



北京首钢股份有限公司
BEIJING SHOUGANG CO., LTD.

冷轧家电板 产品手册

COLD ROLLED HOME APPLIANCE SHEET
PRODUCT MANUAL

北京首钢股份有限公司
Beijing Shougang Co., Ltd.



Products Introduction

产品介绍

1 冷轧退火产品 Cold rolled Annealed steel sheets & strips

1.1 冲压用冷轧低碳钢板及钢带 Cold Rolled Low Carbon Steel Sheets & Strips

(1) 牌号和用途 Steel Grades and Application

钢板及钢带的牌号和分类见下表。如要求按其他牌号订货，经供需双方协商，可按照后附相近牌号对照表中对应牌号组织生产交货。

Steel grades and applications are shown in the following table. If other steel grades are ordered, please negotiate with the manufacturer to organize the production and delivery according to the following reference list of corresponding steel grades.

牌号 Steel Grades	用途 Application	钢级代号 Code	标准 Standard
DC01/SPCC/St12/CS C	一般用 Commercial purpose	CQ	QSGZGS 0324-2020
DC03/SPCD/St13/CS A/CS B	冲压用 Drawing	DQ	
DC04/SPCE/St14/DS A/DS B	深冲用 Deep Drawing	DDQ	
DC05/SPCF/St15/DDS	特深冲用 Extra Deep Drawing	EDDQ	
DC06/SPCG/St16/EDDS	超深冲用 Supereme extra Deep Drawing	SEDDQ	
DC07/St17	特超深冲用 Extra Deep Drawing	SEDDQ	

(2) 化学成分 Chemical Compositions (单位 Unit:%)

牌号 Steel Grades	C ≤	P ≤	S ≤	Mn ≤	Ti ≤
DC01/ St12	0.12	0.030	0.030	0.60	— ^a
DC03/ St13	0.10	0.025	0.025	0.45	— ^a
DC04/ St14	0.08	0.025	0.025	0.40	— ^a
DC05/ St15	0.06	0.020	0.020	0.35	— ^a
DC06/ St16	0.02	0.020	0.020	0.25	0.20 ^b
DC07/ St17	0.01	0.020	0.020	0.20	0.20 ^b

^a可添加 Nb 和 / 或 Ti。Nb and /or Ti can be added.
^b可用 Nb 代替部分 Ti, 此时 Nb 和 Ti 的总含量应不大于该规定值。Part of Ti can be replaced by Nb, and the total content of Nb and Ti should not be greater than the specified value.

牌号 Steel Grades	C ≤	Mn ≤	P ≤	S ≤
SPCC	0.15	0.60	0.100	0.035
SPCD	0.10	0.50	0.040	0.035
SPCE	0.08	0.45	0.030	0.030
SPCF	0.06	0.45	0.030	0.030
SPCG	0.02	0.25	0.020	0.020
DC07/ St17	0.01	0.020	0.020	0.20

允许添加其它合金元素。The addition of other alloying elements is allowed.
^a不适用于 1/8 硬质、1/4 硬质、1/2 硬质和硬质的钢板及钢带。It is not suitable for 1/8 hard、1/4 hard、1/2 hard and hard steel sheets & strips.
^b经供需双方协商，Mn、P、S 的规定可更改。The provisions of Mn, P and S can be changed upon negotiation between the parties.

牌号 Steel Grades	C ≤	Mn ≤	P ≤	S ≤	Alt ≥
CS A	≤ 0.10	0.60	0.025	0.035	0.01
CS B	0.02 ~ 0.15	0.60	0.025	0.035	0.01
CS C	≤ 0.08	0.60	0.10	0.035	0.01
DS A	≤ 0.08	0.50	0.020	0.020	0.01
DS B	0.02 ~ 0.08	0.50	0.020	0.020	0.02
DDS	≤ 0.06	0.50	0.020	0.020	0.01
EDDS	≤ 0.02	0.40	0.020	0.020	0.01

可添加 Nb 和 / 或 Ti, 当 C ≤ 0.02% 时, Nb ≤ 0.10%,Ti ≤ 0.15%; 当 C ≥ 0.02% 时 ,Ti ≤ 0.025%。
Nb and/or Ti can be added , if C ≤ 0.02%, Nb ≤ 0.10%, Ti ≤ 0.15%; if C>0.02%,Ti ≤ 0.025%.

(3) 力学性能 Mechanical Properties

牌号 Steel Grades	屈服强度 Yield strength ^{a,b} MPa	抗拉强度 Tensile strength ^a ,R _m MPa	下列公称厚度 (mm) 的断后伸长率 ^a , longation A80mm,%, ≥ Elongation after fracture,A 80mm,%, ≥						下列公称厚度 (mm) 的 r ₉₀ 值 ^c , 不小于 r ₉₀ ^c min.		n ₉₀ 值不小 于 ^c
			< 0.30	0.30~ < 0.50	0.50~ < 0.70	0.70~ < 1.0	1.0~ < 1.6	≥ 1.6	≤ 2.0	> 2.0 ~ 2.5	
DC01/ St12	140~280 ^d	270~410	24	26	28	30	32	34	—	—	—
DC03/ St13	130~240	270~370	—	30	32	34	35	36	1.3	1.1	—
DC04/ St14	130~210	270~350	—	34	36	38	39	40	1.6	1.4	0.18
DC05/ St15	120~180	270~330	—	35	38	40	40	41	1.9	1.7	0.20
DC06/ St16	110~170	270~330	—	37	39	41	42	43	2.1	1.9	0.22
DC07/ St17	100~150	250~310	—	40	42	44	44	44	2.5	2.3	0.23
^a 试样为 GB/T 228.1-2010 中的 P6 试样 (L₀ = 80mm,b₀ = 20mm), 试样方向为横向。 ^a No. P6 test piece (L0=80mm, b0=20mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the transverse direction. ^b 无明显屈服现象时应采用 R_{p0.2}, 否则采用 R_{el}。当 0.50mm <厚度≤ 0.70mm 时, 屈服强度上限值可增加 20 MPa; 当厚度≤ 0.50mm 时, 屈服强度上限值可增加 40MPa。 ^b If the yield point is not pronounced, the values apply to the 0.2%- proof strength Rp0.2, otherwise the lower yield point ReL is applied. When the thickness is more than 0.5mm and less than or equal to 0.7mm, the maximum value for yield strength is increased by 20MPa. And when the thickness is less than or equal to 0.5mm, the maximum value for yield strength is increased by 40MPa. ^c r₉₀ 值和 n₉₀ 值的要求仅适用于厚度≥ 0.50mm 的产品。厚度大于 2.5mm 时, r₉₀ 值不作要求。 ^c r₉₀ and n₉₀ are applicable only when thickness is more than or equal to 0.50mm. No guarantee for r₉₀ value in case of thickness ≥ 2.5mm. ^d DC01、St12 的屈服强度上限值 280MPa 仅适用于产品制造完成之日起的 8 天内。 ^d The upper limit of yield strength (280MPa) of DC01 and St12 is only applicable within 8 days after they are produced.											

代号 Designation	屈服强度 ^{a,b} , MPa Yield Strength	断后伸长率 ^a ,A50mm,%, ≥ Elongation A50mm,%, ≥	ṛ 值 ^{a,c} Value ^{a,c}	n̄ 值 ^{a,d} Value ^{a,d}
CS A、CS B、CS C	140 ~ 275	30	—	—
DS A、DS B	150 ~ 240	36	1.3 ~ 1.7	0.17 ~ 0.22
DDS	115 ~ 200	38	1.4 ~ 1.8	0.20 ~ 0.25
EDDS	105 ~ 170	40	1.7 ~ 2.1	0.23 ~ 0.27
^a 试样为 GB/T 228.1-2010 中的 P5 试样 (L0=50mm,b0=12.5mm), 试样方向为纵向。 ^a No. P5 test piece (L0=50mm, b0=12.5mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the longitudinal direction. ^b 无明显屈服现象时采用 Rp0.2, 否则采用下屈服强度 ReL。 ^b If the yield point is not pronounced, the values apply to the 0.2%- proof strength Rp0.2, otherwise the lower yield point ReL is applied. ^c $\bar{r} = (r_{90} + 2r_{45} + r_{90}) / 4$。 ^d $\bar{n} = (n_{90} + 2n_{45} + n_{90}) / 4$。				

DC01、St12、SPCC 的力学性能有效期不作保证，且牌号 DC01、St12 应符合表 7 中角注 d 规定；其它牌号规定的力学性能有效期为制造完成后 6 个月内。由于时效的影响，建议用户尽早使用。

The validity period of mechanical properties of DC01, St12 and SPCC is not guaranteed, and the grades DC01 and St12 should conform to the provisions of corner note d in Table 7; The validity period of mechanical properties specified in other brands is 6 months after completion of manufacturing. Due to the influence of aging, it is recommended that users use it as soon as possible.

(4) 拉伸应变痕 Stretcher strain marks

仅适用于表面质量级别为 FC 和 FD 的钢板及钢带

It is only applied to the steel sheets & strips with surface quality grade FC and FD.

低碳钢通常会发生时效，导致屈服强度上升，断后延伸率下降，加工过程中产生桔皮，表面粗糙等缺陷，因此，需规定各牌号的拉伸应变痕保证时间。各牌号拉伸应变痕如下表所示。

Aging often occurs on low carbon steel and causes steel yield strength to increase and elongation to decrease, which may lead to the occurrence of defects such as orange peels and coarse surface during processing. Therefore, it is necessary to specify guarantee time for tensile strain marks of each steel grade. Refer to following table for provisions of tensile strain marks of each steel grade.

牌号 Steel Grades	拉伸应变痕 Tensile strain mark
SPCC	不保证。 No guarantee period.
DC01、St12、SPCD、CS A、CS B、CS C	自生产完成之日起 3 个月内使用时不应出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 3 months from the date on which the products are made available at the manufacturer’ s work.
DC03、DC04、St13、St14、SPCE、DS A、DS B、DDS	自生产完成之日起 6 个月内使用时不应出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 3 months from the date on which the products are made available at the manufacturer’ s work.
DC05、DC06、DC07、St15、St16、St17、SPCF、SPCG、EDDS	使用时不应出现拉伸应变痕。 The products shall be free from stretcher strain marks when forming.

(5) 相近牌号对照表 Reference list of similar steel grades

Q/SGZGS 0324-2020				GB/T 5213 -2019	EN 10130 -2006	DIN 1623.1 -1983	JIS G3141:2017	JFS A 2001:2014	ASTM A1008M-18	ISO 3574-2012
DC01	St12	SPCC	CS C	DC01	DC01	St12	SPCCT	JSC270C	CS Type C	CR1
DC03	St13	SPCD	CS A CS B	DC03	DC03	RRSt13	SPCD	JSC270D	CS Type A CS Type B	CR2
DC04	St14	SPCE	DS A DS B	DC04	DC04	St14	SPCE	JSC270E	DS Type A DS Type B	CR3
DC05	St15	SPCF	DDS	DC05	DC05	—	SPCF	JSC270F	DDS	CR4
DC06	St16	SPCG	EDDS	DC06	DC06	—	SPCG	JSC260G	EDDS	CR5
DC07	St17	—	—	DC07	DC07	—	—	—	—	—

(6) 可订货规格 Available dimensions (单位 Unit: mm)

牌号 Steel Grades	公称厚度 Nominal thickness	公称宽度 Nominal width
冷轧低碳钢板及钢带 Cold rolled steel sheets & strips	0.20~<0.30	700-1250
	0.30~<0.40	700-1320
	0.40~<0.50	700-1520
	0.50~<0.55	700-1580
	0.55~<0.60	780-1580
	0.60~<0.70	800-1700
	0.70~<0.90	800-2020
	0.90~<1.20	800-2050
	1.20~<1.60	800-2000
	1.60~<2.00	900-1900
	2.00~<2.30	900-1800



1.2 家电面板用冷轧钢板及钢带 Cold rolled steel sheet & strip for outer panels of home appliances

(1) 牌号和用途 Steel Grades and Application

牌号 Steel Grades	应用领域 Application field	标准 Standard
JD1	主要应用于冰箱侧板、冰柜外板简单成型件 Simple forming parts: Side plate of refrigerator、outer plate of cooler etc.	QSGZGS 0295-2018
JD2	主要应用于洗衣机箱体、冰箱门板一般成型件 General forming parts: Panel of refrigerator, outer plate of washer etc.	
JD3	微波炉外板等复杂成型件 Complex forming parts: Outer plate of microwave oven, panel of Refrigerator, outer plate of washer etc.	

(2) 化学成分 Chemical Compositions (单位 Unit:%)

牌号 Steel Grades	C ≤	Si ≤	Mn ≤	P ≤	S ≤
JD1	0.12	0.05	0.60	0.040	0.040
JD2	0.10	0.05	0.50	0.030	0.030
JD3	0.08	0.05	0.40	0.020	0.025

(3) 力学性能 Mechanical Properties

牌号 Steel Grades	屈服强度 a,b Yield strength MPa	抗拉强度 ^a Tensile Strength Rm,MPa	断后伸长率 ^a , longation A50mm,%, ≥	洛氏硬度 ^c Rockwell Hardness
JD1	260~340	≥ 340	≥ 30	≥ 50
JD2	200~300	≥ 300	≥ 32	≥ 45
JD3	150~220	≥ 270	≥ 35	≥ 40

^a 试样为 GB/T 228.1 中的 P7 试样 (L0=50mm,b0=25mm) , 试样方向为横向。
No. P7 test piece (L0=50mm, b0=25mm) specified in GB/T 228.1 shall be used, and the test shall be carried out in the transverse direction.
^b 无明显屈服现象时采用 Rp0.2, 否则采用下屈服强度 ReL。
If the yield point is not pronounced, the values apply to the 0.2%- proof strength Rp0.2, otherwise the lower yield point ReL is applied.
^c 当厚度小于 0.8mm 时, 采用洛氏硬度 HR30T; 当厚度大于等于 0.8mm 时, 采用洛氏硬度 HRB。
HR30T shall be applied when the thickness is less than 0.8mm. And HRB shall be applied when the thickness is more than or equal to 0.8mm.

(4) 拉伸应变痕 Stretcher strain marks

由于此类钢种时效的影响, 建议用户尽早使用。
It is suggested to use it as soon as possible due to the influence of aging.

(5) 可订货规格 Available dimensions

牌号 Steel Grades	公称厚度 Nominal thickness	公称宽度 Nominal width
家电面板专用冷轧钢板及钢带 Cold rolled steel sheet & strip for Application	0.30~<0.40	800-1320
	0.40~<0.50	780-1520
	0.50~<0.60	800-1580
	0.60~<0.70	800-1700
	0.70~<0.90	800-2020
	0.90~<1.00	800-2050
	1.00~<1.20	800-2080
	1.20~<1.60	800-2000
	1.60~<2.00	800-1900
	2.00-2.50	800-1850
	2.00~<2.30	900-1800

1.3 家电搪瓷用冷轧钢板及钢带 Cold rolled steel sheet and strip for enamelling

(1) 牌号和用途 Steel Grades and Application

牌号 Steel Grades	用途 application	供货标准 Supply Standard
STC1	主要应用于热水器内胆、烤箱托盘、浴缸、幕墙、换热器元件等 Mainly applied in inner of water heater, baking tray 、bathtub, curtain 、Heat exchanger element etc.	Q/SGZGS 0360-2016
STC2		
STC-H		按协议生产 Production according to the discussion between the user and the supplier.
STC3		按协议生产 Production according to the discussion between the user and the supplier.
HC300EK		按协议生产 Production according to the discussion between the user and the supplier.

(2) 化学成分 Chemical Compositions （单位 Unit:%）

牌号 Steel Grades	化学成分 Chemical compositions （Heat analysis） %					
	C ≤	Si ≤	Mn ≤	P ≤	S ≤	O ≤
STC1	0.008	0.03	0.35	0.025	0.050	-
STC2	0.08	0.03	0.55	0.025	0.050	-
STC-H	0.06	0.03	0.5	0.025	0.025	-
STC3	0.10	0.10	0.40	0.035	0.050	0.07
HC300EK	0.08	0.2	0.6	0.025	0.050	

(3) 力学性能 Mechanical Properties

牌 号 Steel Grades	屈服强度 ^{a,b} Yield strength MPa	抗拉强度 ^a Tensile strength R _m ,MPa,	断后伸长率 ^a longation A80mm%, ≥				断后伸长率 ^c longation A50mm%, ≥	r90 值 ^a ≥	n90 值 ^a ≥
			< 0.6	0.6~ < 1.0	1.0~ < 1.6	≥ 1.6			
STC1	120~200	≥ 260	34	36	38	40		1.8	0.2
STC2	150~280	≥ 280	30	32	34	36		—	—
STC3	140~300	270-450					30		
STC-H	230~320	350~470					35		
HC300EK	≥ 300	≥ 380					29		

^a 试样为 GB/T 228.1 中的 P6 试样 (L₀ = 80mm,b₀ = 20mm)，试样方向为横向。
No. P6 test piece (L₀=80mm, b₀=20mm) specified in GB/T 228.1 shall be used, and the test shall be carried out in the transverse direction.

^b 无明显屈服现象时应采用 R_{p0.2}, 否则采用 R_{eLo}
If the yield point is not pronounced, the values apply to the 0.2%- proof strength R_{p0.2}, otherwise the lower yield point R_{eL} is applied.

^c 试样为 GB/T 228.1 中的 P7 试样 (L₀ = 50mm,b₀ = 25mm)，试样方向为横向。
No. P7 test piece (L₀=50mm, b₀=25mm) specified in GB/T 228.1 shall be used, and the test shall be carried out in the transverse direction.

(4) 可订货规格 Available dimensions(单位 Unit:mm)

牌号 Steel Grades	公称厚度 Nominal thickness	公称宽度 Nominal width
搪瓷用钢 Cold rolled steel sheet and strip for enamelling	0.40~<0.50	800-1400
	0.50~<0.60	800-1580
	0.60~<0.70	800-1700
	0.70~<0.90	800-2020
	0.90~<1.00	800-2050
	1.00~<1.20	800-2080
	1.20~<1.60	800-2000
	1.60~<2.00	900-1900
	2.00~<2.30	900-1800
	2.30-2.50	900-1650



1.4 家电电油汀用冷轧钢板及钢带 Cold rolled steel sheet and strip for Electricity oil heater

(1) 牌号和用途 Steel Grades and Application

牌号 Steel Grades	用途 application	供货标准 Supply Standard
SEH1	电油汀 Electricity oil heater	按协议生产 Production according to the discussion between the user and the supplier.

(2) 化学成分 Chemical Compositions（单位 Unit:%）

牌号 Steel Grades	化学成分 Chemical compositions （Heat analysis） %					
	C ≤	Si ≤	Mn ≤	P ≤	S ≤	Ti ^a ≤
SEH1	0.12	0.50	0.60	0.10	0.045	0.30
^a 可用 Nb 代替部分 Ti, 此时 Nb 和 Ti 的总含量应不大于 0.30%。 Part of Ti can be replaced by Nb, and the total content of Nb and Ti should not be greater than 0.30%.						

(3) 力学性能 Mechanical Properties

牌号 Steel Grades	屈服强度 Yield strength ^{a,b} ReL MPa	抗拉强度 Tensile strength ^b Rm MPa	断后伸长率 After breakage percent elongation ^b A80mm%	r90	n90
SEH1	≤ 180	≥ 270	≥ 41	≥ 1.9	≥ 0.20
^a 屈服现象不明显时，采用 R _{p0.2} ，否则采用 R _{eLo} 。 Taking R _{p0.2} in case of indistinct yield, otherwise ReL. ^b 试样为 GB/T 228.1 中的 P6 试样 (L ₀ = 80mm,b ₀ = 20mm)，试样方向为横向。 Using P6 sample of GB/T 228.1 (L ₀ = 80mm,b ₀ = 20mm)，taking the horizontal sample.					

(4) 可订货规格 Sizes （单位 Unit:mm）

名称 Classification	公称厚度 Nominal thickness	公称宽度 Nominal width
电油汀用冷轧钢板及钢带 Cold rolled steel sheet and strip for Electricity oil heater	0.40~1.00	800~1600



1.5 表面质量 Surface Quality

表面质量级别 Grade	代号 Code No.	特征 Features
较高级的精整表面 Relatively high-grade finishing surface	FB(O3)	表面允许有少量不影响成型性及涂、镀附着力的缺陷，如轻微的划伤、压痕、麻点、辊印及氧化色等。 It is allowed for the existence of a few surface defects which will not affect forming and coating & plating adhesiveness such as minor scratch, impression, pit, roll mark and oxidation tint.
高级的精整表面 High-grade finishing surface	FC(O4)	产品两面中较好的一面无肉眼可见的明显缺陷，另一面至少应达到 FB 的要求。 One side of relatively good quality is free from any remarkable defect visible and the other side must reach FB requirements at least.
超高级的精整表面 Ultra high-grade finishing surface	FD(O5)	产品两面中较好的一面不应有任何缺陷，即不能影响涂漆后的外观质量或电镀后的外观质量，另一面至少应达到 FB 的要求。 One side of relatively good quality is free from any defect, namely appearance quality after painting or electrogalvanizing is not affected, and the other side must reach FB requirements at least.

对于钢带，由于不易切除有缺陷部分，因此允许带缺陷交货，但有缺陷部分不应超过每卷总长度的 6%。
For steel strips, it is so hard to cut the defect part that the delivered with defects is allowed. But the length of the defect part shall be no more than 6% of the total.

钢板及钢带表面不应有结疤、裂纹、夹杂等对使用有害的缺陷，钢板及钢带不得有分层。
It is not allowed for the existence of surface defects which will affect usage such as scabs, cracks, inclusions, etc. No delamination is allowed.

1.6 交货状态 Delivery Conditions

(1) 钢板及钢带以退火后平整状态交货。
The delivered steel sheets & strips shall be annealed and skin passed.

(2) 钢板及钢带通常涂油供货，所涂油膜应能用碱水溶液去除。在通常的包装、运输、装卸及储存条件下，供方应保证自制造完成之日起六个月内，钢板及钢带表面不生锈。如根据需方要求不涂油供货，则供方不承担产品因不涂油而发生的锈蚀及各种划伤等风险。
The delivered steel sheets & strips are usually applied with oil film, which can be swept away with alkali solution. The supplier guarantees that the oiled products will be free from rust under normal packing, transportation, loading and storage conditions within 6 months after they are produced. Products without oil coating can also be supplied according to the requirements of the user. However, the supplier does not respond the risk of rust and various scratches.

1.7 尺寸允许偏差 Tolerances on Dimensions

(1) 厚度允许偏差 Tolerances on Thickness

单位为毫米 Dimensions in millimeters

规定的最小屈服强度 Specified minimum yield strength Re MPa	公称厚度 Nominal thickness	下列公称宽度下的厚度允许偏差 ^{a,b} Tolerances on thickness for a nominal width ^{a,b}					
		普通精度 PT.A Normal tolerances			高 级 精 度 PT.B Advanced tolerances		
		≤ 1200	> 1200 ~ 1500	> 1500	≤ 1200	> 1200 ~ 1500	> 1500
< 260	≤ 0.25	±0.02	±0.03	±0.03	±0.015	±0.020	±0.025
	> 0.25 ~ 0.40	±0.03	±0.04	±0.05	±0.020	±0.025	±0.030
	> 0.40 ~ 0.60	±0.03	±0.04	±0.05	±0.025	±0.030	±0.035
	> 0.60 ~ 0.80	±0.04	±0.05	±0.06	±0.030	±0.035	±0.040
	> 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	±0.09	±0.10	±0.050	±0.060	±0.070
	> 1.60 ~ 2.00	±0.10	±0.11	±0.12	±0.060	±0.070	±0.080
	> 2.00 ~ 2.50	±0.12	±0.13	±0.14	±0.080	±0.090	±0.100
	> 2.50 ~ 3.00	±0.15	±0.15	±0.16	±0.100	±0.110	±0.120
260 ~ < 340	≤ 0.25	±0.03	±0.04	±0.04	±0.020	±0.025	±0.030
	> 0.25 ~ 0.40	±0.04	±0.05	±0.06	±0.025	±0.030	±0.035
	> 0.40 ~ 0.60	±0.04	±0.05	±0.06	±0.030	±0.035	±0.040
	> 0.60 ~ 0.80	±0.05	±0.06	±0.07	±0.035	±0.040	±0.050
	> 0.80 ~ 1.00	±0.06	±0.07	±0.08	±0.040	±0.050	±0.060
	> 1.00 ~ 1.20	±0.07	±0.08	±0.10	±0.050	±0.060	±0.070
	> 1.20 ~ 1.60	±0.09	±0.11	±0.12	±0.060	±0.070	±0.080
	> 1.60 ~ 2.00	±0.12	±0.13	±0.14	±0.070	±0.080	±0.100
	> 2.00 ~ 2.50	±0.14	±0.15	±0.16	±0.100	±0.110	±0.120
	> 2.50 ~ 3.00	±0.17	±0.18	±0.18	±0.120	±0.130	±0.140
340 ~ 420	≤ 0.25	±0.03	±0.04	±0.04	±0.025	±0.030	±0.035
	> 0.25 ~ 0.40	±0.04	±0.05	±0.06	±0.030	±0.035	±0.040
	> 0.40 ~ 0.60	±0.05	±0.06	±0.07	±0.035	±0.040	±0.050
	> 0.60 ~ 0.80	±0.06	±0.07	±0.08	±0.040	±0.050	±0.060
	> 0.80 ~ 1.00	±0.07	±0.08	±0.10	±0.050	±0.060	±0.070
	> 1.00 ~ 1.20	±0.09	±0.10	±0.11	±0.060	±0.070	±0.080
	> 1.20 ~ 1.60	±0.11	±0.12	±0.14	±0.070	±0.080	±0.100
	> 1.60 ~ 2.00	±0.14	±0.15	±0.17	±0.080	±0.100	±0.110
	> 2.00 ~ 2.50	±0.16	±0.18	±0.19	±0.110	±0.120	±0.130
	> 2.50 ~ 3.00	±0.20	±0.20	±0.21	±0.130	±0.140	±0.150
> 420	≤ 0.25	±0.04	±0.05	±0.05	±0.030	±0.035	±0.040
	> 0.25 ~ 0.40	±0.05	±0.06	±0.07	±0.035	±0.040	±0.050
	> 0.40 ~ 0.60	±0.05	±0.07	±0.08	±0.040	±0.050	±0.060
	> 0.60 ~ 0.80	±0.06	±0.08	±0.10	±0.050	±0.060	±0.070
	> 0.80 ~ 1.00	±0.08	±0.10	±0.11	±0.060	±0.070	±0.080
	> 1.00 ~ 1.20	±0.10	±0.11	±0.13	±0.070	±0.080	±0.100
	> 1.20 ~ 1.60	±0.13	±0.14	±0.16	±0.080	±0.100	±0.110
	> 1.60 ~ 2.00	±0.16	±0.17	±0.19	±0.100	±0.110	±0.130
	> 2.00 ~ 2.50	±0.19	±0.20	±0.22	±0.130	±0.140	±0.160
	> 2.50 ~ 3.00	±0.22	±0.23	±0.24	±0.160	±0.170	±0.180
^a 钢 带两端各 10m 内的厚度允许偏差可比规定值超出 50%。 ^a The thickness tolerances may be increased by a maximum of 50% in the region over a length of 10 meters at each end of the steel strip. ^b 纵切钢带的厚度允许偏差：应符合纵切前钢带的相关规定。 ^b The thickness tolerances of the slit wide strip shall comply with the relevant regulations of the strip before slitting.							

(2) 宽度允许偏差（冷轧钢板、钢带）Tolerances on Width

切边钢板和钢带的宽度允许偏差（Tolerances on Width of Trimmed sheet and Strip）

单位为毫米 Dimensions in millimeters

公称宽度 Nominal width	宽度允许偏差 Tolerances on width	
	普通精度 PW.A Normal tolerances	高级精度 PW.B Advanced tolerances
≤ 1200	0/+4	0/+2
> 1200 ~ 1500	0/+5	0/+2
> 1500	0/+6	0/+3

产品状态 Product	公称长度 Nominal length	镰刀弯 不大于 Tolerances on camber /max.		测量长度 Measuring length
		普通精度 PS.A Normal tolerances	高级精度 PS.B Advanced tolerances	
钢带 Wide strip	—	5	2	2000
纵切钢带 Slit wide srtip	—	2	—	2000
钢板 sheet	≤ 2000	0.25%× 实际长度 0.25% of the actual length	2	实际长度 Actual length
	> 2000	5	2	2000

纵切钢带的宽度允许偏差（Tolerances on Width of Slit Wide Strip）

单位为毫米 Dimensions in millimeters

	公称厚度 Nominal thickness	下列公称宽度下的宽度允许偏差 Tolerances on width for a nominal width				
		120 ~ < 125	125 ~ < 250	250 ~ < 400	400 ~ < 600	600 ~ 900
普通精度 PW.A Normal tolerances	< 0.60	0/+0.4	0/+0.5	0/+0.7	0/+1.0	0/+1.5
	0.60 ~ < 1.00	0/+0.5	0/+0.6	0/+0.9	0/+1.2	0/+1.5
	1.00 ~ < 2.00	0/+0.6	0/+0.8	0/+1.1	0/+1.4	0/+2.0
	≥ 2.00	0/+0.7	0/+1.0	0/+1.3	0/+1.6	0/+2.0
高级精度 PW.B Advanced tolerances	< 0.60	0/+0.2	0/+0.2	0/+0.3	0/+0.5	0/+0.6
	0.60 ~ < 1.00	0/+0.2	0/+0.3	0/+0.4	0/+0.6	0/+0.7
	1.00 ~ < 2.00	0/+0.3	0/+0.4	0/+0.5	0/+0.7	0/+0.8
	≥ 2.00	0/+0.4	0/+0.5	0/+0.6	0/+0.8	0/+0.9

(3) 长度允许偏差 Tolerances on length

公称长度 Nominal length	长度允许偏差 Tolerances on length	
	普通精度 PL.A Normal tolerances	高级精度 PL.B Advanced tolerances
≤ 2000	0/+6	0/+3
> 2000	0/+0.3%× 公称长度 0/+0.3%of the nominal length	0/+0.15%× 公称长度 0/+0.15%of the nominal length

(4) 不平度 Tolerances on flatness

规定的最小屈服强度 Specified minimum yield strength Re MPa	公称宽度 Nominal width mm	下列厚度下的不平度 mm 不大于 Tolerances on flatness for a nominal thickness/mm/max.					
		普通精度 P.F.A Normal tolerances			高级精度 P.F.B Advanced tolerances		
		< 0.7	0.7 ~< 1.2	≥ 1.2	< 0.7	0.7 ~< 1.2	≥ 1.2
< 260	≤ 600	7	6	5	4	3	2
	> 600 ~ 1200	10	8	7	5	4	3
	> 1200 ~ 1500	12	10	8	6	5	4
	> 1500	17	15	13	8	7	6
260 ~< 340	≤ 600	供需双方协商。Negotiation between supply and demand.					
	> 600 ~ 1200	13	10	8	8	6	5
	> 1200 ~ 1500	15	13	11	9	8	6
	> 1500	20	19	17	12	10	9
≥ 340	780 ~ 2080	供需双方协商。Negotiation between supply and demand.					

(5) 镰刀弯 (Tolerances on edge camber)

产品状态 Product	公称长度 Nominal length	镰刀弯 不大于 Tolerances on camber /max.		测量长度 Measuring length
		普通精度 PS.A Normal tolerances	高级精度 PS.B Advanced tolerances	
钢带 Wide strip	—	5	2	2000
纵切钢带 Slit wide srtip	—	2	—	2000
钢板 sheet	≤ 2000	0.25%× 实际长度 0.25% of the actual length	2	实际长度 Actual length
	> 2000	5	2	2000



2 连续热镀锌 / 锌铝镁 / 锌铁合金钢板及钢带

Hot dip Zn coated, ZM coated, ZF coated steel sheets and strips

首钢生产的热镀锌钢板，锌层附着力强，耐腐蚀能力强， 锌层厚度控制准确，尺寸精度高，板形平直，有良好的力学性能， 加工性和焊接性。

Hot dip galvanized sheets of Shougang are featured with strong coating adhesiveness, high erosion-resistance, accurately controlled zinc coating thickness, high size precision, flat profile and good mechanical, processing and welding performance.

2.1 低碳铝镇静钢板及钢带 Low carbon Aluminum killed steel sheets and strips

(1) 牌号和用途 Steel Grades and Applications

钢板及钢带的牌号和分类见下表。如要求按其他牌号订货，经供需双方协商，可按照后附相近牌号对照表中对应牌号组织。

Steel grades and application are shown in the following table. If other steel grade be ordered, please negotiate with the manufacturer to organize the production and delivery according to the following reference.

牌号 Steel Grades		应用领域 Application field	按钢种分类 Steel Classification	标准 Standard
钢种标识 Steel	镀层种类标识 Coating Variety			
DC51D	+Z、+ZF、+ZM	主要应用于家电结构件 Mainly used in structural parts of household appliances	低碳铝镇静钢 Steel Grades and Applications	Q/SGZGS 0329-2020
DC52D	+Z、+ZF、+ZM			

(2) 化学成分 Chemical Compositions

牌号 Steel Grades	化学成分 Chemical compositions (Heat analysis) %					
	C ≤	Si ≤	Mn ≤	P ≤	S ≤	Ti ^a
DC51D+Z(ZF、ZM)、	0.18	0.50	1.20	0.12	0.045	0.30
DC52D+Z (ZF、ZM)	0.12	0.50	0.60	0.10	0.045	0.30
^a 可用 Nb 代替部分 Ti, 此时 Nb 和 Ti 的总含量应不大于 0.30%。 Part of Ti can be replaced by Nb, and the total content of Nb and Ti should not be greater than 0.30%.						

(3) 力学性能 Mechanical Properties

牌号 Steel Grades	屈服强度 ^{a,b} Yield strength MPa	抗拉强度 ^a Tensile strength R _m ,MPa	断后伸长率 ^a After breakage percent elongation ^a A _{80mm} %, ≥				r ₉₀ ^a ≥	n ₉₀ ^a ≥
			≤ 0.35	> 0.35 ~ 0.50	> 0.50 ~ 0.70	> 0.70		
DC51D+Z(ZF、ZM)	—	270 ~ 500	15	18	20	22	—	—
DC52D+Z (ZF、ZM)	140 ~ 300 ^c	270 ~ 420	19	22	24	26	—	—

^a 试样为 GB/T 228.1-2010 中的 P6 试样 (L₀=80mm, b₀ = 20mm), 试样方向为横向。

^a No. P6 test piece (L₀=80mm, b₀=20mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the transverse direction.

^b 无明显屈服现象时采用 R_{p0.2}, 否则采用下屈服强度 R_{eL}。

^b If the yield point is not pronounced, the values apply to the 0.2%- proof strength R_{p0.2}, otherwise the lower yield point R_{eL} is applied.

^c 表面质量为 FB 时, DC52D 的屈服上限为 360MPa。

^c For surface quality FB, the upper value for yield strength of DC52D is 360MPa.

力学性能有效期为制造完成后 1 个月内。

For surface quality FB, the upper value for yield strength of DC52D is 360MPa.

(4) 拉伸应变痕 Stretcher strain marks

仅适用于表面质量级别为 FC 和 FD 的钢板及钢带

It is only applied to the steel sheets & strips with surface quality grade FC and FD.

牌号 Steel Grades	拉伸应变痕 Tensile strain mark
DC51D+Z(ZF、ZM)、DC52D+Z(ZF、ZM)	应保证在制造完成后 1 个月内使用时不出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 1 months from the date on which the products are made available at the manufacturer’ s work.

(5) 相近牌号对照表 Reference list of similar steel grades

Q/SGZGS 0329-2020	GB/T 2518-2019	EN 10346:2015	DIN 17162:1-1977	DIN 17162:2-1987	JIS G3302:2019	ASTM A653M-19a
DC51D+Z(ZF)	DX51D+Z(ZF)	DX51D+Z(ZF)	St01Z/St02Z	—	SGCC	CS Type C
DC52D+Z(ZF)	DX52D+Z(ZF)	DX52D+Z(ZF)	St03Z	—	SGCD1	CS Type A/B

Q/SGZGS 0329-2020	EN 10346:2015	VDA 239-100:2016
DC51D+ZM	DX51D+ZM	—
DC52D+ZM	DX52D+ZM	CR1

(6) 可订货规格 Available dimensions (单位 Unit:mm)

名称 Classification	公称厚度 Nominal thickness	公称宽度 Nominal width
低碳铝镇静钢 Low carbon aluminum killed steel	0.20-<0.30	800-1200
	0.30-<0.40	800-1320
	0.40-<0.60	800-1550
	0.60-2.50	800-1850

2.2 IF 钢 IF steel

(1) 牌号和用途 Steel Grades and Applications

钢板及钢带的牌号和分类见下表。如要求按其他牌号订货, 经供需双方协商, 可按照后附相近牌号对照表中对应牌号组织

Steel grades and application are shown in the following table. If other steel grade be ordered, please negotiate with the manufacturer to organize the production and delivery according to the following reference.

牌号 Steel Grades		用途 Application	按钢种分类 Steel Classification	标准 Standard
钢种标识 Steel	镀层种类标识 Coating Variety			
DC53D	+Z、+ZF、+ZM	深冲用 Deep drawing	无间隙原子钢 Interstitial Free steel	Q/SGZGS 0329-2020
DC54D	+Z、+ZF、+ZM	特深冲用 Extra-deep drawing		
DC56D	+Z、+ZF、+ZM	超深冲用 Supreme extra-deep drawing		

(2) 化学成分 Chemical Compositions

牌号 Steel Grades	化学成分 Chemical compositions (Heat analysis) %					
	C ≤	Si ≤	Mn ≤	P ≤	S ≤	Ti ^a
DC53D+Z(ZF、ZM)	0.12	0.50	0.60	0.10	0.045	0.30
DC54D+Z (ZF、ZM)	0.12	0.50	0.60	0.10	0.045	0.30
DC56D+Z (ZF、ZM)	0.12	0.50	0.60	0.10	0.045	0.30

^a 可用 Nb 代替部分 Ti, 此时 Nb 和 Ti 的总含量应不大于 0.30%。

Part of Ti can be replaced by Nb, and the total content of Nb and Ti should not be greater than 0.30%.



(3) 力学性能 Mechanical Properties

牌号 Steel Grades		屈服强度 ^{a,b} Yield strength MPa	抗拉强度 ^a Tensile strength R _m ,MPa	断后伸长率 After breakage percent elongation ^a A _{80mm} %, ≥				r ₉₀ ^a ≥	n ₉₀ ^a ≥
				≤ 0.35	> 0.35 ~ 0.50	> 0.50 ~ 0.70	> 0.70		
DC53D+Z(ZF、ZM)		140 ~ 260	270 ~ 380	23	26	28	30	—	—
DC54D	+Z	120 ~ 220	260 ~ 350	29	32	34	36	1.6 ^d	0.18
	+ZF(ZM)			27	30	32	34	1.4 ^d	0.18
DC56D	+Z	120 ~ 180	260 ~ 350	32	35	37	39	1.9 ^d	0.21
	+ZF(ZM)			30	33	35	37	1.7 ^{d,e}	0.20 ^e

^a 试样为 GB/T 228.1-2010 中的 P6 试样 (L₀=80mm,b₀ = 20mm), 试样方向为横向。

^a No. P6 test piece (L₀=80mm, b₀=20mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the transverse direction.

^b 无明显屈服现象时采用 R_{p0.2}, 否则采用下屈服强度 R_{el0}.

^b If the yield point is not pronounced, the values apply to the 0.2%- proof strength R_{p0.2}, otherwise the lower yield point R_{el} is applied.

^d 当产品公称厚度大于 1.5mm 时 ,r₉₀ 最小值可比表中规定值减小 0.2。当产品公称厚度大于 2.5mm 时, r₉₀ 的规定不再适用。

^d When the nominal thickness of the product is more than 1.5mm, the minimum value of r₉₀ is reduced by 0.2 compared to the value specified in the table. And when the nominal thickness is more than 2.5mm, the regulations of r₉₀ are no longer applicable.

^e 当产品公称厚度大于 0.50mm 且小于等于 0.70mm 时, r₉₀ 最小值可比表中规定值减小 0.2, n₉₀ 最小值可比表中规定值减小 0.01; 当产品公称厚度大于 0.35mm 且小于等于 0.50mm 时, r₉₀ 最小值可比表中规定值减小 0.4, n₉₀ 最小值可比表中规定值减小 0.03; 当产品公称厚度小于等于 0.35mm 时, r₉₀ 最小值可比表中规定值减小 0.6, n₉₀ 最小值可比表中规定值减小 0.04。

^e For 0.50mm < nominal thickness ≤ 0.70mm, the minimum r₉₀-value is reduced by 0.2 and the minimum n₉₀-value is reduced by 0.01. For 0.35mm < nominal thickness ≤ 0.50mm, the minimum r₉₀-value is reduced by 0.4 and the minimum n₉₀-value is reduced by 0.03. For nominal thickness ≤ 0.35mm, the minimum r₉₀-value is reduced by 0.6 and the minimum n₉₀-value is reduced by 0.04.

力学性能有效期为制造完成后 6 个月内。

For 0.50mm < nominal thickness ≤ 0.70mm, the minimum r₉₀-value is reduced by 0.2 and the minimum n₉₀-value is reduced by 0.01. For 0.35mm < nominal thickness ≤ 0.50mm, the minimum r₉₀-value is reduced by 0.4 and the minimum n₉₀-value is reduced by 0.03. For nominal thickness ≤ 0.35mm, the minimum r₉₀-value is reduced by 0.6 and the minimum n₉₀-value is reduced by 0.04.

(4) 拉伸应变痕 Tensile strain mark

仅适用于表面质量级别为 FC 和 FD 的钢板及钢带

It is only applied to the steel sheets & strips with surface quality grade FC and FD.

牌号 Steel Grades	拉伸应变痕 Tensile strain mark
DC53D+Z(ZF、ZM) DC54D+Z(ZF、ZM) DC56D+Z(ZF、ZM)	应保证在制造完成后 6 个月内使用时不出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 6 months from the date on which the products are made available at the manufacturer’ s work.

(5) 相近牌号对照表 Reference list of similar steel grades

Q/SGZGS 0329-2020	GB/T 2518-2019	EN 10346:2015	DIN 17162:1-1977	DIN 17162:2-1987	JIS G3302:2019	ASTM A653M-19a
DC53D+Z(ZF)	DX53D+Z(ZF)	DX53D+Z(ZF)	St04Z/St05Z	—	SGCD2	FS Type A/B
DC54D+Z(ZF)	DX54D+Z(ZF)	DX54D+Z(ZF)	—	—	SGCD3	DDS Type C
DC56D+Z(ZF)	DX56D+Z(ZF)	DX56D+Z(ZF)	St06Z	—	SGCD4	DDS Type A

Q/SGZGS 0329-2020	EN 10346:2015	VDA 239-100:2016
DC53D+ZM	DX53D+ZM	CR2
DC54D+ZM	DX54D+ZM	CR3
DC56D+ZM	DX56D+ZM	CR5

(6) 可订货规格 Available dimensions (单位 Unit:mm)

名称 Classification	公称厚度 Nominal thickness	公称宽度 Nominal width
IF 钢 IF steel	0.30-<0.40	750-1350
	0.40-<0.50	750-1520
	0.50-<0.60	750-1580
	0.60-<0.70	750-1700
	0.70-<1.60	750-2080
	1.60-2.50	750-1850

2.3 碳素结构钢板及钢带 Carbon structural steel sheets & strips

(1) 牌号和分类 Steel grades and application

牌号 Steel Grades		用途 Application	按钢种分类 Steel Classification	标准 Standard
钢种标识 Steel	镀层种类标识 Coating Variety			
S220GD	+Z、+ZF、+ZM	家电结构件用 Structural parts of appliances	碳素结构钢 carbon structural steel	Q/SGZGS 0329-2020
S250GD	+Z、+ZF、+ZM			
S280GD	+Z、+ZF、+ZM			
S320GD	+Z、+ZF、+ZM			

(2) 化学成分 Chemical Compositions

牌号 Steel Grades	C ≤	Si ≤	Mn ≤	P ≤	S ≤
S220GD+Z(ZF、ZM)、S250GD+Z(ZF、ZM)、S280GD+Z(ZF、ZM)、S320GD+Z(ZF、ZM)、	0.20	0.60	1.70	0.10	0.045

(3) 力学性能 Mechanical Properties

牌号 Steel Grades		屈服强度 Yield strength ^{a,b} MPa, ≥	抗拉强度 Tensile strength ^{a,c} Rm, MPa, ≥	下列公称厚度 (mm) 的断后伸长率 After breakage percent elongation ^a in following nominal thickness(mm),A _{80mm} %, ≥			
钢种 Steel	镀层种类 Coating Variety			≤ 0.35	≤ 0.35 ~ 0.50	> 0.50 ~ 0.70	> 0.70
S220GD	+Z、+ZF、+ZM	220	300	13	16	18	20
S250GD	+Z、+ZF、+ZM	250	330	12	15	17	19
S280GD	+Z、+ZF、+ZM	280	360	11	14	16	18
S320GD	+Z、+ZF、+ZM	320	390	10	13	15	17

^a 试样为 GB/T 228.1-2010 的 P6 试样 (L₀=80mm,b₀ = 20mm), 试样方向为纵向。
No. P6 test piece (L₀=80mm, b₀=20mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the longitudinal direction.

^b 无明显屈服现象时采用 R_{p0.2}, 否则采用上屈服强度 ReH。
If the yield point is not pronounced, the values apply to the 0.2%- proof strength R_{p0.2}, otherwise the upper yield point ReH is applied.

(4) 拉伸应变痕 Stretcher strain marks

仅适用于表面质量级别为 FC 和 FD 的钢板及钢带。

It is only applied to the steel sheets & strips with surface quality grade FC and FD.

牌号 Steel Grades	拉伸应变痕 Tensile strain mark
S220GD+Z(ZF、ZM)、S250GD+Z(ZF、ZM) S280GD+Z(ZF、ZM)、S320GD+Z(ZF、ZM)	不做保证，建议用户尽早使用。 No guarantee period. So the user is suggested to use the steel as soon as possible.

(5) 相近牌号对照表 Reference list of similar steel grades

Q/SGZGS 0329-2020	GB/T 2518-2019	EN 10346:2015	DIN 17162:1-1977	DIN 17162:2-1987	JIS G3302:2019	ASTM A653M-19a
S220GD+Z(ZF)	S220GD+Z(ZF)	S220GD+Z(ZF)	—	—	—	SS 230
S250GD+Z(ZF)	S250GD+Z(ZF)	S250GD+Z(ZF)	—	StE250Z	SGC340	SS 255
S280GD+Z(ZF)	S280GD+Z(ZF)	S280GD+Z(ZF)	—	StE280Z	SGC400	SS 275
S320GD+Z(ZF)	S320GD+Z(ZF)	S320GD+Z(ZF)	—	StE320Z	—	—

Q/SGZGS 0329-2020	EN 10346:2015	VDA 239-100:2016
S220GD+ZM	S220GD+ZM	—
S250GD+ZM	S250GD+ZM	—
S280GD+ZM	S280GD+ZM	—
S320GD+ZM	S320GD+ZM	—

(6) 可订货规格 Available dimensions（单位 Unit:mm）

名称 Classification	公称厚度 Nominal thickness	公称宽度 Nominal width
碳素结构钢板及钢带 Carbon structural steel sheets and strips	0.35-<0.40	800-1200
	0.40-<0.50	800-1320
	0.50-<0.60	800-1520
	0.60-<0.70	800-1600
	0.70-2.50	800-1850

2.4 彩涂基板专用钢板及钢带 Substrate steel sheets and strips for color coating

(1) 牌号和分类 Steel grades and application

牌号 Steel Grades		用途 Application	按钢种分类 Steel Classification	标准 Standard
钢种标识 Steel	镀层种类标识 Coating Variety			
JD2	+Z、+ZM	彩涂基板用 Substrate steel for color coating	主要应用于家电冰箱、洗衣机面板、侧板等 Mainly used in home appliances refrigerator, washing machine panel, side panel, etc	按照协议生产 Production according to the discussion between the user and the supplier.
JD3	+Z、+ZM			
JD4	+Z、+ZM			
SLGW	+Z、+ZM			
SLZW	+Z、+ZM			

(2) 化学成分 Chemical Compositions

牌号 Steel Grades	化学成分 Chemical compositions （Heat analysis） %					
	C ≤	Si ≤	Mn ≤	P ≤	S ≤	Ti ^a ≤
JD2+Z (ZM)	0.12	0.50	0.60	0.10	0.045	-
JD3+Z (ZM)	0.12	0.50	0.60	0.10	0.045	0.30
JD4+Z (ZM)	0.10	0.50	0.60	0.10	0.045	0.30
SLGW+Z(ZM)	0.10	0.50	0.60	0.10	0.045	0.30
SLZW+Z(ZM)	0.10	0.50	0.60	0.10	0.045	0.30

^a 可用 Nb 代替部分 Ti, 此时 Nb 和 Ti 的总含量应不大于 0.30%。
Part of Ti can be replaced by Nb, and the total content of Nb and Ti should not be greater than 0.30%.

(3) 力学性能 Mechanical Properties

牌号 Steel Grades		屈服强度 Yield strength ^{a,b} MPa, ≥	抗拉强度 Tensile strength ^{a,c} Rm, MPa, ≥	下列公称厚度 (mm) 的断后伸长率 After breakage percent elongation ^a in following nominal thickness(mm),A _{80mm} , %, ≥
钢种 Steel	镀层种类 Coating Variety			
JD2	+Z、+ZM	≤ 240	≥ 280	≥ 32
JD3	+Z、+ZM	130~230	≥ 270	≥ 36
JD4	+Z、+ZM	200~280	≥ 290	≥ 30
SLGW	+Z、+ZM	230~290	≥ 280	≥ 29
SLZW	+Z、+ZM	245~300	≥ 280	≥ 28
^a 试样为 GB/T 228.1-2010 中的 P6 试样 (L ₀ =80mm,b ₀ = 20mm), 试样方向为横向。 No. P6 test piece (L ₀ =80mm, b ₀ =20mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the transverse direction. ^b 无明显屈服现象时采用 R _{p0.2} , 否则采用上屈服强度 ReH。 If the yield point is not pronounced, the values apply to the 0.2%- proof strength R _{p0.2} , otherwise the upper yield point ReH is applied.				

(4) 拉伸应变痕 Stretcher strain marks

仅适用于表面质量级别为 FC 和 FD 的钢板及钢带。

It is only applied to the steel sheets & strips with surface quality grade FC and FD.

牌号 Steel Grades	拉伸应变痕 Tensile strain mark
JD2+Z(ZM)	应保证在制造完成后 1 个月内使用时不出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 1 months from the date on which the products are made available at the manufacturer’ s work.
JD3+Z(ZM) JD4+Z(ZM) SLGW+Z(ZM) SLZW+Z(ZM)	应保证在制造完成后 6 个月内使用时不出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 6 months from the date on which the products are made available at the manufacturer’ s work.
如需方对拉伸应变痕有特殊要求, 应经供需双方协商并在合同中注明。 If the user has some special requirements on tensile strain mark, it shall be indicated in the orders after negotiation between the user and the supplier.	

(5) 可订货规格 Available dimensions（单位 Unit:mm）

名称 Classification	公称厚度 Nominal thickness	公称宽度 Nominal width
彩涂基板专用钢板及钢带 Substrate steel sheets and strips for color coating	0.35-~0.40	800-1200
	0.40-~0.50	800-1320
	0.50-~0.60	800-1520
	0.60-~0.70	800-1600
	0.70-1.00	800-1850

2.5 液晶电视背板专用钢板及钢带 Steel sheets and strips for back panels of LCD TV

(1) 牌号和分类 Steel grades and application

牌号 Steel Grades	用途 Application	标准 Standard
SLCDA	影视、OA 产品 Film and television, OA products	按照供货技术条件生产 Production according to the technical condition
SLCDP		

(2) 化学成分 Chemical Compositions

牌号 Steel Grades	化学成分 Chemical compositions （Heat analysis） %					
	C	Si ≤	Mn ≤	P ≤	S ≤	Ti ^a ≤
SLCDA	0.12	0.50	0.60	0.10	0.045	0.30
SLCDP	0.12	0.50	0.60	0.10	0.045	0.30
^a 可用 Nb 代替部分 Ti, 此时 Nb 和 Ti 的总含量应不大于 0.30%。 Part of Ti can be replaced by Nb, and the total content of Nb and Ti should not be greater than 0.30%.						

(3) 力学性能 Mechanical Properties

牌号 Steel Grades	屈服强度 Yield strength ^{a,b} MPa,	抗拉强度 Tensile strength ^{a,c} Rm, MPa	下列公称厚度 (mm) 的断后伸长率 After breakage percent elongation ^a in following nominal thickness(mm),A _{80mm} , %
SLCDA	≤ 180	≥ 270	≥ 40
SLCDP	≤ 180	≥ 270	≥ 40
^a 试样为 GB/T 228.1-2010 中的 P6 试样 (L ₀ =80mm,b ₀ = 20mm), 试样方向为横向。 No. P6 test piece (L ₀ =80mm, b ₀ =20mm) specified in GB/T 228.1-2010 shall be used, and the test shall be carried out in the transverse direction.			

(4) 拉伸应变痕 Stretcher strain marks

仅适用于表面质量级别为 FC 和 FD 的钢板及钢带。

It is only applied to the steel sheets & strips with surface quality grade FC and FD.

牌号 Steel Grades	拉伸应变痕 Tensile strain mark
SLCDA、SLCDP	应保证在制造完成后 6 个月内使用时不出现拉伸应变痕。 The products shall be free from stretcher strain marks for up to 6 months from the date on which the products are made available at the manufacturer’ s work.

(5) 可订货规格 Available dimensions （单位 Unit:mm）

名称 Classification	公称厚度 Nominal thickness	公称宽度 Nominal width
液晶电视专用钢板及钢带 Steel sheets and strips for LCD TV	0.40-~0.50	800-1470
	0.50-~0.60	800-1600
	0.60-~0.70	800-1800
	0.70-~1.20	800-2000
	1.2-~2.00	800-1800

2.6 表面质量 Surface quality

钢板及钢带表面不应有漏镀、镀层脱落和肉眼可见裂纹等影响用户使用的缺陷。不切边钢板及钢带边部允许存在微小锌层裂纹和白边。No defects such as Uncoated spots, coating stripping and cracks visible are allowed. However, it is allowed for minor cracks and white brim existed on edges of uncut steel sheets & strips.

表面质量级别 Grade	代号 Code No.	特征 Features
较高级的精整表面 Relatively high-grade finishing surface	FB (03)	允许有小腐蚀点、暗点、带痕、小的铬酸钝化处理缺陷及小锌粒。 It is allowed for the existence of small erosion spots, dark spots, strip marks, minor chromate treatment defects and small zinc particles.
高级的精整表面 High-grade finishing surface	FC (04)	不得有腐蚀点，但在小范围内允许存在轻微压痕、划伤、锌流波痕、轻微的铬酸钝化缺陷，另一面应至少保持 FB 表面。 No erosion spot is allowed. However, it is allowed for the existence of light impression, scratches, zinc flow ripple marks, minor chromate treatment defects in small range, while the other side must reach FB requirements at least.
超高级的精整表面 Ultra high-grade finishing surface	FD (05)	较好的一面必须对缺欠进一步限制，即不能影响涂漆后的外观质量，并应有均匀良好的镀层，另一面应至少保持 FB 表面。 One side of relatively good quality must further restrict on defects, namely appearance quality after painting is not affected, and the other side must reach FB requirements at least.

钢带在连续生产过程中，局部的表面缺陷不易发现和去除，因此钢带允许带缺陷交货，但有缺陷部分不应超过每卷总长度的 6%。For steel strips, it is so hard to find and cut the defect part that the delivered with defects is allowed. But the length of the defect part shall be no more than 6% of the total.

2.7 公称镀层重量的可供范围 Available range of nominal coating mass（单位 Unit:%）

镀层形式 Coating form	适用的镀层表面结构 Applicable surface structure	下列镀层种类的公称镀层重量的可供范围 Weight range of following coatings/(g/m²)		
		纯锌镀层 Zinc coating(Z)	锌铁合金镀层 Zn-Fe alloy coating(ZF)	锌铝镁合金镀层（ZM）
等厚镀层 Same coating mass on both sides	N、M、F、R	60 ~ 450	60 ~ 180	60 ~ 450

1：纯锌和锌铁合金镀层重量为 50g/m2 时，镀层厚度约为 7.1μm。50g/m2 镀层（锌铝镁合金镀层）的厚度约为 7.5μm。
Remarks 1: 50g/m2 coating weight is equivalent to about 7.1μm.

2.8 推荐的公称镀层重量、镀层代号及镀层重量检测值

Recommended Coating weight, coating No. and measuring coating weight

镀层形式 Coating form	镀层种类 Coating variety	推荐公称镀层重量 Coating weight g/m²	镀层代号 Coating No.	双面三点平均值 g/m²Average Coating weight in both sides and three spots g/m², ≥	双面单点值 g/m²Coating weight in both sides and single spot g/m², ≥	单面单点值 g/m²Coating weight in each side and single spot g/m², ≥
等厚镀层 Same coating mass on both sides	Z ZF ZM	60	60	60	51	24
		70	70	70	60	28
		80	80	80	70	32
		90	90	90	77	36
		100	100	100	85	40
		120	120	120	102	48
		140	140	140	120	56
		150	150	150	130	60
		180	180	180	153	72
		200	200	200	170	80
		220	220	220	187	88
		225	225	225	195	90
		250	250	250	215	100
		270	270	270	234	108
		275	275	275	235	110
		305	305	305	275	122
		350	350	350	300	140
		400	400	400	340	160
		450	450	450	385	180

2.9 表面结构 Surface structure

镀层种类 Coating variety	表面结构 surfacestructure	代号 Code No.	特征 Features
Z ZM ^a	普通锌花 Normal spangle	N	镀层在自然条件下凝固，得到的肉眼可见的锌花结构。 Spanglescondensateonzincoatingundemormalconditionsaftergalvanizing.
	小锌花 Small spangle	M	镀层在自然条件下凝固，并通过适当控制得到的肉眼可见的细小锌花结构。Small spanglescondensateonzinc coatingunder normal conditionsafter galvanizing. 该表面结构一般进行光整处理。 Surface structure after skin pass treatment.
	无锌花 Minimized spangle	F	镀层在自然条件下凝固，并通过特殊控制得到的肉眼不可见的细小锌花结构。 No spangles condensate on zinc coating under normal conditions after special galvanizing control. 该表面结构一般进行光整处理。 Surface structure after skin pass treatment.
ZF	锌铁合金 Zn-Fe alloy	R	通过对纯锌镀层进行热处理获得的镀层表面结构，该表面结构通常为灰色无光。Throughtheheattreatmentofpurecoating,thesurfacestructureisusuallygray andmatte.

2.10 表面处理 Surface treatment

序号 Serial nuber	类别 category	代码 Code No.	特征 Features
1	铬酸钝化 Chromate treatment	C	该表面处理可减少产品在运输和储存期间表面产生白锈。铬酸钝化表面可能产生摩 擦黑点。 The treatment can prevent white rusts formed on product surfaces during transportation and storage. Black spots may appear after friction on chromate treatment surface.
2	无铬钝化 Chromium- free treatment	CN	该表面处理可减少产品在运输和储存期间表面产生白锈。无铬钝化应限制钝化膜中对人体有害的六价铬成分。 The treatment prevents white rusts formation on product surfaces during transportation and storage. Chromium-free treatment should restrict hexavalent chromium composition which is harmful to human body.
3	涂油 Oiling	O	该表面处理可减少产品在运输和储存期间表面产生白锈，所涂的防锈油一般不作为 后续加工用的轧制油和冲压润滑油。 The treatment can prevent white rusts formed on product surfaces during transportation and storage. The anti-rust oil is generally not used as rolling oil and stamping oil in subsequent processing.
4	钝化 + 涂油 Chromate treatment+oiling	CO	该表面处理可进一步减少产品在运输和储存期间表面产生的白锈。 The treatment further prevents white rusts formation on product surfaces during transportation and storage.
5	无铬钝化 + 涂油 Chromium-free treatment+oiling	CON	该表面处理可进一步减少产品在运输和储存期间表面产生白锈。无铬钝化应限制钝化膜中对人体有害的六价铬成分。 The treatment further prevents white rusts formation on product surfaces during transportation and storage. Chromium-free treatment should restrict hexavalent chromium composition which is harmful to human body.
6	无铬耐指纹 Chromium-free anti-fingerprint treatment	AFN	该表面处理可减少产品在运输和储存期间表面产生白锈，可提高电子和电气产品表面的耐汗渍沾污性。无铬耐指纹应限制耐指纹膜中对人体有害的六价铬成分。 The treatment prevents white rusts formed on product surfaces during transportation and storage, and improves perspiration resistance of electronic and electrical product surface. Chromium-free and anti-fingerprint treatment should restrict hexavalent chromium composition which is harmful to human body.
7	自 润 滑 Self lubrication	SZR	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。 The surface treatment reduces surface corrosion of the product during transportation and storage. Self-lubrication of the synovial membrane improves the formability of steel sheet.
8	无机固体润滑 Inorganic solid lubrication	L	该表面处理可减少产品在运输和储存期间表面产生白锈，同时固体润滑膜可较好改善钢板的成形性能 The surface treatment reduces surface corrosion of the product during transportation and storage. Meanwhile, the solid lubricant film improves the formability of steel sheet.
9	不处理 No treatment	U	该表面处理仅适用于需方订货时明确提出表面不处理的情况，应在合同中注明。表面不处理的产品在运输和储存期间表面较易产生白锈和黑点，需方应慎重选择。 This surface treatment is only applicable to the situation where the demand is noted in the contract. The surface of products without surface treatment is prone to generate white rust and black spots during transportation and storage. When order, please read the feature carefully.

2.11 交货状态 Delivery conditions

通常情况下，钢板及钢带经热镀锌加光整拉矫或热镀锌加光整后交货。

The products are normally supplied in the hot-dip galvanized and skin-passed condition.

2.12 尺寸、外形及允许偏差 Dimensions, Shapes and Tolerances

(1) 厚度允许偏差 Tolerances on Thickness

单位为毫米 Dimensions in millimeters

规定的最小屈服强度 Re MPa Specified minimum yield strength	公称厚度 Nominal thickness	下列公称宽度下的厚度允许偏差 a,b,c Tolerances on thickness for a nominal width					
		普通精度 PT.A Normal tolerances			高级精度 PT.B Advanced tolerances		
		≤ 1200	> 1200 ~ 1500	> 1500	≤ 1200	> 1200 ~ 1500	> 1500
< 260	≤ 0.25	±0.03	±0.04	±0.04	±0.025	±0.030	±0.035
	> 0.25 ~ 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	±0.09	±0.10	±0.11	±0.060	±0.070	±0.080
	> 1.60 ~ 2.00	±0.11	±0.12	±0.13	±0.070	±0.080	±0.090
	> 2.00 ~ 2.50	±0.13	±0.14	±0.15	±0.090	±0.100	±0.110
260 ~< 340 ^d	> 2.50 ~ 3.00	±0.16	±0.16	±0.17	±0.110	±0.120	±0.130
	≤ 0.25	±0.04	±0.05	±0.05	±0.030	±0.035	±0.040
	> 0.25 ~ 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	±0.10	±0.12	±0.13	±0.070	±0.080	±0.090
	> 1.60 ~ 2.00	±0.13	±0.14	±0.15	±0.080	±0.090	±0.110
340 ~ 420	> 2.00 ~ 2.50	±0.15	±0.16	±0.17	±0.110	±0.120	±0.130
	> 2.50 ~ 3.00	±0.18	±0.19	±0.19	±0.130	±0.140	±0.150
	≤ 0.25	±0.04	±0.05	±0.05	±0.035	±0.040	±0.045
	> 0.25 ~ 0.40	±0.05	±0.06	±0.07	±0.040	±0.045	±0.050
	> 0.40 ~ 0.60	±0.06	±0.07	±0.08	±0.045	±0.050	±0.060
	> 0.60 ~ 0.80	±0.07	±0.08	±0.09	±0.050	±0.060	±0.070
	> 0.80 ~ 1.00	±0.08	±0.09	±0.11	±0.060	±0.070	±0.080
	> 1.00 ~ 1.20	±0.10	±0.11	±0.12	±0.070	±0.080	±0.090
	> 1.20 ~ 1.60	±0.12	±0.13	±0.15	±0.080	±0.090	±0.110
> 420	> 1.60 ~ 2.00	±0.15	±0.16	±0.18	±0.090	±0.110	±0.120
	> 2.00 ~ 2.50	±0.17	±0.19	±0.20	±0.120	±0.130	±0.140
	> 2.50 ~ 3.00	±0.21	±0.21	±0.22	±0.140	±0.150	±0.160
	≤ 0.25	±0.05	±0.06	±0.06	±0.040	±0.045	±0.050
	> 0.25 ~ 0.40	±0.06	±0.07	±0.08	±0.045	±0.050	±0.060
	> 0.40 ~ 0.60	±0.06	±0.08	±0.09	±0.050	±0.060	±0.070
	> 0.60 ~ 0.80	±0.07	±0.09	±0.11	±0.060	±0.070	±0.080
	> 0.80 ~ 1.00	±0.09	±0.11	±0.12	±0.070	±0.080	±0.090
	> 1.00 ~ 1.20	±0.11	±0.12	±0.14	±0.080	±0.090	±0.110
	> 1.20 ~ 1.60	±0.14	±0.15	±0.17	±0.090	±0.110	±0.120
	> 1.60 ~ 2.00	±0.17	±0.18	±0.20	±0.110	±0.120	±0.140
	> 2.00 ~ 2.50	±0.20	±0.21	±0.23	±0.140	±0.150	±0.170
	> 2.50 ~ 3.00	±0.23	±0.24	±0.25	±0.170	±0.180	±0.190

^a 双面镀层重量之和不小于 450g/m² 的热镀层产品厚度允许偏差可比规定值超出 ±0.01mm。

^a The thickness tolerance of hot-dip coating products with the sum of double-sided coating weight not less than 450g/m2 can exceed ± 0.01mm.

^b 钢带两端各 10m 内的厚度允许偏差可比规定值超出 50%。

^b The thickness tolerances may be increased by a maximum of 50% in the region over a length of 10 meters at each end of the steel strip.

^c 纵切钢带的厚度允许偏差：应符合纵切前钢带的相关规定。

^c The thickness tolerances of the slit wide strip shall comply with the relevant regulations of the strip before slitting.

^d 牌号 DC51D+Z(ZF、ZM)、S400GD+Z(ZF、ZM)、S500GD+Z(ZF、ZM) 和 S550GD+Z(ZF、ZM) 厚度允许偏差应符合此档规定。

^d DC51D+Z(ZF,ZM), S400GD+Z(ZF,ZM), S500GD+Z(ZF,ZM) and S550GD+Z(ZF,ZM) should comply with this requirement.

规定的最小屈服强度 Specified minimum yield strength Re MPa	公称厚度 Nominal thickness	厚度允许偏差 ^{a,b,c} Tolerances on thickness
		超高级精度 PT.C Super tolerances
< 270	0.50 ~< 0.95	±0.03
	0.95 ~< 1.40	±0.04
	1.40 ~< 1.90	±0.05
	1.90 ~< 2.50	±0.06
	2.50 ~ 3.00	±0.07
270 ~ 380 ^d	0.50 ~< 0.95	±0.04
	0.95 ~< 1.40	±0.05
	1.40 ~< 2.50	±0.06
	2.50 ~ 3.00	±0.07
> 380	0.50 ~< 0.60	±0.04
	0.60 ~< 0.70	±0.05
	0.70 ~< 1.10	±0.06
	1.10 ~< 1.60	±0.07
	1.60 ~< 2.30	±0.08
	2.30 ~ 3.00	±0.09

^a 其中双面镀层重量之和不小于 450g/m² 的热镀层产品厚度允许偏差可比规定值超出 ±0.01mm。
^a The thickness tolerance of hot-dip coating products with the sum of double-sided coating weight not less than 450g/m² can exceed ± 0.01mm

^b 钢带两端各 10m 内的厚度允许偏差可比规定值超出 50%。
^b The thickness tolerances may be increased by a maximum of 50% in the region over a length of 10 meters at each end of the steel strip.

^c 纵切钢带的厚度允许偏差：应符合纵切前钢带的相关规定。
^c The thickness tolerances of the slit wide strip shall comply with the relevant regulations of the strip before slitting.

^d 牌号 DC51D+Z(ZF、ZM)、S400GD+Z(ZF、ZM)、S500GD+Z(ZF、ZM) 和 S550GD+Z(ZF、ZM) 厚度允许偏差应符合此档规定。
^d DC51D+Z(ZF,ZM), S400GD+Z(ZF,ZM), S500GD+Z(ZF,ZM) and S550GD+Z(ZF,ZM) should comply with this requirement.

根据需方要求，厚度允许偏差可为：标准公差、1/2 公差、公差带上移、公差带下移、正公差、负公差。

According to requirements from customers, thickness tolerances can be allowed as: standard tolerance,1/2tolerance, tolerance zone move-up, tolerance zone move-down, positive and negative tolerance.

(2) 宽度允许偏差（冷轧钢板、钢带）Tolerances on Width（Cold rolled steel sheets & strips）

切边钢板及钢带的宽度允许偏差符合下表规定，不切边钢板及钢带的宽度允许偏差由供需双方协商。

Tolerances on width of trimmed sheets and strips shall comply with the requirement in the following table.

For as-rolled sheets and strips, tolerances on width shall be negotiated by the supplier and the demander.

单位为毫米 Dimensions in millimeters

公称宽度 Nominal Width	宽度允许偏差 Tolerances on width	
	普通精度 PW.A Normal tolerances	高级精度 PW.B Advanced tolerances
≤ 1200	0/+5	0/+2
> 1200 ~ 1500	0/+6	0/+2
> 1500 ~ 1800	0/+7	0/+3
> 1800	0/+8	0/+3

单位为毫米 Dimensions in millimeters

	公称厚度 Nominal thickness	下列公称宽度下的宽度允许偏差 Tolerances on width for a nominal width				
		120 ~< 125	125 ~< 250	250 ~< 400	400 ~< 600	600 ~ 900
普通精度 PW.A Normal tolerances	< 0.60	0/+0.4	0/+0.5	0/+0.7	0/+1.0	0/+1.5
	0.60 ~< 1.00	0/+0.5	0/+0.6	0/+0.9	0/+1.2	0/+1.5
	1.00 ~< 2.00	0/+0.6	0/+0.8	0/+1.1	0/+1.4	0/+2.0
	≥ 2.00	0/+0.7	0/+1.0	0/+1.3	0/+1.6	0/+2.0
高级精度 PW.B Advanced tolerances	< 0.60	0/+0.2	0/+0.2	0/+0.3	0/+0.5	0/+0.6
	0.60 ~< 1.00	0/+0.2	0/+0.3	0/+0.4	0/+0.6	0/+0.7
	1.00 ~< 2.00	0/+0.3	0/+0.4	0/+0.5	0/+0.7	0/+0.8
	≥ 2.00	0/+0.4	0/+0.5	0/+0.6	0/+0.8	0/+0.9

(3) 长度允许偏差 Tolerances on Length（单位 Unit: mm）

公称长度 Nominal length	下列宽度下的宽度允许偏差 The width tolerance of the following nominal widths	
	普通精度 PL.A General precision PL.A	高级精度 PL.B High-grade precision PL.B
≤ 2000	0/+6	0/+3
> 2000	0/+0.3%× 公称长度 Nominal length	0/+0.15%× 公称长度 Nominal length

(4) 不平度 Tolerances on Flatness（单位 Unit: mm）

规定的最小屈服强度 Specified minimum yield strength Re MPa	公称宽度 Nominal width mm	下列厚度下的不平度 mm 不大于 Tolerances on flatness for a nominal thickness/mm/max.				
		普通精度 P.F.A Normal tolerances		高级精度 P.F.B Advanced tolerances		
		< 0.7	≥ 0.7	< 0.7	0.7 ~ < 1.6	≥ 1.6
Re < 260	< 1200	10	8	5	4	3
	1200 ~ < 1500	12	10	6	5	4
	≥ 1500	17	15	8	7	6
260 ≤ Re < 360a	< 1200	13	10	8	6	5
	1200 ~ < 1500	15	13	9	8	6
	≥ 1500	20	19	12	10	9
≥ 360	800 ~ 2080	供需双方协商 Negotiation between supply and demand				
a 牌号 DC51D+Z(ZF、ZM) 钢板不平度应符合此档规定。 aDC51D+Z(ZF,ZM), should comply with this requirement.						

(5) 镰刀弯 Tolerances on Edge Camber（单位 Unit: mm）

产品状态 Product	公称长度 Nominal length	镰刀弯 不大于 Tolerances on camber /max.		测量长度 Measuring length
		普通精度 PS.A Normal tolerances	高级精度 PS.B Advanced tolerances	
钢带 Wide strip	—	5	2	2000
纵切钢带 Slit wide strip	—	2	—	2000
钢板 Sheet	≤ 2000	0.25%× 实际长度 0.25% of the actual length	2	实际长度 Actual length
	> 2000	5	2	2000
^a 规定的最小屈服强度 ≤ 280MPa 的纵切钢带可作此规定；当规定的最小屈服强度 > 280MPa 时，其镰刀弯由供需双方协商。 ^a The slit wide strip with the minimum yield strength ≤ 280MPa as specified may comply with this; When the specified minimum yield strength >280mpa, the camber shall be negotiated by both parties.				



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