### SeAH STEEL CORPORATION



### ■ 본사

서울특별시 중구 봉래동 1가 10 TEL: 02) 3783-8114 FAX: 02) 3783-8067

### ■ HEAD Office

10 Bongnae-Dong 1Ga, Jung-Gu, Seoul, Korea TEL: +82-2-3783-8114 FAX: +82-2-3783-8067

### ■ 서울(경인 • 강원 • 충청지역)

서울특별시 중구 봉래동 1가 10

TEL: 02) 3783-8007 FAX: 02) 3783-8067

### ■ 부산(영남지역)

부산광역시 사상구 학장동 729-1

TEL: 051) 320-5230 FAX: 051) 326-0823

### ■ 광주(호남지역)

광주광역시 북구 동림동 913-10

TEL: 062) 515-0890 FAX: 062) 515-0898

### ■ 공성

전북 군산시 소룡동 1632

TEL: 063) 469-8500 FAX: 063) 469-8521

### ■ PLAN

1632 Soryong-Dong, Gunsan, Jeonbuk, Korea TEL: +82-63-469-8500 FAX: +82-63-469-8521

### ■ 수출

서울특별시 중구 봉래동 1가 10

TEL: 02) 3783-8085 FAX: 02) 3783-8067

### ■ EXPORT

10 Bongnae-Dong 1Ga, Jung-Gu, Seoul, Korea TEL: +82-2-3783-8084~5 FAX: +82-2-3783-8067

# PRE-COATED METAL REGULAR MODIFIED POLYESTER COATED STEEL HIGH DURABILITY POLYESTER COATED STEEL POLYVINYLIDENE FLUORIDE COATED STEEL HIGH POLYMER POLYESTER COATED STEEL PRINTED STEEL / PRE-COATED ALUMINIUM COIL



# **CONTENTS**

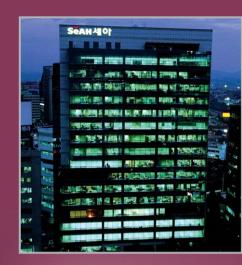


- 3 회사소개 (Cempany Intreductien)
- 4 회사연혁 (C●mpany Histery)
- 5 컬러강판소개 (What is Pre-C●ated Metal?)
- 6 생산가능규격 (Size Availability)
- 7 공정순서도 (Manufacturing Process)
- 8 제품의 종류 (Variety ●f Pr●ducts)
- (1) 폴리에스터수지 강판 (R.M.P) Regular Medified Pelyester Ceated Steel
- (2) 고내후성 강판 (H.D.P) High Durability Polyester Coated Steel
- (3) 불소수지 강판 (P.V.D.F) P●lyvinylidene Flu•ride C•ated Steel
- (4) 엠보스 강판 (Embess) Embessed Steel Plate
- (5) 링클 강판 (Wrinkle) Wrinkle P●lyester C●ated Steel
- (6) 하이폴리머수지 강판 (H.P.P) High P●lymer P●lyester C●ated Steel
- (7) 칼라 알루미늄 강판 (P.A.L) Pre-C●ated Aluminium C●il
- (8) 프린트 강판 (P.S.S) Printed Steel Sheets
- 16 제품규격 및 사양 (Specifications)
- 23 포장 및 마킹 (Packing & Marking)
- 24 컬러강판 취급설명 (Handling Description)
- 25 HOW TO ORDER



국가기간산업의 핵심인 철강전문기업으로 산업 발전에 기여해온 세아그룹. 그동안의 축척된 역량을 기반으로 철강은 물론 IT, 서비스 분야에 이르기까지 보다 풍요로운 21세기를 만들기 위한 세아의 노력은 계속될 것입니다.

# | Company Introduction







1960년 창업 이후 세아제강은 최고의 품질을 자랑하며 국내 강관업계의 선두주자 자리를 지켜왔습니다. 60년대에 이미 국내 최초로 강관 수출을 시작함은 물론, 1981년에는 용접강관의 최고봉이라 할 수 있는 API파이프를 개발하여 금탑산업훈장을 받기도 하였습니다.

포항과 창원에 최신 설비의 대단위 공장을 갖추어 연간 110만톤의 생산능력을 보유하고 있는 세아제강은 일반배관용에서 유정용, 송유용, 기계구조용 강관, 스파이랄 강관, 스테인리스 강관, 첨단 소재의 티타늄 튜브에 이르기까지 고객이 원하는 다양한 제품들을 생산해 내고 있 습니다. 또한 1998년 판재류 부분에도 진출, 군산에 대단위 공장을 설립함으로써 명실상부한 제강회사로서의 면모를 갖추게 되었으며, 2011년 컬러강판 NO.2 CCL가동으로 표면처리강판분야에서도 세계 초일류기업으로 성장하였습니다.

국내 강관업계 최초로 ISO 9001 품질보증 시스템을 획득하는 등 세계적으로 인정받는 품질과 기술력을 바탕으로 세아제강은 앞으로도 세 계일류기업으로 성장하기 위한 혼신의 노력을 기울일 것입니다.

SeAHSteel Group has been contributing to advance industry as aspecialist of steel that is at the core of national key industry. SeAH Steel will continue its efforts to build more abundant 21st century based on our accumulated expertise and competence not only forsteel but as well asIT and Service sector.

Since the Group was founded in 1960, SeAHSteel has kept its position as the leader of steel pipe industry in the nation with top-notch quality. SeAH Steel already started to export steel pipes in 1960 for the first time in the country, and it was also awarded the Gold Tower of Industrial Service Merit in 1981 for developing API Pipe which is at its top of welded steel pipe.

SeAHSteel that has the capacity of producing 1.10 million ton annually from alarge-scale factorywith state-of-the-art facilityin Pohang and Changwonproduces wide range of steel products desired by customers from the general steel pipe to pipes for oil well, oil-carrying and machine structural use, and spiral steel pipe, stainless steel pipe, as well as titanium tube made with cutting edge material. Furthermore, SeAHSteel advanced into steel sheet sector in 1998and it started to take on more solid aspect as asteel company with the establishment of a large-scale factory in Gunsan, and in 2011, SeAH Steel established solid footing towards becoming the first-class enterprise in the world in surface treated steel sheet sector with operating NO.2 CCL facility for colored steel sheet.

SeAH Steel will strive to advance further as the first-class enterprise in the world based on the globally recognized quality and technology through acquiring ISO 9001 Quality Assurance System thefirst in the steel pipe industry in the country and many others.

The Company that makes the world beautiful - SeAH Stee



기술력과 신뢰를 바탕으로 21세기 세계시장의 주역이 되는 기업 The Company that becomes the global leader in 21stcentury based on technology and trust



# **Company History**

1960's → 1960 부산철관공업주식회사(현 세아제강) 설립 1967 부산철관 국내 최초로 강관 수출

1969 부산철관 증권거래소에 주식 상장/부산철관 서울공장 준공

1970's → 1971 부산철관 서울로 본사 이전

1975 부산철관에서 주식회사 부산파이프(현 세아제강)로 사명 변경

1978 Pusan Pipe America(현 SeAH Steel America) 설립 부산파이프 포항공장 준공. 해덕통운(현 세아로지스) 설립

1979 부산번디(현 한국번디) 설립

1980's → 1981 부산파이프 1억불 수출탑 및 금탑산업훈장 수훈

1985 부산파이프. 국내 최초 단열이중관 생산 개시/한국알로이로드(현 세아 ESAB) 설립

1986 세아특수강 설립

1989 TCI(현 세아정보시스템) 설립

1990's → 1990 State Pipe & Supply 인수

1992 코암정보통신(현 세아정보통신) 설립/해암학술장학재단(현 세아해암학술장학재단) 설립

1993 베트남 현지 법인 VINAPIPE 설립

1994 세아금속(현 세아메탈) 설립

1995 부산파이프 그룹화/부산파이프 창원공장 준공

일본 현지법인 Pusan Pipe Japan(현 SeAH Japan) 설립 세아엔지니어링(현 세아 E&T) 설립/Saigon Steel Pipe Corp. 설립

1996 세아그룹으로 그룹명 변경

1998 세아제강 군산공장 준공, 판재사업 개시

1999 강남도시가스 인수

2000's→ 2001 세아홀딩스 설립

2002 중국 현지법인 Landmark Steel Corp. 설립

2003 기아특수강(현 세아베스틸) 인수/Bundy Tubing New Zealand, Ltd. 인수/드림라인 인수

2004 Thai SeAH Precision Metal Co., Ltd. 설립

2005 세아제강 군산공장 냉간압연설비 및 CGL라인 준공

2010 세아그룹 창립 50주년

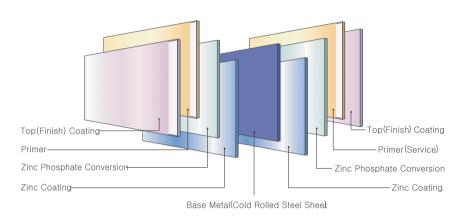
2011 세아제강 군산공장 #2CCL 준공/SeAH Steel UAE 강관공장 준공

# 경영이념

신뢰와 성실을 바탕으로 풍부한 가치를 창조합니다. 사람을 소중히 여깁니다. 인류사회에 기여합니다.

Company Philosophy We creat abundant value based on trust and sincere earnest. We value people. We contribute to human society





# 컬러강판이란?

칼라강판이란 가공 전에 이미 도장된 강판으로서, 아연도강판을 주소재로 하여 완벽한 전처리와 최신 도장공법에 의한 2회 도장, 2회 열처리 건조를 거쳐 생 산됩니다. 도막의 밀착성이 뛰어나고, 표면이 미려하여 롤성형 및 절곡, 프레스 가공을 하여도 도막의 박리현상이 발생하지 않는 우수한 가공성을 지니고 있어 건 자재, 조립금속, 가전제품 등의 다양한 용도에 널리 사용할 수 있습니다.

### What is Pre-Coated Metal?

Galvanized steel strip is painted and baked twice in color coating lines. Excellent pre-treatment and coating processes ensure high corresion resistance, formability, attractive appearance. Used mainly in exterial building materials, electric appliances and furniture.



### NO.1 CCL

생산능력(Capa)	150,000t <b>•</b> n/yr
두께(Thickness)	0.23~1.6mm
폭(Width)	600~1,320mm
중량(C●il Weiǥht)	15m/t max.
코일내경(C●il I.D.)	508mm, 610mm
Line Speed	120m <b>p</b> m
도장방식	2 C●at 2 Bake

# NO.2 CCL

생산능력(Capa)	60,000t●n/yr
두께(Thickness)	Aluminum ceil: 0.3~1.6mm Steel ceil: 0.3~0.8mm
폭(Width)	600~1,600mm
중량(C●il Weiǥht)	20m/t max.
코일내경(C●il I.D.)	508mm, 610mm
Line Speed	80mpm
도장방식	2 C●at 2 Bake

# 도장원판 Base Metal

1	• 냉연강판 (CR)
2 ———	• 아연도 강판 (GI)
3 ———	• 전기아연도 강판 (EGI)
4 ———	• 갈바륨 강판 (G/L)
5 ———	• 알루미늄 원판 (AL)









# 폴리에스터수지 강판 (R.M.P) Regular Modified Polyester Coated Steel

### ●제조방법

폴리에스터 수지를 사용하여 2회 도장, 2회 소부 건조

### ●특 성

선명한 유광 Color, 극무광 Color 가능 우수한 내식성, 내후성, 내화학성, 가공성 다양하고 미려한 색상

### ●용 도

공장지붕 및 벽체, 창고 및 조립식 건물, 내장재, 방화문 등의 건축 내·외장재 및 Shutter, 간판 등

### ●도막두께

앞 면 : 하도 5*µ*, 상도 10~20*µ* 

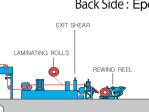
뒷 면 : 상도 5#

- Manufacturing Principle
   Painting and baking ever y 2 times using
   Regular Modified Polyester resin.
- Characteristics
   Corrosion resistance
   Weather resistance
   Chemical resistance
   Variety and beauty of color
- Main Applications
   Roofing and siding of factor y, Warehouse and Pre-fabricated house, Interior, Partition and Door etc. Exterior cover of showcase and Other home electric appliances.

### Dry Film Thickness

Top Side : Primer  $5\mu$ , Finish  $10\sim20\mu$ 

Back Side : Epoxy5μ







# 고내후성 강판 (H.D.P) High Durability Polyester Coated Steel

### ●제조방법

2회 도장, 2회 소부 건조

### ●특 성

고내식성, 고내후성, 고내화학성, 고내열성 기후 변화에 매우 강함

### ●용 도

공장지붕 및 벽체, 칸막이, 방화문, 기타 외장재 등 내식성과 내후성이 특별히 요구되는 건축 내·외장재

### ●도막두께

앞 면 : 하도 5μ, 상도 10 ~20μ 뒷 면 : 상도 5μ Manufacturing Principle
 Painting and baking ever y 2 times using Silicone
 Modified Polyester resin or High Durability Polyster resin.

### Characteristics

Super corrosion resistance Super weather resistance Heat resistance Variety and beauty of color

### Main Applications

Roofing and Siding, Par tition, Door, Exterior cover etc. Where corrosion and weather resistance ar e especially required.

### Dry Film Thickness

Top Side : Primer  $5\mu$ , Finish  $10\sim20\mu$ 

Back Side: Epoxy 5 µ





# 불소수지 강판 (P.V.D.F) Polyvinylidene Fluoride Coated Steel

### ● 제조방법

불소수지를 사용하여 2회 도장, 2회 소부 건조

### ●특 성

초내식성, 초약품성, 초내후성, 내열성 극심한 부식환경에 안정적

### ●용 도

지붕 및 벽체, 빌딩 외장재 등 고도의 내식성, 내후성 및 내열성이 특별히 요구되는 분야

### ●도막두께

# 단면보증

앞 면 : 하도 5μ, 상도 20 ~25μ 뒷 면 : 상도 5 ~10μ

### 양면보증

앞 면 : 하도 5μ, 상도 20 ~25μ 뒷 면 : 하도 5μ, 상도 10 ~20μ

# Manufacturing Principle Painting and baking ever y 2 times using Polyvinylidene Fluoride resin

### Characteristics

Super corrosion resistance Super weather resistance Heat resistance Variety and beauty of color

### Main Applications

Roofing and Siding and Other exterior cover etc. Where corrosion, weather and heat resistance are especially required.

# • Dry Film Thickness

One Side guarantee

Top Side : Primer  $5\mu$ , Finish  $20 \sim 25\mu$ Back Side: Epoxy  $5 \sim 10\mu$  (Special epoxy)



### 엠보스 강판 (Emboss) Embossed Steel Plate

### ●제조방법

컬러강판에 Embossing Roll로 Embossing 처리를 하여 입체감 부여

### ●특 성

우수한 내식성, 내후성 및 입체감

### ●용 도

조립식 건축물 외장재 , 주거용(전원주택) 등

### ●도막두께

앞 면 : 하도 5μ , 상도 15μ

뒷 면 : 상도 5#

### Manufacturing Principle

Added a sense of dimension by embossing Embossing Roll on colored steel plate

### Characteristics

Superior Corrosion Resistance and Weather Resistance, Three-Dimensional

### Main Applications

Exterior Materials For Prefabricated-Building, Residential Building (Country House), etc

### Dry Film Thickness

TopSide : Primer  $5\mu$  , Finish  $15\mu$ 

BackSide: Epoxy 5 $\mu$ 







### 링클 강판 (Wrinkle) Wrinkle Polyester Coated Steel

### ●제조방법

내후성이 우수한 FILLER와 극소량의 소광제를 사용하여 표면에 WRINKLE을 형성시킨 제품

### ●특 성

내후성과 내식성이 우수하며, 초저광택/SOFT TOUCH감 및 파스텔톤의 고급스러운 질감 표현

### ●용 도

건축외장재, 지붕용(스틸기와), 벽체

### ●도막두께

앞 면 : 하도 5 $\mu$  , 상도 20 $\mu$ 

뒷 면 : 상도 5#

### Manufacturing Principle

WRINKLE is formed on the surface for the product by using FILLER with superior weather resistance and the minimum amount of quencher

### Characteristics

It has superior weather resistance and corrosion resistance, SOFT TOUCH feel with minimum gloss and pastel-toned luxurious finish of the texture.

### Main Applications

Building Exterior Materials, Roofs (Steel Tiles), Walls (SLIDING), Embossed Steel Plate

### Dry Film Thickness

TopSide : Primer  $5\mu$  , Finish  $20\mu$ 

BackSide: Epoxy 5μ





## 하이폴리머수지 강판 (H.P.P) High Polymer Polyester Coated Steel

### ●제조방법

하이폴리머수지를 사용하여 2회 도장, 2회 소부 건조

고내식성, 고도의 가공성, 우수한 외관, 미려한 표면

### ●용 도

냉장고, 가스렌지, 세탁기, 오디오 및 기타 가전제품과 도어, 내장재 등 고도의 가공성과 우수한 외관이 요구되는 분야

### ●도막두께

앞 면 : 하도 5 $\mu$ , 상도 20~25 $\mu$ 

뒷 면 : 상도 5*p* 

- Manufacturing Principle Painting and baking every 2 times using High Polymer Polyester resin
- Characteristics Corrosion resistance Excellent workability Excellent appearance Variety and beauty of color
- Main Applications Refrigerator and Microwave oven, Washer, Audio case, Other home electric appliances, Door and Interior, etc.
- Dry Film Thickness

Top Side: Primer  $5\mu$ , Finsh  $20 \sim 25\mu$ 

Back Side: Epoxy 5μ





### 칼라 알루미늄 강판 (P.A.L) Pre-Coated Aluminium Coil

### ●제조방법

알루미늄 원판에 2회 도장, 2회 소부 건조 또는 3~4회 도장, 3~4회 소부 건조

고급 건축물 내 · 외장재로 쓰이는 최고급 칼라강판 뛰어난 내구성, 초내후성, 내강성, 가공성, 열반사성,

산성 및 염수·분뇨 등에 매우 강하며, 해수면 부식에도 강한 내식성을 지님

### ●용 도

외장재 : 대형빌딩, 오피스텔, 백화점, 체육관, 건물 Canopy, 공장 외장용 패널, 양계, 양돈, 축사 외장

내장재 : 벽, 천정재

기 타 : 컨테이너, 대형간판, 교통표지판, 가구

### ● 도막두께

앞 면: 하도 5*µ*, 상도 10~20*µ* 

뒷 면 : 상도 5#

### Manufacturing Principle Painting and baking every 2 times using Poly Vinylidene Fluoride resin

### Characteristics

Super excellent weather resistance Super excellent corrosion resistance Super tenacious surface Super excellent humidity Variety and beauty of color

### Main Applications

Building siding, Roofing, Curtain walls, Spandrel panels, Shutters, Ceiling panels, Moveable partitions, Doors etc.

### Dry Film Thickness

Top Side : Primer  $5\mu$ , Finsh  $10 \sim 20\mu$ 

Back Side : Epoxy 5 µ





### 프린트 강판 (P.S.S) Printed Steel Sheets

### ●제조방법

폴리에스터 수지를 도장한 후 그라비아 옵셋잉크로 무늬를 인쇄하고 투명한 클리어 수지를 도포하여 소부 건조

### ■ = 2

다양하고 미려한 무늬 및 외관(부드럽고 우아한 질감), 내화학성, 내식성

### ●용 도

건축용 : 건축 내·외장재, 칸막이, 도어, 엘리베이터 내장재 등 고급 인테리어를 요하는 곳

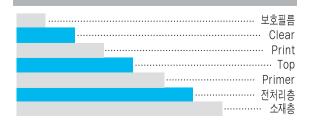
가전용 : 냉장고, 전자렌지, 세탁기, VTR, 오디오, 자판기 등의 Out Case 기 타 : Boiler, Fan Heater, 선박 내장재, 쌀통 등의 금속가구

### ●도막두께

앞 면: 기본층 10~15μ (폴리에스터), 인쇄층 1~3μ (잉크), 클리어층 5~10μ (클리어 수지)

뒷 면 : 상도 5μ

### 프린트 강판 구성도



# Manufacturing Principle

Painting and baking various designs with gravure off set ink on the Pre-painted Steel Coil

### Characteristics

Variety of designs Beauty of color Chemical resistance Good workability

### Main Applications

Refrigerator and W asher, Audio cases, Other home electric appliances, Door and Interior, etc.

### Dry Film Thickness

Top Side : Grand Layer  $10\sim1$  5 $\mu$  (Polyester)

Print  $1\sim3\,\mu$  (Ink)

Clear coat  $5\sim 10\mu$  (Clear resin)

Back Side: Epoxy 5 µ



### Classification and Symbol

### • Classification of Durability of Paint Coatings and Designation

Classification	Symbol	Durability					
Class1	1	Mainly one coat having durability as durability of paint coating					
Class2	2	Mainly two coats having durability as durability of paint coating					
Class3	3	Mainly two coats or more having durability as durability of paint coating					

### Classified Symbol

Application	Classified Symbol	Nominal Thickness (mm)	Classified Symbol of base metal	Remarks		
Commercial	CGCC	0.25 and over, up to and incl. 1.6	cl. 1.6 SGCC			
Commercial, Hard	CGCH	0.11 and over, up to and incl. 1.0	SGCH	For the		
Drawing	CGCD1	0.40 and over, up to and incl. 1.6	SGCD1	classification of		
	CGC 340	0.25 and over, up to and incl. 1.6	SGC 340	coating and the coating mass on		
	CGC 400	0.25 and over, up to and incl. 1.6	SGC 400	the base metal for paint coating.		
Structural	CGC 440	0.25 and over, up to and incl. 1.6	SGC 440	JIS G 3302 shall		
	CGC 490	0.25 and over, up to and incl. 1.6	SGC 490	apply.		
	CGC 570	0.25 and over, up to and incl. 1.6	SGC 570			

### 2 Physical Properties of Paint Coatings

ltem	Item of Test	CGCH CGC570	CGCC, CGCD1 CGC340, 400, 440, 490	Physical Properties
Bending Adhesion	Bend test	-	0	No peeling on the outer surface of the bent portion not less than 7mm from each side edge of the test piece.
Paint Film Hardness	Pencil hardness test	0	0	No scratch marks on the paint film
Impact Resistance	Impact test	-	0	No peeling
Adhesion	Cross-scoring test	0	-	No irregularities on the tested portion

# Specifications 제품규격 및 사양

1 Type					
Designation Classification	KS D 3506	JIS G 3302	ASTM A 653	BS 2989	DIN 17162
Commercial Quality	SGCC	SGCC	CQ(A 526)	Z1	St 01Z
Commercial Hard Quality	SGCH	SGCH	-	-	-
Lock Forming Quality	rming Quality SGCD1 SGCD1 LFQ(A 527)				St 02Z
Drawing Quality	SGCD2	SGCD2	DQ(A528)	Z3	St 03Z
Deep Drawing Quality	SGCD3	SGCD3	-	Z4	St 04Z
Deep Drawing Quality, Non Ageing	SGCD 3N	SGCD 3N	DQSK(A 642)	Z5	St 05Z
Extra Deep Drawing Quality, Non Ageing	-	-	-	-	-
Structural Quality	SGC 35 SGC 41 SGC 45 SGC 50 SGC 58	SGC 340 SGC 400 SGC 440 SGC 490 SGC 570	SQ Gr33(A 446 Gr A) SQ Gr37(A 446 Gr B) SQ Gr40(A 446 Gr C) SQ G60 Class 12 (A 446 Gr D) SQ G60 Class3 (A 446 Gr F) SQ Gr80(A 446 Gr E)	Z 22 Z 25 Z 28 Z 35 Z 55	St E250-2Z St E280-2Z St E280-3Z St E320-3Z St E350-3Z
High-Strength Low-Alloy	-	-	Gr50 (A 816 Gr50) Gr60 (A 816 Gr60) Gr70 (A 816 Gr70) Gr80 (A 816 Gr80)	-	-

Note : ( ) The prior specification of ASTM A 653

### 2 Mechanical Properties

• KS D 3506 Hot-Dip Zinc-Coated Steel Sheets and Coils

0 : "	Thickness	Yield	Tensile				ion (min,9 ness(mm)			Test
Designation	(mm)	Strengt h (min,N/mm²)	Strength (min,N/mm²)	0.25 to 0.40 exd.	0.40 to 0.60 exd.	0.60 to 1.0 exd.	1.0 to 1.6 exd.	1.6 to 2.5 exd.	2.5 and over	Piece
SGCC	0.25-3.2	-	-	-	-	-	-	-	-	
SGCH	0.11-1.0	-	-	-	-	-	-	-	-	
SGCD1	0.40-2.3	-	275	-	34	36	37	38	-	
SGCD2	0.40-2.3	-	275	-	36	38	39	40	-	
SGCD3	0.60-2.3	-	275	-	(38)	40	41	42	-	No.5 Rolling
SGC 35	0.25-3.2	245	343	(20)	20	20	20	20	20	Direction
SGC 41	0.25-3.2	294	402	(18)	18	18	18	18	18	
SGC 45	0.25-3.2	333	441	(18)	18	18	18	18	18	
SGC 50	0.25-3.2	363	490	(16)	16	16	16	16	16	
SGC 58	0.25-2.0	559	569	-	-	-	-	-	-	

Note: Values in parentheses shall be as agreed upon between the purchaser and the manufacturer.

### • JIS G302 Hot-Dip ZincCoated Steel Sheets and Coils

Designation	Thickness	Yield Strength (min,N/mm²)	Tensile	Elongation (min,%) Thickness(mm)						
Designation	(mm)		Strength (min,N/mm²)	0.25 to 0.40 excl.	0.40 to 0.60 excl.	0.60 to 1.0 excl.	1.0 to 1.6 excl.	1.6 to 2.5 excl.	2.5 and over	Piece
SGCC	0.25-3.2	_	-	_	-	-	-	-	-	
SGCH	0.11-1.0	-	-	-	-	-	-	-	-	
SGCD1	0.40-2.3	-	270	-	34	36	37	38	-	
SGCD2	0.40-2.3	-	270	-	36	38	39	40	-	
SGCD3	0.60-2.3	-	270	-	(38)	40	41	42	-	No.5 Rollina
SGC 340	0.25-3.2	245	340	(20)	20	20	20	20	20	Direction
SGC 400	0.25-3.2	295	400	(18)	18	18	18	18	18	
SGC 440	0.25-3.2	335	440	(18)	18	18	18	18	18	
SGC 490	0.25-3.2	365	490	(16)	16	16	16	16	16	
SGC 570	0.25-2.0	560	570	-	-	-	-	-	-	

Note: Values in parentheses shall be as agreed upon between the purchaser and the manufacturer.

### ASTM Specifications

	Туре		Che	emical C	omposit	ion (Max.	,%)	Yield Strength	Tensile Strength	Elongation in 2"	180° Bending Diameter/
(	Symbol)		С				(min,Ksi)	(min,%)	Thickness (Base Metal)		
	ercial Qı (A526)	uality	0.15	0.60	0.035	0.04	0.20	-	-	-	-
	Lock Forming Qualit (A527)		0.15	0.60	0.035	0.04	0.20	-	-	-	-
	ing Qua (A528)	ity	0.10	0.50	0.025	0.035	-	-	-	-	-
	Drawing Quality Special Killed (A642)		0.10	0.50	0.025	0.03	-	-	-	-	-
	Grade A		0.20	-	0.04	0.04	0.20	33	45	20	1.5
	Grade B		0.20	-	0.10	0.04	0.20	37	52	18	2
Structural Quality	Grade C		0.25	-	0.10	0.04	0.20	40	55	16	2.5
(A446)	Grade D		0.40	-	0.20	0.04	0.20	50	65	12	-
	Grad	Grade E		-	0.04	0.04	0.20	80	82	-	-
	Grad	e F	0.50	-	0.04	0.04	0.20	50	70	12	-
	Grade	1	0.20	1.20	-	0.035	0.20	50	60	20	1.5
	50	II	0.15	1.20	-	0.035	0.20	50	60	22	1
	Grade	1	0.20	1.35	-	0.035	0.20	60	70	16	3
High Stength	60	П	0.15	1.20	-	0.035	0.20	60	70	18	1
Steel (A816)	Grade	1	0.20	1.65	-	0.035	0.20	70	80	12	-
(/1010)	70	Ш	0.15	1.65	-	0.035	0.20	70	80	14	1.5
	Grade	ı	0.20	1.65	-	0.035	0.20	80	90	10	-
Mate : 1 M	80	I	0.15	1.65	-	0.035	0.20	80	90	12	1.5

Note: 1. When copper steel is specified, min 2. Base metal bend tests are not required for grades D, E and F

# Specifications 제품규격 및 사양

BS 2	2989										• DII	N 1716	62		
		Chem	nical Com	position (N	Nax.,%)	Mechai	nical Prop	erties	Inte Specine	rnal of Bend *2		Туре			nanical Prop
	Type (Symbol)	C	Mn	Р	S	Yield Strength (min,N/mm²)	Tensile Strength (min,N/mm²)	Elongation in 2" (min,% *1)	Under 3.0mm	3.0mm and over		(Symbo	l)	Yield Strength (min,N/mm²)	Tensile Strength (min,N/mm²)
	ommercial Quality	0.15	0.60	0.04	0.05	210	-	-	1 sheet (2 sheets)	2 sheets			cial Quality : 01Z)	-	-
Rendi	(Z1) ng & Profiling												ning Quality : 02Z)	-	270 to 500
Dorlar	Quality (Z2)	0.12	0.60	0.035	0.04	210	270	-	Close Adhesion	Close Adhesion			g Quality	_	270 to
Drav	ving Quality (Z3)	0.12	0.50	0.035	0.04	-	270	24 (26)	Close Adhesion	Close Adhesion	Part 1	(St	032)		420
												Qı	Drawing Jality	-	270 to
Spe	cial Drawing Quality (Z4)	0.08	0.45	0.03	0.03	-	270	31 (33)	Close Adhesion	Close Adhesion		(51	04Z)		380
	Drawing Quality, on Ageing (Z5)	0.08	0.45	0.03	0.03	-	270	31 (33)	Close Adhesion	Close Adhesion		Deep Drawing Special Killed (St 05Z)		-	270 to 380
	Grade Z22	0.15	0.60	-	0.04	220	290	20 (22)	1 sheet (2 sheets)	2 sheets (3 sheets)			St E250-2Z	250	330 to 470
	Grade Z25	0.16	0.60	-	0.04	250	350	19 (21)	1 sheet (2 sheets)	2 sheets (3 sheets)		Oto sale wal	St E280-2Z St E280-3Z	280	370 to 510
ructural Quality (A 446)	Grade Z28	0.20	0.80	-	0.04	280	390	18 (20)	2 sheets	3 sheets	Part 2	Structural Quality	St E250-3Z	320	400 to
	Grade Z35	0.25	1.50	-	0.04	350	450	15 (17)	2 sheets	3 sheets					540 430
	Grade Z55	0.16	0.60	-	0.04	550	560	-	-	-			St E350-3Z	350	to 570
											Note: *1	. ( ) Zir	nc coating gro	up is 450, 600	

Note: \*1. ( ) Material thickness is over 0.7m \*2. ( ) Coating type is G 600

Grade Z55 is in the unannealed condition and therefore has limited ductility.

	Tuna		Mech	nanical Prope	erties	Cuppin	g Value	Bend Test
	Type (Symbo	)	Yield Strength (min,N/mm²)	Tensile Strength (min,N/mm²)	Elongation (min,%)	Thickness (mm)	Minimum (mm)	Internal Spacing of Bend
		cial Quality 01Z)	-	-	-	-	-	1 Sheet of Nominal Thickness (2 Sheets)*1
		ning Quality 02Z)	-	270 to 500	-	-	-	Close Adhesic
Part 1		g Quality 03Z)	-	270 to 420	24	0.50 0.70 1.00 1.50 2.00	7.4 9.0 10.5	Close Adhesio
	Qu	Drawing Iality 04Z)	-	270 to 380	30	0.50 0.70 1.00 1.50 2.00	9.6 11.1	Close Adhesic
	Speci	Drawing al Killed 05Z)	-	270 to 380	30	0.50 0.70 1.00 1.50 2.00	8.1 9.6 11.1	Close Adhesic
		St E250-2Z	250	330 to 470	19	-	-	1 Sheet (2 Sheets)*2
Part 2	Structural	St E280-2Z St E280-3Z	280	370 to 510	18	-	-	2 Sheets
	Quality	St E250-3Z	320	400 to 540	17	-	1	3 Sheets
		St E350-3Z	350	430 to 570	16	-	-	3 Sheets

Note: \*1. ( ) Zinc coating group is 450, 600 \*2. ( ) Zinc coating group is 600

# Specifications 제품규격 및 사양

### **Coating Weight** Coating Designation (Both Sides) Minimum Coating Type of Coating Weight (g/m²) KS D 3506 JIS G 3302 ASTM BS 2989 DIN 17162 720 G 235 640 G 210 G 600 600 Z 60 Z 60 600 G 185 560 G 165 500 Z 45 Z 45 G 450 450 450 G 140 430 G 350 350 Z 35 Z 35 350 G 115 300 275 Z 27 Z 27 G 90 G 275 275 250 Z 25 Z 25 Zinc 220 Z 22 Z 22 200 Z 20 Z 20 G 200 200 180 Z 18 Z 18 \_ G 60 150 Z 12 Z 12 G 40 120 Z 10 Z 10 G 100 100 100 90 Z 08 Z 08 80

G 01

Note: By triple spot test.

### 4 Shape

Maximum Values of Transverse Bending (KS D3506, JIS G3302) unit:mm

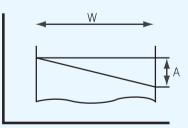
(Z 06)

(Z 06)

Length	Sh	eet	Coil
Width	Under 2,000	2,000 and over	COII
Under 630	4	4/2,000 for ark	oitrary length
630 and over	2	2/2,000 for ark	oitrary length

 Deviations from Squareness (KS D 3506, JIS G 3302)

001



60

40

Be expressed A/W  $\times$  100 (%) Not exceed 1%

### • Flatness (KS D 3506, JIS G 3302)

Kind Width	Warpage	Edge Waviness	Middle Waviness
Under 1,000	12 and below	8 and below	6 and below
1,000 to 1,250 excl.	15 and below	10(9) and below	8 and below
1,250 to 1,600 excl.	15 and below	12(11) and below	9(8) and below
1,600 and over	20 and below	14(13) and below	10 and below

Note: ( ) JIS G 3302

# Specifications 제품규격 및 사양

5 Thickness Tolerance					
• KS D 3506, JIS G 3302 (unit:mr					
Width Thickness	Under 630	630 to 1,000 excl.	1,000 to 1,250 excl.	1,250 to 1,600 excl.	1,600 and over
Under 0.25	±0.04	±0.04	±0.04	-	-
0.25 to 0.40 excl.	±0.05	±0.05	±0.05	±0.06	-
0.40 to 0.60 excl.	±0.06	±0.06	±0.06	±0.07	±0.08
0.60 to 0.80 excl.	±0.07	±0.07	±0.07	±0.08(±0.07)	±0.09(±0.08)
0.80 to 1.00 excl.	±0.08(±0.07)	±0.08(±0.07)	±0.09(±0.08)	±0.10(±0.09)	±0.11(±0.10)
1.00 to 1.25 excl.	±0.09(±0.08)	±0.09(±0.08)	±0.10(±0.09)	±0.11(±0.10)	±0.13(±0.12)
1.25 to 1.60 excl.	±0.10(±0.09)	±0.11(±0.10)	±0.12(±0.11)	±0.13(±0.12)	±0.15(±0.14)
1.60 to 2.00 excl.	±0.11	±0.12	±0.13	±0.15(±0.14)	±0.17(±0.16)
2.00 to 2.50 excl.	±0.13	±0.14	±0.15	±0.17(±0.16)	±0.19(±0.18)
2.50 to 3.15 excl.	±0.15	±0.16	±0.17	±0.19(±0.18)	±0.21
3.15 and over	±0.17	±0.18	±0.20	±0.21	-

Note : ( ) JIS G3302

### • ASTM A 024

• ASTM A 924					
Width Thinckness	To 32 incl.	Over 32 to 40 incl.	Over 40 to 60 incl.	Over 60 to 72 incl.	
Through 0.023	0.003	0.003	0.003	-	
Over 0.023 through 0.043	0.004	0.004	0.004	0.004	
Over 0.043 through 0.061	0.005	0.005	0.005	0.005	
Over 0.061 through 0.075	0.006	0.006	0.006	0.006	
Over 0.075 through 0.101	0.007	0.008	0.008	0.009	
Through 0.187	0.008	0.008	0.009	0.009	

•BS 2989

	(unicinii)						
Width	ı	4	[	3			
Thickness	To 1,200 incl.	Over 1,200 to 1,500 ind.	To 1,200 ind.	Over 1,200 to 1,500 incl.			
Over 0.35 to 0.40 incl.	± 0.05	± 0.06	± 0.07	± 0.08			
Over 0.40 to 0.60 incl.	± 0.06	± 0.07	± 0.08	± 0.09			
Over 0.60 to 0.80 incl.	± 0.07	± 0.08	± 0.09	± 0.10			
Over 0.80 to 1.00 incl.	± 0.08	± 0.09	± 0.10	± 0.11			
Over 1.00 to 1.20 incl.	± 0.10	± 0.11	± 0.12	± 0.13			
Over 1.20 to 1.60 incl.	± 0.12	± 0.13	± 0.14	± 0.15			
Over 1.60 to 2.00 incl.	± 0.14	± 0.15	± 0.16	± 0.17			
Over 2.00 to 2.50 incl.	± 0.16	± 0.17	± 0.18	± 0.19			
Over 2.50 to 3.00 incl.	± 0.19	± 0.20	± 0.21	± 0.22			
Over 3.00 to 4.00 incl.	± 0.23	± 0.25	± 0.25	± 0.27			
Over 4.00 to 5.40 incl.	± 0.24	± 0.26	± 0.26	± 0.28			
Note : A. Coating types G	6100, G200, G275, G350, I	Z100. IZ180					

B. Coating types G450 and G600

### • DIN 17162

Grade		St 01Z				St 02Z	-St 05Z		
Width	No	rmal Deviat	ion	No	rmal Deviati	on	Cl	ose Deviati	on
Thickness	Under 1,200	1,200 to 1,500 excl	1,500 and over	Under 1,200	1,200 to 1,500 excl.	1,500 and over	Under 1,200	1,200 to 1,500 excl.	1,500 and over
To 0.40 incl.	± 0.07	-	-	± 0.05	-	1	± 0.04	-	-
Over 0.40 to 0.50 incl.	± 0.08	± 0.09	-	± 0.06	± 0.07	-	± 0.05	± 0.06	-
Over 0.50 to 0.60 incl.	± 0.08	± 0.09	-	± 0.06	± 0.07	-	± 0.05	± 0.06	-
Over 0.60 to 0.70 incl.	± 0.09	± 0.10	± 0.10	± 0.07	± 0.08	± 0.08	± 0.06	± 0.07	± 0.07
Over 0.70 to 0.80 incl.	± 0.09	± 0.10	± 0.11	± 0.07	± 0.08	± 0.09	± 0.06	± 0.07	± 0.07
Over 0.80 to 0.90 incl.	± 0.10	± 0.11	± 0.11	± 0.08	± 0.09	± 0.09	± 0.07	± 0.08	± 0.08
Over 0.90 to 1.00 incl.	± 0.10	± 0.11	± 0.12	± 0.08	± 0.09	± 0.10	± 0.07	± 0.08	± 0.08
Over 1.00 to 1.20 incl.	± 0.11	± 0.12	± 0.13	± 0.09	± 0.10	± 0.11	± 0.08	± 0.09	± 0.09
Over 1.20 to 1.50 incl.	± 0.13	± 0.14	± 0.14	± 0.11	± 0.12	± 0.12	± 0.09	± 0.10	± 0.10
Over 1.50 to 2.00 incl.	± 0.15	± 0.16	± 0.16	± 0.13	± 0.14	± 0.14	± 0.10	± 0.11	± 0.11
Over 2.00 to 2.50 incl.	± 0.17	± 0.18	± 0.18	± 0.15	± 0.16	± 0.16	± 0.12	± 0.13	± 0.13
Over 2.50 to 3.00 incl.	± 0.19	± 0.20	± 0.20	± 0.17	± 0.18	± 0.18	± 0.14	± 0.15	± 0.15

# Specifications 제품규격 및 사양

6 Width Tolerance					
• KS D3506, JIS G 33	302 (unit:mm)				
Width	Tolerance				
To 1,500 incl.	+7 0				
Over 1,500	+10 0				

•	$\overline{}$	_	00	$\sim$

Width	Tolei	rance
Width	Mill Edge	Slit Edge
To 1,500 incl.	+6 0	+2 0
Over 1,200 to 1,500 incl.	+7 0	+3 0

### 7 Length Tolerance

### • KS D 3506, JIS G 3302

(unit: mm)

Tolerance	
+15	
0	
Recent Revised Years By Specifications	
• KS D 3506 ·····1994	
• JIS G 3302 ·····1994	
• JIS G 3312 ·····1994	
• ASTM A 6531995	
• ASTM A 9241995	

- BO 2303		(unit:mm)		
Length	Tolerance			
Lengin	Mill Edge	Slit Edge		
Under 1,500	+6 0	+3		
1,500 to 3,000 incl.	+8 0	+4 0		
Over 3,000	0, +0.3% of actural length	0, +0.15% of actural length		

### • ASTM A 924

Width	Tolerance
Over 12 through 30	1/8
Over 30 through 48	3/16
Over 48 through 60	1/4
Over 60 through 72	5/16

### • DIN 17162

		(diffe.iri)				
Width	Tolerance					
Widti	Normal Deviation	Close Deviation				
Over 600 to 1200 excl.	6	2				
1,200 and over	6	3				

### • ASTM A 924

			(unitani)
	Length		Tolerance
Over	12 through	30	1/8
Over	30 through	60	1/4
Over	60 through	96	1/2
Over	96 through	120	3/4
Over	120 through	156	1
Over	156 through	192	11/4
Over	192 through	240	11/2
	Over 240		13/4

### • DIN 17162

(unit:mm)

Length	Tolerance					
Lengui	Normal Deviation	Close Deviation				
To 2,000 incl.	6	3				
Over 2,000	0.003× L	0.0015× L				



KS 규격 : KS D3520 에 준함

# Available Form Specications 제품규격 및 사양

1 Availak	ole Form		
Symbol	Forming Shapes	Base Metal Width	Uses
V-115	705	3'	Roof, Wall
V-115L	115	4'	Roof, Wall
V-220	726	3'	Roof
V-220L	220 958	4'	Roof
U-260	15 No. 16	3'	Wall
U-260L	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	4'	Wall
SR-102	29.3 1.035 0 Lx	4'	Roof
W-255	255 577 ]143	3'	Roof
C-76	18 (80)	3'	Roof
C-76L	1,000	3'(4')	Roof

### **Corrugation Size**

Туре	Flat Width (m/m)	Width (m/m)	Effective Width (m/m)	Length(m) Per Area(m²)	Furrow Interval (m/m)	Furrow Depth (m/m)	Number of Furrow	Remark
V-115	914 1,219	735 969	690 920	1.48 1.09	115 115	35 35	7 9	Roof & Wall
V-220	914 1,219	726 958	660 880	1.52 1.14	220 220	72 72	4 5	Roof
U-260	914 1,219	840 1,096	780 1,040	1.30 0.98	260 260	15 15	4 5	Inner & Outer Wall
SR-102	1,219	1,035	960	1.06	192	30	6	Roof & Wall
W-255	914	577	510	2.00	255	143	3	Roof
C-76	914 1,219	816 1,090	762 1,040	1.31 0.96	76 76	18 18	11 14	Roof & Wall

3	3 Weight(kg) Per Area(m²)											
Туре	Th	0.35	0.4	0.45	0.5	0.55	0.6	0.7	0.8	0.9	1.0	1.2
V-	115	4.06	4.59	5.12	5.65	6.28	6.79	7.88	8.92	10.01	11.05	13.34
V-	-220	4.16	4.71	5.26	5.81	6.45	6.98	8.09	9.16	10.28	11.25	13.70
U-	-260	3.57	4.03	4.50	4.97	5.51	5.97	6.92	7.84	8.79	9.71	11.72
SR	-102	4.11	4.65	5.20	5.73	6.36	6.88	7.98	9.04	10.14	11.20	13.52
C-	-76	4.01	4.53	5.05	5.58	6.19	6.70	7.77	8.80	9.87	10.90	13.16

4 Overlap Space and Length											
Classification		Roc	ofing		Wall						
Slope	Under <sup>-</sup>	1/10 incl.	Over	1/10	VYC	111					
Length of Overlap	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical					
Corrugation	Overlap	Overlap	Overlap	Overlap	Overlap	Overlap					
V-115	1 or 11/2	300mm	1 or 1/2	200mm	1/2	150mm					
V-220	1/2	300mm	1/2	200mm	-	-					
U-260	-	-	-	-	1/2	150mm					
SR-102	ı	-	1/2	200mm	1/2	150mm					
W-255	1/2	300mm	1/2	200mm	-	-					
C-76	11/2 or 2	300mm	1 or 1/2	200mm	1/2	150mm					

	C	10	6.0	igated Shee
<b>^</b>	Sactions	Stranati	n of Lorri	INSTAN Shaa

	Corrugation	V-	115	V-	220	W-	255	C-76		
	Factor Thickness(m/m)	Z	İ	Z		Z	İ	Z	I	
	0.50	6.10	10.65	-	-	-	-	2.48	2.23	
	0.55	6.83	11.94	-	-	-	-	2.77	2.50	
	0.60	7.80	13.65	15.2	54.4	_	-	3.16	2.81	
	0.70	8.54	14.9	17.7	63.4	38.17	272.9	3.46	3.12	
	0.80	9.76	17.1	20.2	72.5	43.7	312.1	3.96	3.56	
_	0.90	11.0	19.0	22.8	81.5	49.08	250.91	4.45	4.10	

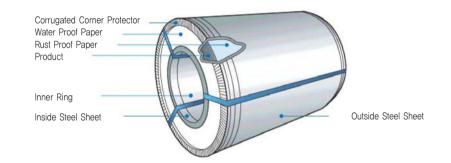
ô	Specification	of Purlin	Distance

Weight		150kg/m²					300kg/m²				
Thickness Forming Model	0.50	0.60	0.70	0.80	0.90	0.50	0.60	0.70	0.80	0.90	
V-115	1,700	1,850	2,000	2,150	2,300	1,000	1,200	1,350	1,500	1,600	
V-220	-	3,200	3,400	3,600	3,800	-	2,700	2,900	3,100	3,300	
W-255	-	5,200	5,450	5,700	5,900	-	4,050	4,300	4,500	4,700	
C-76	1,100	1,200	1,400	1,500	1,800	800	850	950	1,000	1,100	

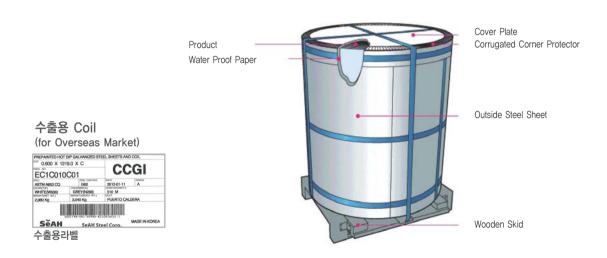
### Coils(for Domestic Market)

### 내수용 Coil (for Domestic Market)

내수용라벨



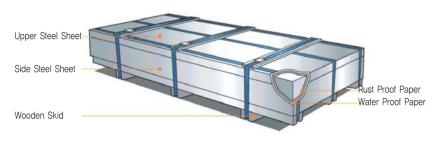
### Coils(for Overseas Market)



### Sheet

### Sheet 포장









- 1. 습기가 많은 곳에 오랫동안 보관할 경우에는 백청현상이 발생될 수 있으므로 가능하면 건조한 곳에 보관하십시오
- If at all possible, store in a dry place, since prolonged storage in high humidity causes white rust.
- 2. 제품의 취급시에 외부의 충격으로 찍힘등의 손상이 발생하지 않도록 주의해 주십시오. 제품은 건조한 실내에 보관하여 주시고 부득이한 경우 옥외 보관시 덮개를 씌워 보관하여 주십시오.

또한 적재시 코일 찌그러짐을 방지하기 위해 2단적재를 삼가해 주십시오.

- The coil must be kept in the warehouse pls.
- Handle it with care, And pls,
- do not pile up more than two stories.
- 3. 컬러강판의 표면오염 제거시는 알콜등의 적절한 용제를 사용하여 부드러운 천으로 닦아내십시오.
  - If some part of surface is contaminated, pls. wash it away with a solvent
- 4. 주문용도와 다른 사용으로 인해 성형불량등의 피해가 발생할 수 있으니 주의하십시오. If usage change, you might get damage in roll-forming.
- 5. 운송 및 취급시의 부주의로 인해 도박박리의 Blocking이 발생할 수 있으니 주의하십시오.
- Paint peel-off might happen due to careless transport.
- 6. 운송중 빗물침투에 의한 백청이 발생하지 않도록 복포하여 운송하십시오.
- Cover the coil to protect from rain or snow that might cause from white rust.
- 7. 기타 부적절한 취급 및 보관으로 인한 제품의 손상은 당사의 보증범위를 벗어나므로 이점 양지 하여 주십시오.
- Our guarantee doesn't cover the damage caused by the improper handling or storage.

# How To Order Commodity Definition Specification for Raw Material · Base Metal Zinc Coating Weight size & Quantity Painting Type Painting Thickness: Top/Back Color: color No. Shipping Date Packing Type Coil Weight • Coil Inner & Outside Diameter • End - Usage Other Information that may be significant in producing the ordered product.