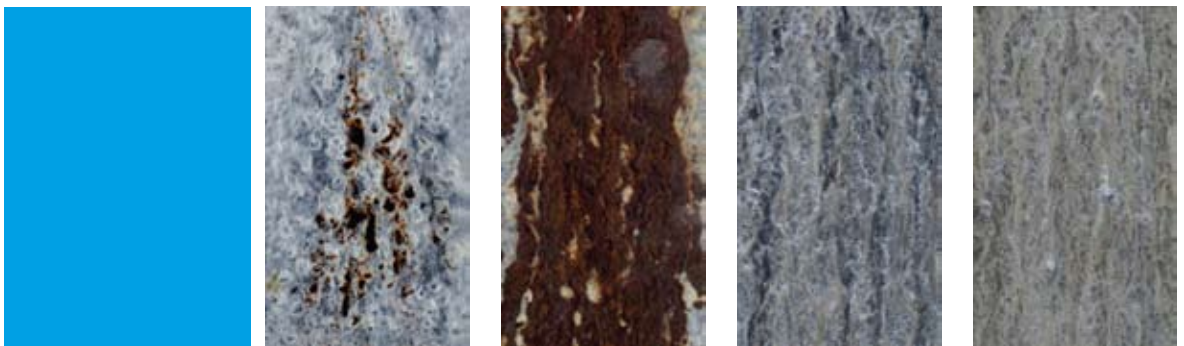


→ 比同等厚度的热镀锌钢板有优异的耐腐蚀性，使用寿命是普通镀锌钢板的2-6倍。

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.

盐雾试验

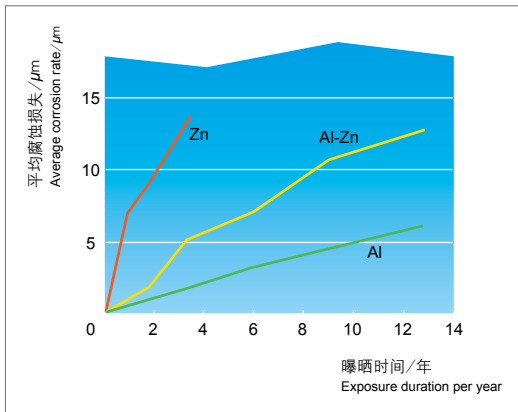
Salt spray test



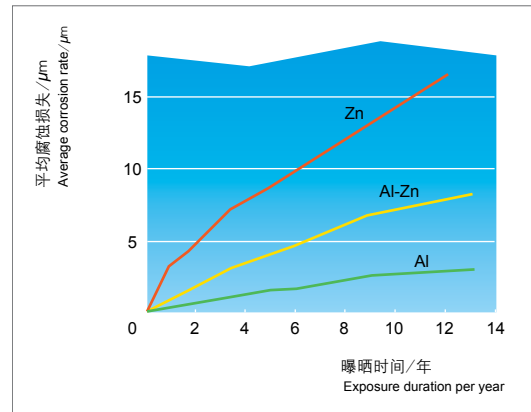
试验时间 Test duration	240 小时/hours	1200 小时/hours	240 小时/hours	1200 小时/hours
镀层种类及重量 Type & weight of coating	GI, (镀锌/Zn coated) 90/90g/m ²		GL, (镀铝锌/Al-Zn coated) 75/75g/m ²	
试验标准 Standard of test	ASTM B117			

大气曝晒试验

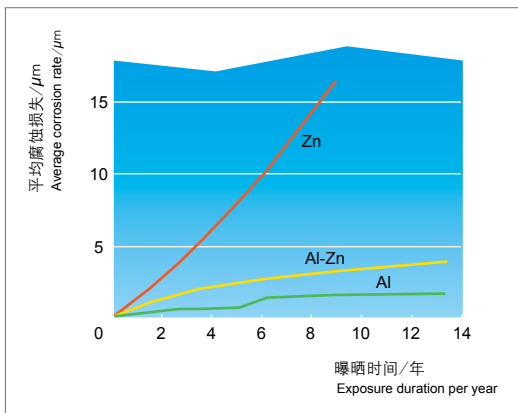
Exposure test



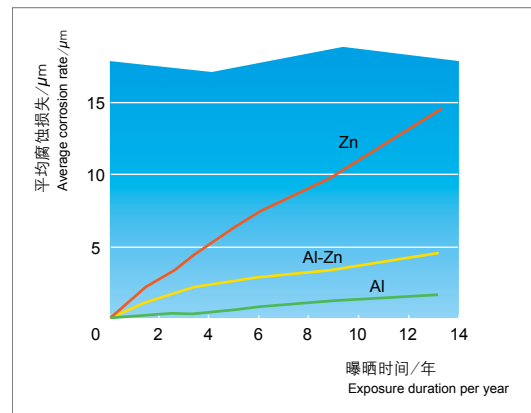
苛刻海洋性气候
Tough marine climate



中等海洋性气候
Moderate marine climate



工业性气候
Industrial climate



乡村气候
Countryside climate

大气曝晒试验数据对比

Comparison by atmospheric exposure test

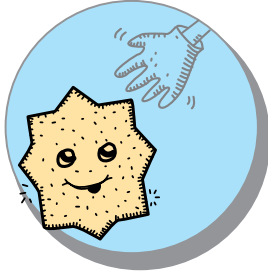
环境 Environment	热镀锌 / GI 平均腐蚀损失 Average corrosion		镀铝锌 / Al-Zn 平均腐蚀损失 Average corrosion	
	g/m ² /y	μ m/y	g/m ² /y	μ m/y
苛刻海洋环境 Tough Marine Climate	140	9.8	16	2.2
中等海洋性气候 Moderate Marine Climate	18	1.3	4	0.54
工业性气候 Industrial Climate	20	1.4	4.2	0.57
乡村气候 Countryside Climate	4	0.28	1.3	0.17

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

热镀铝锌钢板介绍

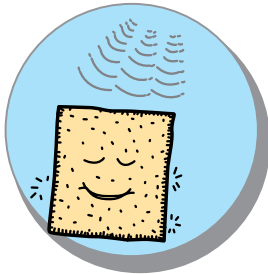
■ 热镀铝锌钢板的特性

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



成型性
Machinability

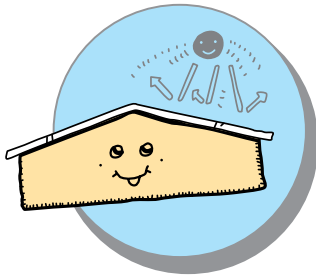
- 满足辊压冲压成形、弯曲和其它形式的加工要求。
It can satisfy the processing requirements of rolling, coiling and others processes alike.



耐热性
Thermal resistance

- 普通热镀锌产品通常使用温度不超过230℃，250℃时会变色，镀铝锌板可在315℃环境下长期使用。

Common HDG steel plate normally works under 230℃, and has its color changed at 250℃, however, Galvalume steel plate can sustain the environment at 315℃ 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.



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 Galvalume steel should be kept away from the alkaline medium.
- The roof made out of the Galvalume steel requires a slope to help drainage and to alleviate corrosion.
- The Galvalume 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 jobsite.
- 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 Galvalume 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 Galvalume steel need to be cleaned, we do not suggest to be cleaned with ethanol. If must be used, small-lot is needed for the initial use, in order to prevent the damage of the coating.

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



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



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





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

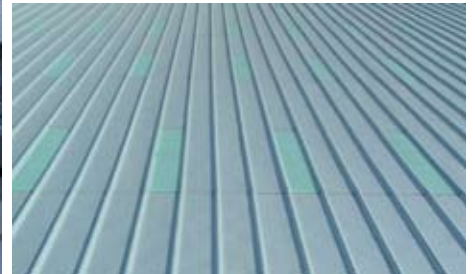
Muffler, heat shields of exhaust pipe and catalytic converter, auto parts & accessories under the frame, signboard in highway

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

■ 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



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

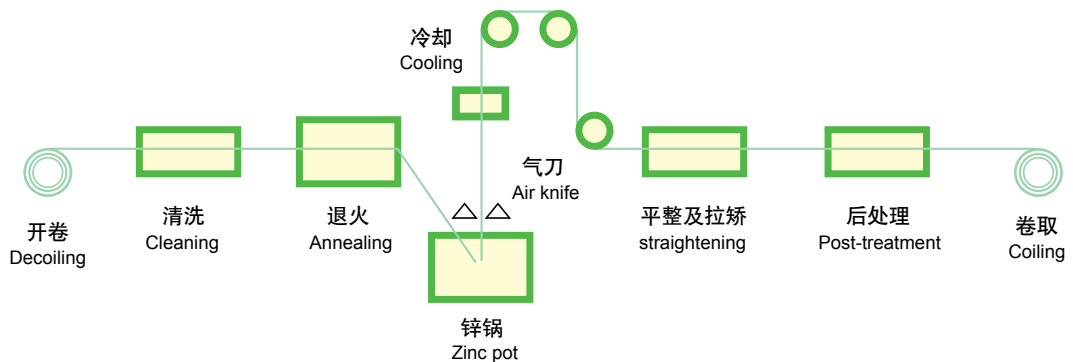
About production line

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0.22-2.0mm，宽度范围700-1300mm，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 Galvalume production lines. The designed capacity totals 450,000 t/a of Galvalume steel with the specification of 0.22 ~ 2.0 mm thick and 700 ~ 1,300 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 (机组设计能力)

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	0.22-2.0mm
公称宽度 Nominal Width	700-1300mm
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	
S550GD+AZ	
HX420LAD+AZ	

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

宝钢热镀铝锌钢板产品规格

热镀铝锌力学性能

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	-	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/T228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。

^d 对于上表中DC51D+AZ和DC52D+AZ的钢板及钢带, 保证在制造后一个月内, 其力学性能符合表中规定。对于上表中其他牌号的钢板及钢带, 保证在制造后6个月内, 其力学性能符合表中规定。

^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. 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.

^d With regard to the plate and strip of DC51D+AZ and DC52D+AZ, their physical properties are guaranteed to remain same as those specified as in the above table, within one month after the production, while with regard to other grades, their physical properties are guaranteed to remain same, within six months after the production.

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}	(L ₀ = 80mm, b = 25mm)
S250GD+AZ ^d	250	330	19	-
S300GD+AZ ^d	300	380	18	-
S350GD+AZ ^d	350	420	16	-
S550GD+AZ ^{e, f}	550	550	-	2
HX420LAD+AZ	420	470	17	-

^a 拉伸试验试样为纵向样。

^b 当屈服现象不明显时采用R_{P0.2}, 否则采用R_{eH}。

^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/T228中的P6试样。

^e 试样为GB/T228中的P14试样。

^f 对于低牌号为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 testb.

^b When yield is not obvious, R_{P0.2} is to be used. Otherwise, use R_{eH}.

^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.

^e The sample is same as the P14 sample in GB/T228.

^f As for the low grade steels like S550GD+AZ, when the thickness is no greater than 0.7 mm, yield strength cannot be measured because of the plate thinning effect that leads to too low specific elongation. At that time, the yield strength should be replaced by the tensile strength.

热镀铝锌镀层重量

Weight of hot-dip Al-Zn coating

镀层的可供重量范围为30/30g/m²~90/90g/m²，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。

Coating weights range from 30/30g/m² to 90/90g/m². The nominal coating weights are given in the following table as the recommendation. The other coating weights than these can be made to order after concluding the agreement between the supplier and the customer.

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: 50 g/m²镀层重量，约等于镀层厚度为13.3μm。

a: The weight of the coating is about 50 g/m², and the thickness is 13.3μm.

热镀铝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/光整锌花/小锌花 Regular spangle / Skin passed spangle / Minimized spangle	-
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 treatment	N5
	涂油 Oiling	O
	不处理 No treatment	U

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

宝钢热镀铝锌钢板产品规格

尺寸允许偏差

Dimension tolerance

厚度允许偏差

Thickness tolerance

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下表的规定

If the minimal yielding strength of the steel strip is under 260MPa, the width tolerances should be in conformity with the following table.

公称厚度, mm Nominal Thickness, mm	下列公称宽度时的厚度允许偏差 ^a , mm The thickness tolerance is dedicated for the following nominal widths ^a , 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
0.22~0.40	±0.04	±0.05	±0.06	±0.030	±0.035	±0.040
>0.40~0.60	±0.04	±0.05	±0.06	±0.035	±0.040	±0.045
>0.60~0.80	±0.05	±0.06	±0.07	±0.040	±0.045	±0.050
>0.80~1.00	±0.06	±0.07	±0.08	±0.045	±0.050	±0.060
>1.00~1.20	±0.07	±0.08	±0.09	±0.050	±0.060	±0.070
>1.20~1.60	±0.10	±0.11	±0.12	±0.060	±0.070	±0.080
>1.60~2.00	±0.12	±0.13	±0.14	±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%

^a The thickness tolerance of over 50% more than the specified value is allowed at 10 m close to the strip weld seam

对于规定的最小屈服强度不小于260MPa，但小于360MPa的钢板及钢带，以及牌号为DX51D+AZ和S550GD+AZ的钢板及钢带，其厚度允许偏差应符合下表的规定

If the minimal yielding strength is no less than 260MPa but under 360MPa, or the steel grade is DX51D+AZ or S550GD+AZ, the width tolerances should be in conformity with the following table.

公称厚度, mm Nominal Thickness, mm	下列公称宽度时的厚度允许偏差 ^a , mm The thickness tolerance is dedicated for the following nominal widths ^a , mm					
	普通精度 PT.A Common precise PT.A			高级精度 PT.B High-level precision PT.B		
	≤1200	>1200~1500	>1500	≤1200	>1200~1500	>1500
0.22~0.40	±0.05	±0.06	±0.07	±0.035	±0.040	±0.045
>0.40~0.60	±0.05	±0.06	±0.07	±0.040	±0.045	±0.050
>0.60~0.80	±0.06	±0.07	±0.08	±0.045	±0.050	±0.060
>0.80~1.00	±0.07	±0.08	±0.09	±0.050	±0.060	±0.070
>1.00~1.20	±0.08	±0.09	±0.11	±0.060	±0.070	±0.080
>1.20~1.60	±0.11	±0.13	±0.14	±0.070	±0.080	±0.090
>1.60~2.00	±0.14	±0.15	±0.16	±0.080	±0.090	±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%

^a The thickness tolerance of over 50% more than the specified value is allowed at 10 m close to the strip weld seam

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

公称宽度, mm Nominal width, mm	宽度允许偏差, mm Width tolerance, mm	
	普通精度 PW.A Common precise PW.A	高级精度 PW.B High-level precision PW.B
600~1200	+5 0	+2 0
> 1200~1500	+6 0	+2 0

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 425-2009	QB/T 14978-2008	AS 1397-2001	EN 10326:2004 EN 10327:2004	ASTM A792M-08	JIS G 3321:2007	ISO 9364-2001
DC51D+AZ	DX51D+AZ	G2+AZ	DX51D+AZ	CS type B CS type C	SGLCC	01
DC52D+AZ	DX52D+AZ	G3+AZ	DX52D+AZ	DS	SGLCD	02
DC53D+AZ	DX53D+AZ	-	DX53D+AZ	-	SGLCDD	-
DC54D+AZ	DX54D+AZ		DX54D+AZ			
S250GD+AZ	S250GD+AZ	G250+AZ	S250GD+AZ	SS 255	-	250
S300GD+AZ	S300GD+AZ	G300+AZ	-	-	SGLC400	-
S350GD+AZ	S350GD+AZ	G350+AZ	S350GD+AZ	SS 345 Class1	SGLC440	350
S550GD+AZ	S550GD+AZ	G550+AZ	S550GD+AZ	SS 550 Class1	SGLC570	550
HX420LAD+AZ	-	-	HX420LAD (EN10346)	-	-	-

宝钢可对照上表提供对应标准及对应牌号的产品

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

镀铝锌反射率报告



中国科学院上海硅酸盐研究所
检测报告

样品名称: 镀铝锌有铬耐指纹板 不平整

委托单位: 宝山钢铁股份有限公司宝钢分公司

检测要求: 太阳反射率 ρ_s , 红外发射率 ϵ_H

检测结果:

样品编号	4#
太阳反射率 ρ_s	0.70
红外发射率 ϵ_H	0.23

(注: 太阳反射率, $M = 1.5$)

中国科学院上海硅酸盐研究所

检测者: 吴岭南

核验: 章介之

报告日期: 2009年12月31日



地址: 上海市定西路 1295 号
电话: 021-52412990

邮编: 200050
传真: 021-52413903

SGS盐雾试验报告



测试报告

编号 : SM071207102

日期 : 2007.12.24

页码 : 1 of 5

宝钢销售中心
同济路 1800 号

下列样品由客户提供及确认:

样品名称 : 热镀锌 75/75 表面耐指纹处理
 样品编号 : SM071106273
 测试要求 : 中性盐雾试验
 参考标准 : ASTM B 117-07
 收样日期 : 2007 年 11 月 27 日
 测试周期 : 2007 年 11 月 27 日~2007 年 12 月 17 日
 测试结果 : 请见下页

***** 待续*****

通标标准技术服务有限公司
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史素娟 实验室技术主管

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SGS-CS (Shanghai) Technical Service Co., Ltd.
Shanghai Branch / 实验室

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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

编号 : SM071207102

日期 : 2007.12.24

页码 : 2 of 5

测试项目: 中性盐雾试验
参考标准: ASTM B 117-07
盐溶液浓度: 5%NaCl水溶液
测试温度: 35 °C
盐雾沉降率: 1.4ml/(80cm²·h)
溶液 PH值: 6.9
测试周期: 500 小时
结果:

测试时间	结果
48 小时	出现黑色斑点,缺陷面积<1%
72 小时	出现黑色斑点,缺陷面积:1~5%
120 小时	出现黑色斑点,缺陷面积:1~5%
168 小时	出现黑色斑点,缺陷面积:5~10%
216 小时	出现黑色斑点和白锈,缺陷面积:10~15%
264 小时	出现黑色斑点和白锈,缺陷面积:10~15%
312 小时	出现黑色斑点和白锈,缺陷面积:20~25%
360 小时	出现黑色斑点和白锈,缺陷面积:20~25%
408 小时	出现黑色斑点和白锈,缺陷面积:25~50%
456 小时	出现黑色斑点和白锈,缺陷面积:25~50%
500 小时	出现黑色斑点和白锈,缺陷面积:25~50%

- 此报告为英文报告 SM071106273 的中文译本,如中英文有差异,概以英文为准。

***** 待续*****

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SGS China Technical Service Co., Ltd.
Shanghai Branch, Baoshan Laboratory

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符合RoHS指令的SGS环保报告



测试报告

No. SHAEC1204205506

日期: 2012年05月15日 第1页,共6页

宝山钢铁股份有限公司
上海同济路1800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: SP12-008799 - SH
 样品接收日期: 2012年03月28日
 测试周期: 2012年03月28日 - 2012年04月13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、六价格的测试结果符合欧盟RoHS指令2002/95/EC的重订指令2011/65/EU附录II的限值要求。

通标标准技术服务有限公司
授权签名



Fan Jingjie, JJ范晶捷
批准签署人

本报告是发布日期为2012年05月15日编号为SHAEC1204205505 英文检测报告中文译本。如有异议, 以英文版本为准。

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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

符合RoHS指令的SGS环保报告



测试报告 No. SHAEC1204205506 日期: 2012年05月15日 第2页,共6页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
1	SHA12-042055.002	银色金属板

备注:

(1) 1 mg/kg = 1 ppm = 0.0001%
 (2) MDL = 检测极限值
 (3) ND = 未检出 (< MDL)
 (4) "-" = 未规定

RoHS指令2011/65/EU

测试方法: (1) 参考ISO 17925:2004 测定镉,铅,汞,用ICP-OES进行分析。
 (2) 参照IEC 62321:2008, 用点测试法/紫外-可见分光光度计比色法测定六价格的含量。

测试项目	限值	单位	MDL	002
镉(Cd)	100	mg/kg	10	ND
铅(Pb)	1000	mg/kg	10	14
汞(Hg)	1000	mg/kg	10	ND
六价格(CrVI)	-	-	◇	阴性


备注:

(1) 最大允许极限值引用自指令2011/65/EU 附录II。
 (2) ◇点测试法:
 阴性= 镀层中未检测到六价格,阳性 = 镀层中检测到六价格;
 (当点测试结果为阴性或无法确定时,将采用沸水萃取法作进一步的结果验证)
 ◇沸水萃取法:
 阴性 = 镀层中未检测到六价格
 阳性 = 镀层中检测到六价格;表明50 cm²表面积的被测试样品的沸水萃取液中六价格的浓度等于或大于0.02 mg/kg
 针对金属表面的防腐涂层: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代表测试时样品的状态

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。

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符合RoHS指令的SGS环保报告



测试报告

No. SHAEC1204205506

日期: 2012年05月15日

第3页,共6页

测试项目	限值	单位	MDL	002
全氟辛酸酯基化合物 (PFOS)- 酸,金属盐和酰胺	1	µg/m ²	1	ND
全氟辛酸 (PFOA)	-	µg/m ²	1	ND

备注:

最大允许限制引用自欧盟决议EU 757/2010 (前身为1907/2006/EC REACH 附录XVII的修正指令-552/2009/EC 第53条) 详细信息请参见Regulation (EC) No 552/2009.

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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 ISO 9001 认证书



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that:

<p>Baoshan Iron & Steel Co., Ltd. Fujin Road Baoshan District Shanghai 201900 China</p>	<p>宝山钢铁股份有限公司 中国 上海 宝山区 富锦路 邮编: 201900</p>
---	--

Holds Certificate No: **FM 70107**
 and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

The design and manufacture of steel products (including steel sheet, steel coils, billet, tube blank, hot and cold rolled sheet coils, seamless tubes, welded tubes, electric steel and heavy plate) for various application to customer's requirements. The manufacture of iron and conversion to steel ingots & slabs. The conversion of slabs to hot rolled sheet & coils. The cold processing of sheet and coils including galvanizing and color coating. The conversion of tube blanks to seamless tubes including pipe couplings & tool joints, plates, welded steel pipes (including HFW, UOE).

For and on behalf of BSI:

Liu Mo Yuan

Managing Director, BSI (China), Liu Mo Yuan

Originally registered: 07/10/2002	Latest Issue: 22/12/2009	Expiry Date: 21/12/2012
-----------------------------------	--------------------------	-------------------------




Page: 1 of 2

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宝钢股份 ISO 9001 证书

Certificate No: **FM 70107****Location**

Baoshan Iron & Steel Co., Ltd.
Fujin Road
Baoshan District
Shanghai
201900
China
宝山钢铁股份有限公司
中国
上海
宝山区
富锦路
邮编: 201900

Registered Activities

The design and manufacture of steel products (including steel sheet, steel coils, billet, tube blank, hot and cold rolled sheet coils, seamless tubes, welded tubes, electric steel and heavy plate) for various application to customer's requirements. The manufacture of iron and conversion to steel ingots & slabs. The conversion of slabs to hot rolled sheet & coils. The cold processing of sheet and coils including galvanizing and color coating. The conversion of tube blanks to seamless tubes including pipe couplings & tool joints, plates, welded steel pipes (including HPFW, UOE).

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China
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邮编: 200431

The manufacture of cold rolling steel coils and sheets including tin galvanizing.

Originally registered: **07/10/2002**Latest Issue: **22/12/2009**Expiry Date: **21/12/2012**

Page: 2 of 2

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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 ISO TS 16949 认证书



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO/TS 16949:2009

This is to certify that:

<p>Baoshan Iron & Steel Co., Ltd. Fujin Road Baoshan District Shanghai 201900 China</p>	<p>宝山钢铁股份有限公司 中国 上海 宝山区 富锦路 邮编: 201900</p>
--	--

Holds Certificate No: **TS 30373**
 and operates a Quality Management System which complies with the requirements of ISO/TS 16949:2009 for the following scope:

The design and manufacture of steel products, including hot rolled steel sheets, cold rolled steel sheets, galvanized steel sheets (HDG and EG), tin plates, TFS, precoated steel sheets, electrical steel sheets, seamless steel tubes and pipes, wires and rods, billets, blooms and tube blanks.
 Permitted Exclusions: None.
 Including the site extension:
Baoshan Iron & Steel Co., Ltd.
 No. 2288 Jiangyang Nan Road, Baoshan District, Shanghai 200431 China
 The manufacture of cold rolling steel coil and sheets, tin plates and TFS.

For and on behalf of BSI:



Managing Director, BSI (China), Liu Mo Yuan

Originally registered: 22/12/2009	Latest Issue: 22/12/2009	Expiry Date: 21/12/2012
IATF Number: 0094410		




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IATF Contracted Office: 12110 Sunset Hills Road, Suite 200, Reston, VA20190, USA
 China Headquarters: Floor 20 East Ocean Center, No. 24A Jiaungomewai Street, Beijing 100004, P. R. China
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宝钢股份 ISO 14001 证书



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2004

This is to certify that:

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--	--

Holds Certificate No: **EMS 83746**
 and operates an Environmental Management System which complies with the requirements of ISO 14001:2004 for the following scope:

The production of iron and steel and related supporting system.

For and on behalf of BSI:


 Managing Director, BSI (China), Liu Mo Yuan

Originally registered: 19/04/2004 Latest issue: 24/12/2009 Expiry Date: 23/12/2012




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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 ISO 14001 认证书

Certificate No: EMS 83746	
Location	Registered Activities
Baoshan Iron & Steel Co., Ltd. Fujin Road Baoshan District Shanghai 201900 China 宝山钢铁股份有限公司 中国 上海 宝山区 富锦路 邮编: 201900	The production of iron and steel and related supporting system.
Baoshan Iron & Steel Co., Ltd. No. 2288 Jiangyang Nan Road Baoshan District Shanghai 200431 China 宝山钢铁股份有限公司 中国 上海 宝山区 江杨南路2288号 邮编: 200431	The design and manufacture of cold rolling steel products.
Originally registered: 19/04/2004	Latest issue: 24/12/2009
	Expiry Date: 23/12/2012
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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. 按照 ASTM 相关标准，镀铝锌钢板（带）在 10 年内粉化程度不会超过 6 级。
2. 在加工成型后 5 年内镀层不会发生肉眼可见的裂纹。
3. 在 20 年内不会发生腐蚀穿孔。

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（如海岸 1000 米以内和重工业污染区除外）。
- (2) 必须是宝钢生产的镀层厚度不小于 $150\text{g}/\text{m}^2$ 的耐指纹镀铝锌产品（环保耐指纹除外）。
- (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、铁屑或油污接触。
- (3) 和不匹配的材料接触（如铅，铜，石墨或不锈钢等）。

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

- (4) 和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

本承诺书对二〇〇七年八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)
承诺书专用章
二〇〇七年七月

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, 6 months 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, sold for unpainted steel building roofing and siding panel usage, will meet Baosteel standard-Q/BQB425 and ASTM A792 / A792 M 2003. Baosteel also warrants that no corrosion caused perforation under normal atmospheric conditions within a period of 20 years and 6 months 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 related standard
2. No apparent crack on coating surface could be observed within 5 years.
3. Corrosion caused perforation within 20 years and 6 months 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 nearby 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 Aug 1, 2007. All rights reserved by Baosteel for above contents.
Baoshan Iron & Steel Co.,Ltd.

Authorized by: (Chop)

Date: 7th Jul 2007

COMMITMENT
LETTER OF PRODUCTS

Info for order 订货所需信息

订货时用户需提供下列信息：

- a) 产品名称 (钢板或钢带) ；
- 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

- a) Product name
- b) Product standard
- c) Grade
- d) Specification and precision (Including thickness, width and inside diameter of coil)
- e) Roughness precision
- f) Coating weight
- g) Surface treatment
- h) Surface quality
- i) Weight
- j) Package





薄板销售部
Steel Sheet Sales Department

地址: 上海宝山同济路1800号
邮编: 201900
电话: 021-26645354 26649834
传真: 021-26645329

产品发展部
Product Development Department

地址: 上海宝山同济路1800号
邮编: 201900
电话: 021-26645552
传真: 021-26645299

宝钢服务热线
Baosteel Service Hot-line

400-820-8590

宝钢在线

http://www.baosteel.net.cn

国内贸易公司

上海宝钢钢材贸易有限公司

电话: 021-50509696
传真: 021-68404618

广州宝钢南方贸易有限公司

电话: 020-32219999
传真: 020-32219555

天津宝钢北方贸易有限公司

电话: 022-84905800
传真: 022-84905806

成都宝钢西部贸易有限公司

电话: 028-85335388
传真: 028-85335680

武汉宝钢华中贸易有限公司

电话: 027-84298800
传真: 027-84298224

上海宝钢商贸有限公司

电话: 021-60869800
传真: 021-60869804

上海宝钢浦东国际贸易有限公司

电话: 021-36014655
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电话: 021-36014688
传真: 021-51266500

长春宝钢钢材贸易有限公司

电话: 0431-85889320
传真: 0431-85889317

沈阳宝钢钢材贸易有限公司

电话: 024-62220699
传真: 024-88210198

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: 0081-3-3237-9121
FAX: 0081-3-3237-9123

宝和通商首尔事务所
HOWA TRADING CO., LTD., SEOUL OFFICE

TEL: 0082-2-5080893
FAX: 0082-2-5080891

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

印度代表处
INDIA OFFICE

TEL: 91-22-67863100
FAX: 91-22-67863110

越南代表处
VIETNAM OFFICE

TEL: 0084-8-39100126
FAX: 0084-8-39100124

泰国代表处
THAILAND OFFICE

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

宝钢欧洲有限公司
BAOSTEEL EUROPE GMBH

TEL: 0049-40-41994101
FAX: 0049-40-41994120

宝钢中东代表处
BAOSTEEL MIDDLE EAST REPRESENTATIVE OFFICE

TEL: 00971-4-8840458
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宝钢西班牙有限公司
BAOSTEEL ESPAÑA, S.L.

TEL: 0034-93-4119325
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宝钢意大利钢材集散中心有限公司
BAOSTEEL ITALIA DISTRIBUTION CENTER SPA

TEL: 0039-010-5308872
FAX: 0039-010-5308895

宝钢东欧代表处
BAOSTEEL CENTRAL AND EAST EUROPE OFFICE

TEL: 0048-32-7315012
FAX: 0048-32-7315011

美洲大区 America Region

宝钢美洲贸易有限公司
BAOSTEEL AMERICA INC.

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FAX: 001-201-3073358

底特律代表处
DETROIT OFFICE

TEL: 001-248-2089918
FAX: 001-248-2080999

休斯顿代表处
HOUSTON OFFICE

TEL: 001-281-4847333
FAX: 001-281-4842655

洛杉矶代表处
LOS ANGELES OFFICE

TEL: 001-949-7526789
FAX: 001-949-7521234

宝钢巴西贸易有限公司 (宝美巴西代表处)
BAOSTEEL DO BRAZIL PTE LTDA.

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