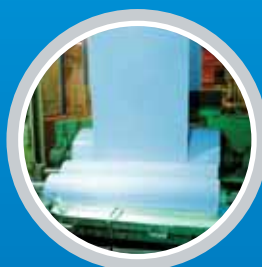


*WORLD BEST
SURFACE TREATMENT COMPANY*



History ««

- 1988.** 2 Established Pohang Coated Steel Co., Ltd. (POCOS)
- 1989.** 11 Established No.1 Continuous Galvanizing Line (#1 CGL)
- 1990.** 1 Acquired KS specification for Prepainted Steel Sheet
- 1991.** 11 Acquired KS specification for Hot Dip Galvanized Steel Sheet
Won 100 million dollar export award
- 1994.** 1 Achieved accumulated production of 1 million ton
- 1995.** 1 Acquired JIS specification for Hot Dip Galvanized Steel Sheet
- 1997.** 6 Transferred CGL technology to China (Dalian Pohang Steel)
12 Achieved 0.1mil tons of annual ALCOSTA sales
Trained CGL technology to China's CGL workers (Shunde Pohang Steel)
- 1998.** 2 Transferred CGL technology to China (Jiangsu Pohang Steel)
7 POSCO acquired Dongguk Steel shares (100%)
- 1999.** 3 Merged with Pohang Steel Industries Co., Ltd (Prepainting Mill)
5 Acquired Coil Service Center Facilities from POSTEEL
- 2000.** 1 Acquired ISO 9002 Certificate
- 2001.** 1 Acquired KS specification for Hot Dip Aluminized Steel Sheet (Alcosta)
6 Organized ESOA(Employee Stock Ownership Association)
11 Started PI System Introduction (ERP)
- 2002.** 8 Listed on the Korean Stock Exchange
- 2003.** 4 Started #2 CGL Construction
5 PI System (ERP) in operation
12 Revised ISO 9001:2000 Certificate
- 2004.** 11 Completed #2 CGL (0.3mil ton / year)
- 2005.** 1 Declaration of 6 Sigma Kick-off
12 Completed #2 CGL Revamping
- 2006.** 9 Completed #1 CGL Revamping (Started ALZASTA production)
- 2007.** 4 Achieved accumulated production of 10 million ton
4 Acquired KS specification for Hot Dip 55% Al-Zinc Alloy Coated Steel Sheet
12 Started Construction of Company Office Building in Seoul
- 2008.** 4 Changed name to POSCO C&C (POSCO Coated and Color Co., Ltd.) from POCOS
12 Won 300 million dollar export award
- 2009.** 1 Management participate in Dalian Pohang Steel

World Best posco C&C

POSCO C&C pledges to open a bright future together with our customers.



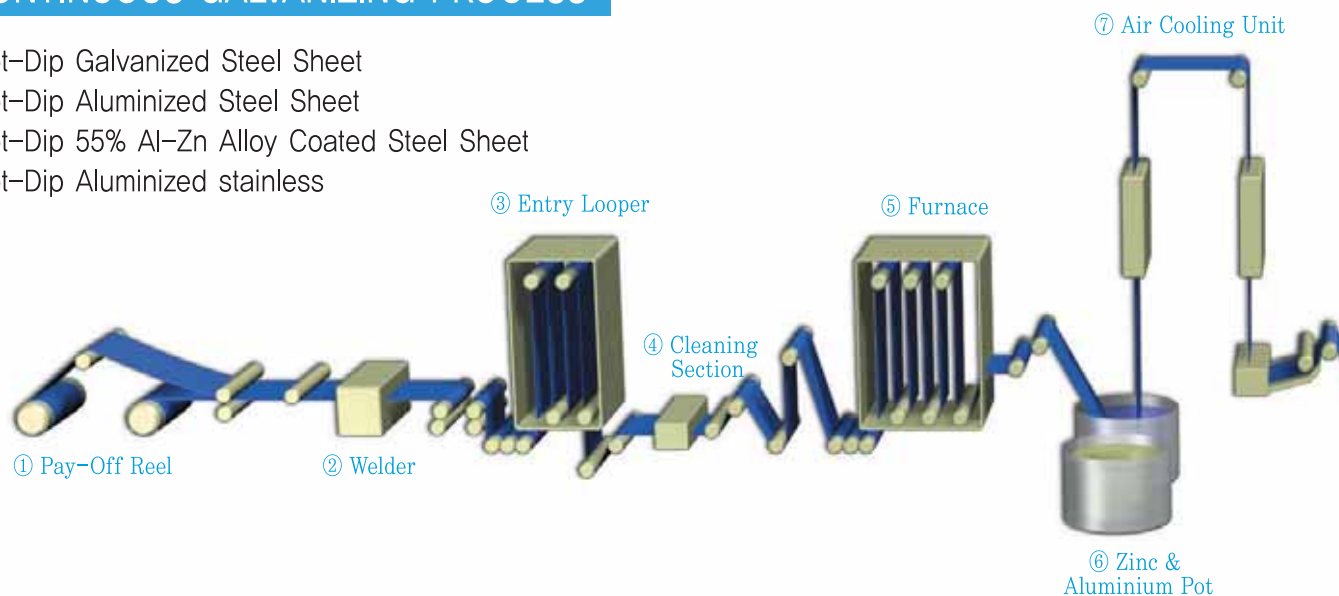
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Manufacturing Process

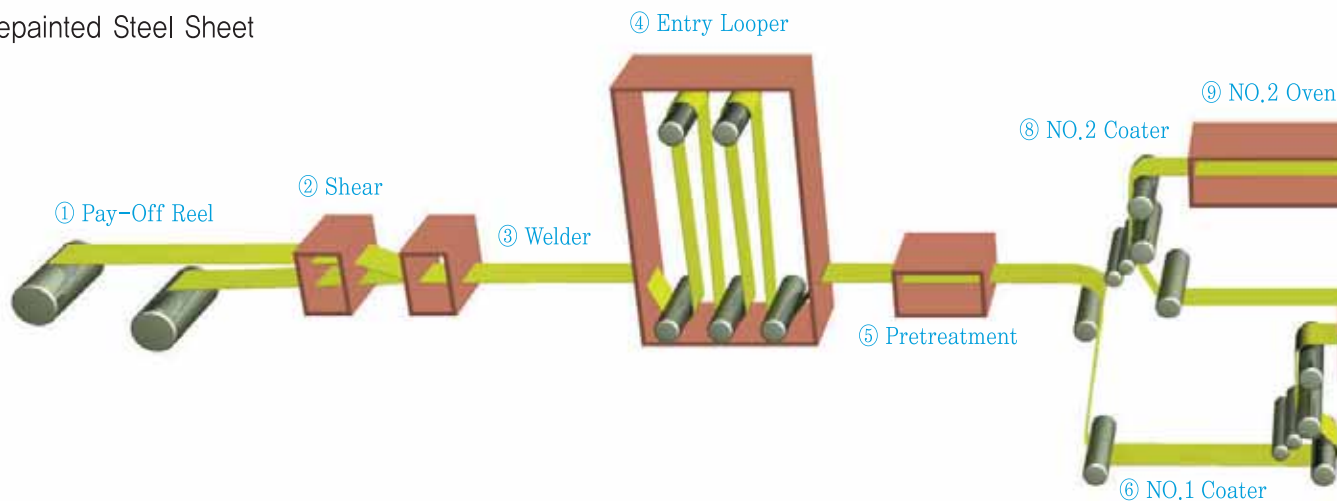
CONTINUOUS GALVANIZING PROCESS

- Hot-Dip Galvanized Steel Sheet
- Hot-Dip Aluminized Steel Sheet
- Hot-Dip 55% Al-Zn Alloy Coated Steel Sheet
- Hot-Dip Aluminized stainless



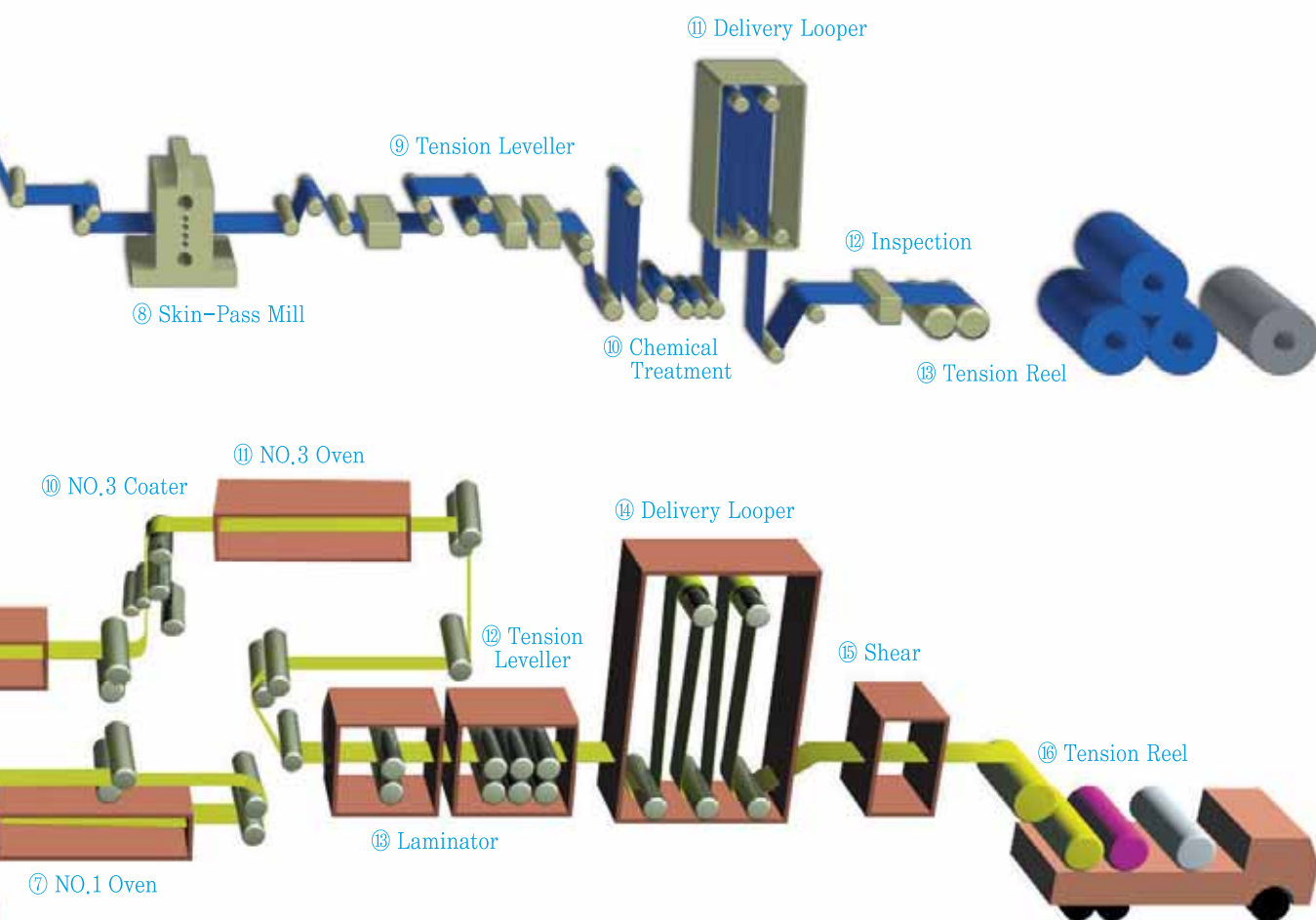
CONTINUOUS COATING PROCESS

- Prepainted Steel Sheet



"POSCO C&C"

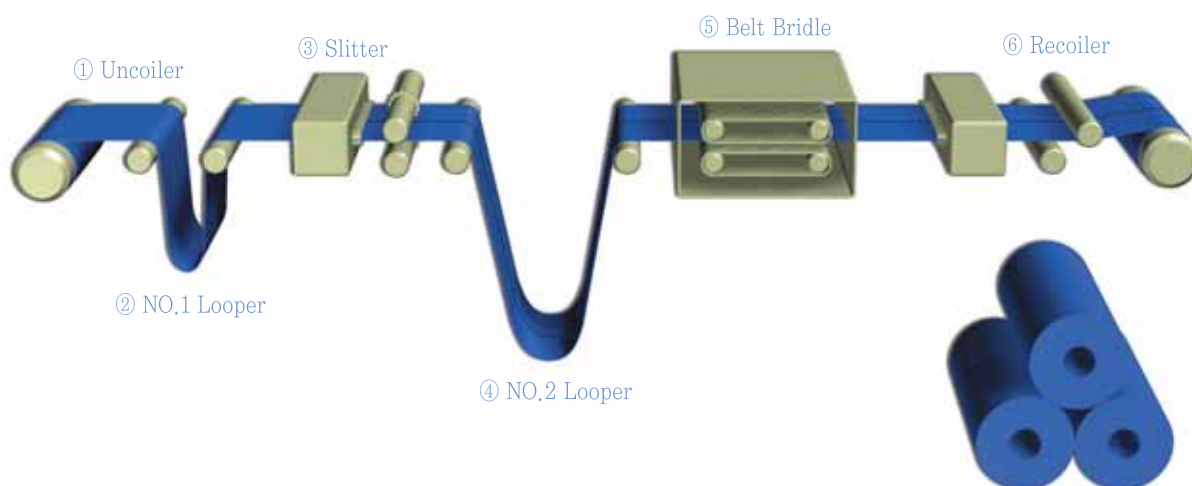
is a producer of zinc coated plate, Aluminized Steel Sheet, and color steel plate of diverse colors and patterns used as materials of our daily essential products including electronic products and architectures with strong and fine colors. As such we are leaping forward as the world's leading surface treatment company.



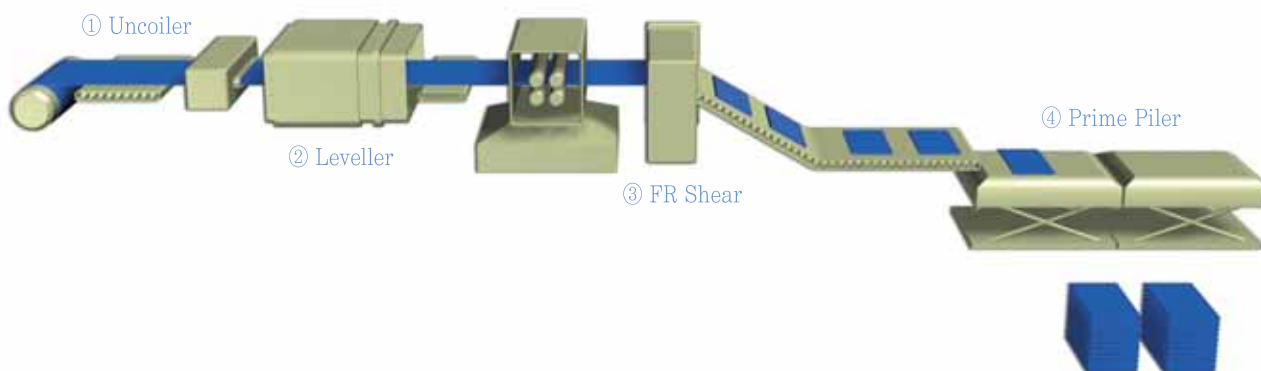
Shearing / Slitting Process

PROCESSING PROCESS

• SKELP

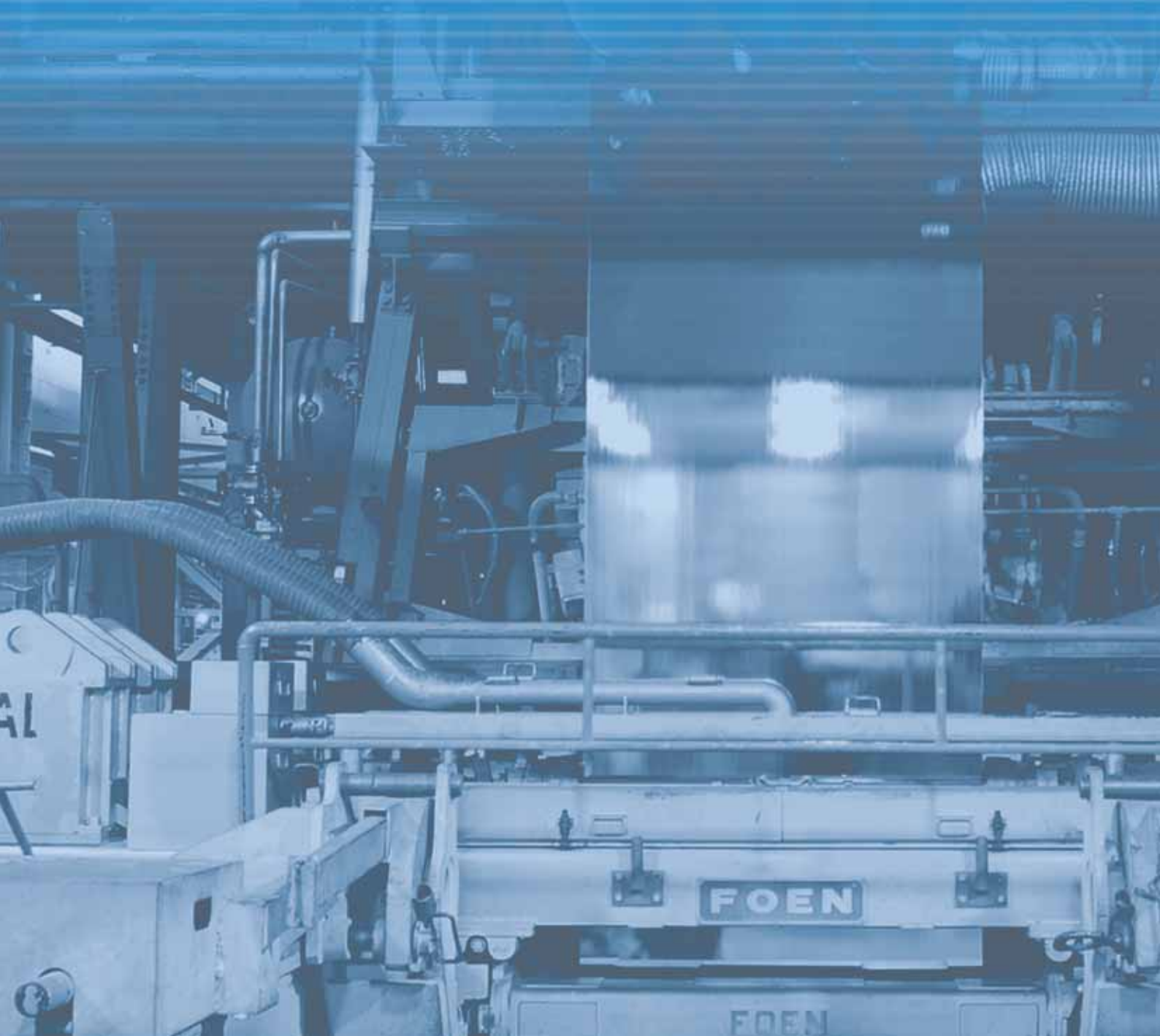


• SHEET



PRODUCTS INTRODUCTION

COATED PRODUCTS





Coated Products

ALCOSTA

Hot-Dip Aluminized Steel Sheet

ALZASTA

Hot-Dip 55% Al-Zn Alloy Coated Steel Sheet

ZINCOSTA

Hot-Dip Galvanized Steel Sheet


Al-coated STS

Hot Dip Aluminized Stainless

Hot-Dip Aluminized Steel Sheet

ALCOSTA

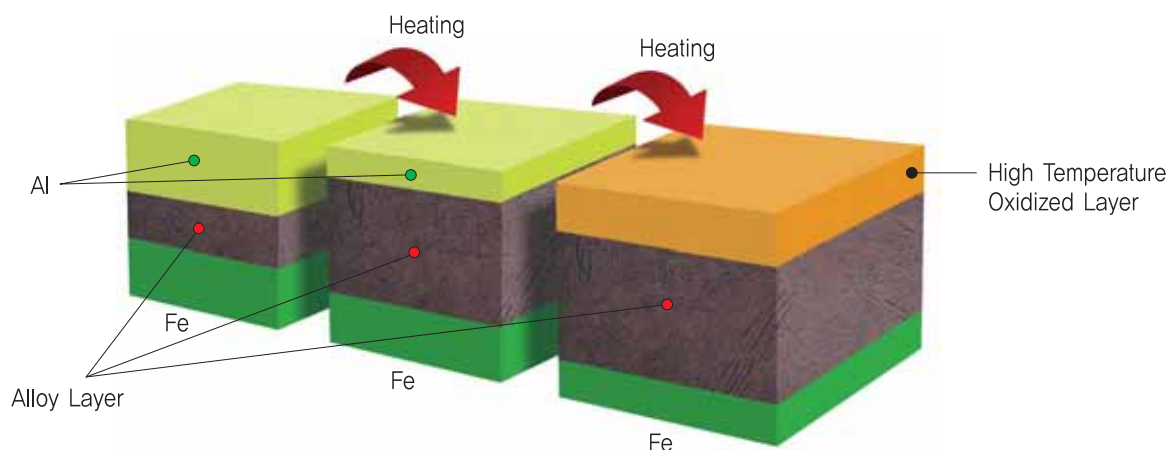
CHARACTERISTICS

BRAND	CHARACTERISTICS	APPLICATIONS	SURFACE
ALCOSTA	<ul style="list-style-type: none"> • Very fine grains due to the suppression of the growth of aluminium crystal during solidification of aluminium melt. • Uniform surface condition and excellent corrosion resistance resulting from the sacrificing effect of aluminum • Good appearance after painting 	<ul style="list-style-type: none"> • Home Appliances • Car Exhaust System • Heating devices • Construction materials, etc 	

HEAT RESISTANCE

The heat resistance of ALCOSTA is excellent compared to that of zinc-coated steel sheet, galvanized steel sheet, and cold-rolled steel sheet. Absolutely no changes in appearance and discoloration are observed even under extended exposure to the temperature of 400°C. At temperatures higher than 400°C the coating material transforms to aluminium-iron alloy layer so that heat resistance and corrosion resistance are preserved even if discoloration occurs. The coating maintains its sacrificial properties up to the temperature of approximately 600°C.

TRANSFORMATION OF COATING LAYER WITH HEATING



"POSCO C&C"

is a producer of zinc coated plate, Aluminized Steel Sheet, and color steel plate of diverse colors and patterns used as materials of our daily essential products including electronic products and architectures with strong and fine colors.

As such we are leaping forward as the world's leading surface treatment company.



HEAT REFLECTIVITY

The ALCOSTA is provided with excellent thermal reflectivity due to the fineness of its surface. The thermal reflectivity of ALCOSTA at 400°C reaches up to approximately 80%, and this is applied to thermal reflectors for toasters, gas ranges, oil stove, and so forth.

HEAT REFLECTIVITY OF VARIOUS COATED MATERIALS

Unit : %

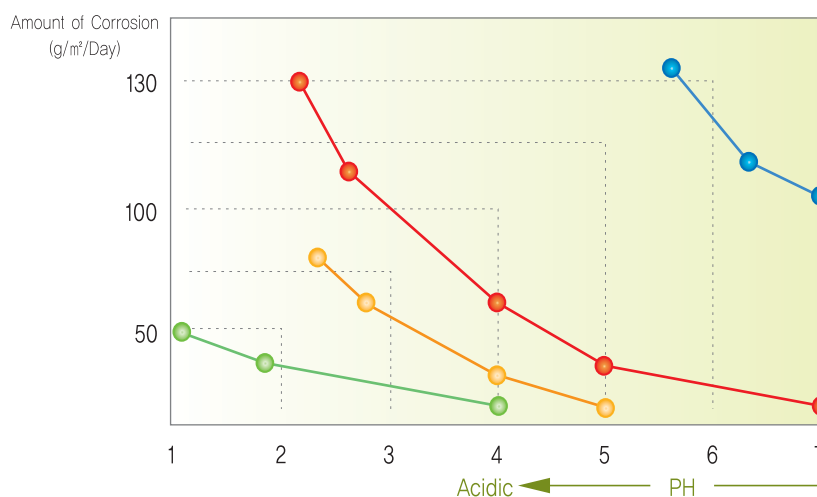
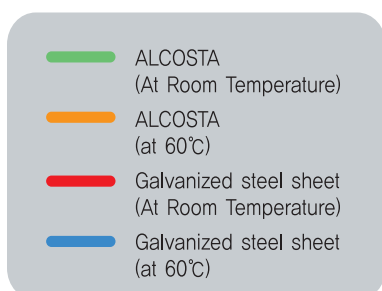
HEAT REFLECTIVITY	ALCOSTA	EGI	GI	
			SPANGLE	ZERO-SPANGLE
100°C × 24Hrs.	90	90	90	90
400°C × 24Hrs.	80	30	20	20

HIGH CORROSION RESISTANCE

The corrosion resistance of ALCOSTA is excellent due to the coating characteristics to form a thin stable oxide layer and hydroxidation layer in the air and water, respectively

CORROSION RESISTANCE IN ACID SOLUTION

ALCOSTA is provided with strong corrosion resistance in acidic solution compared to galvanized steel sheet.



ALCOSTA

■ SALT SPRAY TEST

Aluminium shows lowered electrochemical potential in saline water.

Fe-Al galvanic cell protects steel sheet by sacrificing Al.

The Excellent corrosion resistance of ALCOSTA steel sheet has been verified as shown in the following figure.

| SALT SPRAY TEST RESULTS FOR EACH PRODUCT |

CONDITION		24Hr	72Hr	240Hr	360Hr	720Hr
ALCOSTA SA1D(40g/m²)	Room Temp				<div>Appearance of Red Rust after 288Hrs</div>	
	250℃×24Hrs.					
ALCOSTA SA1D(80g/m²)	Room Temp					<div>Appearance of Red Rust after 384Hrs</div>
	250℃×24Hrs.					
GALVANIZED STEEL SHEET	Room Temp		<div>Red Rust 20%</div> <div>Red Rust 40%</div>		<div>Red Rust 100%</div>	
	250℃×24Hrs.					

■ CORROSION RESISTANCE TEST WITH RESPECT TO EXHAUST GAS

As a result of corrosion resistance test with respect to exhaust gas, the corrosion resistance performance of ALCOSTA has been verified to be better than that of EGI or CR steel sheet and to be comparable to that of stainless steels.

| MUFFLER TEST RESULTS : Comparative table in reference to the corrosion percentage of cold-rolled steel sheet to be 100% |

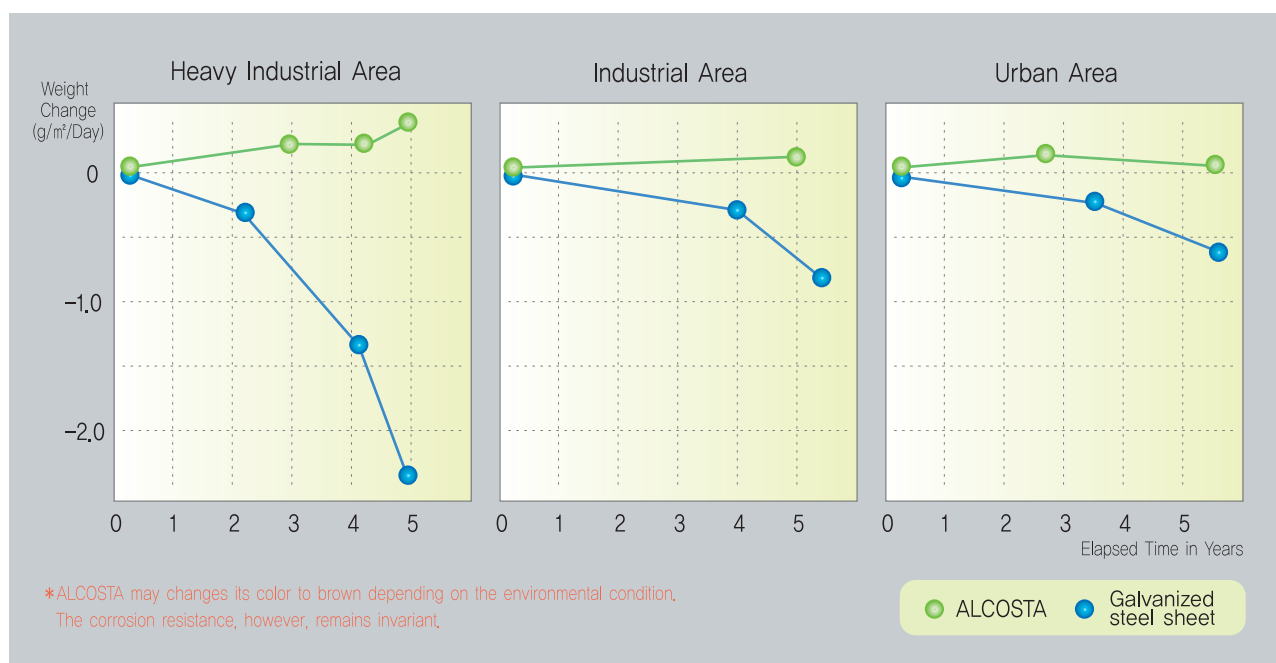
KIND OF PRODUCTS	CORROSION RATIO (in the Parenthesis is thickness decrease value)
18% Cr-STAINLESS STEEL	22.9%
13% Cr-STAINLESS STEEL	27.5%
ALCOSTA(80g/m ²)	30.1% (16μm)
EGI(40g/m ²)	92.8% (80μm)
COLD-ROLLED STEEL SHEET	100% (87μm)

Hot-Dip Aluminized Steel Sheet

WEATHERABILITY

ALCOSTA is provided with excellent weatherability under severely corrosive environments as in industrial area due to its tendency to form a fine and stable oxide layer on the surface.

OUTDOOR EXPOSURE TEST RESULT FOR ALCOSTA



FORMABILITY

ALCOSTA has generally been understood being poor in formability due to the presence of brittle alloy layer between the steel and aluminum layers. But, when formability of ALCOSTA is compared with that of cold-rolled steel sheets and galvanized steel sheets, DQ and DDQ grades of ALCOSTA shows better formability than those.

MECHANICAL PROPERTIES OF ALCOSTA BY CLASS

(Specimen Thickness : 0.8mm)

BRAND	CLASSIFICATION	CODE	TENSILE TEST		
			YP(kgf/mm²)	TS(kgf/mm²)	EL(%)
ALCOSTA	Commercial	SA1C	≥ 23	≥ 30	—
	Drawing	SA1D	≥ 21	≥ 29	≥ 36
	Deep-Drawing	SA1E	≥ 20	≥ 28	≥ 40

*The above values are the general values of 0.8T. For warranty information, refer to manufacture specifications

ALCOSTA

PAINTABILITY

Paintability of aluminum coating is better than of galvanized steel sheet. In order to improve paint adhesion quality, chemical treatment is necessary. But, POSCO C&C chromate solution makes the excellent paintability without further chemical treatment.

■ PRE-TREATMENT FOR PAINTING

In case of needed pre-treatment prior to painting, the following sequence of process is recommended



■ PAINT

The ALCOSTA allow to the same paints like other steel sheet.
The following grades of paints are recommended for ALCOSTA,

- VINYL RESIN PAINT
- POLYURETHANE RESIN PAINT
- SILICON RESIN PAINT
- PHENOLIC RESIN PAINT
- LACQUER

SPECIFIC USAGE

HOME APPLIANCES AND THERMAL EQUIPMENTS, AUTOMOTIVE APPLICATIONS, CONSTRUCTION MATERIALS, ETC

【 HOME APPLIANCES, KITCHEN HEATERS 】

- TV SHRINKAGE BAND
- GAS RANGE
- MICROWAVE OVEN
- ELECTRIC STOVE



【 AUTOMOBILES 】

- CAR EXHAUST SYSTEM COMPONENTS
- ENGINE COVER
- FUEL TANKS



【 CONSTRUCTION MATERIALS 】

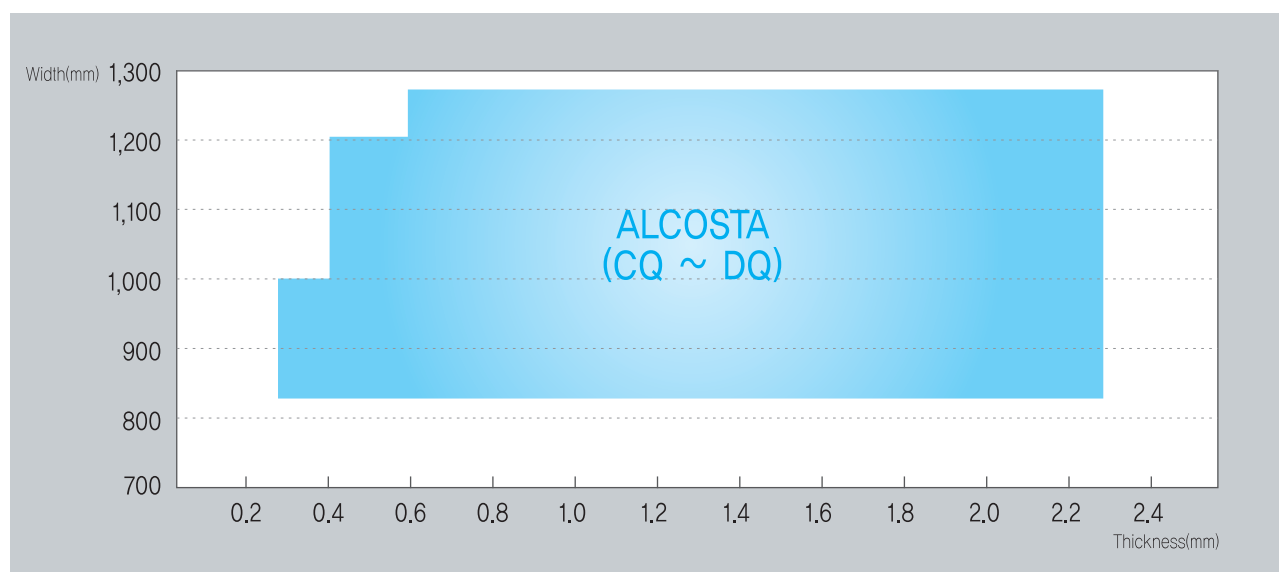
- INTERNAL / EXTERNAL PANELS
- COLD/ WARM WAREHOUSE
- LIVESTOCK BARN
- INSULATED DUCTS
- CHIMNEY PIPE



Hot-Dip Aluminized Steel Sheet

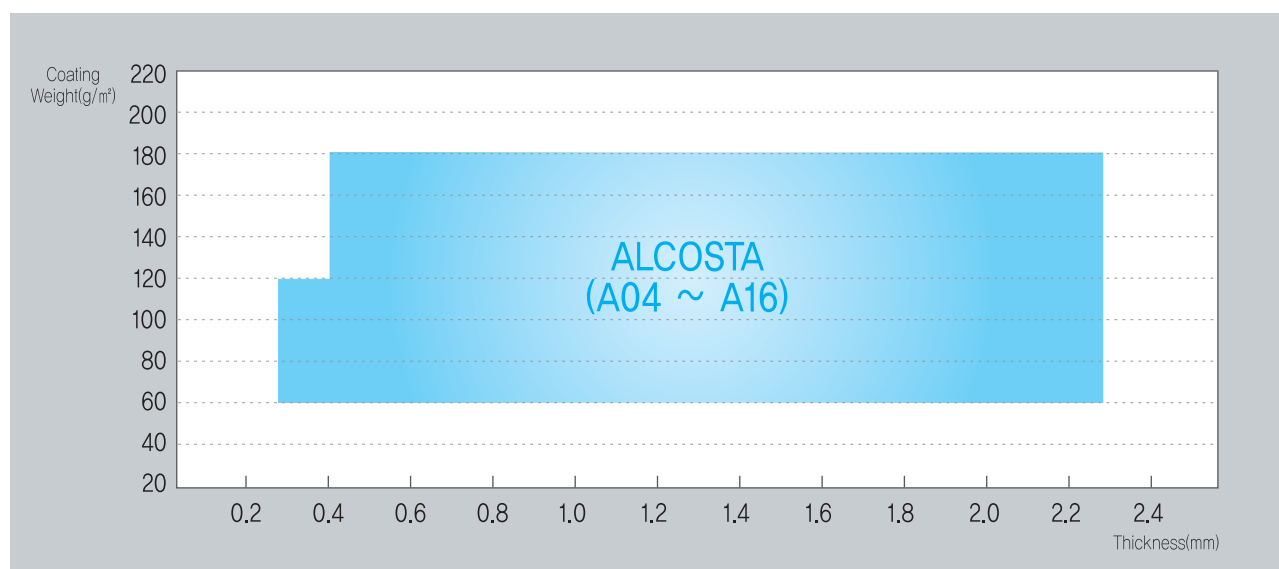
»» SCOPE OF MANUFACTURE

SIZE AVAILABILITY



*After Coating Thickness(TCT)

COATING WEIGHT



*After Coating Thickness(TCT)

ALCOSTA

QUALITY SPECIFICATIONS

| TYPE |

CLASSIFICATON	POSCO C&C	KS	JIS	ASTM
COMMERCIAL QUALITY	PACC	SA1C	SA1C	CS
DRAWING QUALITY	PACD	SA1D	SA1D	FS
DEEP-DRAWING QUALITY	PACE	SA1E	SA1E	DDS

| POSCO C&C STANDARD |

CLASSIFICATON	CODE	ELONGATION(%)			BENDING TEST	
		$0.4 \leq t < 0.6$	$0.6 \leq t < 1.0$	$1.0 \leq t$	Bend Angle	Inner Spacing of Bend
COMMERCIAL QUALITY	PACC	—	—	—	180°	4t
DRAWING QUALITY	PACD	≥ 30	≥ 32	≥ 34	180°	1t
DEEP-DRAWING QUALITY	PACE	≥ 34	≥ 36	≥ 38	180°	1t

*Tensile strength is provided with reference value which exceed min. 28kgf/mm² (275N/mm²)

| KS, JIS |

CLASSIFICATON	CODE	ELONGATION(%)			BENDING TEST	
		$0.4 \leq t < 0.6$	$0.6 \leq t < 1.0$	$1.0 \leq t$	Bend Angle	Inner Spacing of Bend
COMMERCIAL QUALITY	SA1C	—	—	—	180°	4t
DRAWING QUALITY	SA1D	≥ 30	≥ 32	≥ 34	180°	1t
DEEP-DRAWING QUALITY	SA1E	≥ 34	≥ 36	≥ 38	180°	1t

*The inner spacing of bend for sheets thicker than 1.6mm with designations SA1D and SA1E may be allowed to be two times the nominal thickness of the sheet

| ASTM |

CODE	Type	YP(N/mm ²)	El(%)
CS	CQ	170 ~ 345	20 Over
FS	DQ	170 ~ 310	26 Over
DDS	DDQ	140 ~ 240	32 Over

Hot-Dip Aluminized Steel Sheet

COATING WEIGHT

MINIMUM COATING WEIGHT (ON BOTH SIDES)

Unit : g/m²

COATING DESIGNATION	AVERAGE COATING WEIGHT BY 3 POINT MEASUREMENT	RELEVANT STANDARDS (designation code)		
		KS D 3544	JIS G 3314	ASTM A 463
40	40	40	40	T1 13
60	60	60	60	–
80	80	80	80	T1 25
100	100	100	100	–
120	120	–	–	T1 40

1. Average coating weight on both sides by 3 point measurement is represented by average values from three random specimens.

2. Minimum coating weight shall be subject to mutual agreement.

POST TREATMENT

CHEMICAL TREATMENT

TYPE	SYMBOL
CHROME TREATMENT	CX
Cr-FREE TREATMENT	NX
LUBRICATION TREATMENT	LX
NO TREATMENT	XX

Oiling

TYPE	SYMBOL
OILED	PL, PG, PH
NON-OILED	PX

DIMENSIONAL TOLERANCE

THICKNESSES TOLERANCE

KS, JIS

Unit : mm

THICKNESS	WIDTH	THICKNESS TOLERANCE	
		W < 1000	1000 ≤ W < 1250
0.40 ≤ t < 0.60		± 0.07	± 0.07
0.60 ≤ t < 1.00		± 0.10	± 0.11
1.00 ≤ t < 1.60		± 0.13	± 0.14
1.60 ≤ t < 2.30		± 0.17	± 0.18
2.30 ≤ t		± 0.21	± 0.22

ASTM

Unit : mm

THICKNESS (t)	WIDTH (W)	
	W < 1500	1500 ≤ W
0.25 ≤ t < 1.50	± 0.05	± 0.05
1.50 ≤ t < 2.00	± 0.08	± 0.08
2.00 ≤ t < 2.50	± 0.15	± 0.18

WIDTH TOLERANCE

KS, JIS

Unit : mm

TYPE (W)	TOLERANCE
Max 1500	+ 7
	– 0

ASTM


Unit : mm

WIDTH(W)	TOLERANCE
600 ≤ W < 1200	– 0, + 5
1200 ≤ W < 1500	– 0, + 6

Hot-Dip 55% Al-Zn Alloy Coated Steel Sheet <<<




ALZASTA

>>> CHARACTERISTICS

BRAND	CHARACTERISTICS	APPLICATIONS	SURFACE
ALZASTA	<ul style="list-style-type: none"> • Excellent anti-corrosion property • Good appearance with bright gray color and fine spangle • Good paintability 	<ul style="list-style-type: none"> • Interior/Exterior Applications : Roof, walls, shutter, ceiling, floors • Home Appliances: Refrigerator, Air-conditioner Outdoor machine • Automobile Parts 	

HEAT RESISTANCE

ALZASTA can be used at about 400°C without discoloration because it has excellent heat resistance compared to Galvanized.

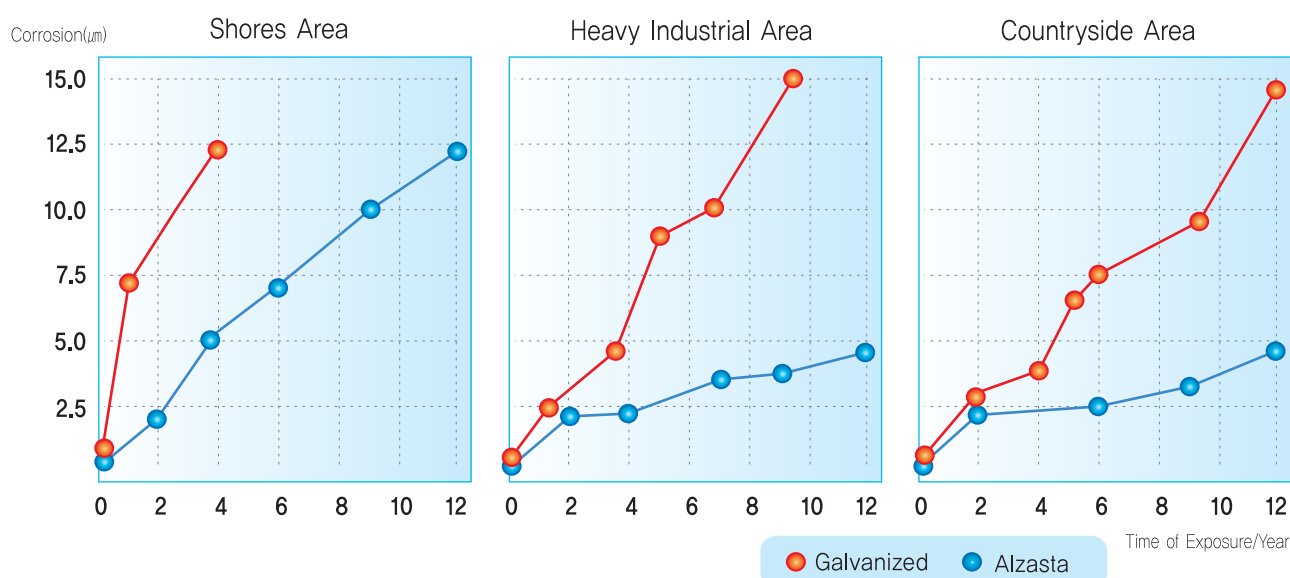
	200°C	300°C	400°C
ALZASTA			

ALZASTA-55% Aluminum-produced with POSCO C&C's unique technology boasts excellent corrosion resistance with the robust oxidization coating of aluminum and sacrificial corrosion protection effect zinc, elegant and also making it suitable for construction materials, home appliances and automotive parts with excellent painting adhesiveness.







CORROSION RESISTANCE

ALZASTA maintains 3 to 6 times durability compared to Galvanized in various corrosive environments. This durability comes from compact oxide film by aluminum and galvanic action by zinc.



| SALT SPRAY TEST BY PRODUCTS (3200Hr) |

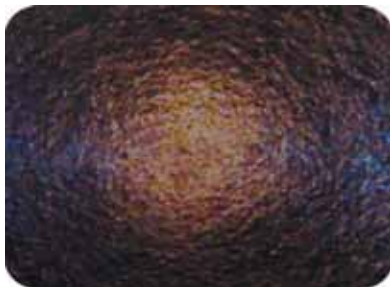
Hot-dip 55% Al-Zn Alloy Coated Steel Sheet / ALZASTA 150g/m ²	Galvanized Steel Sheet / Galvanized 275g/m ²	Al Coated Steel Sheet / Al-coated 150g/m ²	Al Coated Steel Sheet / Al-coated 300g/m ²
			

ALZASTA

FORMABILITY AND COATING ADHESION

ALZASTA has the same formability as Galvanized, and excellent durability at forming section because of relatively small micro-crack at forming section.

Ball Impact Test



⬆ No peeling-off at 1kg/ 500mm impact test

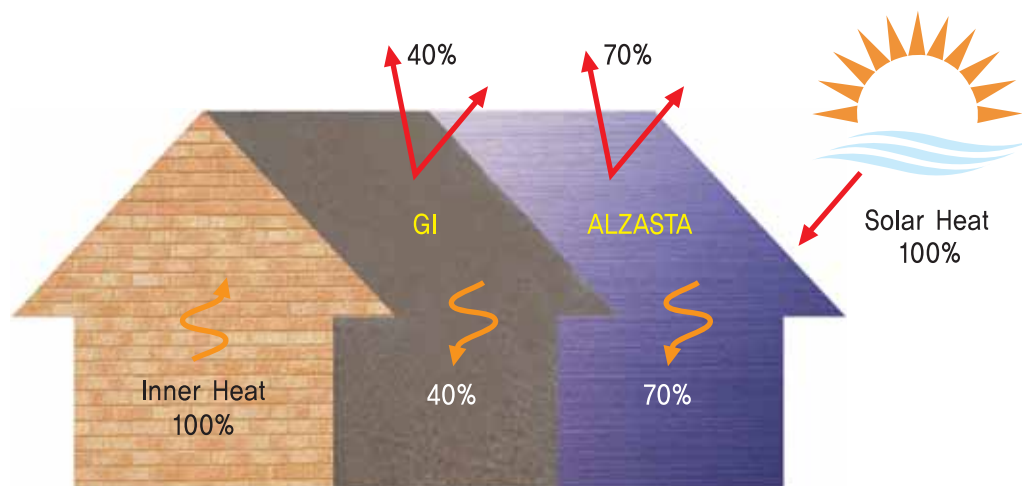
Bending Test



⬆ No peeling-off at 0t and 180° bend test

HEAT REFLECTIVITY

ALZASTA has two times heat reflectivity compared to Galvanized and so can reduce energy cost when used in roofing and paneling. When painted with black pigment such as composite oxide, it can effectively prevent temperature from rising.



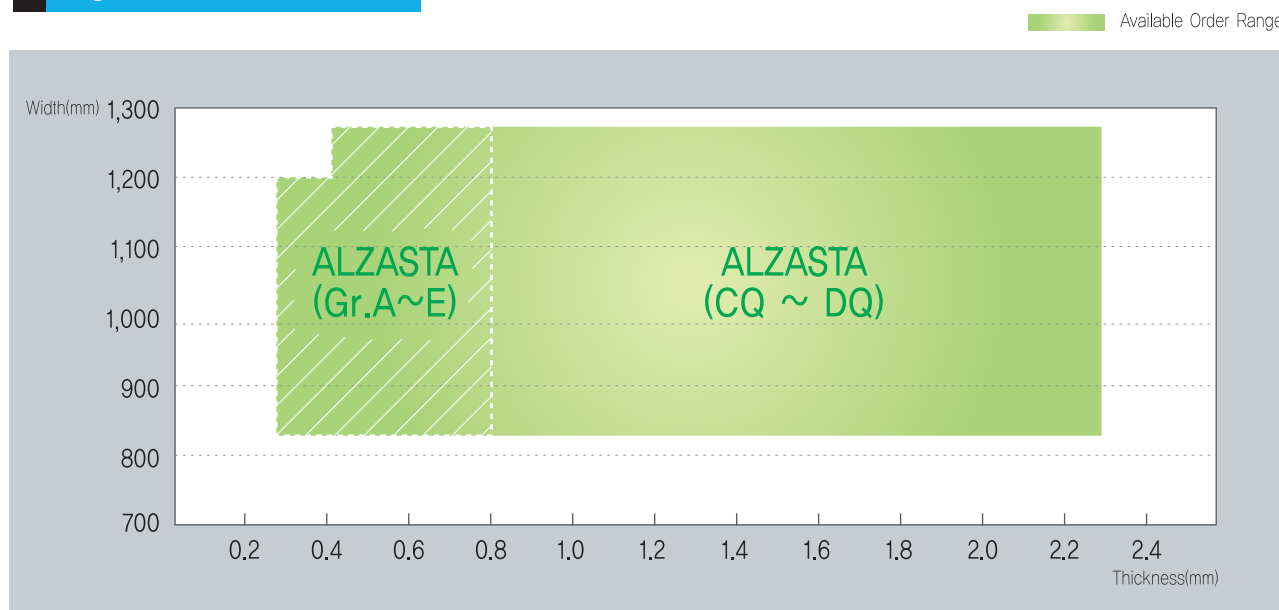
PAINTABILITY

ALZASTA can be painted without any additional pre-treatment because of excellent adhesion between coating layer and paint. It also maintains good paintability after various painting were previously applied on it.

Hot-Dip 55% Al-Zn Alloy Coated Steel Sheet

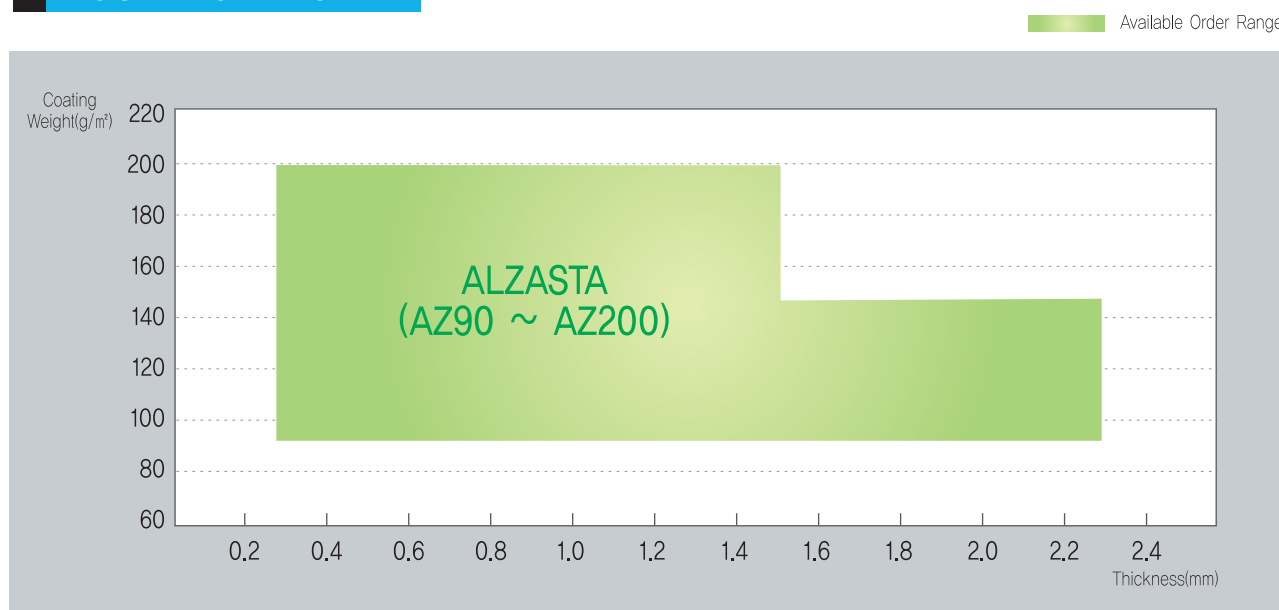
»» SCOPE OF MANUFACTURE

SIZE AVAILABILITY



* After Coating Thickness(TCT)

COATING WEIGHT



* After Coating Thickness(TCT)

ALZASTA

QUALITY SPECIFICATIONS

COMPARISON TABLE BY SPECIFICATION

CLASSIFICATION		SPECIFICATIONS			
		POSCO C&C	KS D3770	JIS G3321	ASTM A792
COMMERCIAL QUALITY		PLCC	SAZCC	SGLCC	CS
DRAWING QUALITY		PLCD	SAZCD	SGLCD	DS
STRUCTURAL STEEL	32kg	PLC32	—	—	SS230
	37kg	PLC37	—	—	SS255
	41kg	PLC41	SAZ400	SGLC400	SS275
	45kg	PLC45	SAZ440	SGLC440	SS340
	58kg	PLC58	SAZ570	SGLC570	SS550

POSCO C&C STANDARD

CLASSIFICATON		THICK- NESS(mm)	Y.P (kgf/mm ²)	T.S (kgf/mm ²)	ELONGATION(%)				
					0.3≤t<0.4	0.4≤t<0.6	0.6≤t<1.0	1.0≤t<1.6	1.6≤t<2.3
COMMERCIAL QUALITY		0.3≤t<2.3	≥21	≥28	≥20	≥21	≥24	≥24	≥25
DRAWING QUALITY			—	≥28	—	≥27	≥31	≥32	≥33
STRUCTURAL STEEL	32kg		≥23	≥32	≥20	≥20	≥20	≥20	≥20
	37kg		≥26	≥37	≥18	≥18	≥18	≥18	≥18
	41kg		≥30	≥41	≥16	≥17	≥18	≥18	≥18
	45kg		≥35	≥46	≥14	≥15	≥16	≥18	≥18
	58kg		≥57	≥58	—	—	—	—	—

CHEMICAL TREATMENT

TYPE	CODE	USAGE	REMARKS
CHROMATE TREATMENT	CX	Normal Chromated	
	NX	Cr-Free	
ORGANIC TREATMENT	XG	General purpose	
	XF	PE-Foam Sandwich Panel	
	XT	Cr-Free, Home Appliances	
	XB	Construction/ Interior Application(Green)	
	CP	Pipe	
OTHER TREATMENT	XX	No treatment	SPM, No Oiling
	CX	TV-Band	SPM, No Oiling

Hot-Dip 55% Al-Zn Alloy Coated Steel Sheet

DIMENSIONAL TOLERANCE

THICKNESSES TOLERANCE

| KS, JIS |

Unit : mm

THICKNESS \ WIDTH	630 < W	630 ≤ W < 1000	1000 ≤ W < 1250
0.5 ≤ t < 0.6	± 0.05	± 0.05	± 0.05
0.6 ≤ t < 0.7	± 0.06	± 0.06	± 0.06
0.7 ≤ t < 0.8	± 0.07	± 0.07	± 0.07
0.8 ≤ t < 1.0	± 0.07	± 0.08	± 0.08
1.0 ≤ t < 1.25	± 0.08	± 0.08	± 0.09
1.25 ≤ t < 1.6	± 0.09	± 0.10	± 0.11
1.6 ≤ t < 2.0	± 0.11	± 0.12	± 0.13
2.0 ≤ t < 2.3	± 0.13	± 0.14	± 0.15

| ASTM |

Unit : mm

THICKNESS (t)	WIDTH (W)	
	W < 1500	1500 ≤ W
0.25 ≤ t < 1.50	± 0.05	± 0.05
1.50 ≤ t < 2.00	± 0.08	± 0.08
2.00 ≤ t < 2.50	± 0.15	± 0.18

WIDTH TOLERANCE

| KS, JIS |

Unit : mm

WIDTH (W)	TOLERANCE
W ≤ 1500	+ 7
	- 0

| ASTM |

Unit : mm

WIDTH (W)	TOLERANCE
600 ≤ W < 1200	- 0, + 5
1200 ≤ W < 1500	- 0, + 6

SPECIFIC USAGE

AUTOMOTIVES, HOME APPLIANCES, PUBLIC WORKS, ARCHITECTURES

【 HOME APPLIANCE 】

- LCD MONITORS
- AIR-CONDITIONER FAN
- TV SHRINKAGE BAND



【 CONSTRUCTION MATERIALS 】

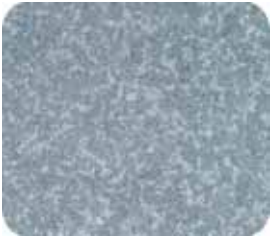


- INTERNAL/EXTERNAL PANELS
- DUCTS



Hot-Dip Galvanized Steel Sheet <<<

ZINCOSTA

>>> CHARACTERISTICS

	MINIMIZED SPANGLE	ZERO SPANGLE	EXTRA SMOOTH
CHARACTERISTICS	<ul style="list-style-type: none"> • Characteristics of the crystal structure due to the restricted growth of zinc crystals during normal solidification • Good appearance after painting due to uniformity of the surface, and better paintability compared to regular spangle 	<ul style="list-style-type: none"> • Difficult to check the crystal grains with naked eyes due to complete suppression of the growth of zinc crystals during solidification of molten zinc • Excellent appearance after painting due to the uniformity of the surface and outstanding appearance 	<ul style="list-style-type: none"> • Extra smooth surface after skin pass process with unique spangle and gloss • Good appearance after painting due to surface smoothness
APPLICATIONS	<ul style="list-style-type: none"> • Furnitures and Office Equipments • Home Appliances • Construction 	<ul style="list-style-type: none"> • Furnitures and Office Equipments • Home Appliances • Base Materials for Painted Steel Sheets 	<ul style="list-style-type: none"> • Furnitures and Office Equipments • Home Appliances • Base Materials for Painted Steel Sheets
SURFACE CONDITION			

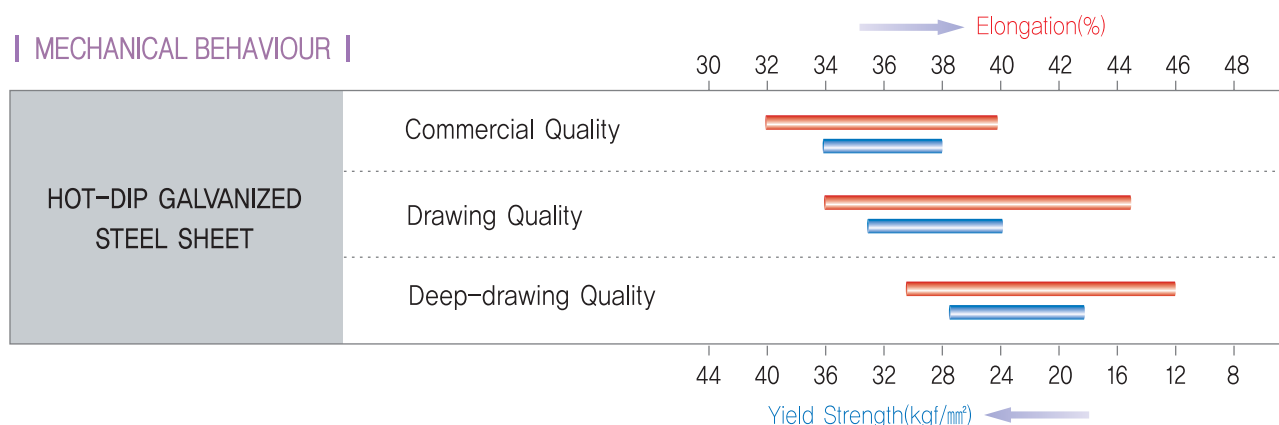
ZINCOSTA produced with POSCO C&C's unique technology is suitable for office supplies, home appliances, construction materials, painting steel plates materials with elegant exterior and excellent coating.



FORMABILITY

Hot-dip galvanized steel sheet manufactured through continuous galvanizing process is excellent in its property of coating adherence, shows little peeling of coating layer when subjected to deep drawing process since little iron-zinc alloy layer is retained.

MECHANICAL BEHAVIOUR



CORROSION RESISTANCE

GENERAL CHARACTERISTICS

ELECTROCHEMICAL PROTECTION PROPERTY

The reason rust formation is prevented in the zinc-coated steel sheets is that zinc has more negative ionized trend than iron. Even if the zinc coating is damaged, the life can be extended due to sacrificial anodic reaction of zinc.

PHYSICAL PROTECTIVE PROPERTY

The zinc itself is active metallic element. So when exposed to air, it turns into zinc oxide or zinc carbonate through a rapid reaction with oxygen or carbon dioxide in air, and thin layer develops on the surface.

This thin layer is very compact and shows very adhesive property so that it serves as an anticorrosive barrier to protect the underneath material from rust formation under corrosive external conditions.

ZINCOSTA

CORROSION RESISTANCE IN AIR

The corrosion resistance of zinc depends on the property of the anticorrosive thin layer thereon.

The corrosion resistance of thin layer, however, deteriorates rapidly with the appearance of porous layer in case there exist corrosive components such as sulfurous acid gas in the air. Accordingly, the thickness of the hot-dip zinc coating is a critical factor for the service life of the sheets. In the case of identical coating thickness it mainly relies on the environment under which the sheets are used.

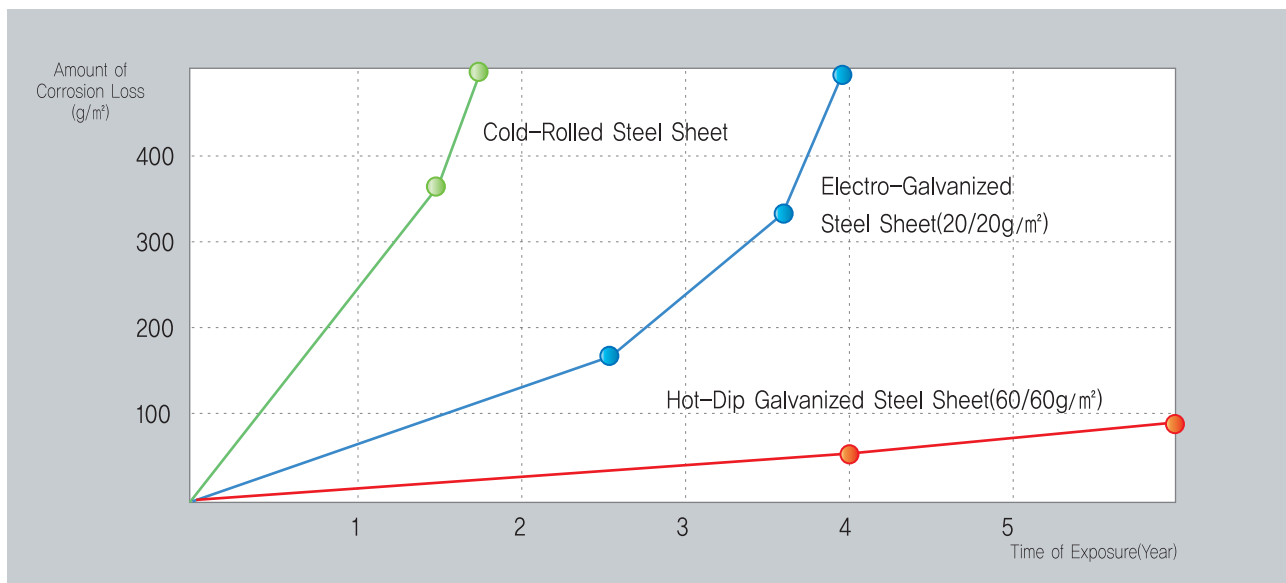
The life of hot-dip zinc coating steel sheets in urban area or in industrial area is almost 25 to 40% of the life in the rural area. In addition, the life of the sheets when used indoors is 5 to 10 times longer than that when used outdoors.

CORRELATION OF THE LIFE AND ENVIRONMENT FOR THE HOT-DIP GALVANIZED STEEL SHEET

(Amount of zinc: 300g/m²)

ENVIRONMENT	RURAL AREA	SEA SHORE	OUTSKIRTS	URBAN AREA	INDUSTRIAL AREA
LIFESPAN(Yr)	16	10	8	6	4

OUTDOOR EXPOSURE TEST RESULT

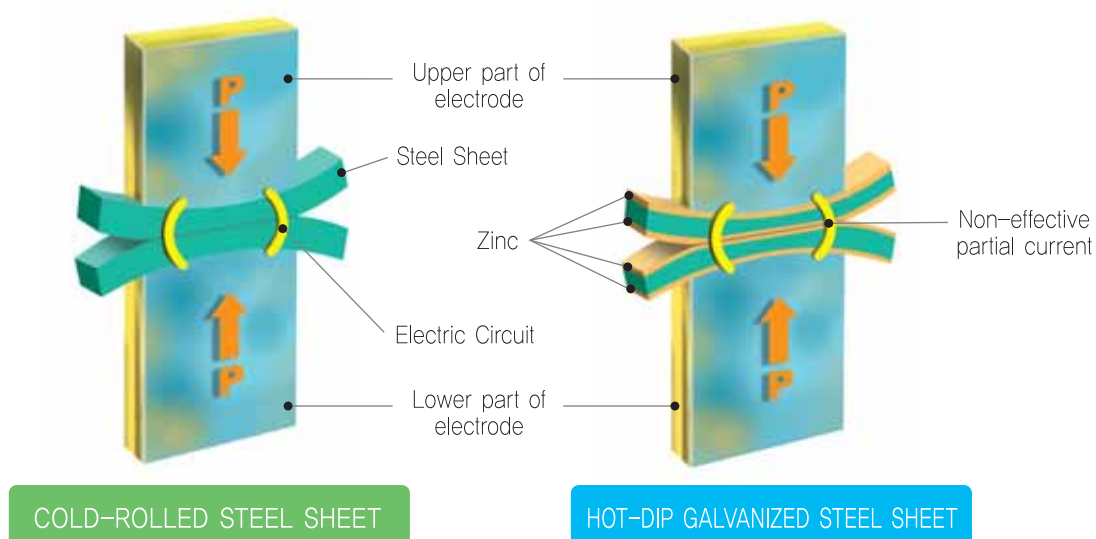


WELDABILITY

- Since electrical conductivity of the zinc-coated layer is better than that of iron, electrical resistance is somewhat less at the contact surface between zinc layers and iron base sheet so that heat generation is more or less lower.
- Melting point of zinc is lower than that of iron. So, continuous weldability is somewhat lowered due to the fact that molten zinc tends to adhere onto the electrode.
- Zinc is more ductile than iron. So, electrical density of zinc coating is somewhat lowered due to relatively wider contact area by the applied pressure of electrodes.

Hot-Dip Galvanized Steel Sheet

| DISTRIBUTION OF ELECTRIC CURRENT BETWEEN UPPER PART AND LOWER PART OF ELECTRODE |



| SUGGESTIONS FOR THE IMPROVEMENT OF WELDABILITY SPOT WELDING |

SPOT WELDING	SEAM WELDING
<ul style="list-style-type: none"> • Increase the welding current by 10% to 30% • Extend welding time by approximately 10% • Slightly increase the pressure of electrodes • Select cone-type electrode material made of Cr-Cu alloy • Frequently polish the electrode and cool the electrode with water. 	<ul style="list-style-type: none"> • Adjust welding current to higher value • Increase the pressure of electrodes to suppress air bubble or internal defects • Let intermittent current flow so that better welded nuggets can be obtained as the ratio of ON and OFF time is increased. • Sufficiently cool electrodes with water

■ FUSION-ARC WELDING

In case of arc welding with coated electrodes, it is recommended to use electrodes with good melt flow characteristics and ones coated with high ph material. Recommended electrodes are E4303(lime titania type), E4313(high titanium oxide type), and E4316(low hydrogen type) prescribed in the KSD 7004

■ SOLDERABILITY

Hot-dip galvanized steel sheets can be easily soldered as with an appropriate solvent is used instead of surface preparations. The soldability of chromated material is excellent. Non-corrosive solvents or mixture solutions of zinc chloride(15 to 20%) and ammonium chloride (3,3 to 5%) are typically recommended ones and through rinsing is necessary without further drying up.

ZINCOSTA

PAINTABILITY

Hot-dip galvanized steel sheet is frequently used to be painted as shown in the applications. Corrosion resistance after painting is much influenced by the type of steel sheet as well as pretreatments with the type of paints.

CORROSION RESISTANCE FOR PAINTED PRODUCTS

TYPES OF STEEL SHEETS			FLAT PART				CROSS-CUT PART			
MATERIAL	PHOSPHATE TREATMENT	PRIMER PAINTING	OUTDOOR EXPOSURE TEST		SALT SPRAY TEST		OUTDOOR EXPOSURE TEST		SALT SPRAY TEST	
			6 months	1 year	200 hrs	400hrs	6 months	1 year	200hrs	400hrt
COLD-ROLLED STEEL SHEET	Done	Done	◎	◎	○	△	○	△	△	×
		None	△	×	△	×	△	×	△	×
	None	Done	○	△	△	×	△	×	△	×
		None	△	×	×	×	×	×	×	×
HOT-DIP GALVANIZED STEEL SHEET	Done	Done	◎	◎	◎	○	◎	○	○	△
		None	◎	△	○	△	○	△	△	△
	None	Done	◎	○	○	△	○	△	△	×
		None	△	×	△	×	△	×	×	×
GALVANNEALED STEEL SHEET	Done	Done	◎	◎	◎	○	◎	○	○	△
		None	◎	○	○	△	○	△	△	△
	None	Done	◎	○	○	△	○	△	△	△
		None	○	△	△	△	△	×	△	×

Flat part ◎ Normal
○ Slightly Blister
△ Slightly Blister
× Rust Observed

Cross-Cut part ◎ Normal
○ Width of Blister 1mm Max
△ Width of Blister 5mm Max
× Width of Blister 5mm Min

SPECIFIC USAGE

AUTOMOTIVES, HOME APPLIANCES, PUBLIC WORKS, ARCHITECTURES

【 AUTOMOTIVE PARTS/HOME APPLIANCES 】

- AUTOMOTIVE PANEL
- HOME APPLIANCE



【 CONSTRUCTION MATERIALS 】

- LIGHTWEIGHT STEEL STRUCTURE
- DECK PLATE
- DUCT



【 PIPE 】

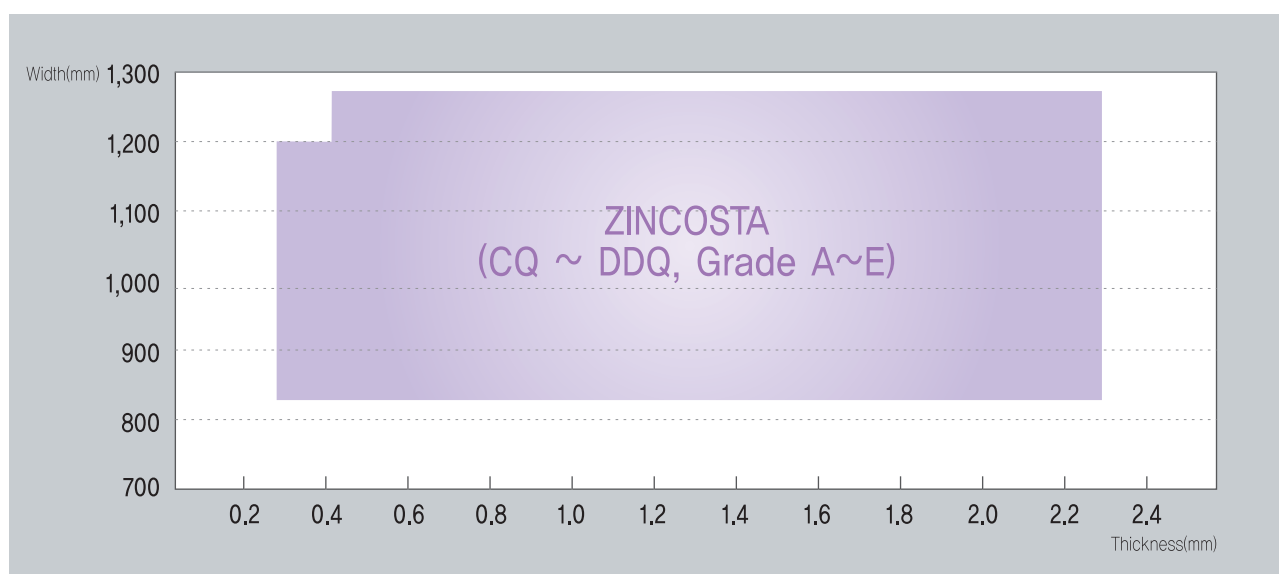
- GREEN HOUSE PIPE
- SPIRAL PIPE



Hot-Dip Galvanized Steel Sheet

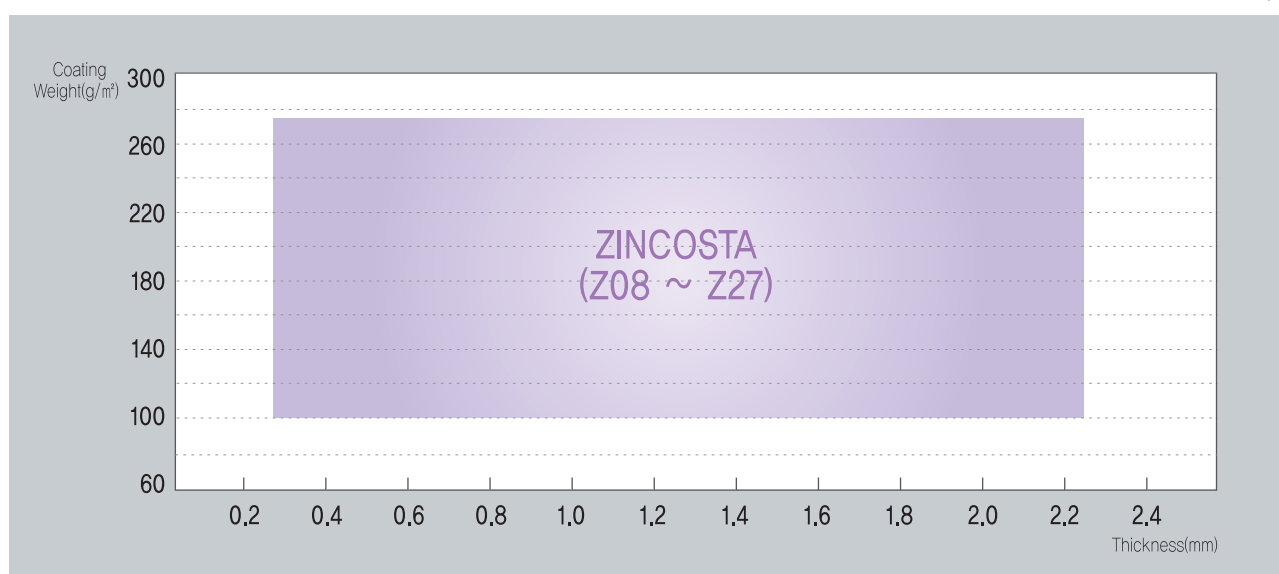
»» SCOPE OF MANUFACTURE

SIZE AVAILABILITY



*After Coating Thickness(TCT)

COATING WEIGHT



*After Coating Thickness(TCT)

ZINCOSTA

QUALITY SPECIFICATIONS

COMPARISON TABLE BY SPECIFICATION

CLASSIFICATON		POSCO C&C	KS D3506	JIS G3302	ASTM A653
COMMERCIAL QUALITY		PGCC	SGCC	SGCC	CS
DRAWING QUALITY		PGCD	SGCD1	SGCD1	FS
DEEP-DRAWING QUALITY		PGCE	SGCD2	SGCD2	DDS
NON-AGING DEEP-DRAWING QUALITY		PGCE	SGCD3	SGCD3	EDDS
STRUCTURAL STEEL	35kgf Class	PGC32	SGC340	SGC340	SS255
	41kgf Class	PGC41	SGC400	SGC400	SS275
	45kgf Class	PGC45	SGC440	SGC440	SS340
	50kgf Class	PGC50	SGC490	SGC490	—
	58kgf Class	PGC58	SGC570	SGC570	SS550

POSCO C&C STANDARD

CLASSIFICATON		CODE	APPLICABLE THICKNESS (mm)	YIELD POINT kgf/mm ² (N/mm ²)	TENSILE STRENGTH kgf/mm ² (N/mm ²)	ELONGATION(%)				
						0.25 ~ 0.40	0.40 ~ 0.60	0.60 ~ 1.0	1.0 ~ 1.6	1.6 ~ 2.3
COMMERCIAL QUALITY		PGCC	0.25 ~ 2.3	—	—	—	—	—	—	—
DRAWING QUALITY		PGCD		—	28 Over (270 over)	—	34 Over	36 Over	37 Over	38 Over
DEEP-DRAWING QUALITY		PGCE		—	28 Over (270 over)	—	36 Over	38 Over	39 Over	40 Over
NON-AGING DEEP-DRAWING QUALITY		PGCE		—	28 Over (270 over)	—	38 Over	40 Over	41 Over	42 Over
STRUCTURAL STEEL	35kgf Class	PGC32		25 Over (245 over)	35 Over (340 over)	20 Over	20 Over	20 Over	20 Over	20 Over
	41kgf Class	—		30 Over (295 over)	41 Over (400 over)	18 Over	18 Over	18 Over	18 Over	18 Over
	45kgf Class	PGC45		34 Over (335 over)	45 Over (440 over)	18 Over	18 Over	18 Over	18 Over	18 Over
	50kgf Class	PGC50		37 Over (365 over)	50 Over (490 over)	16 Over	16 Over	16 Over	16 Over	16 Over
	58kgf Class	PGC58		57 Over (560 over)	58 Over (570 over)	—	—	—	—	—

* Steels for general use generally have yield point of min. 21kgf/mm² (205N/mm²) and tensile strength of min. 28kgf/mm² (270N/mm²)

Hot-Dip Galvanized Steel Sheet

| KS, JIS |

CLASSIFICATION	CODE	APPLICABLE THICKNESS (mm)	YIELD POINT (N/mm ²)	TENSILE STRENGTH (N/mm ²)	ELONGATION(%)					
					0.25 ~ 0.40	0.40 ~ 0.60	0.60 ~ 1.0	1.0 ~ 1.6	1.6 ~ 2.3	2.5 Over
COMMERCIAL	SGCC	0.25~3.2	—	—	—	—	—	—	—	—
DRAWING QUALITY CLASS 1	SGCD1	0.40~2.3	—	270 Over	—	34 Over	36 Over	37 Over	38 Over	—
DRAWING QUALITY CLASS 2	SGCD2		—	270 Over	—	36 Over	38 Over	39 Over	40 Over	—
DRAWING QUALITY CLASS 3	SGCD3	0.60~2.3	—	270 Over	—	38 Over	40 Over	41 Over	42 Over	—
STRUCTURAL QUALITY	SGC340	0.25~3.2	245 Over	340 Over	20 Over	20 Over	20 Over	20 Over	20 Over	20 Over
	SGC400		295 Over	400 Over	18 Over	18 Over	18 Over	18 Over	18 Over	18 Over
	SGC440		335 Over	440 Over	18 Over	18 Over	18 Over	18 Over	18 Over	18 Over
	SGC490		365 Over	490 Over	16 Over	16 Over	16 Over	16 Over	16 Over	16 Over
	SGC570	0.25~2.0	560 Over	570 Over	—	—	—	—	—	—

* Steels for general use generally have yield point of min. 21kgf/mm² (205N/mm²) and tensile strength of min. 28kgf/mm² (270N/mm²)

| ASTM |

CODE	TYPE	YP(N/mm ²)	TS(N/mm ²)	El(%)
CS	CQ	170 ~ 380	—	20 Over
FS	DQ	170 ~ 310	—	26 Over
DDS	DDQ	140 ~ 240	—	32 Over
EDDS	EDDQ	105 ~ 170	—	40 Over
SS230	Gr.A	230 Over	310 Over	20 Over
SS255	Gr.B	255 Over	360 Over	18 Over
SS275	Gr.C	275 Over	380 Over	16 Over
SS340	Gr.D	340 Over	450 Over	12 Over
SS550	Gr.E	550 Over	570 Over	—

ZINCOSTA

COATING THICKNESS

| MINIMUM COATING WEIGHT(ON BOTH SIDES) |

COATING DESIGNATION	AVERAGE COATING WEIGHT ON BOTH SIDES BY 3 POINT MEASUREMENT	MINIMUM COATING WIGHT ON BOTH SIDES BY 1 POINT MEASUREMENT	RELEVANT STANDARDS(DESIGNATION CODE)		
			KS	JIS	ASTM
060	60	51	Z06	Z06	—
080	80	68	Z08	Z08	—
090	90	77	—	—	G30
100	100	85	Z10	Z10	—
120	120	102	Z12	Z12	G40
180	180	153	Z18	Z18	G60
200	200	170	Z20	Z20	—
220	220	187	Z22	Z22	—
250	250	213	Z25	Z25	—
275	275	234	Z27	Z27	G90
350	350	298	Z35	Z35	G115
450	450	383	Z45	Z45	G140
500	500	426	—	—	G165
600	600	510	Z60	Z60	G210

1. The average coating weight on both sides by 3 point measurement is the average value of coating weight from three random specimens.

2. The minimum coating weight on both sides by 1 point measurement is the lowest value of coating weight from three random specimens.

3. The maximum coating weight on both sides shall be negotiated.

SURFACE CONDITION

| COATING |

TYPE	CLASSIFICATION		DESIGNATION
GALVANIZED	Coating on Both Sides	Minimized Spangle	SM
		Extra Smooth	SS

Hot-Dip Galvanized Steel Sheet

POST TREATMENT

CHEMICAL TREATMENT

CALSSIFICATION	DESIGNATION
GENERAL TREATMENT	CX
CR-FREE TREATMENT	SX
NO TREATMENT	XX

OILING

CALSSIFICATION	DESIGNATION
OILED	PL, PG, PH
NON - OILED	PX

DIMENSIONAL TOLERANCE

THICKNESSES TOLERANCE

KS, JIS

WIDTH THICKNESS	W < 630	630 ≤ W < 1000	1000 ≤ W < 1250	1250 ≤ W < 1600
0,25 ≤ t < 0,40	±0,05	±0,05	±0,05	±0,06
0,40 ≤ t < 0,60	±0,06	±0,06	±0,06	±0,07
0,60 ≤ t < 0,80	±0,07	±0,07	±0,07	±0,07
0,80 ≤ t < 1,00	±0,07	±0,07	±0,08	±0,09
1,00 ≤ t < 1,25	±0,08	±0,08	±0,09	±0,10
1,25 ≤ t < 1,60	±0,09	±0,10	±0,11	±0,12
1,60 ≤ t < 2,00	±0,11	±0,12	±0,13	±0,14
2,00 ≤ t < 2,50	±0,13	±0,14	±0,15	±0,16

ASTM

INDICATED THICKNESS(t)	WIDTH (W)	
	W < 1500	1500 ≤ W
0,25 < t ≤ 1,50	±0,05	±0,05
1,50 < t ≤ 2,00	±0,08	±0,08
2,00 < t ≤ 2,50	±0,15	±0,18

WIDTH TOLERANCE

KS, JIS

WIDTH	TOLERANCE
W ≤ 1500	+ 7
	- 0


ASTM

WIDTH(W)	TOLERANCE
600 ≤ W < 1200	- 0, + 5
1200 ≤ W < 1500	- 0, + 6

Hot Dip Aluminized Stainless

Al-coated STS

CHARACTERISTICS

R BAND	CHARACTERISTICS	APPLICATIONS	SURFACE
Al-Coated STS	<ul style="list-style-type: none"> • Application of high strength steel STS with sacrificial anode reaction and elegant exterior, • Excellent resistance to salt corrosion and condensed water • Excellent resistance to red rust up to 427°C • Excellent resistance to oxidation by coating layer up to 843°C • Excellent coloring 	<ul style="list-style-type: none"> • construction exterior and interior finish materials • fuel cell and solar cell panel module • automobile exhaust system 	

AI COATING THICKNESS AND MATERIAL CHARACTERISTICS

(Al-coated STS 409L for exhaust system)

Maker	THICKNESS (mm)	WHETHER NON-COATED PLATE EXISTS	THICKNESS OF AL COATING (μm)	TENSION CHARACTERISTICS		
				YS(MPa)	TS(MPa)	EL(%)
POSCO	0,6	—	26,06	310	438	27,4
	1,2	—	20,02	311	435	31,8
A COMPANY	0,5	—	21,54	244	402	26,5
	0,8	—	19,28	252	402	30,1
	1,4	—	12,48	260	409	33,4
B COMPANY	1,0	—	27,15	311	417	28,7

MATERIALS SPECIFICATION

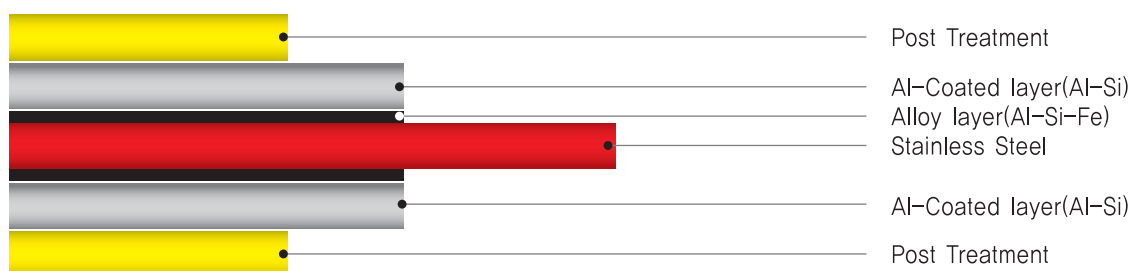
TYPE	YP(MPa)	TS(MPa)	EL(%)
AL-STS 0,6t	≤315	≥380	≥26,0
AL-STS 1,2t			≥28,0

Al-coated STS produced with POSCO C&C's unique technology is suitable for construction material, fuel cell, solar cell panel module and automotive exhaust system materials with elegant exterior, excellent resistance to salt corrosion and condensed water, and resistance to oxidation.



PRODUCT STRUCTURE

Application of high strength steel STS with sacrificial anode reaction and elegant exterior providing excellent corrosion resistance and coloring..



*ALCOSTA-STs :
Hot Dip Aluminized Stainless Steel

FORMABILITY

Al-coated STS, a high polymer strong steel has excellent molding ability and also excellent seam welding processing ability.

TYPE	PRESS FORMATION ASSESSMENT	PIPE MILL ASSESSMENT
AL-COATED STS 409L (PROCESSING RESULT)		





Al-coated STS

CORROSION RESISTANCE

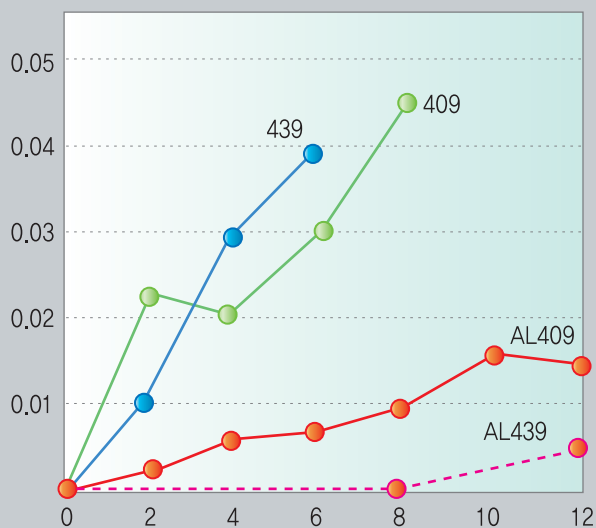
Al-Coated STS 409L steel has excellent corrosion resistance in corrosion environment.

COMPARISON ON THE CORROSION RESISTANCE OF Al-coated STS 409L

(Salt water spray test, 500 cycle)

Al Coated STS 409L	409L	439	436L
			

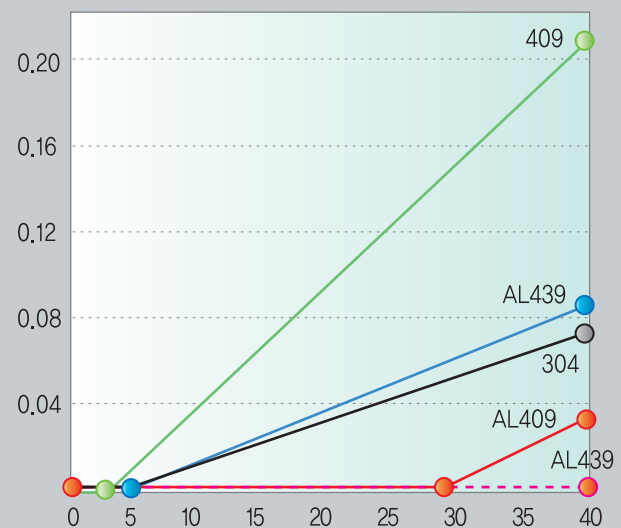
External corrosion evaluation



TEST CONDITIONS

1. Heat 1 hour in air once per week
2. SST(5% NaCl, 35°C, 15min) → Dry (75min) → Humidity(85% RH, 60°C, 1350min) : 12week

Interior (condensed water) corrosion evaluation



CONDENSATE WATER CONDITION

Cl(100ppm), NO3(100ppm), NO3(3000ppm), SO(5000ppm)

TEST CONDITIONS

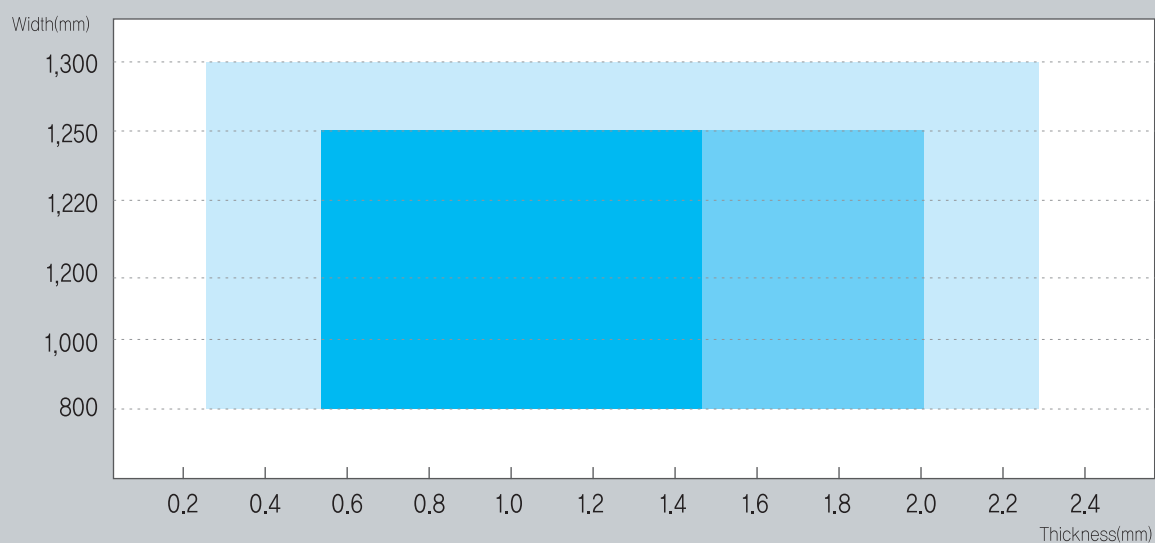
Exposure of Sample in condensate(90°C, 16hr) → Dry(250°C, 1hr) → Humidity(85%RH, 50°C, 6hr)

Hot Dip Aluminized Stainless

»» SCOPE OF MANUFACTURE

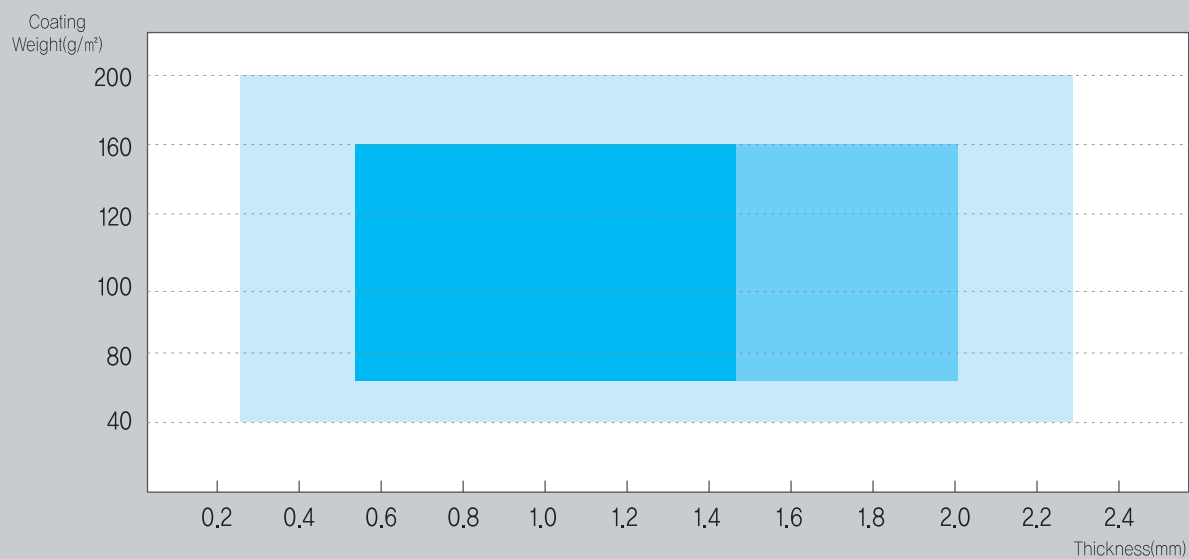
SIZE AVAILABILITY

Available Order Range
Review on order winning status
acilities capacity



COATING WEIGHT

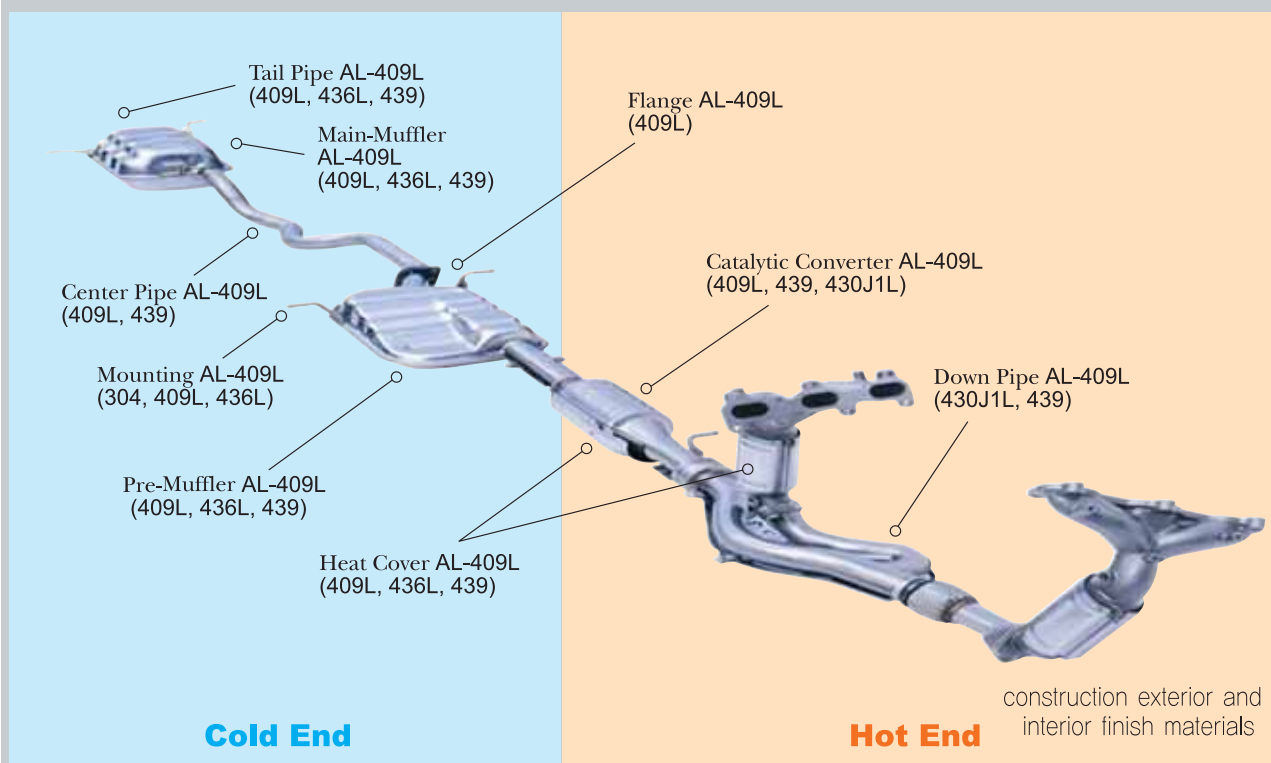
Available Order Range
Review on order winning status
acilities capacity



Al-coated STS

SPECIFIC USAGE

【 AUTOMOBILE EXHAUST SYSTEM 】



【 FUEL CELL AND SOLAR CELL PANEL MODULE 】



【 CONSTRUCTION EXTERIOR AND INTERIOR FINISH MATERIALS 】



PREPAINTED PRODUCTS

PREPAINTED PRODUCTS



Prepainted Products <<<

POS-PCS

POS-PVDF

POS-PSP

POS-PDF2

POS-PVS

POS-PLY4

POS-PAL

POS-PCS

POS-PCS2

POS-PCS6

POS-MATT

POS-LAMI

POS-PBG

POS-PET

PREPAINTED PRODUCTS

POS-PGS POLYESTER PAINTED STEEL SHEET

- General Application
- High Formability

Polyester resin paint can be applied to the various applications such as construction and home appliance usages.

Application •

Construction Materials :

- Exterior Material(Roofing, Wall)
 - Industrial, commercial, public utility, housing, etc
- Interior Material
 - Interior wall, ceiling, partition, fireproof door, etc

Home Appliances : oil and gas boiler, rice box, portable gas range, etc

Other : electric device, steel furniture, agricultural equipment



POS-PVDF POLYVINYLIDENE FLUORIDE PAINTED STEEL SHEET

General Solid Fluoride, Metallic Fluoride, Mica Fluoride

- Warranty Period : More than 20 years
- Ultra weather resistance

Fluoride resin painted steel has ultra excellent durability(corrosion resistance, weather resistance, chemical resistance) than any other painted products and widely used in the area of coastal area and chemical industrial area.

Application •

Construction Materials :

- Exterior Material(Roofing, Wall)
 - Industrial, commercial, public utility, housing
- Interior Material
 - Interior wall, ceiling, partition, fireproof door



PREPAINTED PRODUCTS

POS-PSP SUPER POLYESTER PAINTED STEEL SHEET

- High corrosion resistance
- High weather resistance

Improved polyester resin has better anti-chemical, corrosion-resistant and weather-resistant characteristics.

Application

Construction Materials :

- Exterior Material(Roofing, Wall)
 - Industrial, commercial, public utility, housing, etc
- Interior Material– interior wall, ceiling, partition, etc



ULTRA SUPER POLYESTER PAINTED STEEL SHEET

Enriched POS-PSP(Super Polyester Painted Steel Sheet)

- Intensified weather resistance characteristics extends lifespan of the building
- Beautiful surface of the building can be kept by the characteristics delaying discoloration and gloss-loss.
- Saving the cost to re-paint for maintenance
- Extended warranty period for weather resistance compared to POS-PSP (10 years ⇨ 15 years)

Application

Exterior and Interior Application

PREPAINTED PRODUCTS

POS-PDF2 POLYVINYLIDENE FLUORIDE PAINTED STEEL SHEET

- Anti-Contamination Characteristics
- Writing Properties, Erasing Properties

Whiteboards and green boards made of polyvinylidene fluoride painted steel are contributing to the improvement of educational environment.

Application •

Educational facilities :

Green board, white board for school, office and home



POS-PVS PVC PLASTIC-SOL PAINTED STEEL SHEET

- Only 1 product in Korea(Nobody produces this product.)
- Ultra weather resistance
- High formability
- Self-extinguishing

PVC(vinyl chloride) resin preserving properties of plastic gives outstanding weather resistance, chemical resistance, and corrosion resistance. Elongation of paint layer reaches up to 300-400% without any crack under very severe processing conditions. Specially embossed surface enhances product features specific appearance and guarantees 15 years of durability. It is the only products with self-extinguishing property for the areas (ie,chemical, coastal, and SO2 GAS areas)

Application •

Construction Materials

- Exterior Material(Roofing, Wall)
 - Industrial, commercial, public utility, housing, etc
- Interior Material
 - Interior wall, ceiling, partition, entry doors

Other : Air-conditioner, industrial devices



PREPAINTED PRODUCTS

POS-PLY4 PET LAMINATED SHEET

- LCD monitors
- Pet Film with high luminance reflectivity
- High Diffusion reflectivity rate

Used for LCD monitors which require high diffusion reflectivity rate.

Application

Display Panel : LCD monitor (PC / Lap-top), LCD TV , etc



POS-PAL PREPAINTED ALUMINIUM SHEET

- Best exterior finish for buildings
- Long-term durability(more than 25 years)
- Super weather resistance
- Excellent flatness

The POS-PAL has light-weight (approx, 1/3 of a steel sheet) and excellent corrosion resistance with PVDF resin paint. It enriches the dignity of modernized building structure with various sorts of colors and beautiful surfaces. It has high durability with resistance to extreme weather and chemicals found in municipal environments. It comes with a guarantee for over 25 years.

Application

High-rise Buildings :

- Exterior Material (Curtain Wall)
 - Large-scale buildings, officetels, hotel, hospitals, department stores, shopping malls, stadiums, building canopies, factories

Construction Materials :

- Interior Material : Interior walls, ceiling, partitions, fire safety doors

Other : container, advertising signboard, Traffic signboard, furniture



PREPAINTED PRODUCTS

POS-PCS HIGH-POLYMERIC POLYESTER PAINTED STEEL SHEET

- Home appliances
- Beautiful surface
- Excellent formability

Extremely good formability, chemical resistance, glossy surface, and excellent hardness.
Generally used for high grade home appliances.

Application

Home Appliances : refrigerator, microwave oven, washing machine, air-conditioner, outcase of home appliances, etc



POS-PCS2 ANTI-STATIC HIGH-POLYMERIC POLYESTER PAINTED STEEL SHEET

- Anti-Static Effect ($10^4 \sim 10^8$ OHM/cm²)
- Pollution-free
- Excellent Formability
- Excellent Hardness

POS-PCS2 is made of a mixture of high-polymeric polyester, melamine resin and conductive filler, giving excellent resistance to electricity

Application

Construction Materials :

Interior Application, Ceilings
Semiconductor plant, operation room, x-ray room, explosive plant / storage, printing / painting plant, pharmaceutical plant, pulverizing plant, and food plant



PREPAINTED PRODUCTS

POS-PCS6 TEXTURED HIGH-POLYMERIC POLYESTER PAINTED STEEL SHEET

- Home appliances
- Beautiful texture and metallic effect
- High formability

POS-PCS6 has exceptional formability, good chemical resistance, glossy surface, and excellent hardness. Mostly used for home appliances that require beautiful appearance.

Application

Home Appliances : DVD Player, Set-Top Box Case



POS-MATT HIGH DURABILITY WRINKLE POLYESTER STEEL SHEET

- High weather resistance
- High anticorrosion
- Super low gloss
- Soft and high grade quality touch

Outstanding weather resistance and anticorrosion enough to be compared. With fluorine resin by using good weather resistance filler and fire amount of flattening agent. This material is mainly used for roof(steel roof tile etc.) and wall body with the deluxe decoration of pastel tone, soft touch and super low gloss by forming wrinkle on the surface.

Application

Construction Materials :

- Exterior(material for roof and wall)
 - For industrial and commercial use, public installations, residence(rural residence, high grade villa)
 - For improvement of roofing. Steel roof tiles,







PREPAINTED PRODUCTS

POS-LAMI LAMINATED STEEL SHEET

- A variety of patterns and beautiful colors
- High formability & Durability
- Excellent corrosion & Rust resistant
- Outstanding Surface Quality : No Dust Mark, No Orange Peel, No embossed, surface, etc
- Outstanding Adhesion : No peeling-off of film and 10-year warranty
- Outstanding Formability and Chemical Resistance
- Excellent Matches with various types of protection films and adhesion



TYPE	CROSS SECTIONAL	FILM SPECS	APPLICATIONS	FEATURES
HIGH GLOSSY TYPE	<ul style="list-style-type: none"> • P/F • PVC • Adhesive • Base Metal 	PVC 50~200 μ m PET 30~100 μ m	<ul style="list-style-type: none"> • Refrigerator • Air-conditioner • Washing Machine • Vending Machine • Case for electric home appliances 	Elegant and clean image With high reflectivity and gloss
EMBOSSED MONOTONE TYPE	<ul style="list-style-type: none"> • PVC • Adhesive • Base Metal 	PVC 50~200 μ m	<ul style="list-style-type: none"> • Construction interior-materials • Ship interior materials • Office furniture • Partition • Fireproof door • Elevator, etc 	Various colors and surface types
PATTERN TYPE	<ul style="list-style-type: none"> • P/F • PVC • Adhesive • Base Metal 	PVC 50~200 μ m	<ul style="list-style-type: none"> • Partition • Construction interior-materials • Case for electric home appliances • Elevator, etc 	Various colors and printed patterns
NON-GLOSS TYPE	<ul style="list-style-type: none"> • PVC • Adhesive • Base Metal 	PVC 50~200 μ m	<ul style="list-style-type: none"> • Microwave oven • VTR • Audio • Computer Casing, etc 	Extremely low glossy type With thermal stability

PREPAINTED PRODUCTS

POS-PBG BIO WAVE POLYESTER PAINTED STEEL SHEET

■ Bio shield Steel Sheet

- Shields electric/magnetic waves
- Blocks electromagnetic waves 2–3 times better than general steel sheets and 10 times better than copper/aluminum
- Excellent blocking effects in both high and low magnetic condition

Application

Home appliance casings, subway finishes, adapter casings, internal / external finishes for buildings near power transmission towers, electric heating floors, etc



■ Bio Green Steel Sheet – Blocking electromagnetic waves + Transmitting far infrared rays and bio elements

- EMI shielding function
- Far infrared ray emissivity jade, bio stone versus equivalent or higher
- Provides anti-germs and anti-bacteria function (more than 99% of anti-bacterial effect)
- Freshness maintenance function/strawberry, flower freshness decomposition prevention rate more than 50% versus general products

Application

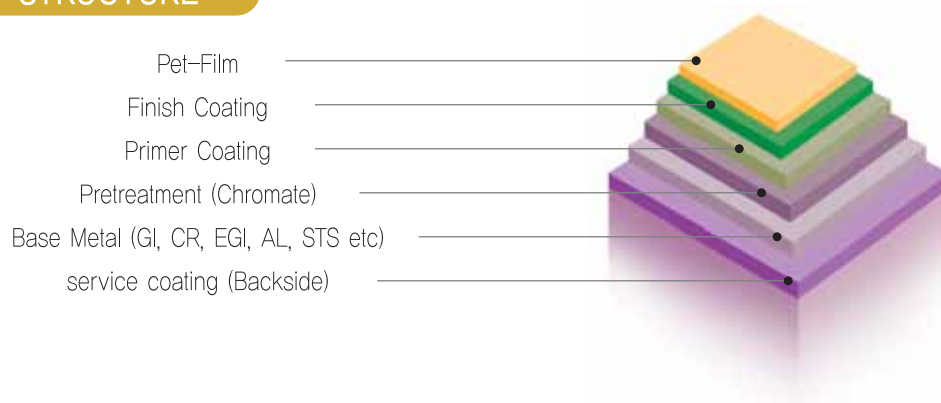
Home appliance case, construction exterior material, construction interior material (i.e. toilets), bathroom, kitchen appliance, food storage, showcase and etc,



PREPAINTED PRODUCTS

POS-PET PET LAMINATED STEEL SHEET

STRUCTURE



STANDARD SPECIFICATIONS

■ Base metal

- Base metal : CR, EGI, GI, GA, AL, STS
- Thickness : Steel 0,2 ~ 1,2mm, AL 0,25 ~ 2,5mm
- Width: 700 ~ 1270mm

■ PET Film

- Thickness : 12 ~ 80 μ m
- Tolerance: $\pm 4\mu$ m
- Width : 600 ~ 1400mm / The order should be indicated color and pattern

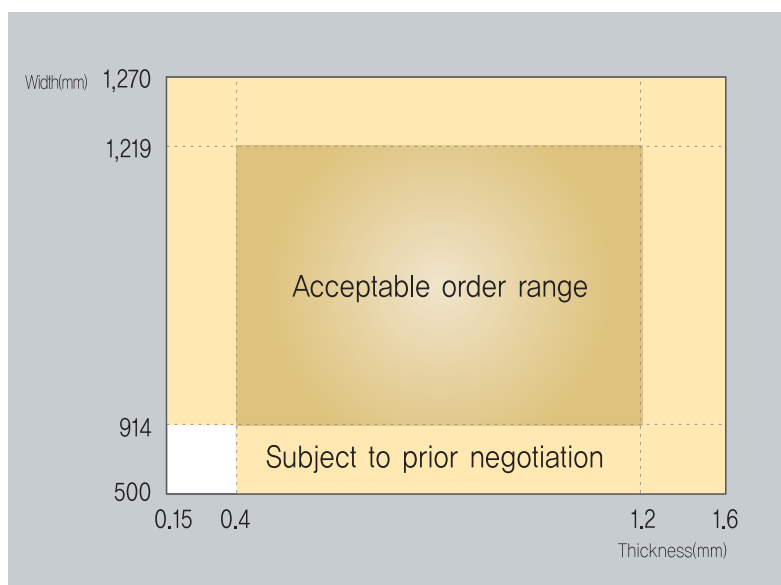
| CHARACTERISTICS BY PET FILMS |

TYPE		CHARACTERISTICS	USAGE
YV	HIGH GLOSS PET	<ul style="list-style-type: none"> • Various colors and 10~20% more glossy and clearer than regular PCM • Same level of gloss as high gloss PVC LAM and various colors and printed patterns, • Excellent film hardness, formability, and pollution resistance, etc 	High grade home Appliances, Unit Bathroom, etc
YY	HALF-GLOSS PET	<ul style="list-style-type: none"> • Improved print quality on top of the characteristics Non-gloss Pet 	Exterior / Interior, Partitions, Home Appliances, etc
YK	NON-GLOSS PET	<ul style="list-style-type: none"> • Outstanding formability, pollution resistance, corrosion resistance, UV resistance/ Outstanding print quality and appearance 	Exterior / Interior

PREPAINTED PRODUCTS

>>> SCOPE OF MANUFACTURE

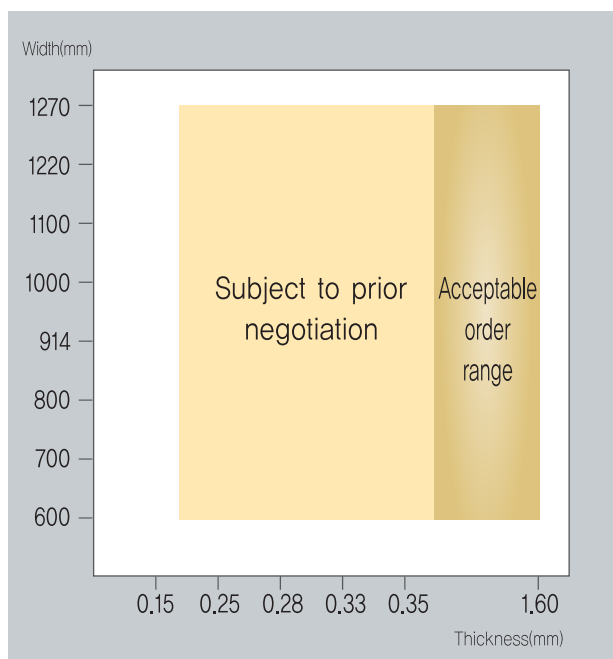
SIZE AVAILABILITY



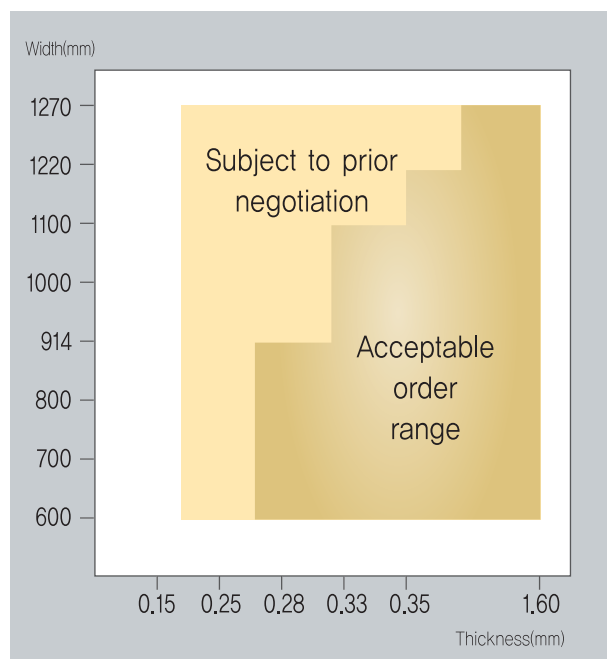
PLANT SPECIFICATION

- Capacity : 300,000 tons/year
- Coating Method : Roll Coating
- Manufacturing Scope
: (Thickness) 0.15~1.60mm
(Width) 500~1270mm
(Inner Diameter) 508mm, 610mm
- Applied Materials :
GI, CR, EGI, AL, GA, STS

■ STRUCTURAL QUALITY

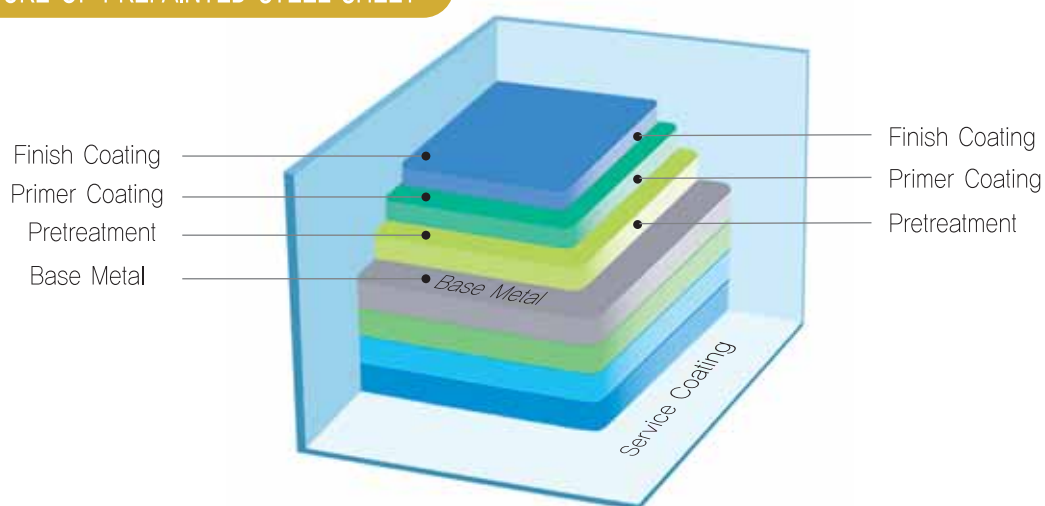


■ COMMERCIAL QUALITY



PREPAINTED PRODUCTS

STRUCTURE OF PREPAINTED STEEL SHEET



PROPERTIES OF PRODUCTS

TYPE	PGS POLYESTER PAINTED STEEL SHEET	PSP(PSS) SUPER POLYESTER PAINTED STEEL SHEET	PVDF POLYVINYLIDENE FLUORIDE PAINTED STEEL SHEET	PVS PLASTIC-SOL PAINTED STEEL SHEET	PCS HIGH-POLYMERIC POLYESTER PAINTED STEEL SHEET	PCS2 ANTI-STATIC HIGH- POLYMERIC POLYESTER PAINTED STEEL SHEET	PAL PAINTED ALUMINUM SHEET	PVDF2 PAINTED STEEL SHEET FOR WRITING BOARDS	MATT HIGH DURABILITY WRINKLE POLYESTER STEEL SHEET	PET	LAMI
WEATHER RESISTANT	●	◎	◎	◎	●	▲	◎	●	◎	●	◎
CORROSION RESISTANT	●	●	◎	◎	●	●	◎	●	◎	●	◎
FORMABILITY	●	●	◎	◎	◎	◎	◎	●	●	◎	◎
STAIN RESISTANT	●	●	◎	●	●	◎	◎	◎	●	◎	●
ABRASION RESISTANT	●	●	◎	◎	▲	●	◎	◎	●	◎	◎
CHEMICAL RESISTANT	●	●	◎	◎	●	●	◎	●	●	◎	◎

◎ EXCELLENT ● GOOD ▲ NORMAL

STANDARD COATING THICKNESS

TYPE			PGS	PSP(PSS)	PVDF	PVS	PCS	PCS2	PAL	PVDF2	MATT	PET	LAMI
SING LE Side	TOP	FINISH	15-20	15-20	20-25	110-200	15-20	15-20	15-20	15-20	20-25	15-20	100-200
		PRIMER	5-8	5-8	5-8	5-8	5-8	5-8	5-8	5-8	5-8	5-8	5-8
BOTH Sides	BACK	SERVICE	4-10	4-10	4-10	4-10	4-10	4-10	4-10	4-10	4-10	4-10	4-10
		FINISH	15-20	15-20	20	110-200	15-20	-	-	-	-	-	-
	TOP	PRIMER	5-8	5-8	5-8	5-8	5-8	-	-	-	-	-	-
		FINISH	15-20	15-20	20	50-100	15-20	-	-	-	-	-	-
BOTH Sides	BACK	PRIMER	5-8	5-8	5-8	5-8	5-8	-	-	-	-	-	-
		FINISH	15-20	15-20	20	50-100	15-20	-	-	-	-	-	-

*Note1) We can put the surface protection film upon request.

Note2) The above standards are the ordinary standards that may be subject to change by mutual consent.

PREPAINTED PRODUCTS

»» KOREAN STANDARD PREPAINTED HOT-DIP GALVANIZED STEEL SHEETS AND STRIPS : KS D3520

SCOPE OF APPLICATION

This specification specifies KS D3506 (Prepainted Hot-dip Galvanized Steel Sheets and Strips which is painted with durable synthetic resin paint on the one or both sides of hot dip galvanized steel(CR base metal) in a uniform way of painting and drying process, hereafter "sheet" and "coil".) Under this standard, sheets include flat sheets and corrugated sheets that meet the shapes and standards in KS D 3053 (shapes and sizes of corrugated sheet).

■ CLASSIFICATION AND SYMBOL

| CLASSIFICATION OF DURABILITY OF PAINT COATINGS AND DESIGNATION |

CLASSIFICATION	SYMBOL	DURABILITY
CLASS 1	1	Mainly one coat having durability as durability of paint coating.
CLASS 2	2	Mainly two coats having durability as durability of paint coating.
CLASS 3	3	Mainly one coats or more having durability as durability of paint coating.

| CLASSIFIED SYMBOL |

CLASSIFIED SYMBOL	NOMINAL THICKNESS(mm)	APPLICATION	CLASSIFIED SYMBOL OF BASE METAL	REMARKS
CGCC	0.25 and over, up to and incl. 1.6	COMMERCIAL	SGCC	
CGCH	0.11 and over, up to and incl. 1.0	COMMERCIAL HARD	SGCH	
CGCD1	0.40 and over, up to and incl. 1.6	DRAWING	SGCD1	
CGC 340	0.25 and over, up to and incl. 1.6	STRUCTURAL	SGC 340	
CGC 400	0.25 and over, up to and incl. 1.6		SGC 400	
CGC 440	0.25 and over, up to and incl. 1.6		SGC 440	
CGC 490	0.25 and over, up to and incl. 1.6		SGC 490	
CGC 570	0.25 and over, up to and incl. 1.6		SGC 570	

| MECHANICAL PROPERTIES OF PAINT LAYER |

TYPE	TEST METHOD	CGCH, CGC570	CGCC, CGCD1, CGC340, 400, 440, 490	MECHANICAL PROPERTIES
ADHESION IN BENDING	Bend Test	—	●	No peel-off on the outer surface at min 7mm away from both ends
PAINT HARDNESS	Pencil Hardness Test	●	●	No scratches on the surface
IMPACT RESISTANCE	Impact Test	—	●	No peel-off
ADHESION	Cross Cut Test	●	—	No defects on the test spot

PREPAINTED PRODUCTS

»» STEEL SERVICE CENTER

1. Highest precision in dimension and quality assurance
2. To supply a diversified products, small lot including sketch size, and narrow width
3. Just in time delivery system
4. Perfect packing of products

STEEL SERVICE CENTER

| SERVICE 1 LINE|

CLASSIFICATION		BASE METAL SIZE				PRODUCTION SIZE				PRODUCTIVE CAPACITY (Ton/Year)
		Thickness	Width	Max-Weight	Inner Diameter	Width	Length	Max-Weight	Inner Diameter	
L	Slitter	0,3~3,2	600~1680	20 ton	508/610	40~1680	—	20 ton	508/610	96,000
	Shear	0,25~3,2	600~1680	20 ton	508/610	600~1650	600~4800	5 ton	—	120,000
M	Shear	0,25~2,3	200~750	7,5 ton	508/610	200~750	200~4500	5 ton	—	8,400

| SERVICE 2 LINE|

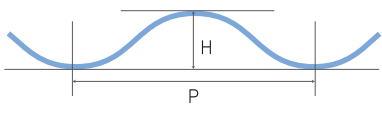
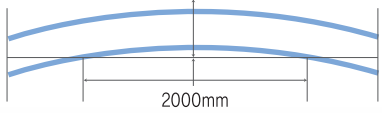

CLASSIFICATION		BASE METAL SIZE				PRODUCTION SIZE				PRODUCTIVE CAPACITY (Ton/Year)
		Thicknes	Width	Max-Weight	Inner Diameter	Width	Length	Max-Weight	Inner Diameter	
Slitter		0,2~1,8	500~1300	22 ton	508/610	30~1300	—	22 ton	508/610	54,000
Shear		0,2~1,8	300~1050	10 ton	508/610	300~1050	400~6500	5 ton	—	36,000

| AVAILABLE ITEM |

CR / EGI / CGI / HGI / GA / PO / PCM / AL / ES / STS

PREPAINTED PRODUCTS

| ASSURANCE QUALITY |

TYPE	GUARANTEED	MEASURING METHOD
FLATNESS	0.5%	 <p>* $H/P \times 100(\%)$</p>
STRAIGHTNESS	1mm	 <p>* Bending at every 2,000mm: Less than 1mm</p>
PERPENDICULARITY	0.1%	 <p>* $C/W \times 100(\%)$</p>
BURR	5%	<p>* Pores in sectional part less than 5% of thickness</p>
WIDTH ERROR LENGTH ERROR	0mm ~ +0.5mm ± 0.5mm	<p>* Measuring tape, veneer calipers</p>

Research/Quality Management/ Handling Guide





Research/ Quality Management



POSCO C&C products are in the laboratory and simulator rooms, all of the rigorous inspection and testing, and after-market device with a practical and scientific analysis of quality management techniques and quality of the POSCO C&C products will be birth.



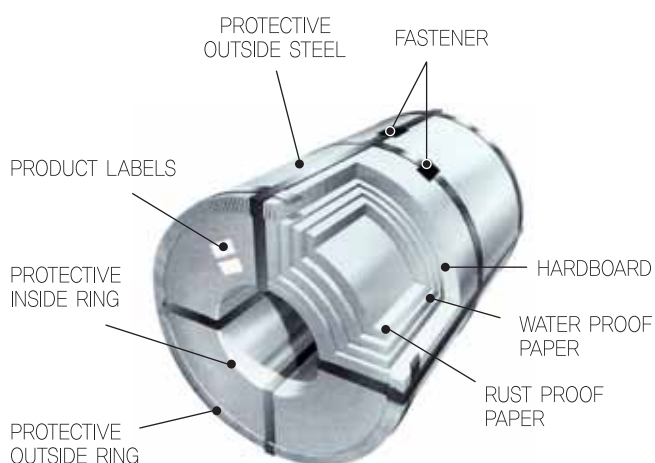
- 1 Microstructure analysis
- 2 component analysis
- 3 hardness measurement
- 4 emission spectroscopic analysis
- 5 tension test
- 6 sem analysis
- 7 salt water spray test
- 8 film thickness measurement
- 9 processability measurement
- 10 thermohydrastat test
- 11 Moisture resistnace test
- 12 standard illuminant test
- 13 color difference test
- 14 adhesive force measurement
- 15 materials import inspection 1
- 16 materials import inspection 2
- 17 palpation duration test

HANDLING GUIDE

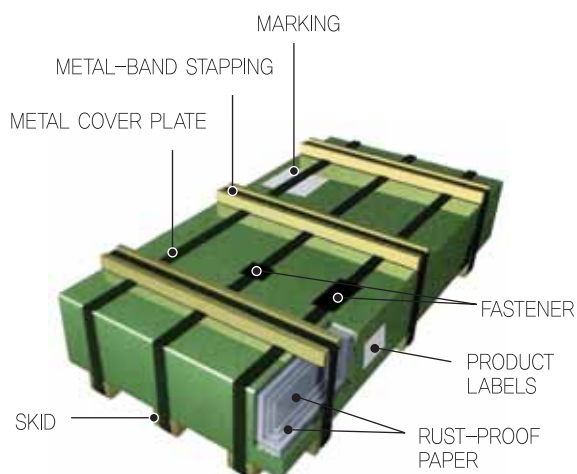
»» PACKING

To meet the diverse needs of our customers on packaging, we are providing, coil/sheet packaging and vertical / horizontal packaging services.

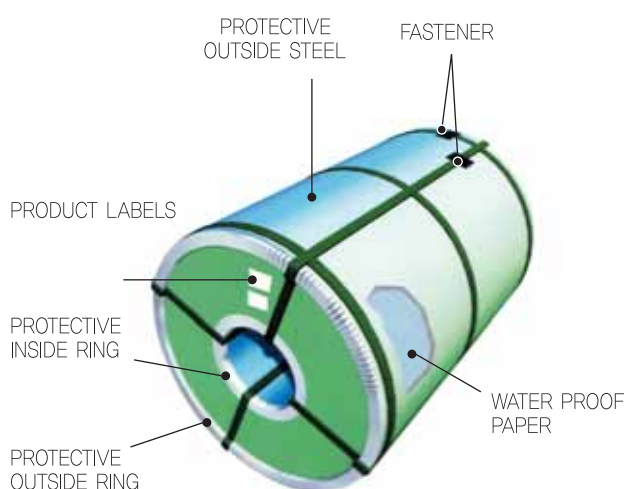
COIL PACKING



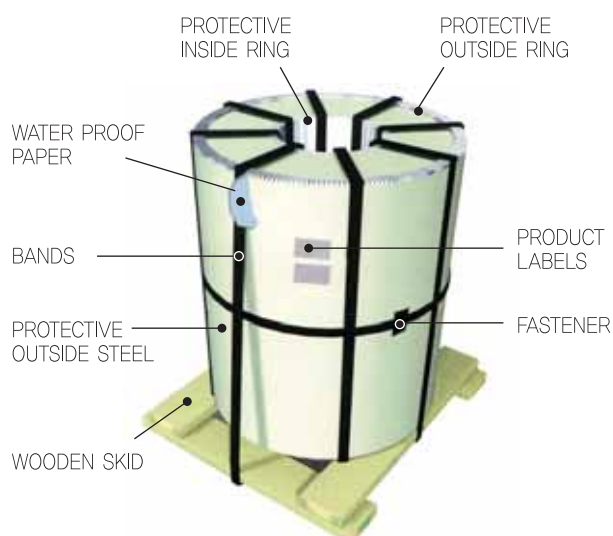
SHEET PACKING



HORIZONTAL PACKING



VERTICAL PACKING



HANDLING GUIDE

»» HANDLING INSTRUCTIONS

1 TRANSPORTATION

Prevention of blocking or dents during transportation

Fix the product on the 5-angled skids or put some appropriate buffers such as rubber pad or thick cloths on the square skid before loading.



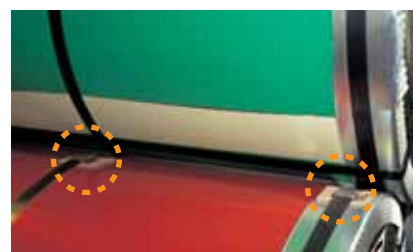
Prevention of dents during trucking

Prepare rubber mat or something to protect the products from dents on the truck before loading.



Prevention of dents at the part of fastener of packing bandage

keep the fastener part away from next products,



Instruction for preventing products from blocking or edge-damage by movement during transportation

Fix the products tightly with rope after putting some buffers between each product.



When it is raining, Hold loading and unloading during raining. in order to prevent products from white rust, and cover the products with plastic during transportation while raining.

HANDLING GUIDE

2 HANDLING

Prevention of damage at inner diameter of products

Use urethane covering on the arms of carrying device such as crane and forklift.



Caution for strong impact

Be careful of getting damaged on the surface of products from strong impact while handling.



Prevention of blocking or denting

Be careful of getting blocking or dents by friction of the strips or by using inferior skid.



Proper handling device

Use proper and safe device while handling products.



HANDLING GUIDE

3 STORAGE

Caution for over-pressure on products

Insert rubber pads between products (coils) when stack more than two layers.



Prevention of dents

Use rubber mat or 5-angled skid before staking product on the ground to prevent from dents by foreign body or unevenness of the ground.



Stacking products outside

Keep products away from rain, snow or any kinds of moisture and keep the products at well-ventilated place to avoid rust by moisture or dew condensation.



HANDLING GUIDE

4 USING

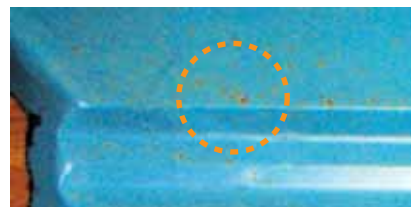
Prevention of white rust

Use product as soon as possible in order to avoid white rust or zinc peeling-off by moisture or dew condensation.



Prevention of red rust

Remove every fragments completely after cutting or drilling. Otherwise, they may cause red rust by oxidization on the products.



Control of water drops on the finished products

Keep the finished products away from water or rain drops after packing, and use it within 10 day, once moisture soaked onto the finished products.

Control of pollutant on the products

Clean the pollutant using proper solvents with gauze or soft cloth.

- Recommended Item : Kerosene, Methanol
- Restricted Item : M,E,K Trichloroethylene Benzene, Toluene, Thinner

Safety Suggestions

- The surface of products is slippery after installation. Please wear anti-slippery boots and watch your step.
- Please locate at the side of coil or bundle while cutting the steel bands fastened around the products.
- Always keep cautious while un-packing the products.

Other

- Do not process products in lower temperature or beyond their characteristics.
- Products with protection films must avoid direct sunlight. Remove protection films immediately after installation
- When it comes to repair works on paint surface, always consult with POSCO C&C and use recommended paints.

HANDLING GUIDE

5 OTHER SAFETY SUGGESTIONS

Avoid from stacking up the product with protect film more than two layers to prevent from getting distortion.

Do not open package or take off the protect film before use.

Pack the rest of products with clean cover after use some portion of products.

Never walk on the products with dirty shoes before of after use of products.

Do not handle products with oil stained or tainted gloves.

Use only hook bolt and handling tools treated with rust-resisting agents.(e. g. Zinc coated, Stainless Steel)

Carry the sheets with more than two persons to prevent from scratching from the ground.

For maintenance coating due to damage of the product, please call our company for coating according to recommended appropriate maintenance coating method.

If the touch-up paint is needed, please contact us and follow our instructions.

6 WARRANTY

Warranty does not cover the following cases.

- Spalling of zinc coating due to long period of storage.
(Recommendation: Use the products as soon as possible.)
- White rust caused by the formation of moisture during storage.
– Keep the products dry and well-ventilated place.
- Blocking caused by mis-handling
- Defects caused by mis-use of products
- Other damages caused by improper handling or storage.

HANDLING GUIDE

7 DEFINITION OF TERMINOLOGY

* Blocking

Detachment of the paint to the opposite side caused by friction between top paint and backer during moving, loading and unloading

* Surface Blister

A tiny, swollen paint layer on the products.

- White Rust :

Formation of white powder or swelling phenomenon by moisture or dew condensation caused by long term stocking

- Red Rust :

Reddish brown rust caused by the fragments after processing and by oxidization on the damaged part of the product.

* Dent

Appropriate rubber pad or wooden skid would prevent the products from dents caused by the things uneven in the floor while stacking

* Handling Mark

Severe defects caused by ant strong impacts from the handling devices.

* Dew Condensation

Formation of water drops on the products due to the temperature fluctuation. It may cause severe white rust on products.

POSCO C&C pledges to open a bright future together with our customers.



All the staffs in POSCO C&C
are doing every effort to give all the best to meet the various and
diversified needs from customers.

»» Sales Division

Banpo tower, 748-8 Banpo-dong, Seocho-gu, Seoul, Korea

- Domestic Steel Marketing Group : 02-2186-8830
- Home Appliance Material Marketing Group : 02-2186-8820
 - Changwon Office : 055-285-9717
 - Gwangju Office : 062-955-6832
- Export Group : 02-2186-8810
- New demand developement Group : 02-2186-8857

»» Customer Service Division

- Quality Technical Group
 - Galvanizing Mill : 054-280-6691
470 Jangheung-dong, Nam-gu, Pohang, Gyeongsangbuk-do, Korea
 - Prepainting Mil : 054-280-6690
501-1 Goidong-dong Nam-gu, Pohang, Gyeongsangbuk-do, Korea
- Production Technical Group : 054-280-6310

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- Prepainting Mill : 501-1 Goidong-dong, Nam-gu, Pohang, Gyeongsangbuk-do, Korea TEL. (054)280-6600
- Seoul Office : Banpo tower, 748-8 Banpo-dong, Seocho-gu, Seoul, Korea TEL. (02)2186-8800