

STEEL IN EVERYDAY LIFE

From steel products to everyday applications



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Steel, coated metal and aluminium

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Steel, coated metal and aluminium

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WELCOME

A message from J.H. Kim



J.H. Kim
CEO

With more than three decades of experience in the steel industry, our dedicated and highly trained team delivers a comprehensive procurement service designed to provide reliability, confidence, and complete peace of mind throughout your projects.

WELCOME TO STEEL AND CO. LTD – S. KOREA

At Steel And Co Ltd, we proudly supply high-quality steel products for Building Construction, Engineering, Petrochemical, Automotive, and Home Appliance sectors worldwide.

Our expert team follows strict safety evaluations, thorough inspections, and precise quality control to ensure that every shipment meets the highest standards before delivery. Each order is prepared to match the specific requirements of every customer.

Our specialists are fully capable of providing customized solutions tailored to your business needs, helping you reach exceptional performance and results in your projects.

At Steel And Co. Ltd, we place strong value on building long-term partnerships with our clients, founded on trust, transparency, and mutual growth.

We cordially invite you to enjoy a seamless, reliable, and reassuring ONE – STOP STEEL procurement experience with us.

Warm regards,

J.H. Kim / CEO

A KOREAN STEEL NETWORK

SUPPLIERS

POSCO

HYUNDAI STEEL

SeAH

KG Steel

KOREA

STEEL AND CO.LTD

INDUSTRY APPLICATIONS

- 01 Construction
- 02 Home Appliances
- 03 Automobile
- 04 OIL & GAS
- 05 Industrial Machinery & Manufacturing



Supplier and industry associations shown in the original catalogue.



HYUNDAI STEEL

Premium Steel Solutions for Global Industries

Global Leader in High-Value Steel Solutions

Hyundai Steel is one of Korea's most advanced integrated steelmakers and a core company of Hyundai Motor Group, delivering next generation steel solutions to global automotive, construction, shipbuilding and industrial markets. Through cutting edge blast furnace and electric arc furnace technologies, Hyundai Steel manufactures high strength, durable and lightweight steels trusted by international manufacturers.

Advanced Manufacturing & Capacity

Hyundai Steel operates world class integrated steelworks supported by downstream rolling, galvanizing, color coating and plate making facilities. Its diversified production system enables the production of premium flat and long steel products for critical applications worldwide.

Innovation & Sustainability

Hyundai Steel is committed to eco innovation, high performance steel development, and long term sustainability, and is progressing toward a long term net zero emissions roadmap.

CORE PRODUCT RANGE

- 01 Hot Rolled Steel
- 02 Cold Rolled Steel
- 03 Galvanized (GI/GA)
- 04 Electro Galvanized (EG)
- 05 Pre Coated Steel
- 06 Steel Plates
- 07 H Beams
- 08 Angles
- 09 Channels
- 10 Rebar
- 11 Sheet Piles
- 12 Railway Rails
- 13 Automotive grade High Strength Steels
- 14 Specialty Industrial Steels

APPLICATION INDUSTRIES

Automotive · Home Appliances · Building & Construction · Shipbuilding & Offshore · Industrial Machinery

IN MOTION & IN PLACE

Hyundai Steel offers outstanding products built around continuous research development and sophisticated technical skills that meet the demands from various steel-required industry fields.

AUTOMOBILE · CONSTRUCTION · ENERGY

Automobile

Cold Rolled Steel

Rolled from hot rolled steel at ambient temperature, cold rolled steel has even thickness and fine surface. It is most widely used in the automotive material such as inner and outer car frames.

Automotive Parts

Enhancing the strength and fuel efficiency, automotive parts require complicated techniques to reduce the weight and are applied to impact point, door inner plate and chassis parts.

Special Steel

Special steels are employed in critical automotive parts such as crankshaft, connecting rod and many other gear parts where high intensity and durability are necessary.

Energy

Pipe

Energy pipes are used to drill, mine, and transfer energy sources and require sophisticated technical skill which can overcome high pressure, rapid temperature change, and corrosion. Hyundai Steel produces various pipes that satisfy API standard.

Plate

Plates are applied to build pressure vessel to extract, refine and store drilled oil or gas. Depending on different oil or gas types, pressure vessel must be able to stand high and low temperature and corrosion.



Construction

H-Section

H-Section comprises the structure of a building as one of the main steel product. SHN is an H-Section with outstanding welding performance and impact resistance and its advantage is in reducing volume of steel materials used in comparison to other steel materials and shortening the construction period.

Reinforcing Bar

Reinforcing Bar is also an important steel product for construction together with H-Section. High-intensity reinforcing bars reduce the volume being used thus raising construction efficiency. As thread bars do not need the process of making thread of screw when connecting, construction period can be shorter. As for earthquake-proof bars enhance stability of structures.

Plate

In general, plates refer to 6mm or thicker steel material. Among them, the ones for construction-use are mainly used in bridges, plants, and steel construction of large buildings.



EVERYDAY & INDUSTRIAL



HOME APPLIANCES



SHIPBUILDING



INDUSTRY

Home Appliances

Cold Rolled Steel

Cold rolled steel for home appliance is applied to various products such as TV, refrigerator, outer panel of washer. With different designs, cold rolled coils have excellent machinability, high corrosion resistance and conductivity.

Stainless Steel

Stainless steel is highly anti-rust compared to other materials. Its corrosion-proof ability exceeds from tens to thousands of times the regular steel and its great heat-resistance allows it to be widely used in home appliances such as dishwashers and washing machines.

Shipbuilding

Plate

Ship plates show properties such as low temperature toughness and impact resistance and are usually applied to inner and outer walls, upper decks, and hatch covers of bulk carriers, container ships, and LNG ships. Hyundai Steel manufactures regular and high strength steels after its manufacturing process is approved by classification associations from different nations.

Section

Depending on the shape, sections are classified into H-BEAM, I-BEAM, angle and channel. Used in reinforcement for vessel plate or deckhouse, sections are required to have high strength and shock absorption.

Others

Railway Rails

Rails used in railroads for high-speed, regular and Maglev trains are higher in intensity compared to other sections and they have excellent abrasion resistance.

Track Shoe Assembly

Built as substructure of an excavator, track shoe assembly is a high-strength/precision product for stably sustain the weight on sandy and gritty sites and function on the slope.

Roll

Attached to a rolling machine, rolls must have wear and heat resistance; durability to roll semi-finished products including slab and billet at a high temperature.

Sheet Pile

Sheet pile plays a role as the stop gate against water and soil in civil engineering, works in river and the coast. The rigid connector of the pile enhances its water-proof ability.

CIVIL ENGINEERING / SHEET PILES



MAKING STEEL

Seven manufacturing work sites



01

Dangjin Steelworks

Korea's first privately operated integrated mill began in 2010. Three blast furnaces make heavy plate and hot- and cold-rolled coils. Scrap-fed EAFs make rebar and special steels.

Hot Rolled Steel / Cold Rolled Steel / Heavy Plate / Re-Bar / Special Steel



02

Suncheon Plant

The source describes a world-largest, single-unit 1.2-million-tonne Continuous Annealing Line (CAL) and annual cold-rolled coil capacity of 2 million tonnes. State-of-the-art Continuous Hot-dip Galvanizing (CGL), Electro Galvanizing (EGL) and Color Coating (CCL) lines serve automotive, electronics and construction.

Cold Rolled Steel / Hot-Dip Galvanizing Steel / Electro Galvanizing Steel / Color Steel



03

Incheon Plant

A Korean steel industry pioneer, described in the source as the world's largest single electric-furnace plant. Eco-friendly, high-efficiency facilities and Incheon North Port's steel pier support cost efficiency.

H-Section / Re-Bar / Regular Section / Stainless Steel



04

Pohang Works

Top-level technology and competitiveness support Korea's sole source of high-speed railway rails. The source credits the plant with the world's second development of Maglev rails.

H-Section / Re-Bar / Railway Rails / Round Steel / Rolls / Heavy Equipment



05

Ulsan Plant

Advanced welding equipment and automotive facilities produce high-value steel plates and lightweight automotive materials for energy development, construction and automobiles.

Steel Pipes / Automotive Lightweight Materials



06

Yesan Plant

An automotive weight-reduction centre with 21 hot-stamping machines and six TWB (Tailor Welded Blanks) machines, as recorded in the source.

Automotive Lightweight Materials



07

Cheongdo Plant

An overseas production base established for the Chinese market and Hyundai Steel's international expansion.

Plant capacities, equipment counts and superlatives are historical catalogue statements; current operating figures have not been reverified.

AUTOMOTIVE STEEL

Hyundai Steel has contributed to manufacture of lighter and safer cars by developing Advanced High Strength Steel (AHSS) with higher strength and lower weight than normal steels. Also, considering the properties of steel, Hyundai Steel plays an important role in the evolution of automotive by focusing on developing technologies that secure strength and formability of steel at the same time.

FOUR MATERIAL ZONES



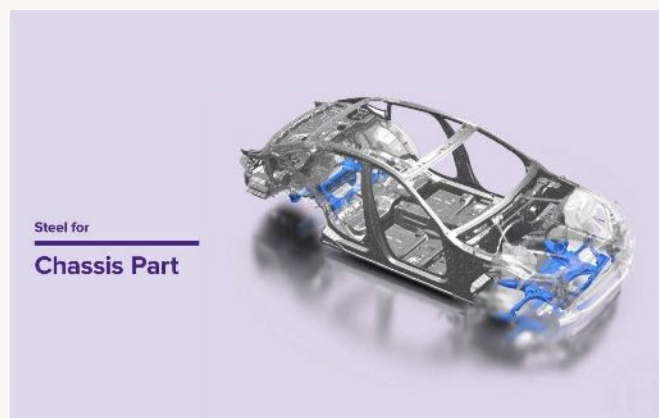
01 Steel for Outer Part



02 Steel for Body Structure Part



03 Steel for Hot Stamping Part



04 Steel for Chassis Part

RAILWAY RAILS



Hyundai Steel will grow into a giant steel company leading the international industry in steel for customers and improving national competitiveness. Railway Rails produced in our company are being supplied widely at home and abroad and they are being used as temporary facilities.

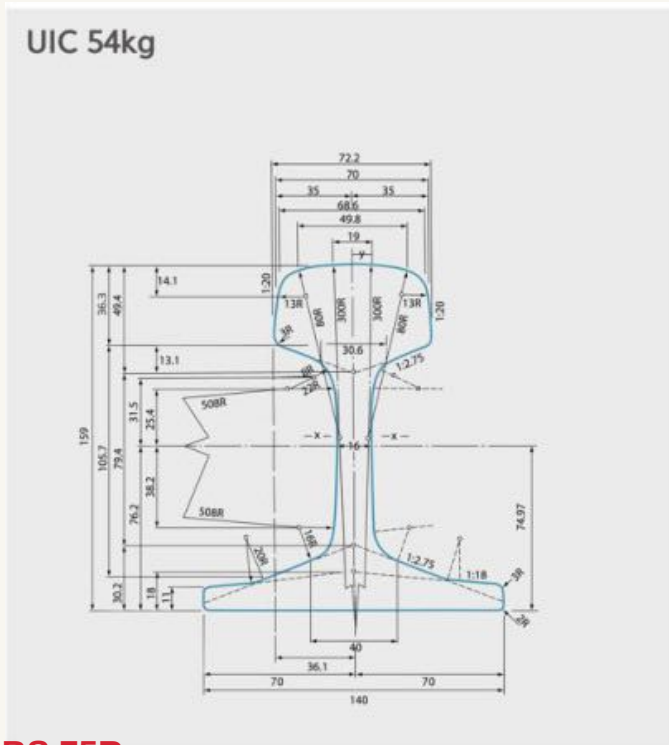
현대제철은 무한한 가능성과 창조적 시장개척으로 국가 경쟁력 향상을 위해 세계를 주도하는 철강기업으로 성장해 나가겠습니다. 또한 현대제철이 생산하는 철도레일은 국내 및 해외에 널리 공급되고 있습니다.

Rail application image from the original catalogue.

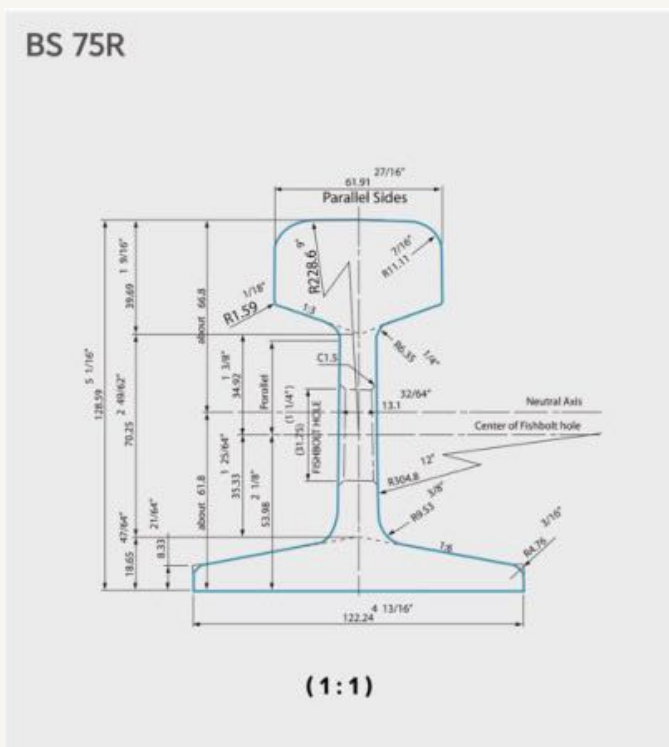
RAIL PROFILES

International Union of Railway

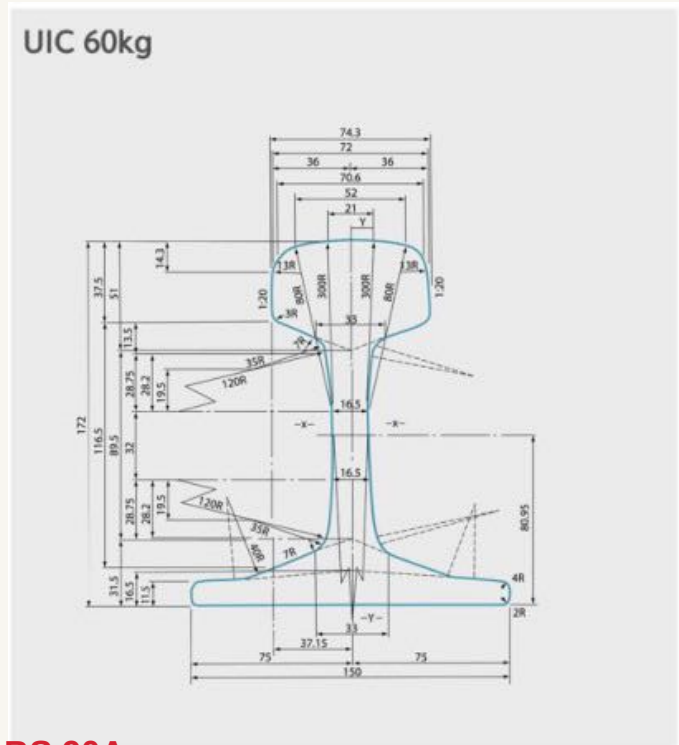
UIC 54kg



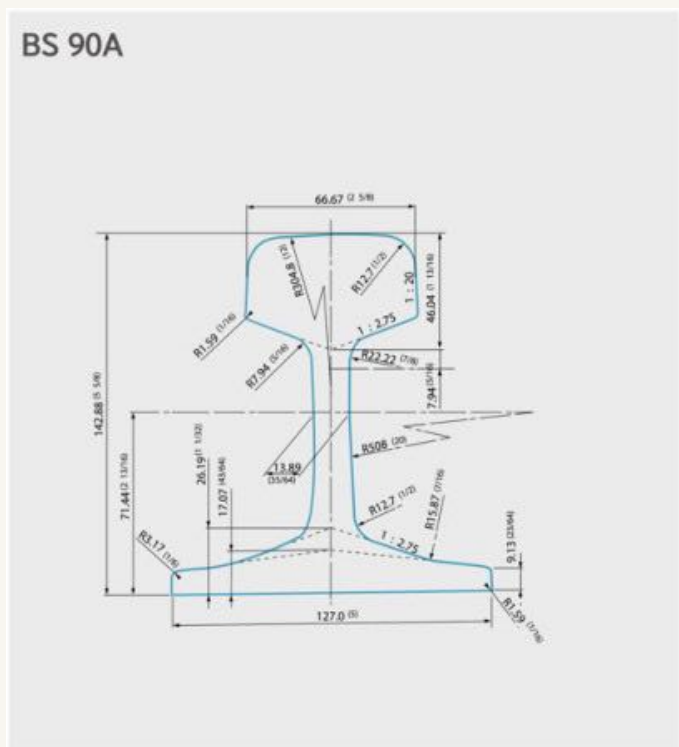
BS 75R



UIC 60kg



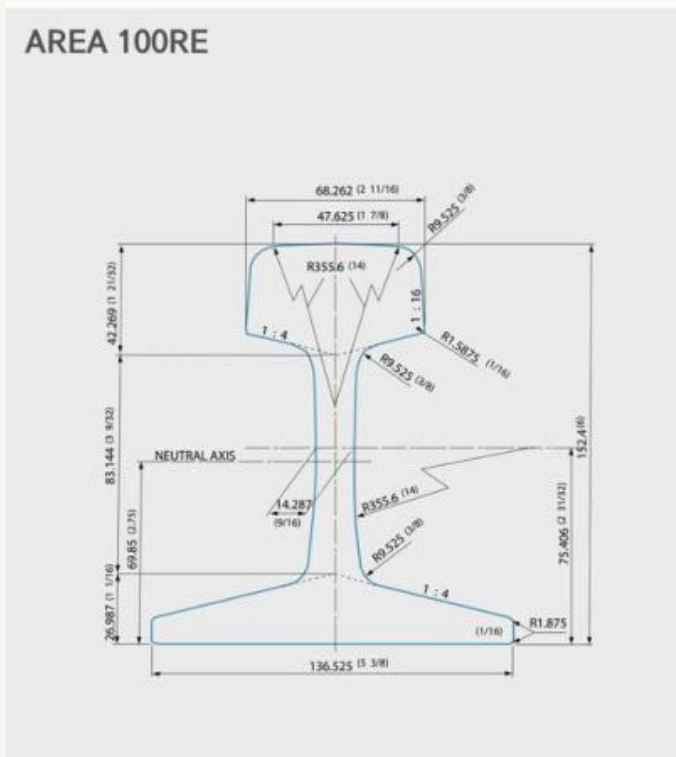
BS 90A



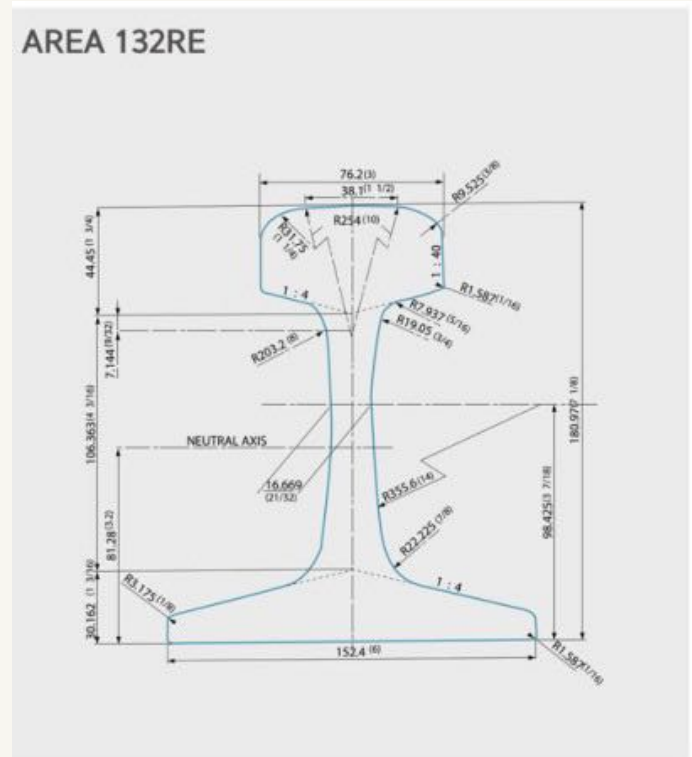
AMERICAN RAILWAY PROFILES

American Railway Engineering Association

AREA 100RE

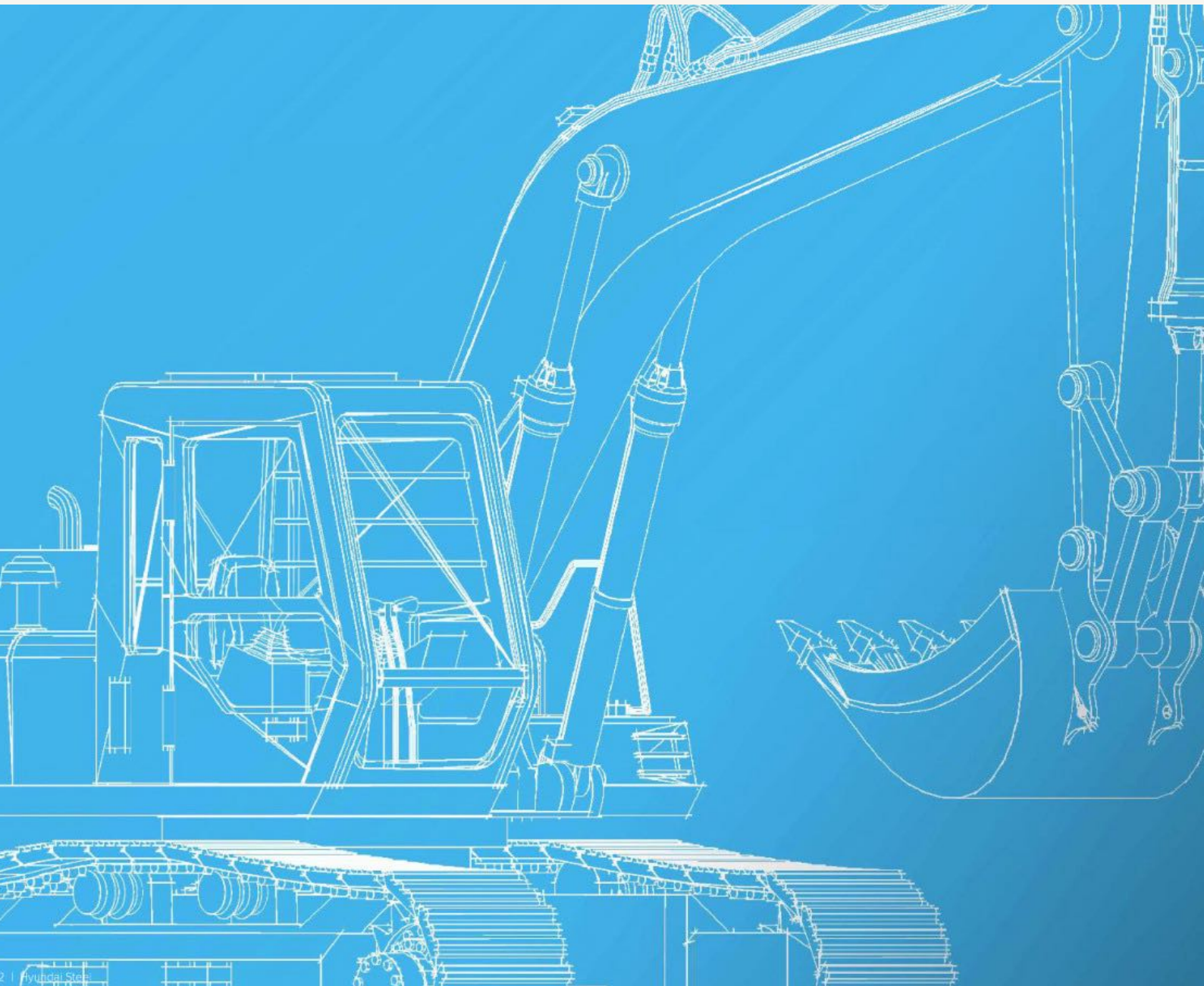


AREA 132RE



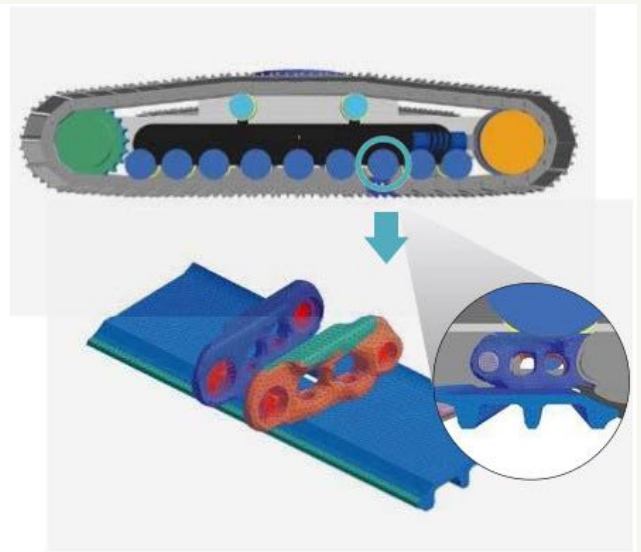
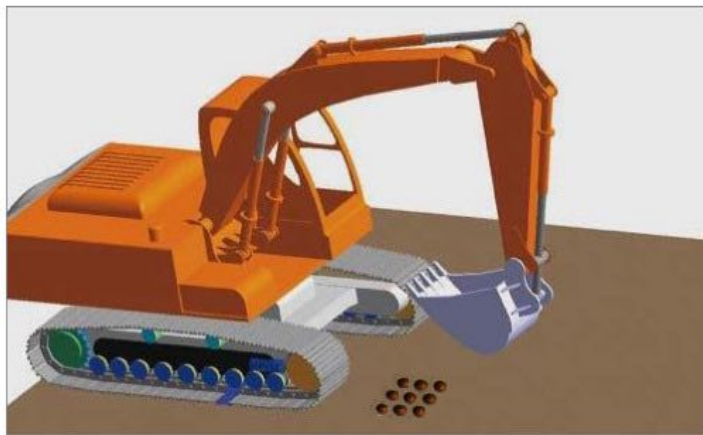
TRACK CHAIN ASSEMBLY

Hyundai Steel's catalogue states that it has supplied track shoe assemblies to major construction-equipment manufacturers since 1986. The range covers 2–90-tonne machines, with a stated annual supply capacity of 130,000 assemblies. The company describes solutions for different customer requirements.



TRACK CHAIN MANUFACTURING

Hyundai Steel / Quality, planning and heat treatment

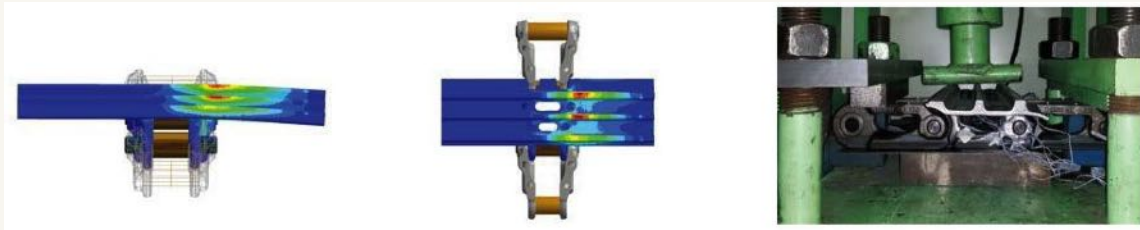


TRACK CHAIN TESTING

Hyundai Steel / Engineering and verification

Hyundai Steel designs track-shoe assembly components using dynamic and static analysis of operating conditions, equipment weight and construction-equipment traction. Quality assurance, process management and endurance testing are used to verify performance.

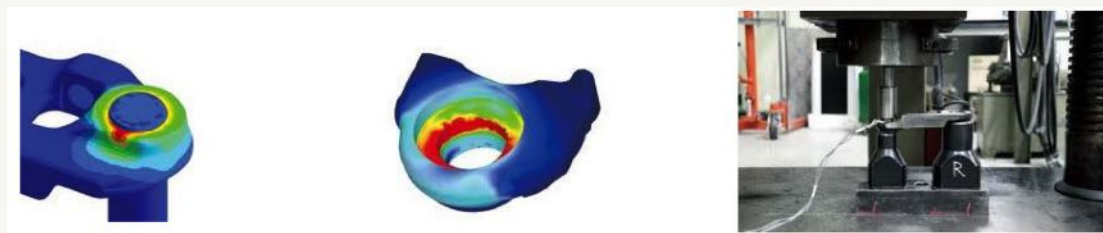
Edge load test



Fatigue durability test



Link pressing test



Pin / bush fracture test



STEEL SHEET PILES

Hyundai Steel / Products and applications

Steel sheet piles retain earth and water pressure in civil-engineering and building projects. Hyundai Steel's source catalogue states that the company was the first to develop and produce SSP in Korea, held a 10% global market share, and received World-Class Product recognition for the range.

현대제철에서 국내최초로 개발하여 생산하고 있는 SSP(Steel Sheet Piles, 강널말뚝)는 토목 및 건축공사 시 토압이나 수압을 지탱하는 철강재로 세계 시장 점유율 10%를 차지하고 있습니다.

또한 현대제철의 Steel Sheet Piles는 우수한 기술력을 바탕으로 완성된 뛰어난 품질을 대외적으로 인정 받으며, 세계일류상품에 선정되었습니다.



SHEET PILE QUALITY

Hyundai Steel / Products and applications

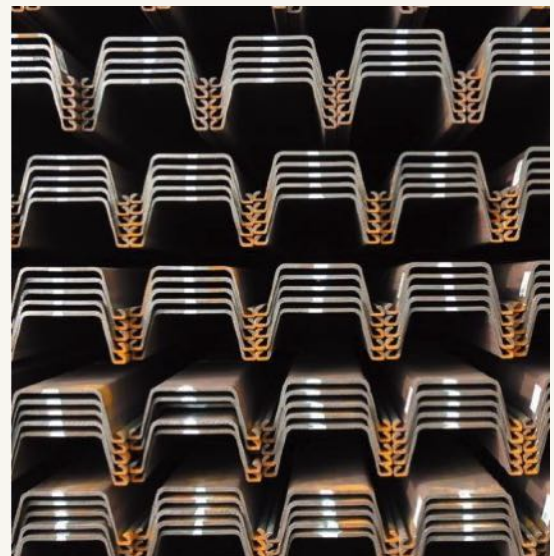
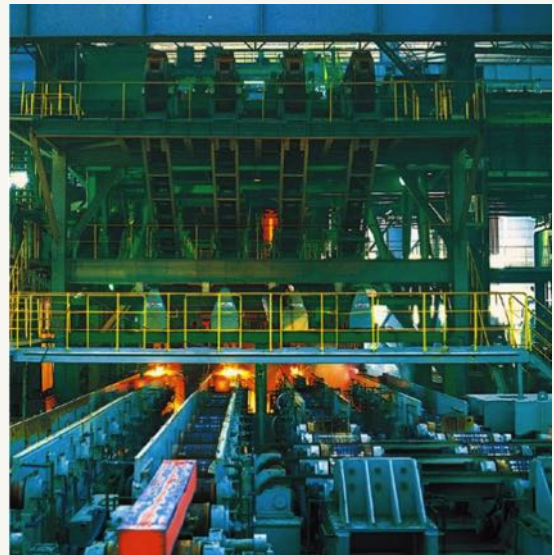
강널말뚝의 특징

1. Consistent factory quality

Hyundai Steel describes a standardized, factory-controlled process that produces uniform material quality. The source states that additional quality control is not required.

1. 우수한 품질

강널말뚝은 공장에서 고도의 품질관리 하에 규격화되어 생산되므로, 재질이 균질하고 품질이 우수해 별도의 품질관리가 필요없습니다.



CUTOFF AND STRUCTURAL DESIGN

Hyundai Steel / Products and applications

강널말뚝의 특징

2. Cutoff capacity

The double-hook interlock is designed to provide water-cutoff performance.

2. 우수한 차수성능

강널말뚝 연결부가 Double Hook형으로 설계되어 차수성능이 우수합니다.



3. Structural design

The flange is thicker where bending moments and susceptibility to local buckling are greater. The web is thinner where bending moments and shear forces are relatively small. Hyundai Steel describes this distribution as an economical, structurally safe design.

3. 공학적인 안전성

강널말뚝은 큰 휨모멘트를 부담하는 부분 및 국부 좌굴의 우려가 있는 단면의 두께는 두껍게 하고, 상대적으로 적은 휨모멘트와 전단력을 부담하는 부분의 두께는 얇게하여 공학적으로 경제적이고 안전합니다.



DURABILITY AND CONSTRUCTION

Hyundai Steel / Products and applications

강널말뚝의 특징

4. Durability and seismic performance

Steel sheet piles can be reused. As ductile walls, they can accommodate displacement within the elastic range during earthquakes or settlement, and are also used in permanent structures.

4. 내구성 및 내진성

강널말뚝은 내구성이 우수하여 반복사용이 가능하며, 연성 벽체로 지진 및 침하 상황에서도 탄성 범위 내에서 변위를 허용하므로 영구구조물로 널리 사용됩니다.



5. Straightforward construction

The source describes a simple construction process with shorter construction periods than other methods. Different methods can be selected to suit site conditions.

5. 간편한 시공

시공이 간편하고 공정이 단순하기 때문에 타 공법에 비해 공기가 단축되며, 현장 상황에 맞게 시공법이 다양합니다.



WATER JET COMBINED METHOD

Hyundai Steel / Products and applications

시공방법 / 1. WATER JET 병용 공법

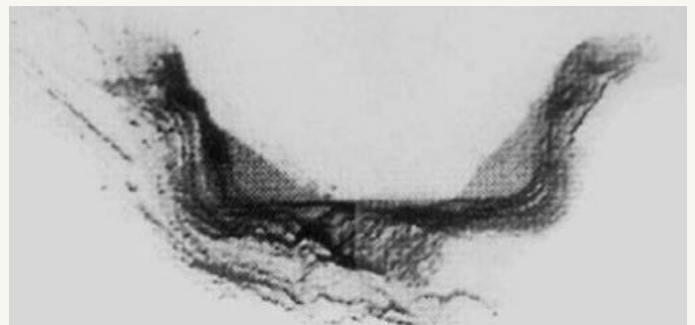
This method combines high-pressure water from a water-jet pump with the vibration and impact energy of a vibro hammer. Water erodes hard ground or rock while repeated driving advances the sheet pile.

Water Jet Pump에서 토출되는 고압수와 바이브로 해머의 진동타격 에너지를 조합하여 암반 등의 경질지반을 급속히 침식시켜 반복항타에 의해 강널말뚝을 직접 타입하는 공법입니다.

Method characteristics

1) 공법의 특징

- Direct pile driving in hard ground and rock.
경질지반 및 암반에 직항타가 가능합니다.
- The source reports reduced construction time and cost in rock.
암반공사시 공사기간이 단축되고 공사비를 절감할 수 있습니다.
- Low noise and vibration.
소음이나 진동이 적게 발생합니다.
- Ground grouting can be carried out with sheet-pile installation.
강널말뚝 설치와 더불어 지반 그라우팅도 가능합니다.



WATER JET CONSTRUCTION NOTES

Hyundai Steel / Products and applications

시공방법 / 2) 시공시 주의점

- For rock driving, select the water-jet pump and vibro-hammer combination to suit the construction conditions.

암반 향타시 장비조합 상황에 따라 시공 가능 여부가 결정되므로 Water Jet Pump 및 바이브로 해머의 조합을 적정하게 해야 합니다.

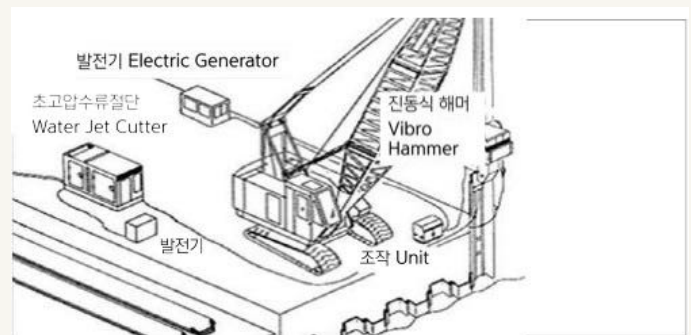
- Run the water-jet pump from the start of penetration to prevent soil and sand from clogging the nozzle.

Water Jet Pump 병용시공시 노즐이 토사에 의해 막히지 않도록 근입 개시 시점부터 Water Jet Pump를 구동시켜야 합니다.

- Balance hydraulic pressure and water discharge when cutting hard ground or rock. Keep the hose free from twisting and blockage.

Water Jet Pump는 유압 및 유량에 의해 경질지반 및 암반을 절삭하므로 유압과 유량이 균형을 유지해야 합니다.

(호스가 꼬이거나 막히지 않도록 주의)



VIBRO-HAMMER PILE DRIVING

Hyundai Steel / Products and applications

시공방법 / 2. 바이브로 햄머에 의한 항타공법

Hammer vibration reduces ground friction. The pile's own weight and the hammer's driving force advance the steel sheet pile into the ground.

햄머의 진동으로 지반의 마찰저항을 줄여가며 강널말뚝의 자중과 햄머의 항타력으로 강널말뚝을 지중에 근입하는 방법입니다.

Method characteristics

1) 공법의 특징

- Pile driving generates vibration and noise.
항타시 진동 및 소음이 발생합니다.
- A crane or excavator supports the vibro hammer for straightforward operation.
크레인 또는 굴삭기를 이용하여 진동햄머로 시공하므로 간편합니다.
- Water-jet assistance can be combined with this method in rock and belemnite layers, as described in the source.
암반 및 전석층 시공시 WATER JET 병용 시공이 가능합니다.

Construction note

2) 시공시 주의점

Select the hammer to suit the ground and site conditions.

지질조건과 현장여건에 따라 적절한 햄머로 시공해야 합니다.



HYDRAULIC PRESS-IN AND PULL-OUT

Hyundai Steel / Products and applications

시공방법 / 3. 유압식 압입 인발 공법

Hydraulic press-in force and the sheet pile's own weight advance the pile into the ground.

유압 압입력과 강널말뚝의 자중으로 강널말뚝을 지중에 근입하는 방법입니다.

Method characteristics

1) 공법의 특징

- Hydraulic installation produces low noise and vibration.
장비의 유압을 이용해 강널말뚝을 설치하므로 저소음, 저진동 공법입니다.
- Construction is possible where the clearance between structures is small.
구조물 간의 이격거리가 작아도 시공이 가능합니다.
- The source gives the operating conditions as $N \leq 30$ and $L \leq 20$.
 $N \leq 30$ 이하의 지층, $L \leq 20$ 이하의 조건에서 시공 가능합니다.

Construction notes

2) 시공시 주의점

- Install the first sheet pile carefully: it determines the accuracy of subsequent work.
첫번째의 강널말뚝의 시공은 시공정밀도를 결정하기 때문에 신중하게 시공해야 합니다.
- Check the press-in location, alignment and access, and the risk of overturning in every direction.
압입위치, 법선의 출입, 전후 좌우의 전도 등을 충분히 주의해야 합니다.



AUGER PRESS-IN METHOD

Hyundai Steel / Products and applications

시공방법 / 4. 오거 압입 병용 공법

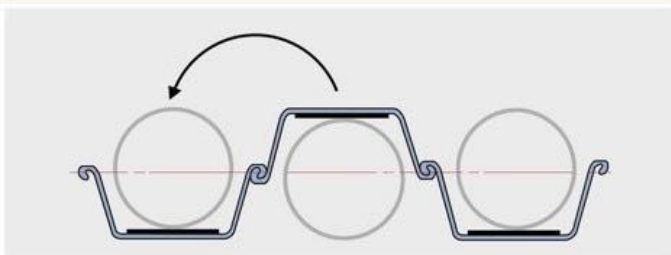
An auger, casing and hydraulic cylinder work together where conventional vibro-hammer driving is difficult. The sheet pile is attached to the leader-mounted auger casing and pressed in as drilling proceeds.

오거, 케이싱, 유압실린더를 효율적으로 조합하여 기존의 바이브로 햄머로 타입이 곤란한 지층에 강널말뚝을 근입하는 방법으로, 리더에 부착된 오거 케이싱에 강널말뚝을 부착하여 오거 천공과 동시에 강널말뚝을 압입하는 방법입니다.

Method characteristics

1) 공법의 특징

- Installation alongside auger drilling produces low noise and vibration.
오거 천공과 병행해 강널말뚝을 설치하므로 저소음, 저진동 공법입니다.
- Predrilling reduces damage to the sheet pile.
오거의 선행 천공 후 강널말뚝이 설치되므로 강널말뚝 손상이 적습니다.
- The source describes use in highly permeable gravel and belemnite layers with stone diameter $\varnothing \leq 200$ mm.
투수성이 큰 자갈층 및 전석층($\varnothing \leq 200\text{mm}$)시공도 가능합니다.
- Ground grouting can be carried out with sheet-pile installation.
강널말뚝 설치와 더불어 지반 그라우팅도 가능합니다.



AUGER CONSTRUCTION NOTES

Hyundai Steel / Products and applications

시공방법 / 2) 시공시 주의점

- Excessive press-in force in ground with a high N value can cause inaccurate installation and damage equipment. Withdraw the pile and repeat press-in.

N치가 높은 지반에서의 무리한 압입은 부정확한 시공이 될 수 있고 장비에 손상을 주므로 인발 후 재압입해야 합니다.

- For the source's belemnite layer with stone diameter $\varnothing \geq 200$ mm, drill first and then carry out auger press-in.

전석층 $\varnothing \geq 200$ mm일 경우 선행 천공 후, 오거 압입하여야 합니다.

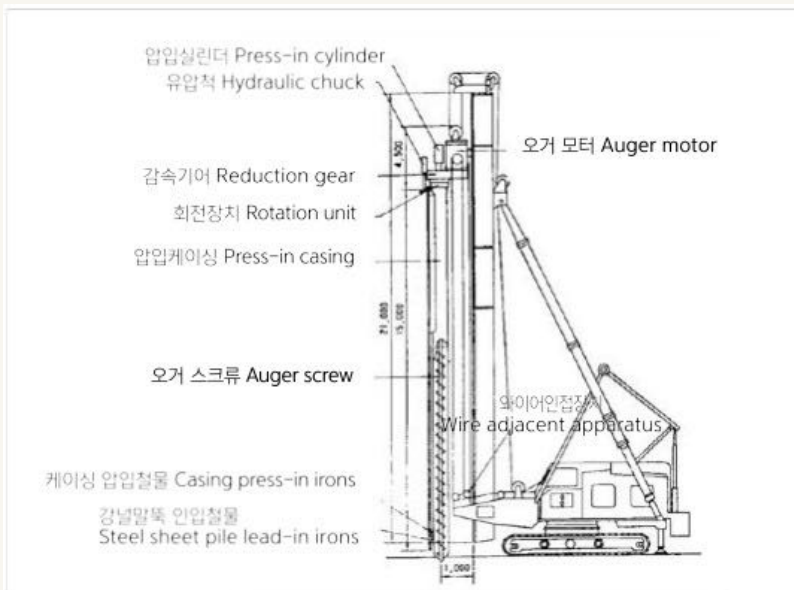
- Secure the sheet pile fully in the fixing chuck at the top of the casing.

강널말뚝은 케이싱 상단 고정척에 완전히 고정되어야 합니다.

- Replace worn casing: wear can cause bending.

케이싱 마모는 휨의 원인이 되므로 교체하여야 합니다.

Auger assembly



CORROSION AND PROTECTION

Hyundai Steel / Products and applications

부식 및 대책

Corrosion rates by environment

1. 환경별 강널말뚝의 부식속도 Corrosion Velocity of Steel Sheet Pile by Environment

(한쪽면 기준 for only one side)

	부식환경구분 Classification of corrosion environments	부식속도 (mm/년) Corrosion velocity (mm/year)
海側 The sea side	H.W.L. ~ 이상 H.W.L. ~ above H.W.L.	0.3
	H.W.L. ~ L.W.L. - 1.0m	0.1 ~ 0.3
	L.W.L. - 1.0m ~ 海底 L.W.L. - 1.0m ~ the seabed	0.1 ~ 0.2
	海底泥層中 in submarine clay layer	0.03
陸側 The land side	陸上大氣中 in the air on land	0.1
	土中(殘溜水位上) in earth (above remaining water level)	0.03
	土中(殘溜水位下) in earth (below remaining water level)	0.02

Protection by environment

2. 환경별 강널말뚝의 부식대책 Counterplan for Corrosion Protection of Steel Sheet Pile by Environment

(A : 신설 구조물 new structure, B : 기존 구조물 existing structure)

	大氣中 in the air		水際部 the waterside		水中 underwater		海低土中 in earth underwater		陸側土中 in earth on the land side	
	A	B	A	B	A	B	A	B	A	B
塗裝 painting	◎	◎	○	△	○	×	○	×	○	×
라이닝 lining	◎	◎	◎	◎	○	×	○	×	○	×
콘크리트피복 concrete covering	◎	◎	◎	◎	△	×	△	×	△	×
耐蝕金屬被覆 corrosion-resisting metal covering	◎	◎	◎	△	○	×	△	×	△	×
電氣防蝕法 electric corrosion protection method	×	×	○	○	◎	◎	◎	◎	◎	◎



◎ : 시공가능, 유효 construction possible, valid
 ○ : 시공가능, 약간 유효 construction possible, a little valid
 △ : 시공가능, 그다지 효과적이지 않거나 경제적으로 유리하지 않음
 construction possible, not so effective or not advantageous economically
 × : 시공불능, 효과적이지 않음 construction impossible, not effective

WATER-CUTOFF CHARACTERISTICS

Hyundai Steel / Products and applications

차수성

1. 차수성 Cutoff Character

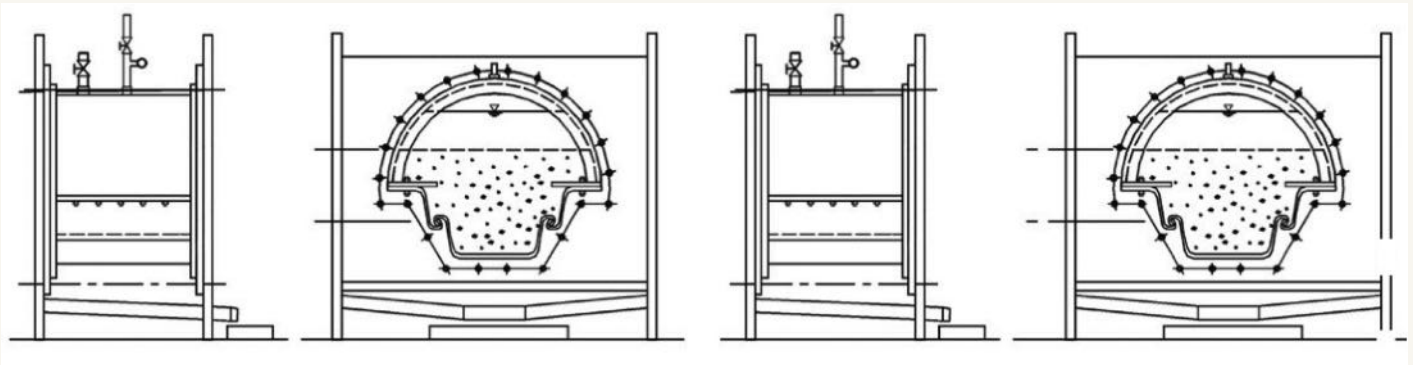
지수재 도포시 In the application of water stop		지수제 미도포시 In no application of water stop			
		시공상태 Conditions of construction		침출수 함유량 leachate content	
전면도포 the whole surface application	누수없음 no leakage of water	인장 tension	2.0×10^{-5} cm/sec	30%	3.0×10^{-5} cm/sec
지수재 2cm 삭제 eliminated water stop of 2cm	누수없음 no leakage of water	중립 neutral	2.6×10^{-5} cm/sec	60%	2.8×10^{-5} cm/sec
지수재 3cm 삭제 eliminated water stop of 3cm	누수없음 no leakage of water	압축 compression	0.5×10^{-5} cm/sec	100%	2.6×10^{-5} cm/sec

"인공차수재 및 복토재 개발", Page 533-565 요약, 건설기술연구원, 1996년, 환경부 발간

"Development of artificial liner and covering materials", Page 533-565 summary, Korea Institute of Construction Technology, 1996, Ministry of Environment

Testing method

시험방법



COMBINED SHEET PILES

Hyundai Steel / Products and applications

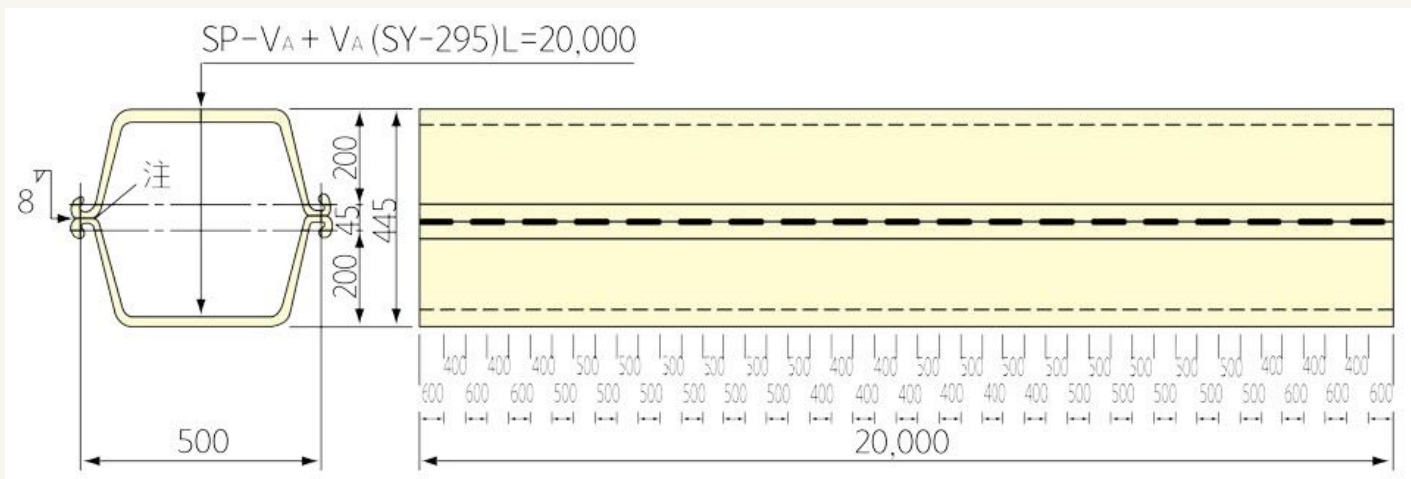
조합형 강널말뚝

Welding combined sheet piles

The usual weld length is approximately 60% of the sheet-pile length, taking welding workability into account.

조합형 강널말뚝 용접

통상 조합형 강널말뚝의 용접길이는 용접가공성을 고려해서 강널말뚝 길이의 60% 정도로 합니다.



Note: weld only the two ends on the inner side, for 300 mm at each end.

(注) 안쪽은 양단만 300mm 용접합니다.



INTERLOCK COMPATIBILITY

Hyundai Steel / Products and applications

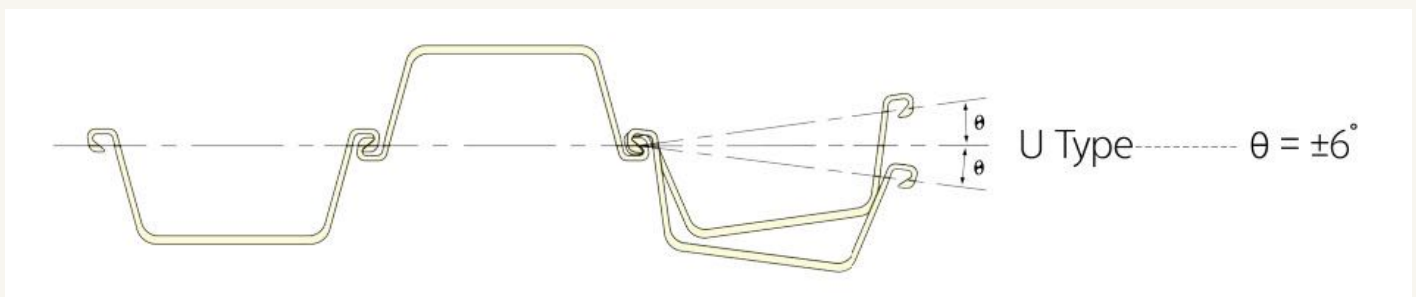
회전각도 및 호환성

1. Standard interlocking rotation

For sheet piles of the same profile, the standard U-type rotation is $\theta = \pm 6^\circ$.

1. 표준 회전각도

동형의 강널말뚝을 연결시 표준 회전각도는 아래와 같습니다.

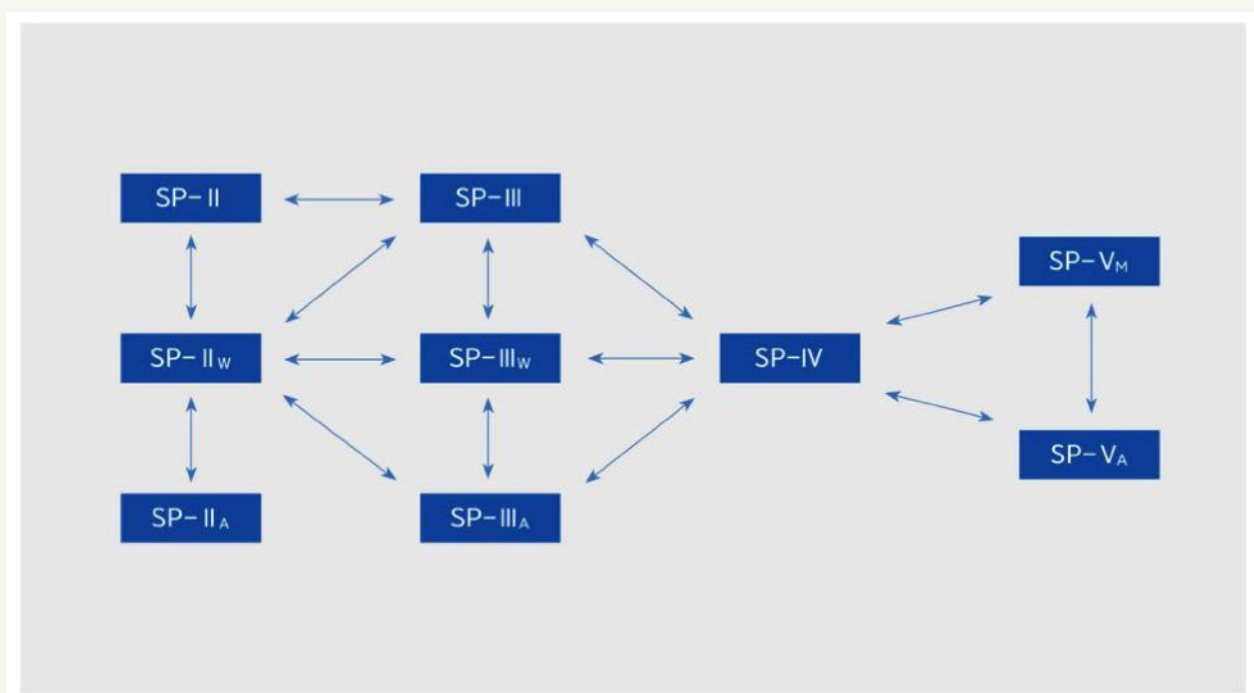


2. Connection to other sections

Sheet-pile interlocks can connect to the other sections indicated by the compatibility diagram.

2. 호환성

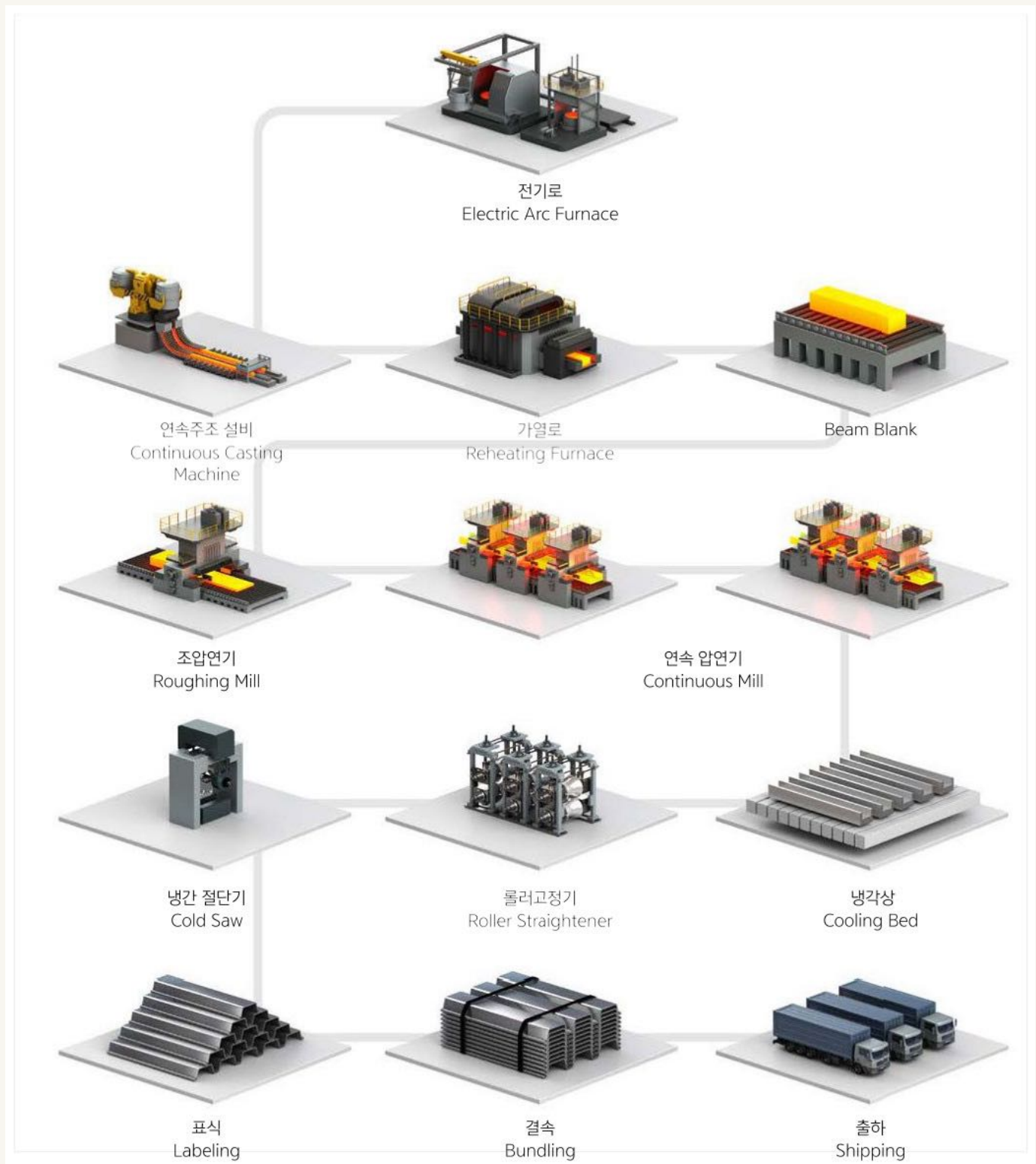
강널말뚝의 계수부는 동형(同形) 외에 아래에 표시된 범위 내에서 연결이 가능합니다.



SHEET PILE PRODUCTION

Hyundai Steel / Products and applications

제조공정

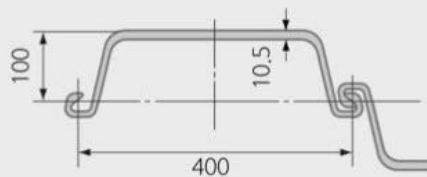


SHEET PILE SHAPES AND SIZES

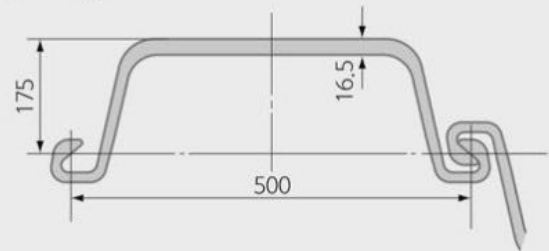
Hyundai Steel / U-type sheet pile profiles

형상 및 치수 / U형강널말뚝

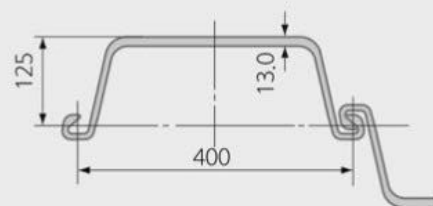
ISP - II



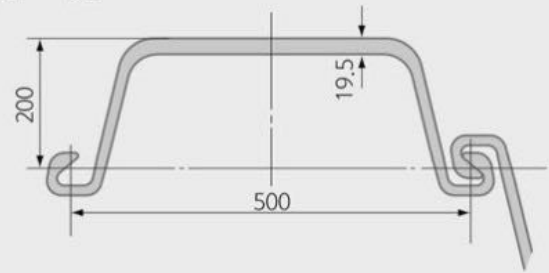
ISP - V_M



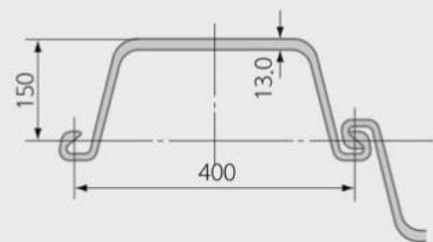
ISP - III



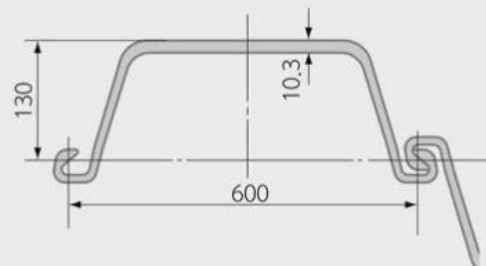
ISP - V_A



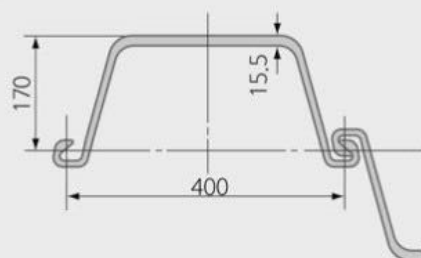
ISP - III_A



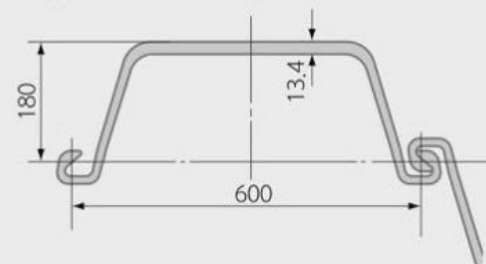
ISP - II_w



ISP - IV



ISP - III_w



H CORE

국내 최초로 내진용 H형강 개발에 성공한 현대제철은 꾸준한 연구개발과 투자로 철근, 후판, 강관 등 전 분야에 걸쳐 내진강재 포트폴리오를 구축하였습니다. 이러한 앞선 기술력을 바탕으로 현대제철은 대한민국의 건축물을 안전하게 지킬 내진강재 브랜드 <H CORE>를 출시했습니다.



STRUCTURAL APPLICATIONS

Hyundai Steel project references



1

잠실 롯데월드 타워

규모: 555m (B6F/123F)
SHN275, SHN355



2

일산 킨텍스 제2전시장

규모 : 54,470㎡(B1F/4F)
SHN355



3

LH 진주 신사옥

규모 : 41.1m (B2F/8F)
SHN355



4

송도 G-Tower

규모 : 151m (B2F/33F)
SHN275, SHN355



5

여의도 IFC몰

규모 : 오피스3개동 (29F / 32F / 55F)
SHN275, SHN355



STRUCTURAL APPLICATIONS

Hyundai Steel project references continued



6

남극 장보고기지

규모 : 15m (4 stories)

SHN355



8

가나 Takoradi T2 CCPP

규모 : 스팀터빈 1동, HRSG 2동,

Marine Work (HDPE Pipe 2.8km)

SD400S



7

콜롬비아 Termotasajero 2 CFPP

규모 : 160MW

SHN355



9

필리핀 Arena Concert Hall

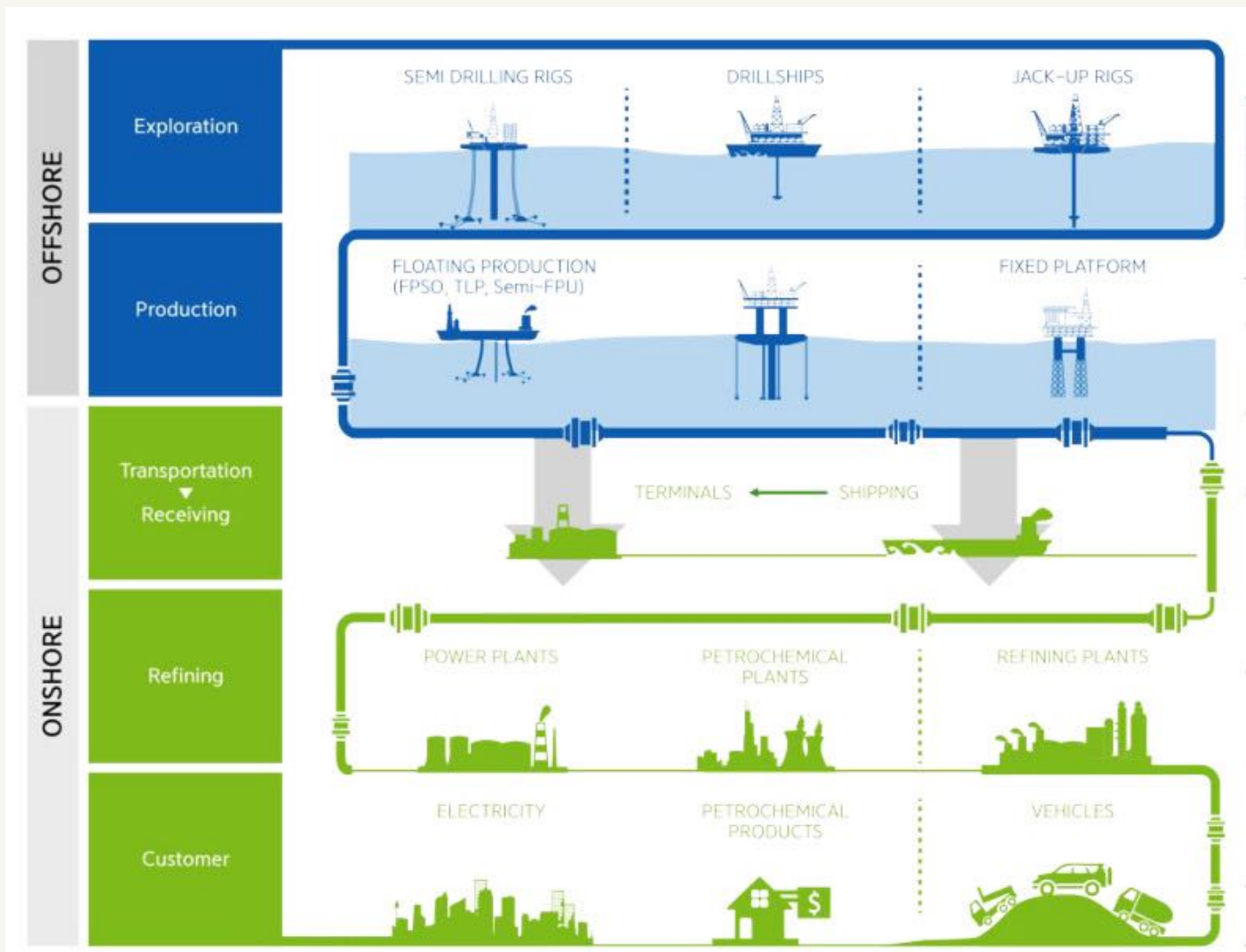
규모 : 51,898석

SHN275, SHN355



STEEL FOR OFFSHORE

Supply for oil & gas · Onshore and offshore applications



HYUNDAI STEEL OFFSHORE PRODUCTS



HEAVY PLATE



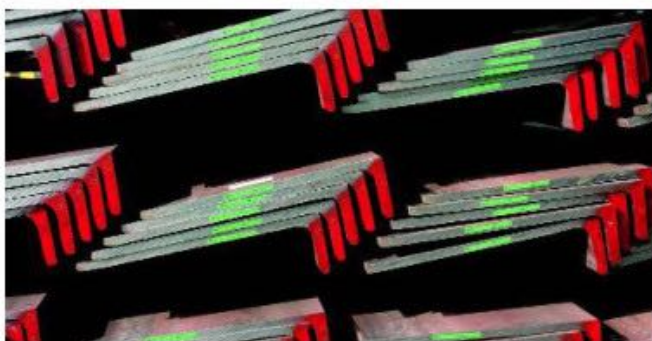
H-BEAM

OFFSHORE STEEL GRADES

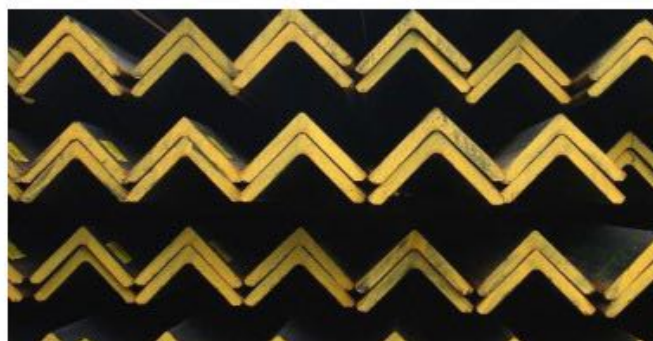
Temperature and product matrix

		Temperature	
Offshore Structure		Shipbuilding	
9-100 mm	5-75 mm	6-100 mm	
Heavy Plate	Rolled Shape		
		RT	A
		0°C	B, AH32/36/40/47 AH32 (COT)~35t
		-20°C	D, DH32/36/40/47
		-40°C	E, EH32/36/40/47
		-60°C	FH32/36~80t LT-FH32/36
EN-S460G2+M	EN-S355G 10+M	S355G11/G12	
EN-S420G2+M	NORSOK Y20/25	S420 (G3, G4)	
NORSOK Y30/35/40/45	API 2H-50Z	S460 (G3, G4)	
API 2W-50Z/60Z	A/D/E500		
A/D/E/F420		LT-FH32/36 (I/A)	

SECTIONS FOR OFFSHORE STRUCTURES



INVERTED / UNEQUAL ANGLE



EQUAL ANGLE

HEAVY PLATE OFFSHORE

Hyundai Steel / Material, module and structure

적용 사례

Heavy plate is shown through the production and fabrication sequence, from steel material to modules and completed offshore structures.

MATERIAL



MODULE



STRUCTURE



SECTIONS AND ANGLES OFFSHORE

Hyundai Steel / Material, module and structure

적용 사례

H-sections

MATERIAL



MODULE



STRUCTURE



Low-temperature angles

MATERIAL



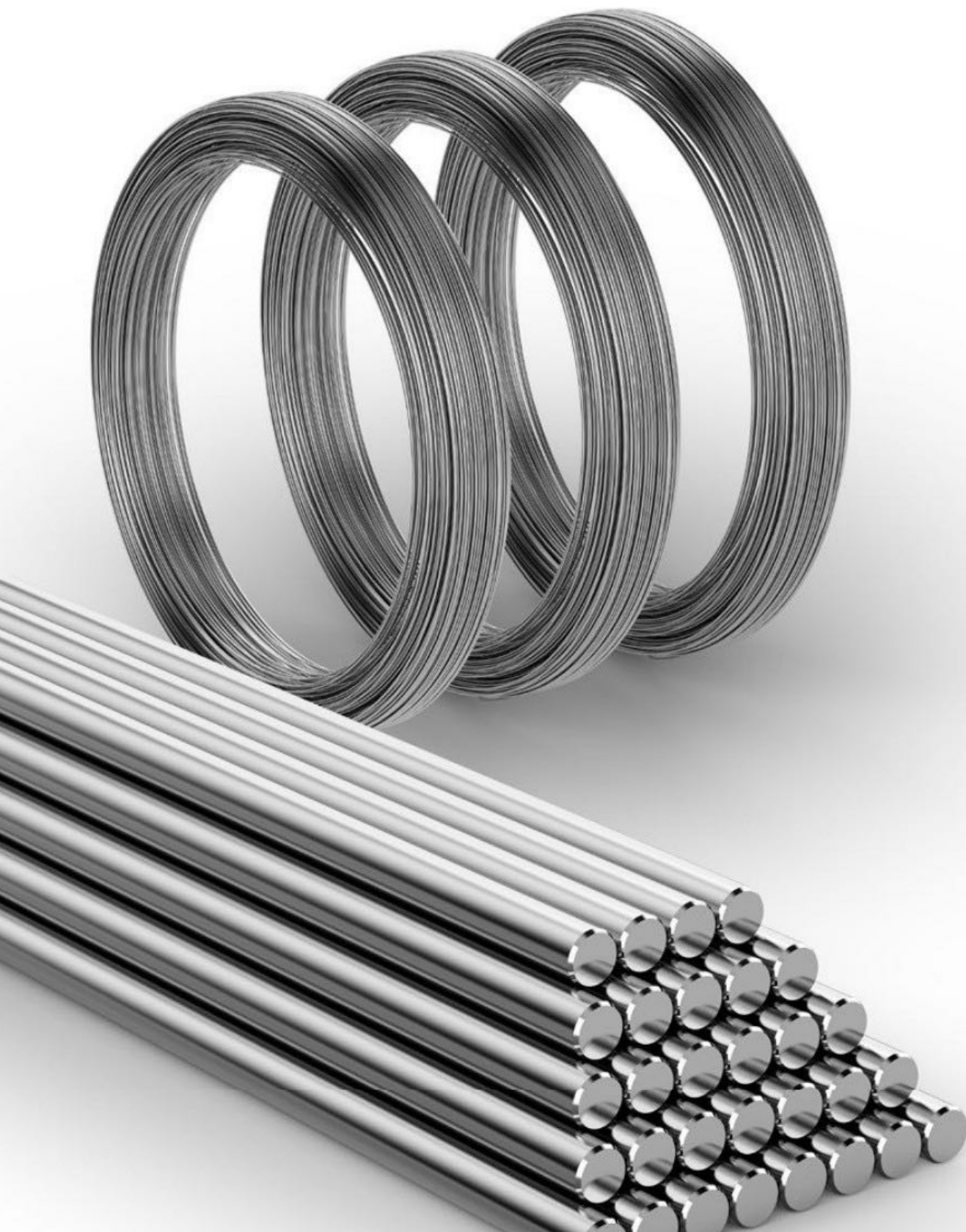
MODULE



STRUCTURE



SPECIAL STEEL

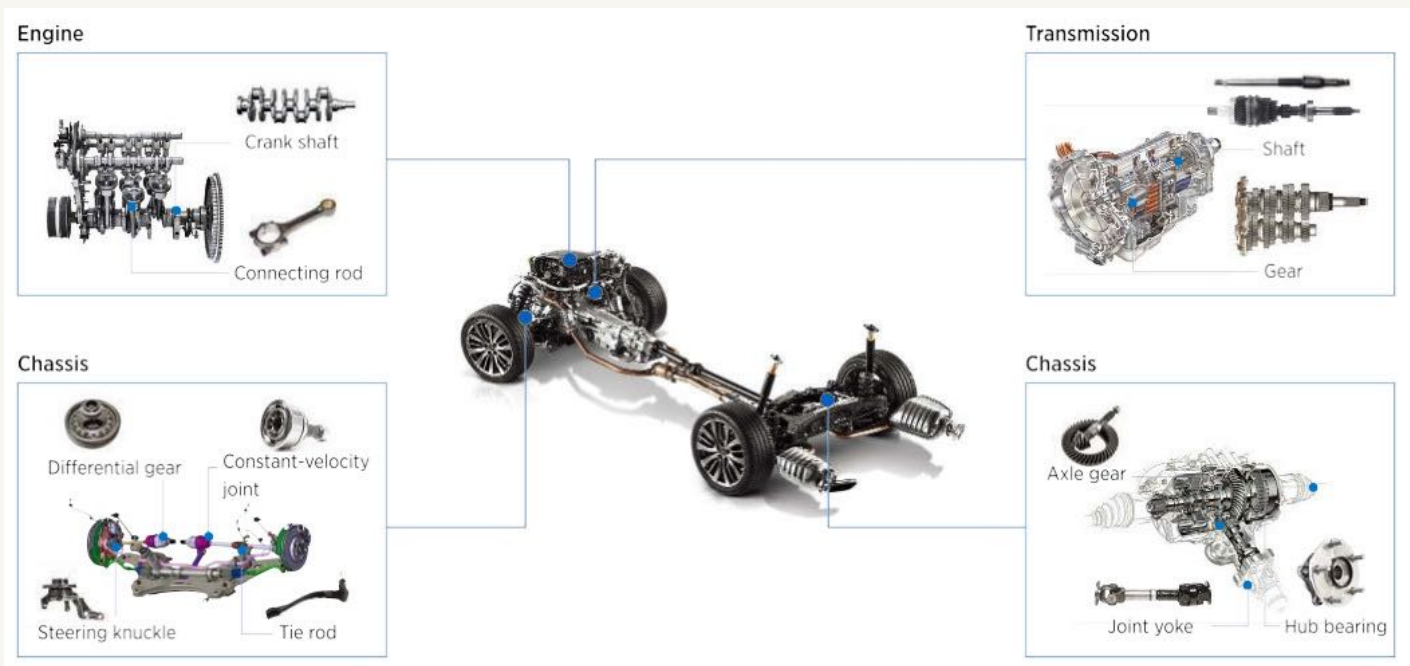


AUTOMOTIVE COMPONENTS

Hyundai Steel / Products and applications

Special steels are used for components that transmit power from the engine and powertrain to the drive shaft. Strength and durability are developed through alloy selection, heat treatment and subsequent processes such as heading and drawing.

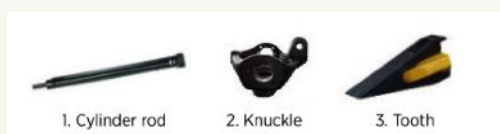
Components from round bars



HEAVY EQUIPMENT COMPONENTS

Hyundai Steel / Products and applications

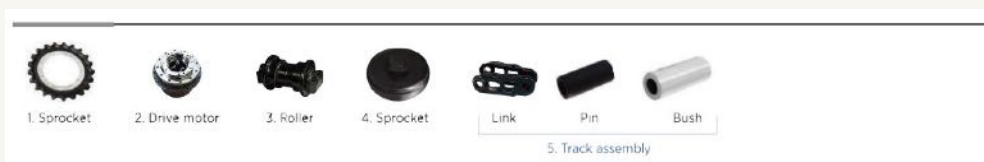
Special steels are used for excavator engines, booms, pins, links and bushes connecting the tracks. These applications require high strength and wear resistance; the source identifies high-carbon steels for this use.



Upper rotating body



Track links and seals



AGRICULTURE AND INDUSTRY

Hyundai Steel / Products and applications

Steels for tractors and machine tools range from automotive special steels to low-carbon steels. Components are produced by processes including forging, drawing and heat treatment.

Agricultural machines



Industrial machines



SHIPBUILDING AND OFFSHORE

Hyundai Steel / Products and applications

Steels for anchors, mooring chains and shipbuilding equipment are selected for high strength, corrosion resistance and wear resistance.

Shipbuilding



1. Engine



2. Shipbuilding equipment



3. Anchor chain

Ocean facilities



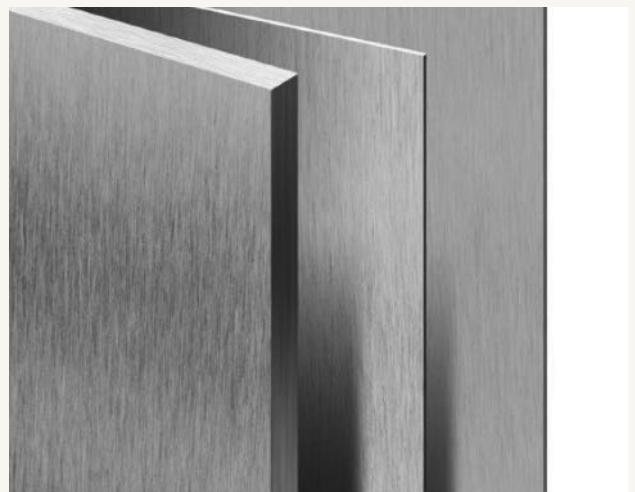
1. Drill system



2. Mooring chain

STEEL FOR CIVIL CONSTRUCTION

Pipe, reinforcing bar, sections and plate



CIVIL CONSTRUCTION USES

현대제철은 5대 SOC사업 철강소재 전제품을 공급합니다.

교량



철도



항만



공항



산업단지



STEEL SELECTION MATRIX

	후판 	강관 	형강 	철근 
일반	SS 235 SS 275 SS 315 SS 410 SS 450 SS 550	SGT 275 SGT 355 SGT 380 SGT 450 SGT 550	SS 235 SS 275 SS 315 SS 410 SS 450 SS 550	SD 300 SD 400 SD 500 SD 600
용접용	SM 275 SM 355 SM 420 SM 460	STP 275 STP 355 STP 380 STP 450 STP 550	SM 275 SM 355 SM 420 SM 460	SD 400W SD 500W
고성능 & 고기능	HSB 380 HSB 460 HSB 690	SHT 410 SHT 460 SNT 275 SNT 355 SNT 460	SHP 275 SHP 355W SY 300 SY 300W SHN 275 SHN 420 SHP 275W SHP 450W SY 400 SY 400W SHN 355 SHN 460	SD 400S SD 500S SD 600S SD 400T SD 500T SD 600T

고성능 토목용 강재

고강도

일반강 대비 강재량
감소로 시공성 및
경제성 확보

충격 및 내구성

시공 중 발생하는 충격에도
쉽게 파괴되지 않는
인성 보유

용접성

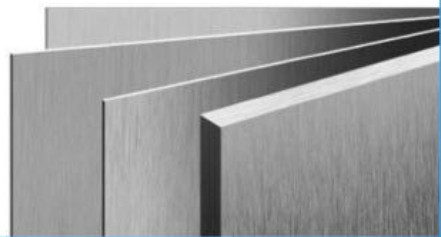
탄소당량 규제를 통해
향상된 용접성능 보유

HIGH-PERFORMANCE BRIDGE STEEL

HSB(High Performance Steel for Bridges)란 교량에서 요구하고 있는 성능을 충족시키기 위해 고강도, 고인성, 고용접성을 보유한 맞춤형 강재입니다.

ADVANTAGE

- 판 두께에 따른 항복강도 저감 없음
- 충격 인성 보증 및 용접성능 확보
- 외기 환경에 대한 내후성 및 저온인성 확보
- 내후성 강종(W)은 무도장으로 사용 가능



강재 특성

구분	HSB 380 HSB 460	HSB 380L HSB 460L	HSB 380W HSB 460W	HSB 690	HSB 690L	HSB 690W
최대 판 두께	t ≤ 100mm			t ≤ 80mm		
항복강도	380MPa 이상(HSB380/L/W) 460MPa 이상(HSB460/L/W) *전 두께 일정 항복강도			690MPa 이상 *80mm이하 일정 항복강도 ¹⁾		
인장강도	500MPa 이상(HSB380/L/W) 600MPa 이상(HSB460/L/W)			800MPa 이상		
충격인성	-5℃ 47J 이상	-20℃ 47J 이상	-5℃ 47J 이상	-20℃ 47J 이상	-40℃ 47J 이상	-20℃ 47J 이상
용접성	예열 없음 ²⁾			판 두께 25mm 초과시 예열온도 50℃ 이상 ³⁾		
제조법	TMCP(Thermo-mechanical Control Process Steel) *생산성 및 납기, 품질에서 유리					

주¹⁾ 출처: 도로교 설계기준(한계상태설계법) 2016

주²⁾ 출처: 도로교 표준시방서 2016

HSB L-Type (Low Temperature)



저온 충격인성 보증
극한의 저온 환경에서도 충격에 쉽게
깨지지 않는 강력한 인성 유지

HSB W-Type (Weather Resistance)



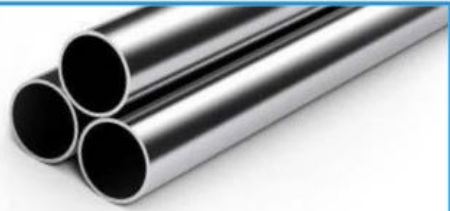
내후성 확보
다양한 부식환경에 저항할 수 있는
부식 저항성 확보

STEEL TUBE PILES

STP(Steel Tube Pile)란 토목 구조물에 사용되는 용접 구조용 기초 말뚝이며, 충격 및 용접 성능을 보유한 제품입니다.

ADVANTAGE

- 용접강관 말뚝에 적용하는 소재
- PHC 파일 대비 우수한 지지력 및 횡저항력 확보
- 충격 인성 보증



일반 구조용 탄소 강관 용접불가 규정

일반 구조용 탄소 강관

Carbon steel tubes for general structural purposes

1. 적용범위

이 표준은 토목, 건축, 철탑, 발판, 지주, 지면 미끄럼 방지 말뚝¹⁾, 그 밖의 구조물에 사용하는 일반 구조용²⁾ 탄소 강관(이하 관이라 한다)에 대하여 규정한다.

비고 1 용접하여 사용되는 구조용 강관에는 적용하지 않는다.

비고 2 바깥지름 318.5mm 이상의 강관 기초 말뚝 및 지면 미끄럼 방지 말뚝에는 적용하지 않는다.

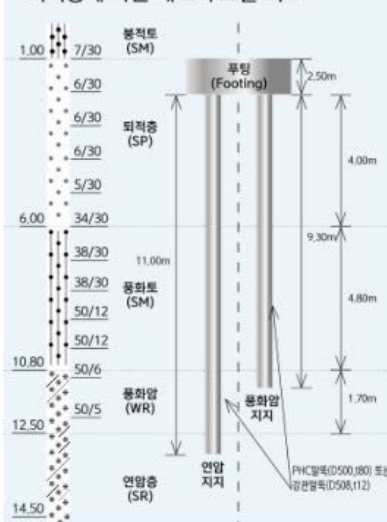
(참고 1) 용접성이 요구되는 강관에는 건축 구조용 탄소 강관 KS D 3632가 있다.

(참고 2) 구조물의 기초 강관 말뚝 및 지면 미끄럼 방지 말뚝에는 KS F 4602가 있다.

(참고 3) 원심력 주강관의 지면 미끄럼 방지 말뚝에는 SPS-KFCA-D4108-5011이 있다.

※ 위 내용은 한국산업표준(KS D 3566:2016)의 적용기준 관련 자료를 발췌한 것이다.

지층에 따른 재료의 효율 비교



파일재료 효율(%)

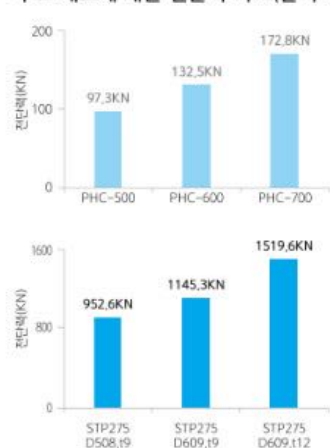


주: 개정된 KS 기준 STP275(2018.1.1 시행)

주: 개정된 KS 기준 STP355(2018.1.1 시행)

※ 출처: 철강협회, 건설용 파일 재료별 성능 비교 연구 2016

구조 재료에 대한 전단력 비교(단기하중)



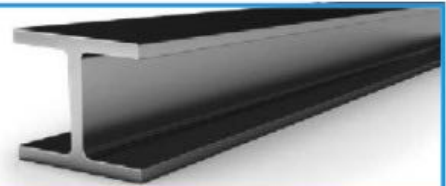
※ 출처: 지진공학회, 국내 건축기초 내진설계 기준강화 및 제도개선 연구 2017

STEEL H PILES

SHP(Steel H Pile)란 토목 구조물의 기초, 가설 토류벽, 벽체의 보강재, 가설 교량의 교각과 주형 등에 사용하는 고성능 토목 H형강 말뚝입니다.

ADVANTAGE

- 충격 인성 보증 및 용접성능 확보
- 구리(Cu)첨가로 내식효과 증대



용접 및 충격성능 보증

기호	탄소당량(%)	충격인성		Cu 첨가(%)
		시험온도(℃)	샤르피 흡수에너지(J)	
SHP 275	0.40 이하	20	27	0.2~0.5
SHP 275W	0.36 이하	0	27	
SHP 355W	0.45 이하	0	27	
SHP 450W	0.45 이하	0	27	

※ KS D 3503(SS) 강재 적용은 비용접부재로 한정한다. (출처 : KDS 14 31 05 강구조설계 일반사항(하중저항계수설계법))

두께에 따른 기준 항복강도 비교(일반 vs 고성능)

일반 형강

기호	항복점 또는 항복 강도 (N/mm ²)				인장강도 (N/mm ²)
	강재의 두께 (mm)				
	16 이하	16 초과 40 이하	40 초과 100 이하	100 초과 하는 것	
SS 235	235 이상	225 이상	205 이상	195 이상	330~450
SS 275	275 이상	265 이상	245 이상	235 이상	410~550
SS 315	315 이상	305 이상	295 이상	275 이상	490~630
SS 410	410 이상	400 이상	—	—	540 이상
SS 450	450 이상	440 이상	—	—	590 이상
SS 550	550 이상	540 이상	—	—	690 이상

고성능 형강

기호	두께 (mm)	항복점 (N/mm ²)	인장강도 (N/mm ²)
SHP 275	16 이하	275 이상	410~550
	16을 넘는 것	265 이상	
SHP 275W	16 이하	275 이상	410~550
	16을 넘는 것	265 이상	
SHP 355W	16 이하	355 이상	490~630
	16을 넘는 것	345 이상	
SHP 450W	16 이하	450 이상	550~700
	16을 넘는 것	440 이상	

HIGH-STRENGTH REINFORCING BAR

SD600(High Strength Reinforcing Bar)이란 초고강도 철근으로 항복강도 600MPa 이상의 특성을 지닌 제품입니다.

ADVANTAGE

- 강재사용량 감소로 시공능률 향상
- 배근량 절감으로 공기단축 및 경제성 확보



경제성 분석

기호	소요철근량(%) (최소철근비 기준)	재료비(%) (실수요단가기준)	총 재료비(%)	절감액(%)
SD 400	100	100	100	-
SD 500	80	104	83	17
SD 600	67	107	72	28

※출처 : 한국콘크리트학회, 원-압축철근을 위한 Ultra-Bar(SD 600) 및 스테럽과 타이 철근을 위한 Ultra-Bar(SD 500 및 600)의 적용성 연구 2010

SD 600 철근의 굽힘성능 시험

KS D 3504 굽힘성능 기준

종류	연신율	굽힘성		
SD 600	10% 이상	굽힘각도	안쪽 반지름	
		90°	D 25 이하	공칭 지름의 2.5배
			D 25 초과	공칭 지름의 3배

기술표준원 KS B 0804 금속 재료 굽힘 시험에 제시된 방법으로 굽힘성 수행



※출처 : 한국콘크리트학회, 원-압축철근을 위한 Ultra-Bar(SD 600) 및 스테럽과 타이 철근을 위한 Ultra-Bar(SD 500 및 600)의 적용성 연구 2010

SY SHEET PILE PROFILES

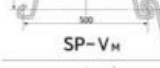
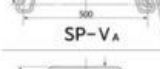
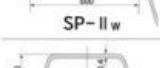
SY(Sheet Pile)란 우수한 차수성능과 공학적 안전성을 바탕으로 지하수 또는 해수가 접한 연약지반 흠막이 시설에 사용되는 특화 제품입니다.

ADVANTAGE

- 충격 인성 보증 및 용접성능 확보
- 구리(Cu)첨가로 내식효과 증대
- 열간압연을 통해 최적화 단면 형상 유지



형상 및 치수

형식 (U형 강널말뚝)	치수			강널말뚝 1본당				벽폭 1M당			
	폭 Width	높이 Height	두께 Thickness	단면적 Sectional Area	단위중량 Unit Weight	단면2차 모멘트 Modulus of Inertia	단면계수 Sectional Area	단면적 Sectional Area	단위중량 Unit Weight	단면2차 모멘트 Modulus of Inertia	단면계수 Sectional Area
	mm	mm	mm	cm ²	kg/m	cm ⁴	cm ³	cm ² /m	kg/m ²	cm ⁴ /m	cm ³ /m
 SP-II	400	100	10.5	61.18	48.00	1,240	152	153.0	120	8,740	874
 SP-III	400	125	13.0	76.42	60.00	2,220	223	191.0	150	16,800	1,340
 SP-III A	400	150	13.0	76.40	60.00	3,060	278	191.0	150	22,600	1,510
 SP-IV	400	170	15.5	96.99	76.10	4,634	360	242.5	190	38,610	2,271
 SP-V M	500	175	16.5	109.60	86.00	5,345	383	219.2	172	40,290	2,310
 SP-V A	500	200	19.5	133.80	105.00	8,100	520	267.6	210	63,000	3,150
 SP-II w	600	130	10.3	78.70	61.80	2,445	231	131.2	103	13,640	1,018
 SP-III w	600	180	13.4	103.90	81.60	5,124	371	173.2	136	32,802	1,822

SY PROPERTIES & INTERLOCKS

기계적 성질

종류의 기호	항복점 (N/mm ²)	인장강도 (N/mm ²)	탄소당량 Ceq(%)	충격인성	비고
SY 300	300 이상	500 이상	-	-	Cu 첨가율 0.23~0.55%
SY 300W	300 이상	500 이상	0.44 이하	0°C 27J 이상	
SY 400	400 이상	550 이상	-	-	
SY 400W	400 이상	550 이상	0.46 이하	0°C 27J 이상	

환경별 강널말뚝의 부식속도

구분	Cu 첨가 (%)	부식 두께		비고
		공업지대 (Mils)	해변지대 (Mils)	
노출기간 (15.5 년)	0.012	28.8	52.0	공업지대 : Kearny, NJ 해변지대 : Kure Beach
	0.04	8.8	14.3	
	0.24	6.1	11.2	

※ 출처 : 국가기술표준원, KS F 4604:2015 열간 압연 강널말뚝

※ 참고 : 1Mils = 0.0254mm

표준 회전각도

동형의 강널말뚝을 연결시 표준 회전각도는 아래와 같습니다.



POSCO STEEL

High-Value Steel Solutions for Global Industries



Global Leader in Premium Steel Products & Solutions

POSCO is one of the world's largest and most advanced integrated steelmakers, with a crude steel production capacity of over 42 million tons per year. Headquartered in Pohang, South Korea, POSCO supplies world-class steel products to the automotive, construction, appliance, energy, shipbuilding and industrial sectors.

Integrated Manufacturing & Technology

POSCO operates state-of-the-art steelworks in Pohang and Gwangyang, offering complete production from ironmaking and hot rolling to cold rolling, plating and color coating. Its steels deliver exceptional strength, formability, corrosion resistance and surface quality for demanding applications.

Core Product Range

Hot Rolled Steel · Cold Rolled Steel · Galvanized (GI/GA) · Electro Galvanized (EG) · Pre-Coated Steel
Steel Plate · Wire Rod · H-Beams · Channels · Angles
· Rebar · Sheet Piles · Railway Rails
Advanced Automotive Steels · Electrical Steel ·
Stainless Steel · API Steel

Main Application Industries

Automotive · Home Appliances · Building &
Construction · Shipbuilding & Offshore · Energy &
Pipelines · Industrial Machinery

Innovation & Sustainability

POSCO is a global pioneer in eco-friendly steelmaking, developing hydrogen-based production technologies and high-performance low-carbon steels. Its long-term roadmap targets carbon neutrality through process innovation and energy efficiency.

Supplier claims and capacity figures follow the source catalogue; current operating figures have not been reverified.

304 FOR FABRICATION

304L / 304LN / 304L-FCW



Austenitic stainless steel

Three 304 variants pair corrosion resistance with properties for forming, fabrication and welding.

特征

FEATURES

304L

18Cr-9Ni-LC

Low-carbon 304 stainless steel with excellent resistance to intergranular corrosion.

304LN

18Cr-9Ni-LC-0.13N

Higher tensile strength and corrosion resistance than conventional 304.

304L-FCW

18Cr-8Ni/10Ni-LCP

Extremely low carbon, sulfur and phosphorus contents give this 304 steel excellent weldability.

304L 低碳的304不锈钢，对晶间腐蚀具有优秀的耐性。

304LN 低碳加氮的钢种，与304钢种相比强度与耐腐蚀性有所提高。

304L-FCW 极低C、P、S控制，优秀的焊接性。

304LN terminology: the source English says "low nitrogen"; the Chinese describes a low-carbon, nitrogen-added grade.

Chemical and physical properties

化学及物理特征

钢种 Grade				化学成分 Chemical Composition(%)					机械性质 Mechanical Property				耐腐蚀性 Corrosion Resistance	
POSCO PZSS	ASTM	EN	JIS (KS)	C	Cr	Ni	Mo	其它 Other	屈服强度 Yield Strength (0.2%) (MPa)	抗拉强度 Tensile Strength (MPa)	延伸率 Elongation (%)	硬度 Hardness (Hv)	临界点蚀温度 CPT (℃)	点蚀当量 PREN
304L	S30403	14306/1.4307	304L	≤0.030	18.0-20.0	9.00-13.00	-	-	≥175	≥480	≥40	≤200	-	19
304LN	S30453	1.4311	304LN	≤0.030	17.0-19.0	8.5-11.5	-	N≥0.12-0.22	≥245	≥550	≥40	≤220	-	21
304L-FCW	-	-	-	≤0.02	18.0-20.0	8.0-11.1	-	P≤0.025 S≤0.005	≥205	≥520	≥40	≤195	-	19

FORMED AND WELDED USES

Application guide for the 304 family

304L

Machinery and tools for the chemical, coal and petroleum industries where high intergranular corrosion resistance is required. Other uses include building materials, heat-resistant parts, parts that are difficult to heat-treat, and LNG tanks.

304LN

Water-heater tanks and chemical tanks.

304L-FCW

Flux-cored welding wire for chemical containers and equipment, shipbuilding and papermaking, where high-quality welds are required.



304 family applications



Applications

用途

304L 要求高耐腐蚀性的化学、煤炭、石油产业领域的机器、建筑材料、耐热零部件及无法热处理的零部件、热水机、热交换机。

304LN 汽车结构部件、热水箱。

304L-FCW 药芯焊丝用途，适用于化学容器、化工设备、船舶制造、造纸等对不锈钢焊接要求较高行业。

HEAT TRANSFER EQUIPMENT

300SCC (304CuW) / 19Cr-9Ni-2Cu-W

Added resistance to stress corrosion cracking

Adding niobium, silicon, tungsten and copper to 304 improves resistance to stress corrosion cracking (SCC). Applications include boilers and boiler tubes, heat exchangers and bellows.

特征

在304基础上添加Nb、Si、W、Cu，较大程度改善了耐应力腐蚀开裂能力。

用途

锅炉及用管、换热器、波纹管等。



Boiler

锅炉



Plate heat exchanger

板式换热器



Chemical and physical properties

化学及物理特征

钢种 Grade				化学成分 Chemical Composition(%)					机械性质 Mechanical Property				耐腐蚀性 Corrosion Resistance	
POSCO PZSS	ASTM	EN	JIS (KS)	C	Cr	Ni	Mo	其它 Other	屈服强度 Yield Strength (0.2%) (MPa)	抗拉强度 Tensile Strength (MPa)	延伸率 Elongation (%)	硬度 Hardness (Hv)	临界点蚀温度 CPT (℃)	点蚀当量 PREN
300SCC (304CuW)	-	-	-	0.04-0.07	18.2-18.8	8.3-8.7	≤0.5	Cu(1.9-2.2) Nb(0.15-0.25) W(0.35-0.65)	≥ 310	≥ 650	≥ 50	≤ 230	-	21

316 FOR PROCESS EQUIPMENT

316 / 18Cr-11Ni-2Mo 316Ti / 17Cr-11Ni-2Mo-Ti

316

Molybdenum gives 316 superior corrosion and pitting resistance and high-temperature strength. Uses include potable-water pipes; equipment for chemicals, paper, dyes, acetic acid and fertilizer; coastal structures; photographic processing; and food processing.

316Ti

Adding titanium improves intergranular corrosion resistance. Applications include crude-oil tanks, heat-exchanger covers and automotive exhaust parts.



特征

316 因为添加Mo, 所以耐腐蚀性、耐点蚀性、高温强度特别优秀, 具有优秀的加工硬化性(加工后弱磁性)。

316Ti 在316的基础上添加Ti, 提高了耐晶间腐蚀能力。

用途

316 水管、化学/造纸/染料/草酸/肥料生产设备、相片工业、食品工业、海岸地区的设施。

316Ti 原油储罐、热交换机壳体、汽车排气管部件。

Chemical and physical properties

化学及物理特征

钢种 Grade				化学成分 Chemical Composition(%)					机械性质 Mechanical Property				耐腐蚀性 Corrosion Resistance	
POSCO PZSS	ASTM	EN	JIS (KS)	C	Cr	Ni	Mo	Ti	屈服强度 Yield Strength (0.2%) (MPa)	抗拉强度 Tensile Strength (MPa)	延伸率 Elongation (%)	硬度 Hardness (Hv)	临界点蚀温度 CPT (℃)	点蚀当量 PREN
316	S31600	1.4401	316	≤0.08	16.0-18.0	10.00-14.0	2.00-3.0	-	≥205	≥520	≥40	≤200	-	24
316Ti	S31635	1.4571	316Ti	0.08	16.0~18.0	10.0~14.0	2.0~3.0	≥0.01~0.07	> 205	> 520	> 40	< 200	-	24

316L IN CORROSIVE SERVICE

316L / 18Cr-11Ni-2Mo-LC

Low carbon and intergranular corrosion resistance

316L combines the properties of 316 with excellent resistance to intergranular corrosion. It is suited to corrosion-prone environments containing salt and toxic gases.

特征

316L 低碳的316钢种，耐晶间腐蚀性优秀。

用途

316L 316钢种用于中盐、有害气体等腐蚀因素多的环境。



316L family applications

Composition and physical properties for both 316L variants appear on the following page.

316L FOR ORBITAL WELDING

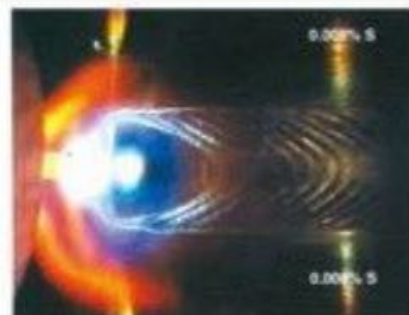
High-sulfur 316L / 17Cr-12Ni-2Mo

This austenitic grade increases sulfur content relative to 316L and is designed to meet ASME BPE. It is used for biopharmaceutical equipment valves and pipe fittings, meeting the requirements of automatic welding.

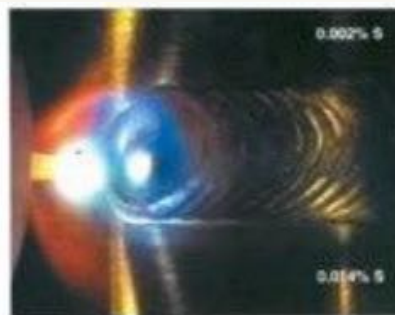
特征	用途
316L (高S) 高S 316L是为了满足ASME BPE标准所设计, 在普通316L基础上提升S含量的奥氏体不锈钢。	316L (高S) 生物制药行业设备阀门、管件, 满足自动焊接加工要求。

Welding behaviour

Automated orbital welding / weld-bead shifting



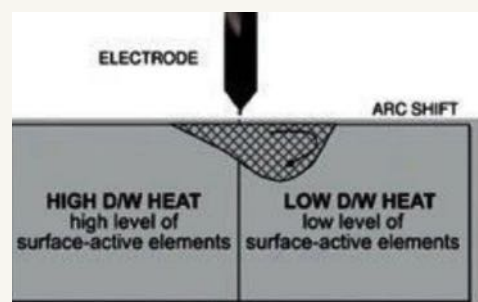
(A) Symmetrical weld pool with deep penetration.



(B) Symmetrical weld pool with a shallower, smoother bead.

Butt welding

Heat-to-heat variation



High D/W heat: high level of surface-active elements. Low D/W heat: low level of surface-active elements. The diagram shows electrode and arc shift.

Chemical and physical properties

化学及物理特征

钢种 Grade				化学成分 Chemical Composition(%)					机械性质 Mechanical Property				耐腐蚀性 Corrosion Resistance	
POSCO PZSS	ASTM	EN	JIS (KS)	C	Cr	Ni	Mo	其它 Other	屈服强度 Yield Strength (0.2%) (MPa)	抗拉强度 Tensile Strength (MPa)	延伸率 Elongation (%)	硬度 Hardness (Hv)	临界点蚀温度 CPT (°C)	点蚀当量 PREN
316L	S31603	1.4404	316L	≤0.03	16.0-18.0	12.0-15.0	2.0 -3.0	-	≥175	≥480	≥40	≤200	18	24
316L(高)	-	1.4404	-	≤0.03	≥16.5	≥10.0	≥2.0	S 0~0.025	≥290	580~780	≥35	≤185	-	24

CUTLERY AND WEAR RESISTANCE

Martensitic stainless steel / 410 and 420N1

410 / 13Cr-LC

A magnetic martensitic stainless steel with superior drawability, hardened by heat treatment. It is less suited to severe corrosive environments. Applications include knife blades, machinery parts and tableware such as spoons, forks and knives.

420N1 / 14Cr-0.1C-0.1N

A magnetic grade with better formability, corrosion resistance, strength and abrasion resistance than 420J1. It is used for high-quality table knives requiring corrosion and abrasion resistance, and for wear-resistant machinery parts.

特征

410 马氏体 (Martensite) 系的代表性钢种，强度虽然很大，但不太适合于恶劣的腐蚀性环境。加工性优秀，热处理后变得更硬 (有磁性)。

420N1 与420J1比较明显改善加工性、耐腐蚀性、强度、耐磨耗性 (带有磁性)。

- 加工性：中心偏析最小化
- 耐腐蚀性：控制铬铁碳化物的产生
- 强度/耐磨耗性：析出细小的铬铁氮化物。

Its formability is improved by minimizing centre segregation; corrosion resistance by limiting chromium-carbide formation; and strength and abrasion resistance by fine chromium-nitride precipitation.

用途

410 一般刀片、机械零部件、第1系列西式餐具 (勺、叉、刀等)。

420N1 需耐腐蚀性、耐磨耗性的高级餐具刀用品。需耐磨耗性的机器零部件等。



Chemical and physical properties

化学及物理特征

钢种 Grade				化学成分 Chemical Composition(%)					机械性质 Mechanical Property				耐腐蚀性 Corrosion Resistance	
POSCO PZSS	ASTM	EN	JIS (KS)	C	Cr	Ni	Mo	其它 Other	屈服强度 Yield Strength (0.2%) (MPa)	抗拉强度 Tensile Strength (MPa)	延伸率 Elongation (%)	硬度 Hardness (Hv)	临界点蚀温度 CPT (°C)	点蚀当量 PREN
410L	S41003	1.4003	410L	≤0.15	11.5-13.5	-	-	-	≥205	≥440	≥20	≤210	-	12.5
420N1	-	-	-	0.17max	12.0~14.0	-	-	N≤0.14	≥225	≥520	≥18	≤218	-	15

SURFACE FINISHES

Processing methods and applications

表面处理

FINISH 表面状态	表面处理代号	PROCESSING METHOD 表面加工方法	APPLICATION 用途
No.1		Hot-rolled, then annealed and pickled. 热轧后退火／酸洗	Cold-rolling feedstock, industrial tanks and chemical-industry equipment. 冷轧原料、工业用TANK、化学工业设备等
2D		A non-gloss cold-rolled finish, heat-treated and pickled after rolling. 冷轧后退火／酸洗	Petrochemical plants, automotive parts, building materials and steel pipe. 石油化学设备、汽车部件、建材、钢管
2B		A standard skin-passed 2D finish with better gloss, flatness and mechanical properties. 冷轧、退火／酸洗处理后，经过一定的SKIN PASS工程	Almost all uses. 几乎所有用途
No.3		2B or BA polished with 100-120 mesh abrasive. 将2B或BA产品用100-120mesh研磨材料进行研磨的产品	Interior and exterior building decoration, electrical-product exteriors and kitchen furnishings. 建筑内外装潢、电子产品外观、厨房设备
No.4		2B or BA polished with 150-180 mesh abrasive. 将2B或BA产品用150-180mesh研磨材料进行研磨的产品	Bathtubs, interior and exterior building decoration, and food-industry installations. 浴缸、建筑内外装潢、食品设备

DECORATIVE FINISHES

Processing methods and applications

表面处理

FINISH	表面处理代号	PROCESSING METHOD	表面加工方法	APPLICATION	用途
No.8	表面状态	2B or BA ground with abrasive of 800 mesh or finer.		Construction, reflective mirrors and decoration.	
		将2B或BA产品用800mesh以上的研磨材料进行研磨的产品		建筑、反射镜、装饰	
Mirror		Ground with refined abrasive above 1,000 mesh to create a mirror effect.		Construction, reflective mirrors and decoration.	
		用1000mesh以上的精细研磨材料进行加工，使之产生镜面效果		建筑、反射镜、装饰	
Hair line		No.4 ground with suitably sized abrasive to create continuous grinding lines.		Interior and exterior building decoration.	
		在NO.4产品上使用适合粒度的研磨材料进行研磨，使之表面产生连续性的研磨花纹		建筑内外装潢	
Satin vibration		2B or BA ground horizontally in multiple axes for a non-directional finish.		Construction, electrical appliances and decoration.	
		将2B或BA产品用多轴水平研磨方式、无方向性的研磨的产品		建筑、家电、装饰品	
Dull		A finely textured roll reduces the gloss of 2B and creates surface roughness.		Low-reflection uses, including train interiors and exteriors and building decoration.	
		用细微的凹凸辊进行冷轧，降低表面光泽		电动车及建筑物内外装饰需要降低光反射的地方	

SELECT FOR THE ENVIRONMENT

Corrosion resistance starts with the application

产品使用须知

钢种的选择

Select stainless steel for its service environment and intended purpose to maintain its appearance and extend its service life.

根据不同的使用环境与目的选择最适宜的钢种，就可延长不锈钢的寿命与美丽的外观。

代表钢种 Product Grades	环境 Environment	农村地区 Rural Area				城市地区 Urban Area				工业地区 Industrial Area				沿海地区 Coastal Area			
		I	L	M	H	I	L	M	H	I	L	M	H	I	L	M	H
高耐腐蚀性STS Highly Corrosion Resistant STS		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STS316		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STS304		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STS430		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Reading the selection guide

范例

I: indoor environment
L: low-grade environment
M: medium-grade environment
H: high-grade environment

屋内环境
该地区具有轻度腐蚀环境（低温、高湿度）
该地区的环境一般
该地区具有高度腐蚀性（高温、高湿度等）

完全适宜
适宜
如果打扫频繁可使用
不适宜

Green ring: more corrosion resistance than required
Blue dot: suitable
Yellow diamond: usable with frequent cleaning
Orange square: unsuitable

The matrix covers rural, urban, industrial and coastal locations for highly corrosion-resistant stainless steel, STS316, STS304 and STS430.

PROTECT THE SURFACE

Storage, transport and protective-film use

保管与运输

The surface oxide layer gives stainless steel its corrosion resistance. Keep this layer in good condition during storage and transport.

因不锈钢表面有保护膜，具有高耐腐蚀性，为了保护并维持这层膜，保管及运输时要注意。

Storage

Keep stainless steel away from moisture, dust, grease and lubricants to prevent rust and reduced corrosion resistance during welding. Moisture trapped beneath protective film can accelerate corrosion compared with an unprotected surface.

Store in a clean, dry, well-ventilated place, preferably in its original packaging with an extra cover. Avoid direct sunlight and inspect the film regularly. Replace deteriorated film immediately; the source gives an approximate film life of three months. Remove wet packaging, including interleaving paper, immediately to prevent surface corrosion.

保管

保管时要注意不要接触水分、灰尘、油、润滑油、粉尘等，以免生锈或焊接时耐蚀性降低。另外，如果保护膜与原板间渗透水分时，比不覆盖保护膜更易腐蚀。

仓库保管要选择洁净、干燥、通风良好的地方，最好在保持原来的包装状态下，加以覆盖。有保护膜的材料应避免暴露于直射光线下，并要定期检查保护膜。如果保护膜的性质发生变化（胶纸的寿命为3个月）应立即更换。

包装材料（包括间隔纸）如果湿了，为防止表面腐蚀，应立即除去。

Transport

Use rubber or timber supports to prevent scratches and equipment intended for transporting stainless steel. Wear gloves to prevent fingerprints.

运输

运输时为防止表面划痕，要用橡胶或木材托架；运输设备采用不锈钢专用设备；为防止指纹污染应戴手套操作。

Film in use

Keep film-covered stainless steel out of direct sunlight in a well-ventilated place. Adhesive changes can affect use, so use the material as soon as possible after delivery. The Chinese guidance specifies use within three months.

使用注意事项

表面附有保护膜的不锈钢板应避免光线直射，应保管在通风良好的场所。保护膜粘贴剂的变质有可能给使用带来副作用，故请尽可能在购入后三个月内使用。

SURFACE PROTECTIVE FILMS

PVC and PE options for forming and handling

贴膜的分类及特点

表面保护膜

MATERIAL / COLOUR / THICKNESS

材质 颜色 厚度 (μm)

加工特性: 成型 / 折弯 / 滚花成型

CHARACTERISTICS AND APPLICATIONS

特点

适用范围

PVC / White

白色

100 μm

Strong adhesion; superior heat and weather resistance. For interior and exterior building materials (HL, No.3 and No.4) and materials stored for long periods.

Forming / Bending / Roll-forming

Good / Excellent / Good

附着力强

耐热、耐气候

建筑内外装饰 (HL、No.3、No.4)

需要长期保管的材料

PVC / Blue

蓝色

80 μm

Suited to drawing and high-gloss finishes. Applications include sinks and kitchenware, plus BA and mirror surfaces.

Forming / Bending / Roll-forming

Excellent / Excellent / Good

有利于使用在加工用、
高光泽产品

深冲用 (水槽、餐具)、
高光泽表面 (BA、MIRROR)

PE / Transparent or blue

透明 / 蓝色

50 μm

A cost-effective option for simple surface protection and light drawing.

Forming / Bending / Roll-forming

Insufficient / Good / Insufficient

成本低

单纯的表面保护
轻加工用

● 优秀Excellent ● 良好Good ■ 不足Insufficient

若需要其它材料的保护膜，请另行通知。



PVC / White



PVC / Blue



PE / Transparent

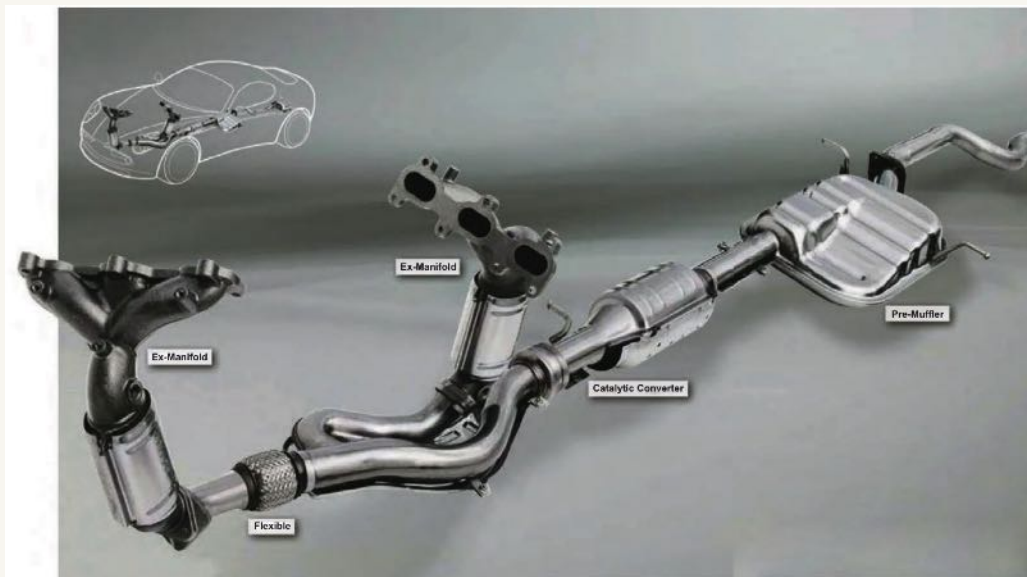


PE / Blue

Contact us separately if you require another type of surface protective film.

AUTOMOTIVE EXHAUST SYSTEM

Hot end, cold end and service conditions



Main muffler

Components and material requirements from the POSCO source catalogue.

COMPONENT	TEMPERATURE	REQUIRED PROPERTIES	POSCO GRADES
Hot end / Exhaust manifold	950–850°C	Thermal fatigue; high-temperature strength and oxidation resistance	429EM / 441 / 444
Front pipe	800–600°C	High-temperature strength; high-temperature oxidation resistance	441 / 429EM / 439
Flexible tube	Below 650°C	Fatigue strength; chlorine-induced corrosion resistance; high formability	304 / 316L / 321
Catalytic converter	600°C	High-temperature oxidation resistance	409L / 439 / 430J1L
Cold end / Centre & tail pipe / Muffler	Below 600°C	Chlorine-induced corrosion resistance; condensation-corrosion resistance	409L / 439 / 436L / 436J1L / 436LM

EXHAUST PRODUCTION ROUTES

Processes and component functions

01 Exhaust manifold

Process: QPSS cold-rolled steel → stamping and exhaust-system assembly → automotive manufacturer.

Function: The source describes 400-series Si-alloy stainless steels as offering high-temperature strength and oxidation resistance to support fuel-economy and environmental requirements.

02 Catalytic converter

Process: QPSS cold-rolled steel → stamping and exhaust-system assembly → automotive manufacturer.

Function: The source highlights the high-temperature strength and oxidation resistance of 400-series stainless steels.

03 Flexible tube

Process: QPSS cold-rolled steel → POSCO AST thin cold rolling → SDB outside/inside GTA tubing, double-layer overlap and hydroforming to make corrugated flexible tubing → bellows assembly.

Function: The component absorbs engine heat and vibration, reducing transmission to the rear of the exhaust system. High corrosion and high-temperature salt resistance are required.

04 Muffler

Process: QPSS cold-rolled steel → muffler manufacturer: shell stamping, ERW or TIG-welded pipe and muffler assembly → automotive manufacturer.

Function: The muffler reduces exhaust-system noise.

STAINLESS IN EVERYDAY USE

POSCO applications

POSCO stainless products serve tableware, kitchen utensils, elevators, home appliances, vehicle parts and construction. The source highlights corrosion resistance, formability and weldability across these applications.



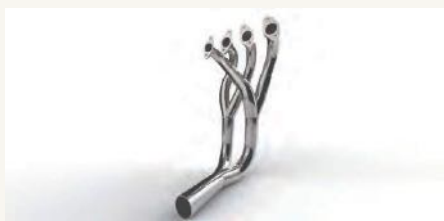
Surface finishes



Cutlery



Cold-rolled stainless steel



Exhaust pipe



Kitchen sink



Mirror finish (8K)

FERRITIC STAINLESS STEEL

Grades, characteristics and applications

GRADE	COMPOSITION
439	17.5Cr-0.3Ti-LCN
436L	17.5Cr-1Mo-0.3Ti-LCN
436J1L	17.5Cr-0.5Mo-0.3Ti-LCN
441	17.5Cr-0.3Si-Ti-Nb-LCN
429EM	14Cr-1Si-0.2Ti-LC
430J1L	19Cr-0.5Cu-0.4Nb-LCN
409L	11Cr-0.2Ti-LCN
445NF	21Cr-0.3Ti-0.4Cu-Si,Nb
430	16Cr-0.05C
410L	12Cr-LCN
444	19Cr-2Mo-0.3Nb-LCN



Automotive exhaust



Elevator



Household goods

Material characteristics

Ferritic stainless steel has a body-centered cubic structure. These grades generally contain no nickel, with small additions such as Mo, Ti and Nb. High thermal conductivity, low thermal expansion, oxidation resistance and stress-corrosion resistance support use in components exposed to air, steam, water and oxidizing acids. The source presents ferritic grades as a relatively low, stable-cost alternative to austenitic 300-series steels in suitable applications.

FERRITIC 439

17.5Cr-0.3Ti-LCN

Characteristics

High thermal conductivity and low thermal expansion support heat-exchanger and automotive-exhaust applications. Compared with 430, reduced carbon and the addition of titanium improve intergranular-corrosion resistance, formability and weldability.

The source reports strength and corrosion resistance similar to 304, with lower elongation (30%), and better corrosion resistance than 200-series materials.

Applications

Elevator decoration; architectural decorative structures and structural tubes; automotive exhaust-system components; washing-machine inner drums.



Exhaust pipe



Elevator



Washer drum



Heat-exchanger tube

Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Ti	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient x 10 ⁻⁶ /m/°C (20~100°C)	Thermal Conductivity x 10 ⁻⁶ W/m/°C (100°C)
-	439	≤0.03	17.0~19.0	-	-	0.2+4(C+N) ~1.0	≥175	≥400	≥22 ≤175		0.46	7.70	10.5	26.4

FERRITIC 436L / 436J1L

436L · 17.5Cr-1Mo-0.3Ti-LCN / 436J1L (432) · 17.5Cr-0.5Mo-0.3Ti-LCN

436L

Mo, Ti and Nb additions provide corrosion resistance, drawability and weldability. Applications include automotive exhaust pipes, hot-water systems and household electrical appliances.

436J1L (432)

Added molybdenum supports high corrosion resistance. The source identifies POSCO and JFE as the only producers at the time of publication. The listed application is automotive exhaust systems.



Exhaust pipe end



Solar water heater



Automotive trim

◆ Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient x 10cm/cm°C W/m·°C (20~100°C)	Thermal Conductivity x 10cm/cm°C W/m·°C (100°C)
436L	436L	≤0.025	16.0~19.0	-	0.75~1.5	Ti, Nb, Zr 8x(C%+N%) ~0.8 N≤0.025	≥245	≥410	≥20	≤230	0.46	7.70	9.3	23.9
436J1L (432)	436J1L (432)	≤0.025	17.0~20.0	-	0.4~0.8		≥245	≥410	≥20	≤200	-	-	-	-

FERRITIC 445NF / 443CB

21Cr-0.3Ti-0.4Cu-Si,Nb

Characteristics

The source reports corrosion resistance above that of 304, with high thermal conductivity and low thermal expansion. Low C/N and Ti/Mo additions improve corrosion resistance at welded areas. The grade offers deep-drawing performance, low work hardening and magnetic response to support machining.

Applications

Sinks, interior pipes, hot-water systems, bathtubs and boilers; electrical appliances; construction; automobile parts; refrigerated containers; water tanks.



Kitchen gas burner



Elevator



Oven

◆ Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient x 10cm/cm°C W/m°C (20~100°C)	Thermal Conductivity x 10cm/cm°C W/m°C (100°C)
-	445NF (443CB)	≤0.015	20.0~23.0	≤0.5	-	Ti+Nb 10(C+N)-0.6	≥245	≥410	≥22 ≤200		0.44	7.74	10.5	23

FERRITIC 430

16Cr-0.05C

Characteristics

A widely used, representative ferritic stainless grade with low thermal expansion and good oxidation resistance.

Applications

Heat-resistant products and burners; home appliances; hard-disk-drive components; flatware; interior and exterior architectural materials; gas stoves; washing-machine drums.



Microwave oven



Washing-machine drum



Range hood

◆ Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient x 10cm/cm°C W/m°C (20~100°C)	Thermal Conductivity x 10cm/cm°C W/m°C (100°C)
430	430	≤0.12	16.0~18.0	—	—	—	≥205	≥450	≥22	≤200	0.46	7.70	10.5	23.9

FERRITIC 410L

12Cr-LCN

Characteristics

Lower carbon content than 410, with good formability, bendability and resistance to high-temperature oxidation.

Applications

Refrigerated containers and automotive, mining and industrial-machine components that require abrasion resistance and weldability. Boiler combustion chambers and burner components use its formability and oxidation resistance at temperatures below 820°C.



Boiler combustion chamber



Refrigerated containers

◆ Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g·°C	Specific Gravity	Thermal Expansion Coefficient x 10cm/cm/°C W/m·°C (20~100°C)	Thermal Conductivity x 10cm/cm/°C W/m·°C (100°C)
410L	410L	≤0.03	11.0~13.5	—	—	—	≥195	≥360	≥22	≤200	0.46	7.75	9.9	25.1

FERRITIC 444

19Cr-2Mo-0.3Nb-LCN

Characteristics

Higher chromium and molybdenum contents provide intergranular-corrosion and stress-corrosion-cracking resistance.

Applications

Potable-water tanks; solar and electric hot-water systems; heat exchangers; automotive exhaust manifolds.



Automotive exhaust manifold



Hot-water system



Water-storage tank

◆ Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient×10cm/m°C W/m·°C(20~100°C)	Thermal Conductivity ×10cm/cm°C W/m·°C (100°C)
444	444	≤0.025	17.0~20.0	-	1.75~2.58	Ti,Nb,Zr C%+N% ~0.8	≥245	≥410	≥20 ≤230	0.427	7.75	11.0	26.8	

MARTENSITIC STAINLESS STEEL

410 / 420N1 / 420J2

GRADE	COMPOSITION
410	13Cr-0.04C
420N1	13Cr-0.1C-0.1N
420J2	13Cr-0.3C

Heat treatment and use

Martensitic stainless steel can be hardened by quenching, with final hardness depending on tempering temperature. The source cites Cr13 grades such as 2Cr13, 3Cr13 and 4Cr13, with uses including steam-turbine blades, tableware and surgical instruments.

Grade characteristics

410 is a magnetic, heat-treatable grade with good drawability.
420N1 is also magnetic and improves formability, corrosion resistance, strength and abrasion resistance compared with 420J1.
420J2 develops greater quench hardness than 420J1.

Applications

Machinery parts; spoons, forks and knives; high-quality table knives requiring corrosion and abrasion resistance.



Precision cutting tool



Scalpel and cutting tools

Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g·°C	Specific Gravity	Thermal Expansion Coefficient x 10 ⁻⁶ /cm/°C (20~100°C)	Thermal Conductivity x 10 ⁻⁶ W/m·°C (100°C)
410	410	≤0.15	11.5~13.5	-	-	-	≥205	≥440	≥20	≤210	0.4	7.7	9.9	24.
-	420N1	≤0.17	12.0~14.0	-	-	N ≤0.14	≥225	≥520	≥18	≤218	6	0	10.	9
420J2	420J2	0.26~0.41	12.0~14.0	-	-	-	≥225	≥540	≥18	≤247	0.4	7.7	3	23.
											6	5	10.	8
											0.4	7.7	3	23.
											6	5		8

Source table contains detached figures. Verify current supplier data before specification.

AUSTENITIC STAINLESS STEEL

Grade and composition overview

GRADE	COMPOSITION
304	18Cr-8Ni
304L	18Cr-9Ni-LC
304LN	18Cr-9Ni-LC-0.13N
304J1	17Cr-8Ni-2Cu
316	18Cr-12Ni-2Mo
316L	18Cr-12Ni-2Mo-LC
301	17Cr-7Ni
301L	17Cr-7Ni-LC
321	18Cr-9Ni-0.3Ti
202	17.5Cr-6Mn-2Ni-2Cu-N
204Cu	14Cr-10Mn-1.5Ni-1Cu-N



Sink



Cutlery



Cookware

Material characteristics

Austenitic stainless steels retain an austenitic structure at room temperature. The source describes a stable structure at about 18% Cr, 8–10% Ni and 0.1% C, and includes 18Cr-8Ni grades and higher-alloy variants with Mo, Cu, Si, Nb or Ti additions. It describes these steels as nonmagnetic, tough and formable, with comparatively lower strength. Strengthening is achieved by cold working rather than phase transformation. S, Ca, Se and Te additions improve machinability.

304 / 304L / 304LN

304 · 18Cr-8Ni / 304L · 18Cr-9Ni-LC / 304LN · 18Cr-9Ni-LC-0.13N

Grade characteristics

304 combines corrosion and heat resistance with low-temperature strength and useful mechanical properties. 304L is a low-carbon variant with intergranular-corrosion resistance. The source describes 304LN as a low-nitrogen variant with higher tensile strength and corrosion resistance than conventional 304.

304 applications

Household sinks, pipes, hot-water systems and bathtubs; automotive wipers, mufflers and mouldings; medical instruments; building materials; chemical, food-processing and textile equipment; vessel parts.

304L and 304LN applications

304L: machinery and tools for chemical, coal and petroleum industries; building and heat-resistant parts; parts that are difficult to heat-treat; LNG tanks.

304LN: water-heater and chemical tanks.



Kitchen sink



Clamp



Stainless cookware

◆ Chemical and Physical Properties

Type		Chemical Composition(%)						Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Other	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g·°C	Specific Gravity	Thermal Expansion Coefficient x 10cm/°C (20~100°C)	Thermal Conductivity x 10cm/cm·°C (100°C)	
304	304	≤0.08	18.0~20.0	8.0~10.5	-	-	≥205	≥520	≥40	≤200	0.5	7.9	17.	16.	
304L	304L	≤0.03	18.0~20.0	5	-	0.12≤N≤	≥175	≥480	≥40	≤200	0	3	3	3	
304LN	304LN	≤0.03	17.0~19.0	9.0~13.0	-	0.22	≥245	≥550	≥40	≤220	0.5	7.9	17.	16.	
				0							0	3	3	3	
				8.5~11.5							0.5	7.9	17.	16.	
											0	3	3	3	

Source table contains detached figures. Verify current supplier data before specification.

AUSTENITIC 304J1

17Cr-8Ni-2Cu

Characteristics

Copper addition reduces nickel demand and supports economical processing. The source reports antibacterial performance, formability and deep drawability, including use in products requiring sanitary conditions.

Applications

Vacuum bottles and lunch boxes; kitchen cookware; catering facilities; products requiring pinning and drawing.



Kitchen hob



Vacuum cups



Stainless cookware

◆ Chemical and Physical Properties

Type		Chemical Composition(%)					Mechanical Property				Physical Property			
JIS (KS)	POSCO	C	Cr	Ni	Mo	Cu	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Hardness (Hv)	Specific Heat J/g°C	Specific Gravity	Thermal Expansion Coefficient x 10 ⁻⁶ /m/°C (20~100°C) W/m·°C	Thermal Conductivity x 10 ⁻⁶ /cm/°C (100°C) W/m·°C
304J1	304J1	≤0.08	15.0~18.0	6.00~9.00	-	1.0~3.0	≥155	≥450	≥40 ≤200		0.50	7.93	17.3	16.3

Source table contains detached figures. Verify current supplier data before specification.

K.G. DONGBU STEEL

Since 1967 | Over five decades of steel manufacturing



Pipes



Photovoltaic supports

Structures requiring alkaline or anti-ammonia environment

SUPPLIER PROFILE

The original catalogue describes K.G. DONGBU STEEL CO., LTD. as one of the leading names in the global steel industry, serving a wide range of industrial sectors for over 50 years. It states an annual production capacity of 2 million tons and a commitment to quality, innovation and customer satisfaction in domestic and international markets.

Core products

Cold Rolled Steel Sheets
Electrolytic Galvanized Steel
Tinplate Steel
Pre-Coated Metal: Polyester, Anti-Corrosive, Printech
(Decorative Coating)

Applications

Automobile Industries
Home Appliances
Steel Furniture
Building Materials & Office Equipment

From roofs and walls to doors, refrigerators and washing machines, the supplier presents its steel products as a foundation for modern infrastructure and household innovation worldwide.

Historical supplier profile and capacity claim, retained from source page 46; not independently revalidated.

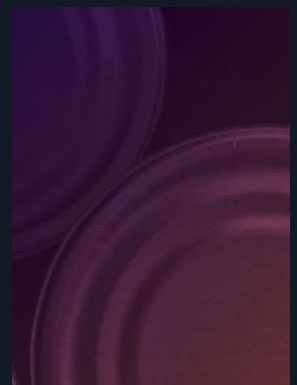
PACKAGING STEEL

Electrolytic Tinplate / Tin Free Steel



Electrolytic tin/chrome-coated steel sheets combine an attractive metallic gloss with excellent workability and rust resistance for food and beverage cans.

KG Steel produces high value-added TP/TFS based on customer requirements.



MGCOT

Metallic coated steel



High corrosion resistance

Source claim: corrosion performance 4–9 times superior to GI at the same coating mass; equivalent or better than SuperGalum® at the same coating mass.

Deformed-zone protection

Source claim: over 10 times superior to GI in deformed-zone corrosion resistance.

Chemical resistance

The supplier describes improved resistance in acidic and alkaline environments compared with GI, for stock-farm buildings and other construction uses.

Paintability

The supplier describes GI-compatible painting, excellent paint adhesion and better corrosion performance than GI after painting.

CATALOGUE FAMILIES · GI/GA · CR · SuperGalum® · MgCOT® · ALCOT® · EGI

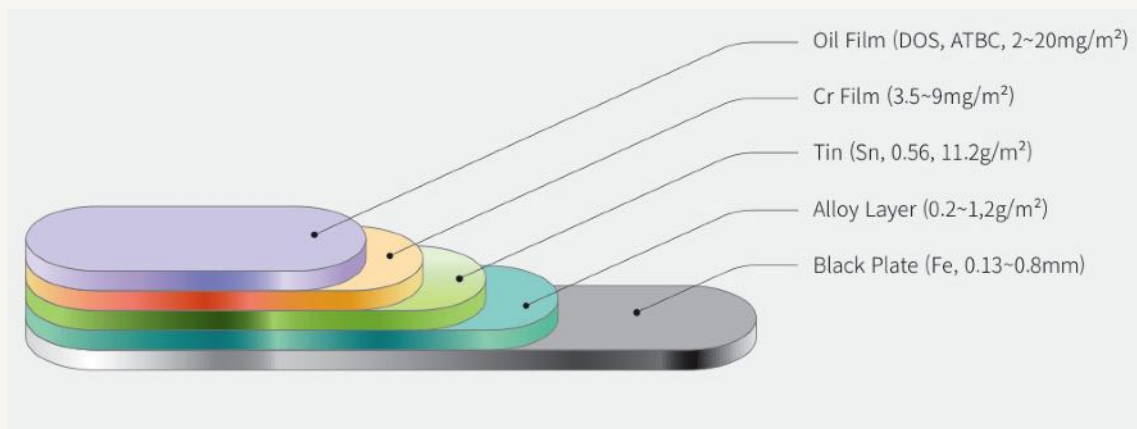
Performance comparisons are historical supplier claims from source page 49; verify suitability for the intended environment.

TINPLATE & TIN FREE STEEL

Coating structures and applications

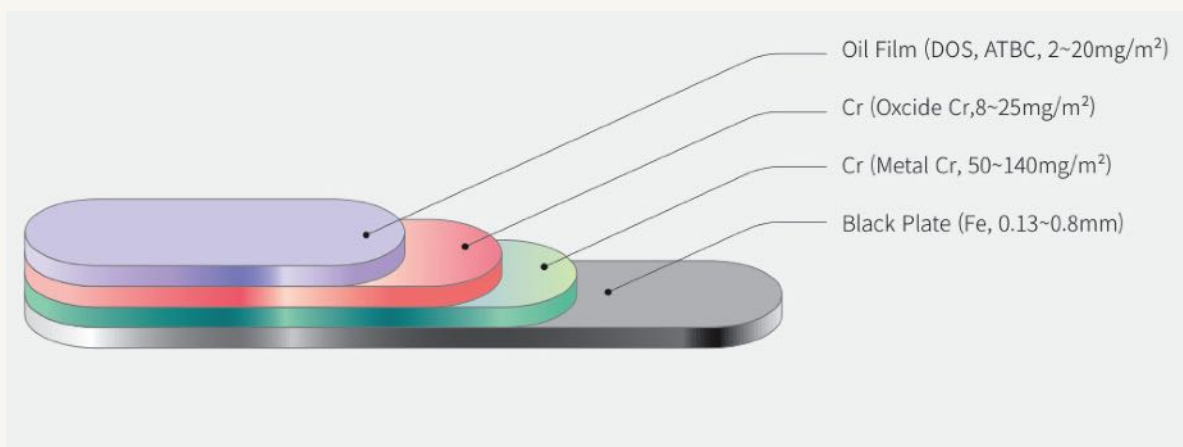
01 Tinplate / TP

An elegant shiny surface with corrosion resistance, formability, weldability and printability. Applications include beverage, food, oil, paint and aerosol cans; bottle caps; cable and electronic components.



02 Tin Free Steel / ECCS

Superior lacquer and paint adhesion, with strong resistance against corrosion. Used for cans, containers, home appliances and optical cables.



Layer names, coating quantities and base gauges are retained verbatim in the supplier diagrams (source page 50).

MGCOT IN USE

Structural products, demanding environments and everyday applications

STRUCTURAL MATERIAL WITH EXTERIOR EXPOSED SHEAR SURFACE



Pipes



Photovoltaic supports

ALKALINE OR ANTI-AMMONIA ENVIRONMENTS



Cattle shed



Building structure

STRUCTURAL PRODUCTS REQUIRING ANTI-SCRATCH



Structural guardrail



Safe guard

HOME APPLIANCES AND AUTO PARTS



Automotive parts



Outdoor Equipment of air conditioner

TINPLATE IN EVERYDAY LIFE

Food, packaging, electronics and construction

FOOD & BEVERAGE CANS

Welded cans



D & I cans



DRD cans



AEROSOL CANS

Body, Dome, Mounting Cup



GENERAL CANS

1~18L, Pail, Fancy, etc.



INDUSTRIAL AND ELECTRONICS

Oil Filter



Electronic components



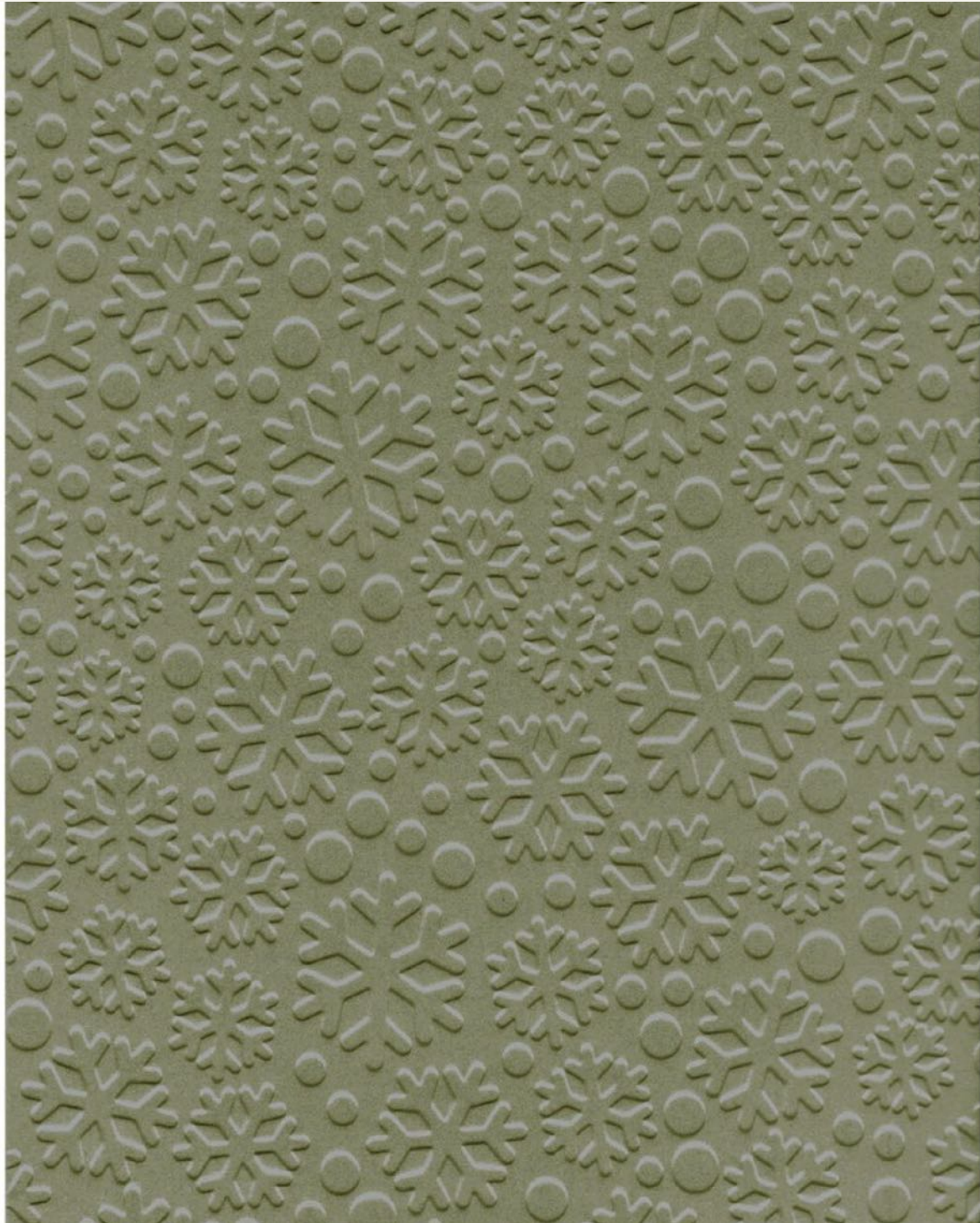
CONSTRUCTION MATERIALS

Construction Material



SNOW CRYSTAL EMBOSS

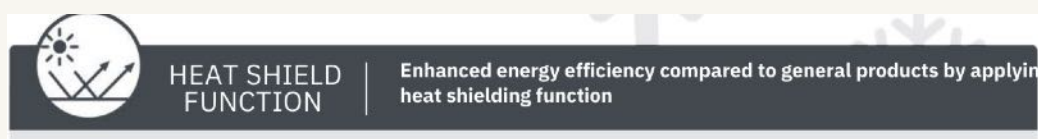
Champagne Gold | P8Z023D



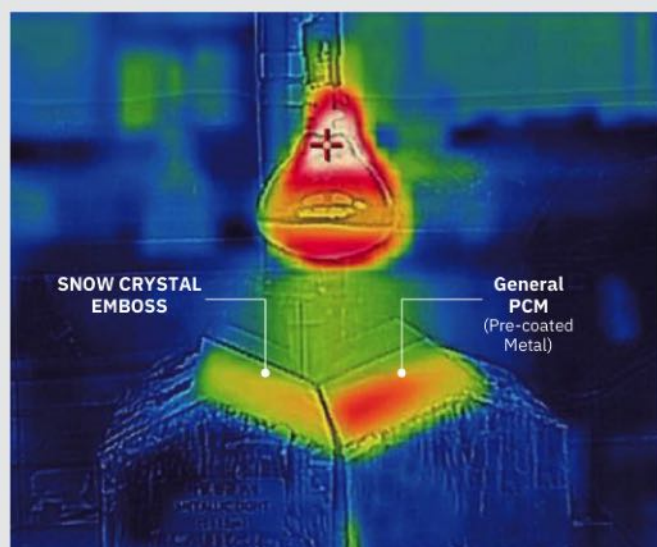
SNOW CRYSTAL PERFORMANCE

Heat-shielding function | Supplier test reference

The supplier describes a snow-crystal pattern for frozen panels, combining a cool visual impression with heat shielding and antibacterial activity of 99.9%.

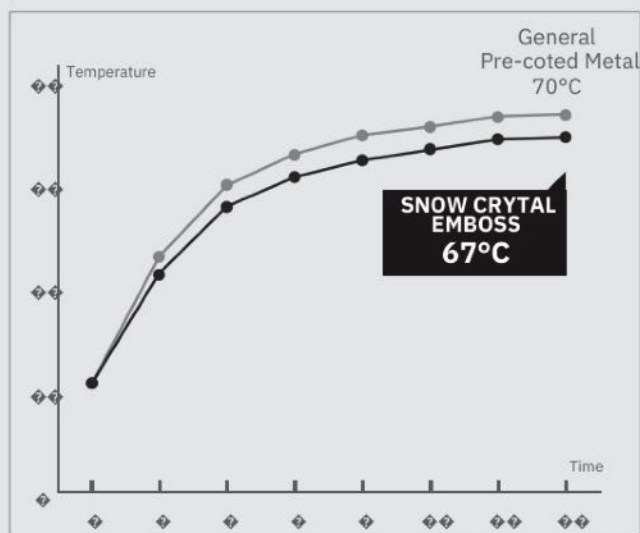


Temperature change measurement using an infrared bulb



※ When heated with the same infrared rays : The temperature of this product with heat shielding function (left) is lower than that of general products (right)

Measuring temperature changes in indoor air



※ When using the same infrared heating : When installed with this product, the indoor temperature is approximately 3°C lower than with general products (expected reduction rate of air conditioner electricity bill of 10% or more)

67°C

Snow Crystal Emboss
Recorded in the source test graphic.

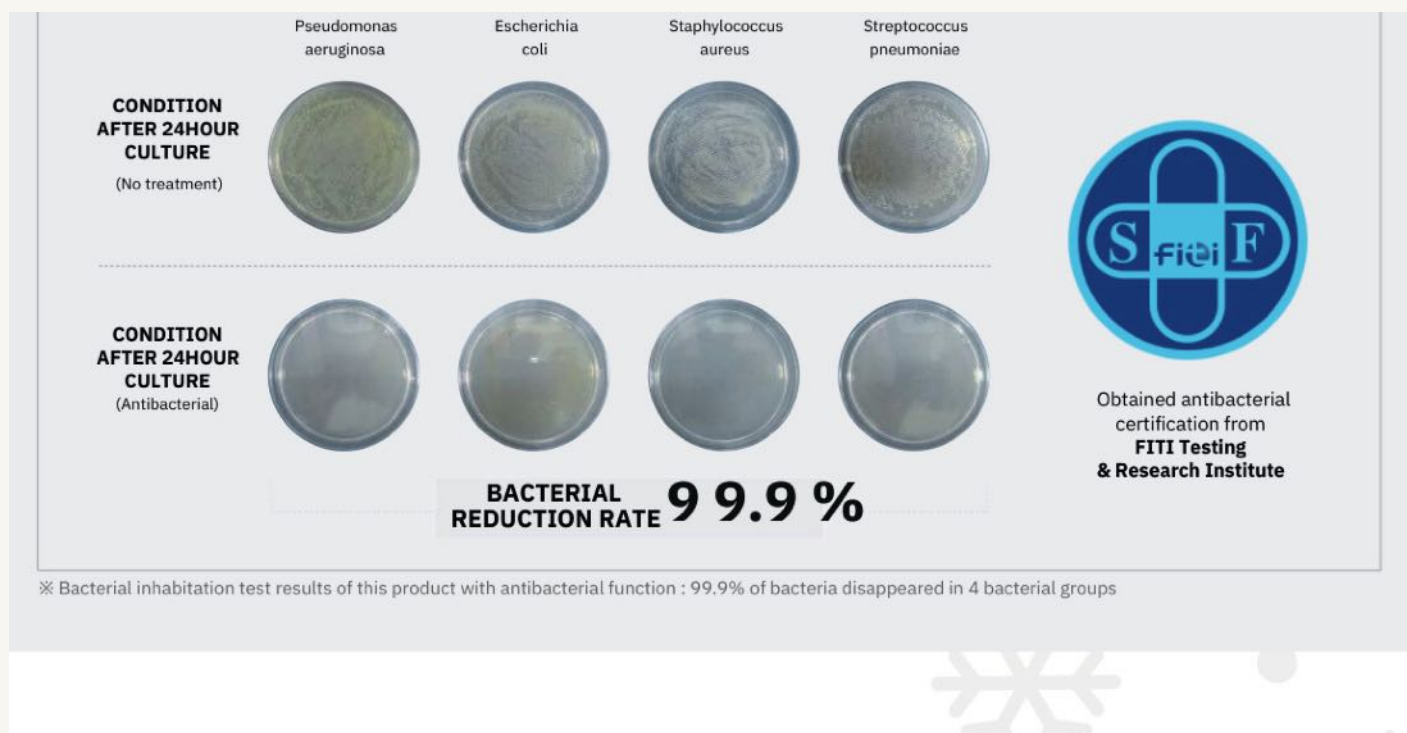
70°C

General pre-coated metal
Recorded in the source test graphic.

Historical supplier test claims. Some source graph characters are damaged; the original evidence is retained without guessing values.

ANTIBACTERIAL FUNCTION

Snow Crystal Emboss | Supplier test reference



99.9%

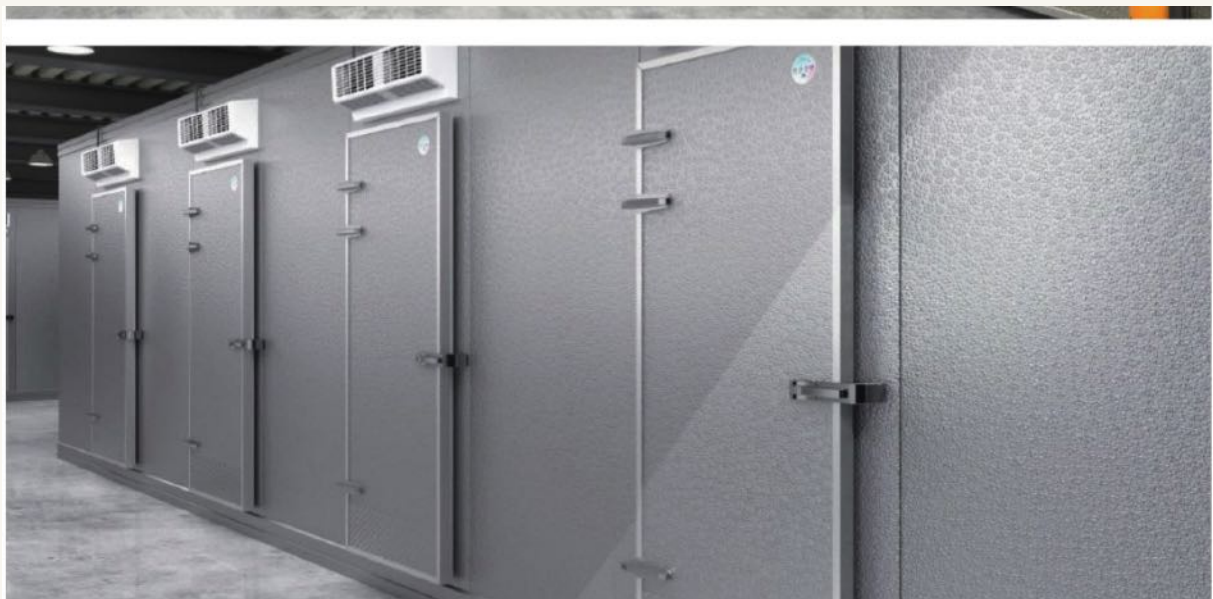
Bacterial reduction rate stated in the original test panel after 24-hour culture across four bacterial groups.

Pseudomonas aeruginosa · *Escherichia coli* · *Staphylococcus aureus* · *Streptococcus pneumoniae*

Historical supplier claim, including its FITI Testing & Research Institute certification reference. Not a current medical efficacy claim.

COLD-ROOM APPLICATIONS

Champagne Gold and Light Metal



SUPPLIER OFFICES AS PUBLISHED

HEADQUARTERS 5F, KG Tower, 92, Tongil-ro, Jung-gu, Seoul, Republic of Korea

Tel. +82-2-3450-8114

INCHEON WORKS 789 BaekBeom-ro, Seo-Gu, Incheon, Republic of Korea

Tel. +82-32-570-4114

DANGJIN WORKS 1228, Bukbusaneup-ro, Songak-eup, Dangjin-si, Chungcheongnam-do, Korea

Tel. +82-41-351-8114

EMBOSSED SURFACES

Cedar · Stucco · Leather · Real Wood · No Wave · Snow Crystal · Stone Emboss

제품특성 및 용도

- 도장된 강판을엠보스롤을 이용해표면에 일정한 패턴의 요철을 부여한 제품입니다.
Cedar, Stucco, Leather, Real Wood, No Wave, Snow Crystal, Stone Emboss 총 7가지의 제품을 생산 중입니다.
- 용도 : 건축 외장재, 냉동창고, 가전제품 등

Painted steel is embossed with a regular relief pattern. The supplier lists seven surface types for exterior building materials, cold stores and home appliances.

ORDER RANGE

수주 범위



SURFACE TYPES SHOWN IN THE ORIGINAL CATALOGUE

표면 종류

1 Cedar



2 Stucco



3 Leather



엠보스

APPLIANCE STEEL

HI-POLY | Coating structure

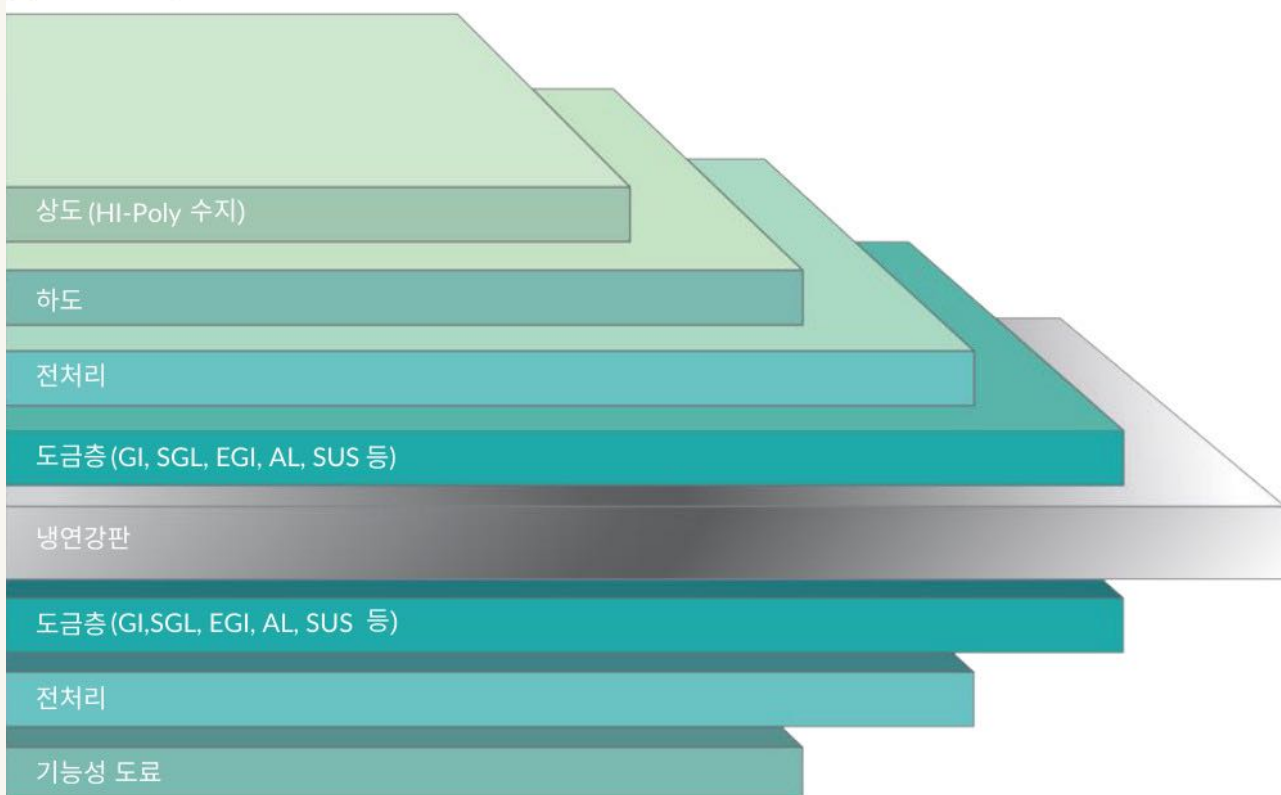
제품특성 및 용도

- 당사의 칼라강판은삼성, LG, 동부대우 및 전세계 글로벌 가전사에 공급 중 입니다.
가전 제품의 고급스러움을 강조하고 다양한 형상을 구현하도록 VCM, Printech, HI-POLY PCM을 사용합니다.
- 용도 : 냉장고, 세탁기, 에어컨 실내기, 에어컨 공조기, TV 등

The source describes colour-coated steel supplied to Samsung, LG, Dongbu Daewoo and global appliance makers, using VCM, Printech and HI-POLY PCM for refrigerators, washing machines, indoor air conditioners, air-handling units and televisions.

HI-POLY / COATING LAYERS

1 HI-POLY



가전

HI-POLY

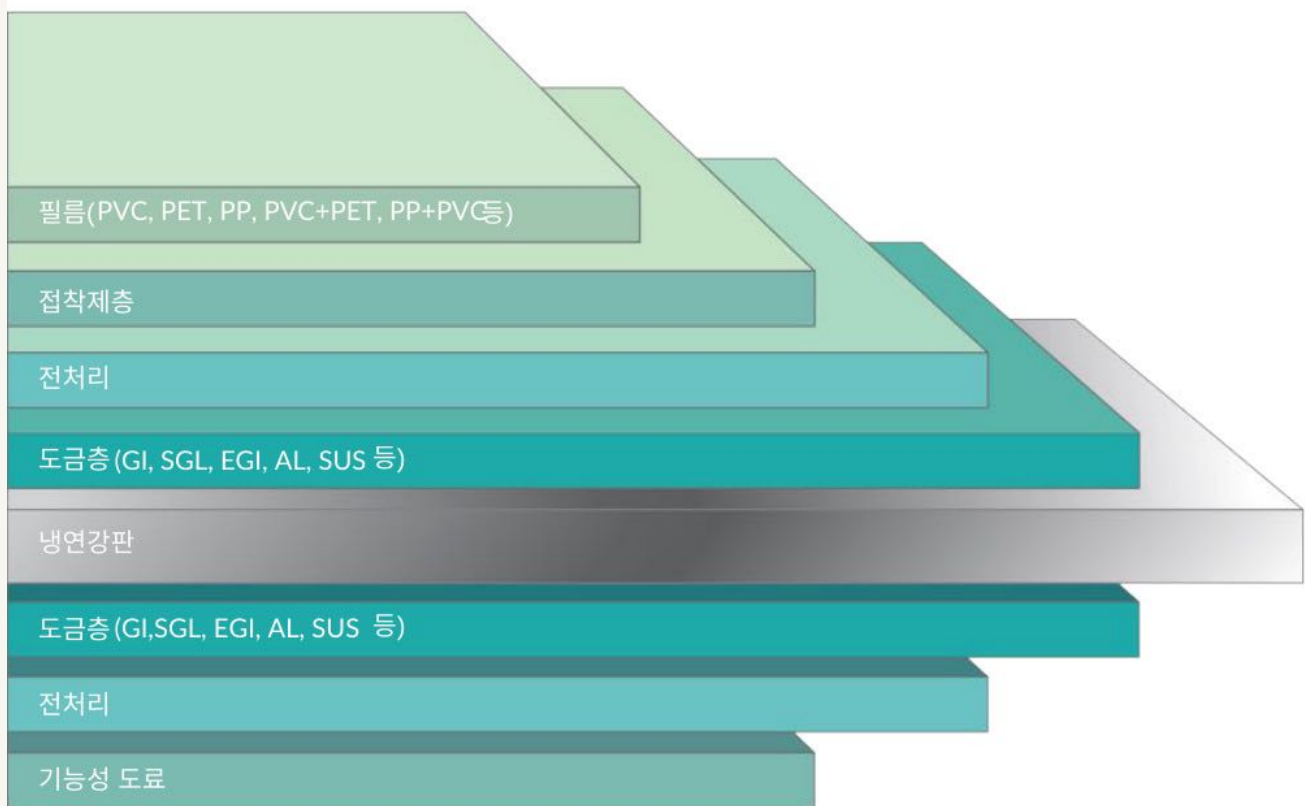
All substrate and layer labels are retained in the original supplier diagram.

VCM COATING STRUCTURE

Appliance steel | Film-laminated metal

도장제품 단면

2 VCM



FILM MATERIALS SHOWN

PVC · PET · PP · PVC + PET · PP + PVC

The diagram retains the source's film, adhesive, pretreatment, plated layers, cold-rolled steel and functional coating labels.

STONE EMBOSS

Bringing the realism of stone to metal

Premium embossed pattern inspired by natural stone textures

Stone Embossed Steel captures the rough surface and tactile quality of granite, with visual depth and a textured surface that mimics natural stone in detail.

Versatile applications

For insulated panels, single-skin sheets and roofing. Combining it with Printech finishes creates a more lifelike, dimensional stone appearance.

Natural aesthetics

Printed grout-effect lines enhance natural-stone block appearance. The source describes adoption across project sites and installation quality.

0.3T–0.6T

THICKNESS

600–1,250 mm

WIDTH

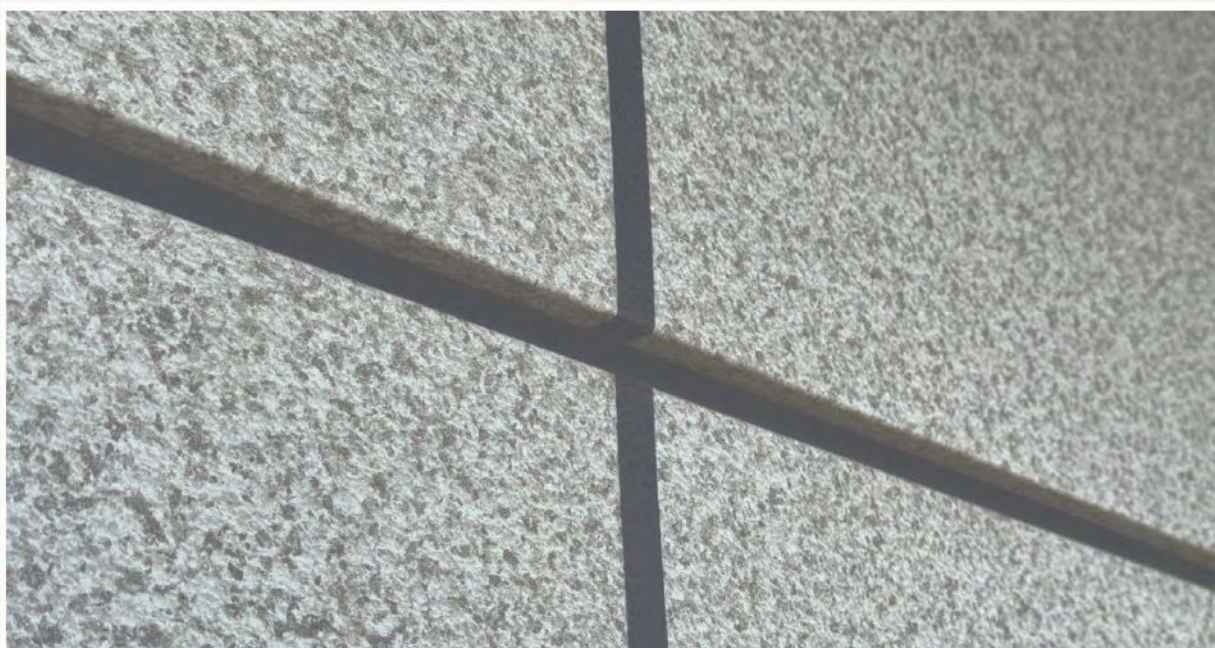


XTONE PRINTECH

Dimensions and supplier claims retained from source page 61; verify current specification and project suitability.

STONE IN ARCHITECTURE

Stone Emboss | Construction cases



Installation photography from the original supplier catalogue (source page 62).

SEAH STEEL

High-performance steel solutions for global industries



GLOBAL SPECIALIST IN PREMIUM STEEL PIPES & SPECIAL STEELS

The original catalogue presents SeAH Steel as a global supplier of high-performance steel pipes, stainless tubes and specialty steels. Manufacturing hubs across Korea, the UAE and North America serve energy, oil & gas, construction, machinery and industrial applications.

Manufacturing & technology

The source describes a UAE large-diameter pipe facility capable of pipes up to 120 inches in diameter and 60 mm in thickness. Stainless and alloy steel divisions supply seamless tubes and precision materials for high-temperature and high-pressure environments.

Core product range

Large Diameter Heavy Wall Pipes
Stainless & Alloy Pipes · Seamless Tubes
Steel Line Pipe · Structural Pipes
Special Bar Quality (SBQ) Steels
Tool & Die Steels · Industrial Alloy Bars
Corrosion Resistant Steel Products

Main application industries

Oil & Gas · Construction · Automotive
Industrial Machinery · Energy & Offshore

Innovation & sustainability: the supplier emphasizes reliability, precision manufacturing and environmentally responsible steel solutions, with continuous investment in global production and advanced inspection systems for durable, high-performance products.

Historical supplier profile, capability and sustainability statements retained from source page 63; not independently revalidated.

ALUMCOAT

SeAH Coated Metal



**ALUMINIUM
FOR ARCHITECTURE**

SPECIAL PRODUCTS

SeAH Coated Metal | Texture, protection and applications

세아씨엠의 다양한 특수 제품

SeAH Coated Metal's various special products

다양한 소비자 니즈를 충족하는 특수제품으로 시장 트렌드를 선도합니다.

SeAH Coated Metal leads the way with developing value added products to satisfy various customer needs.

MATT & PRINT

MATT & PRINT

다양한 질감/패턴 표현

Various expressions of textures/patterns

PRISMATIC

PRISMATIC(카멜레온)

빛의 각도에 따른 색채 변화 효과

Color change effect by the angle of light

ANTI-BACTERIA

ANTI-BACTERIA

항균, 항바이러스 기능

Anti-bacterial, Anti-viral Function

ANTI-GRAFFITI, CERAMIC

ANTI-GRAFFITI, CERAMIC

오염물질 흡착 방지, 낙서방지 효과 우수

Excellent prevention of pollution adhesion and doodling

COOL ROOFING

COOL ROOFING

특수 도료를 사용하여 지붕에 가해지는 태양열 차단

Blockage of solar heat on the roof using special paint

The source's anti-bacterial and anti-viral wording is retained as a historical supplier claim, not independently validated.

FOUR WAYS TO APPLY

Buildings · Special vehicles · Garage / entrance doors · Cool roofing



Building exterior materials



Special vehicles



Garage / entrance doors



Cool roofing

PRINCOAT

Printed products | Characteristics and coating layout

PRINCOAT

프린코트

프린코트는 아름다운 세상을 꿈꾸는 세아씨엠 컬러강판의 새 이름입니다.
다양한 색상과 패턴의 디자인들은 적용된 제품을 더 가치 있는 제품으로 만들어 줄 것입니다.

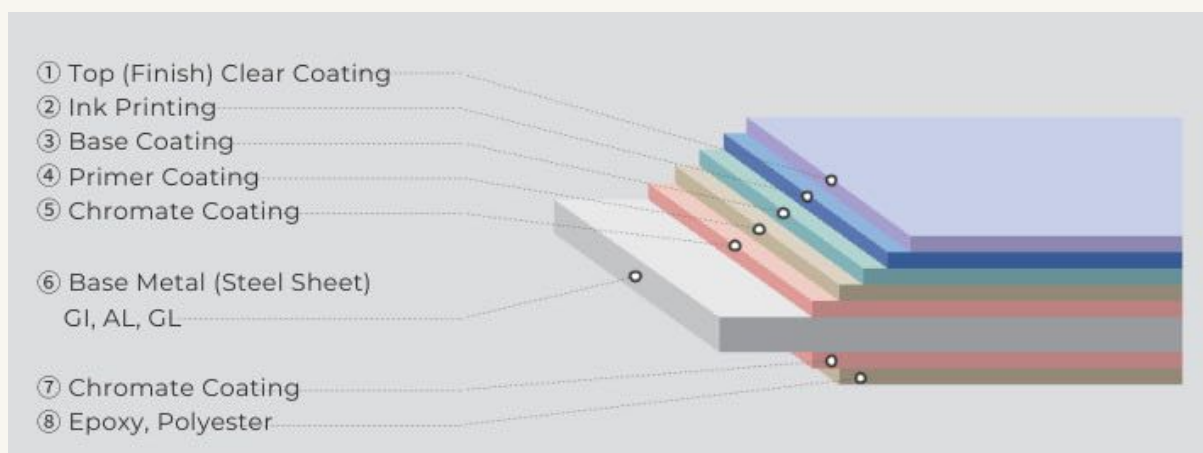
PrinCoat is new brand name of SeAH Coated Metal's Printed Products dreaming beautiful world.
Various colors and patterns of PrinCoat can make the products more valuable.

CHARACTERISTICS

특성

- 다양한 패턴과 고급스러운 질감
Various patterns and effects luxurious texture
- 연속도장 생산방식으로 대량 생산 가능
Mass production through continous color coating manufacturing system
- 그라비아오프셋 인쇄방식으로 다양한 색상 및 패턴 부여
Various colors & Patterns through gravure off set prints
- 4도 프린트패턴을 이용하여 다채롭고 고급스러운 질감 구현
Varied and luxurious through 4 layers print patterns

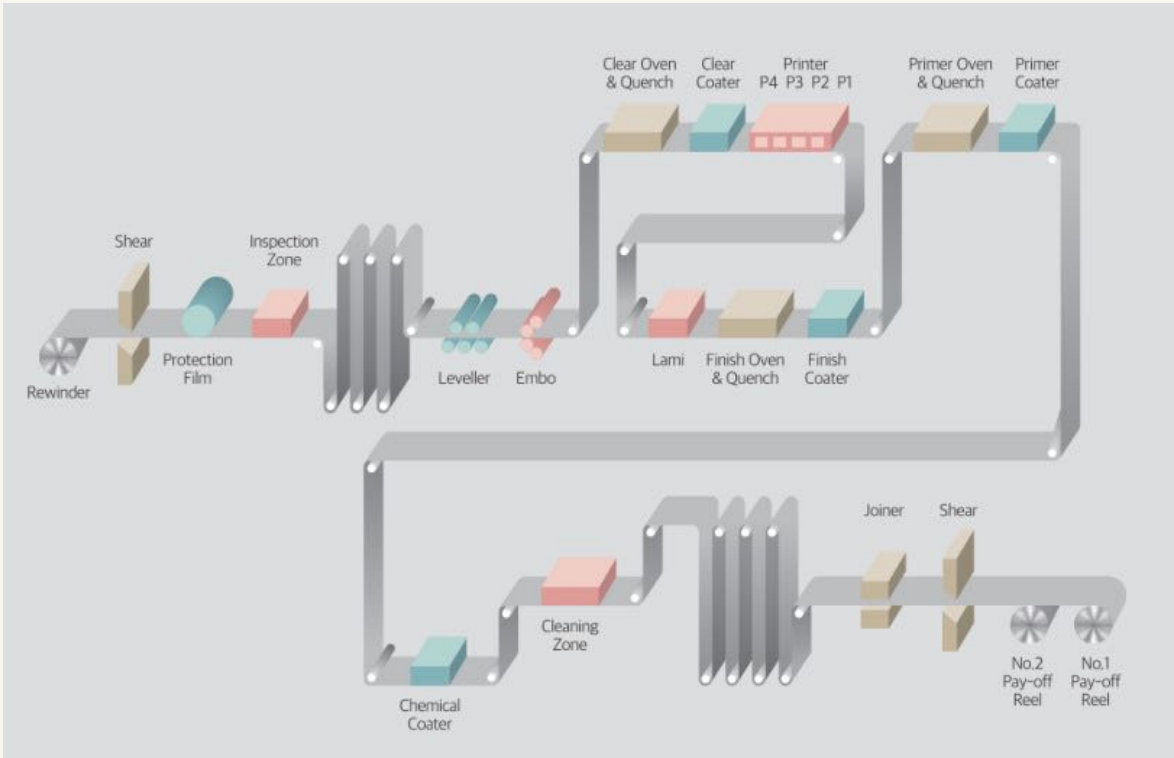
COATING LAYOUT / STRUCTURE



Bilingual supplier copy and all layer labels retained in distinct source panels.

PRINCOAT PRODUCTION

Manufacturing process and size availability



N01 CCL / N02 CCL

N01 CCL		N02 CCL	
CAPA	150,000 MT/Y	CAPA	60,000 MT/Y
THICKNESS	0.23 ~ 1.60 mm	THICKNESS	GI 0.3 ~ 1.2 mm / AL 0.3 ~ 2.2 mm
WIDTH	600 ~ 1,360 mm	WIDTH	600 ~ 1,600 mm
COIL WEIGHT	15 MT MAX.	COIL WEIGHT	20 MT MAX.
COIL I.D	508 / 610 mm	COIL I.D	508 / 610 mm
LINE SPEED	120 MPM	LINE SPEED	80 MPM
PAINTING METHOD	2 COAT 2 BAKE	PAINTING METHOD	3 COAT 3 BAKE

Source capacities, sizes, line speeds, coil weights and painting methods are retained verbatim (source page 66).

PRINCOAT PATTERN LIBRARY

Hairline · Zinc · Stone wall / brick · Stone

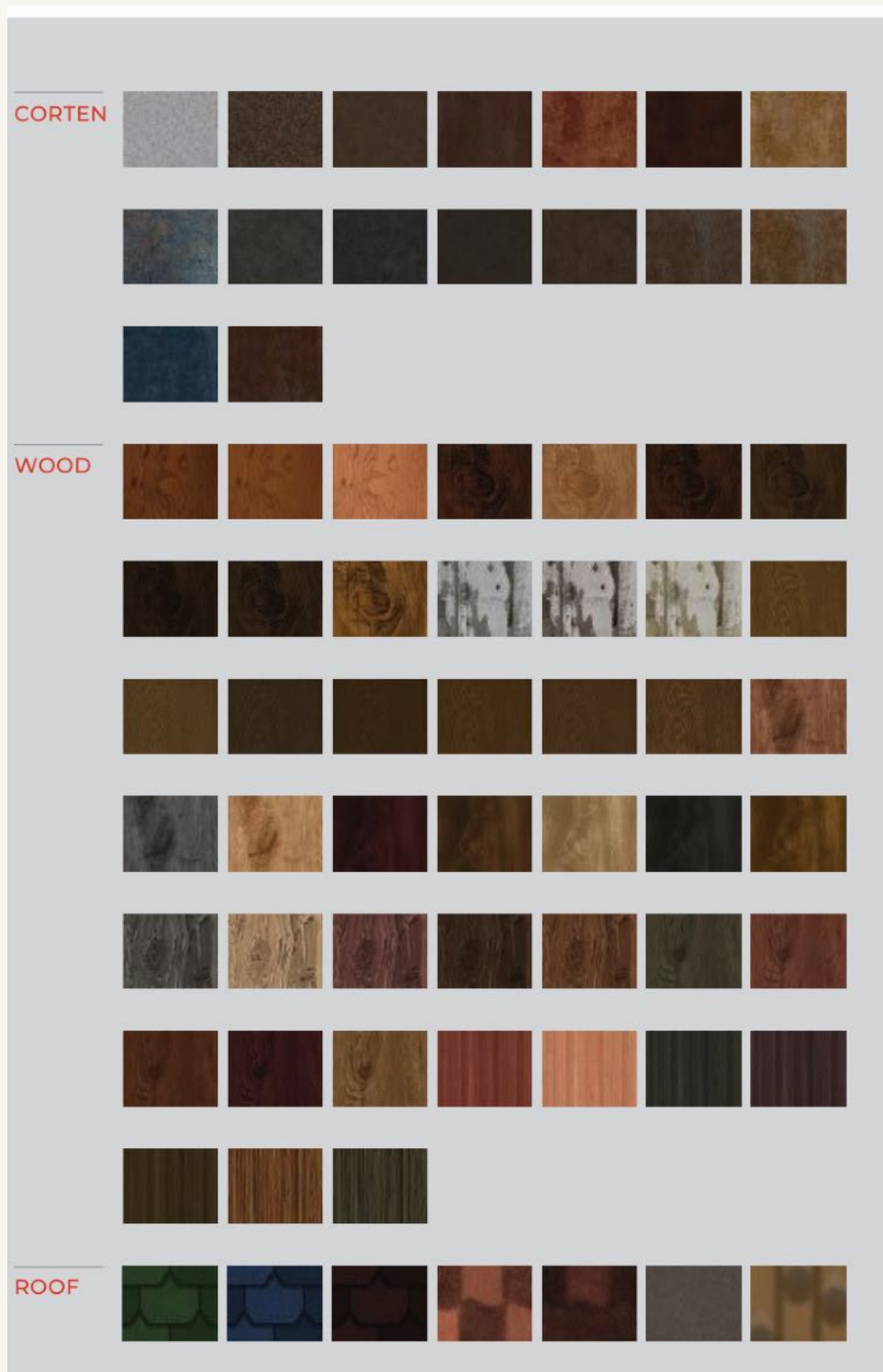


※ 본 이미지의 색상과 크기는 실제 제품과 차이가 있을 수 있습니다.

Colours and scale shown may differ from the actual product, as stated in the source catalogue.

PRINCOAT PATTERN LIBRARY

Corten · Wood · Roof

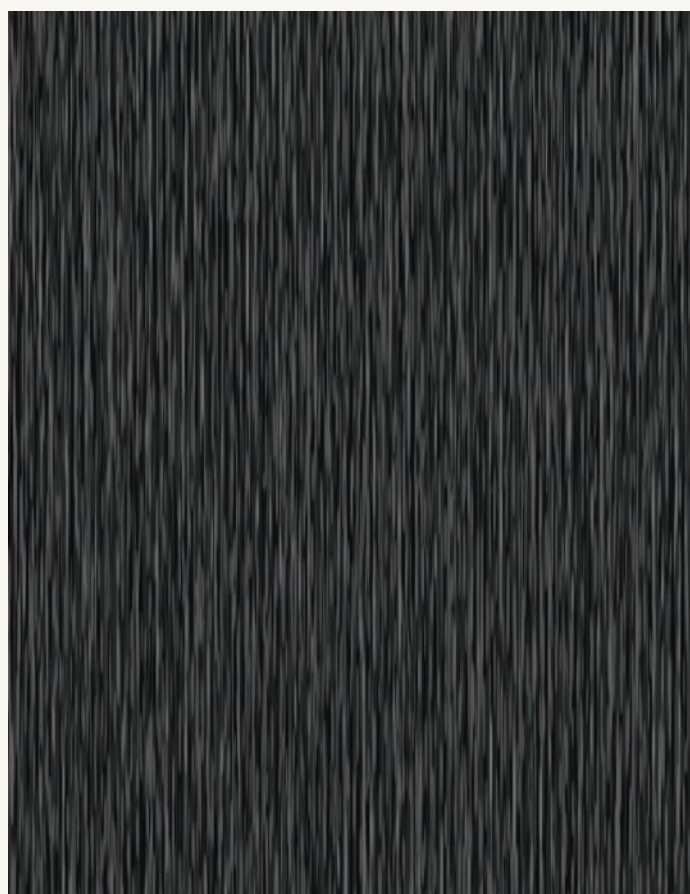


※ 본 이미지의 색상과 크기는 실제 제품과 차이가 있을 수 있습니다.

Colours and scale shown may differ from the actual product, as stated in the source catalogue.

BIG ZINC

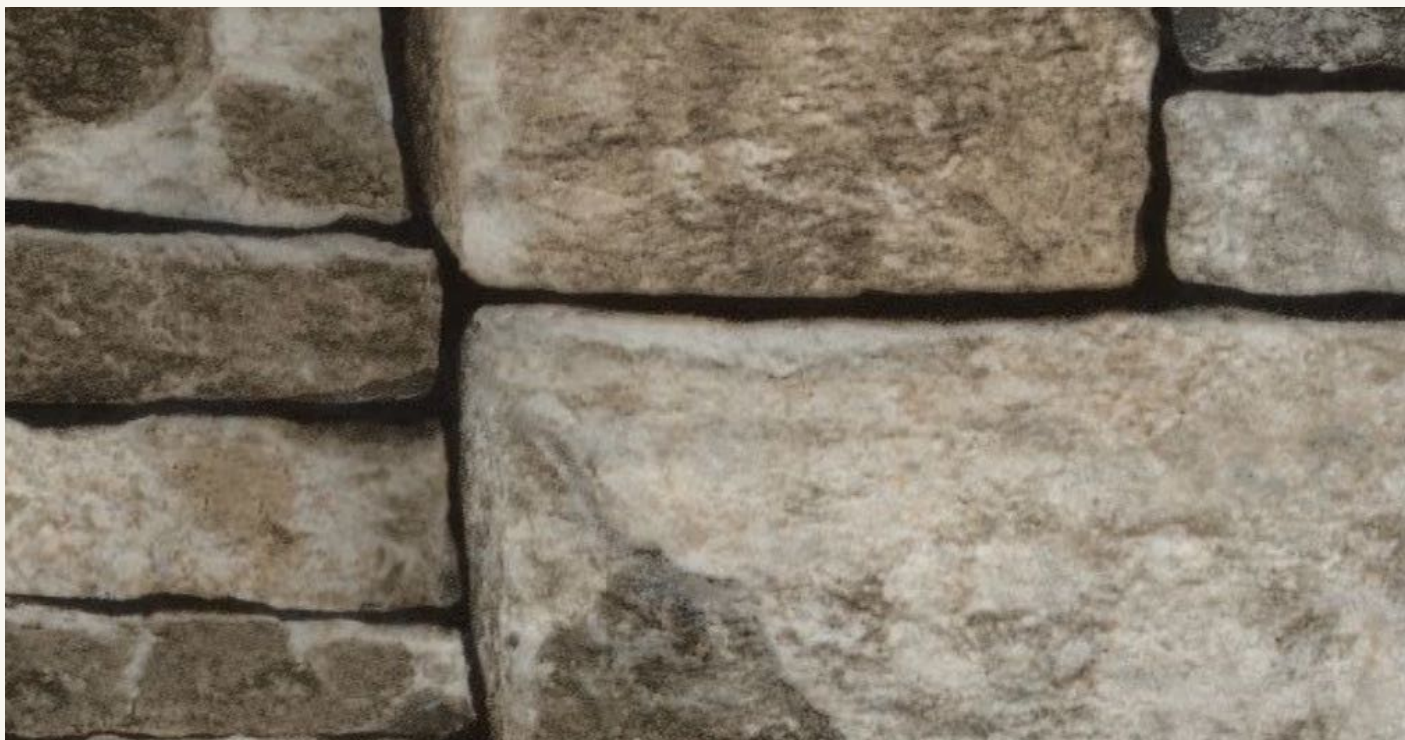
PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

STONE WALL

PrinCoat | Pattern collection



STONE WALL



Introducing the stone wall of PrinCoat, which gives a heavy and hard feeling like a natural stone. We offer you various patterns from exotic stone walls to modern stone wall patterns, and they will blend naturally into your architecture.

자연의 돌처럼 묵직하고 단단한 느낌을 주는
프린코트의 돌담을 소개합니다.
이국적인 돌담부터 현대적인 돌담 패턴들이
여러분의 건축물에 자연스럽게 어우리길 것입니다.

Supplier design statement and finish variants from the original catalogue. Colour and scale are indicative.

STONE WALL

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

LEDGE STONE

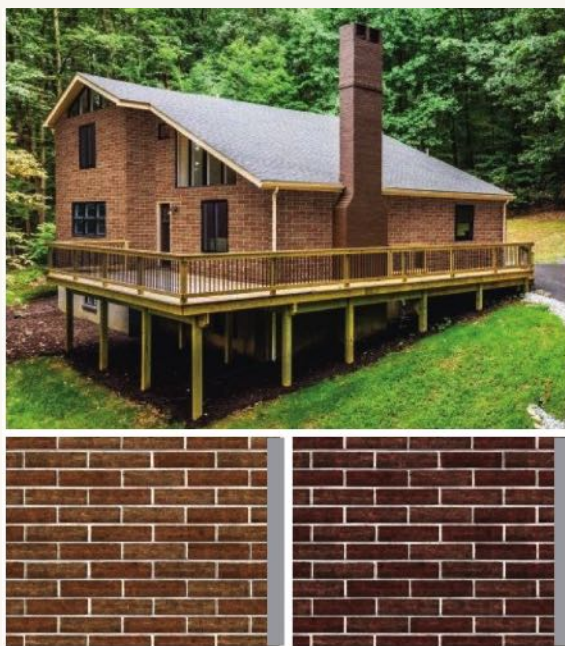
PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

NEO-CLASSIC BRICK

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

TRAVERTINE

PrinCoat | Pattern collection



TRAVERTINE



PrinCoat's stone design seeks naturalness. It shows the delicate color and various patterns of stone and the depth of a long period of time.

프린코트의 돌무늬는 자연스러움을 추구합니다.
돌이 가진 섬세한 색감과 다양한 무늬를 만들고
함축된 오랜 시간의 깊이감을 보여줍니다.

Supplier design statement and finish variants from the original catalogue. Colour and scale are indicative.

TITAN

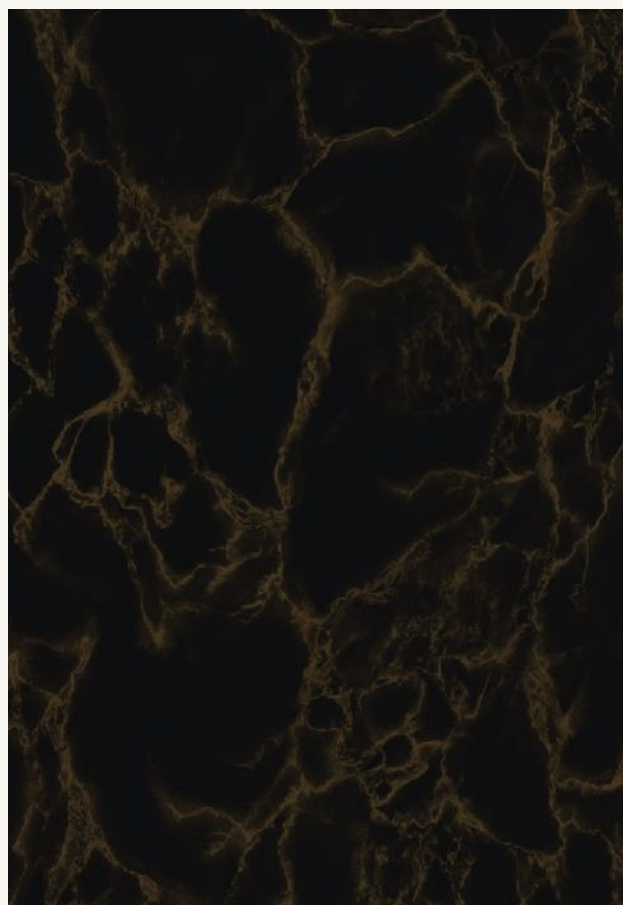
PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

ARABESCATO

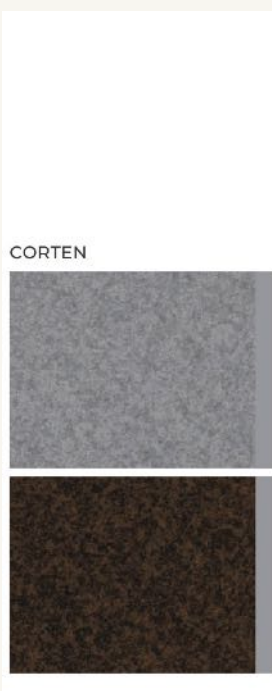
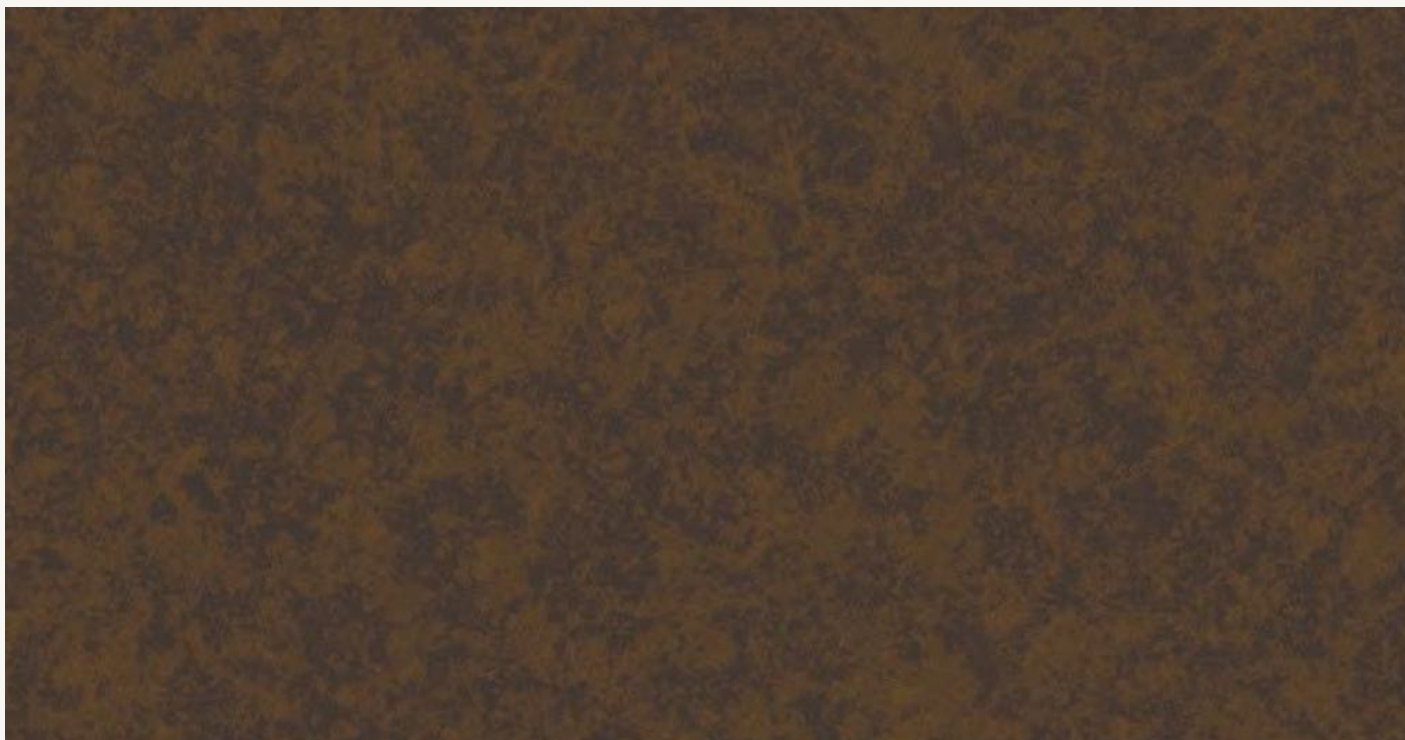
PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

CORTEN

PrinCoat | Pattern collection



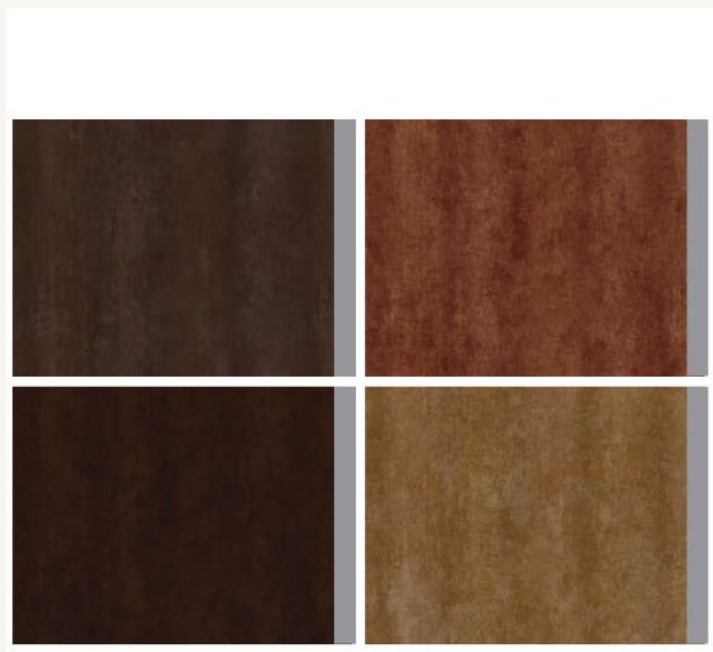
Corten, which expresses iron's time with beauty, shows a long-lasting beauty. PrinCoat's Corten will make the architecture outstanding.

철의 시간을 아름답게 표현한 코르텐은
오랫동안 질리지 않는 멋을 보여줍니다.
프린코트의 코르텐은 건축물이
한껏 돋보일 수 있도록 만들어 줄 것입니다.

Supplier design statement and finish variants from the original catalogue. Colour and scale are indicative.

CORTEN

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

CORTEN / VARIATIONS

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

LOG WOOD

PrinCoat | Pattern collection



PrinCoat's wooden design, which captures the unique sensibility of the tree, will make it an ideal building you imagine.

LOG WOOD



나무가 가진 특유의 감성을 살린 프린코트의 나무무늬는
여러분이 그리는 이상적인 건축물로 만들어 줄 것입니다.

Supplier design statement and finish variants from the original catalogue. Colour and scale are indicative.

VINTAGE WOOD

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

BURL WOOD

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

T WOOD

PrinCoat | Material and application



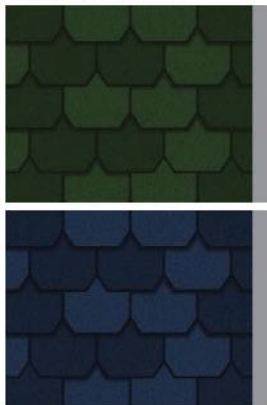
Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

ASPHALT SHINGLE

PrinCoat | Pattern collection



ASPHALT SHINGLE



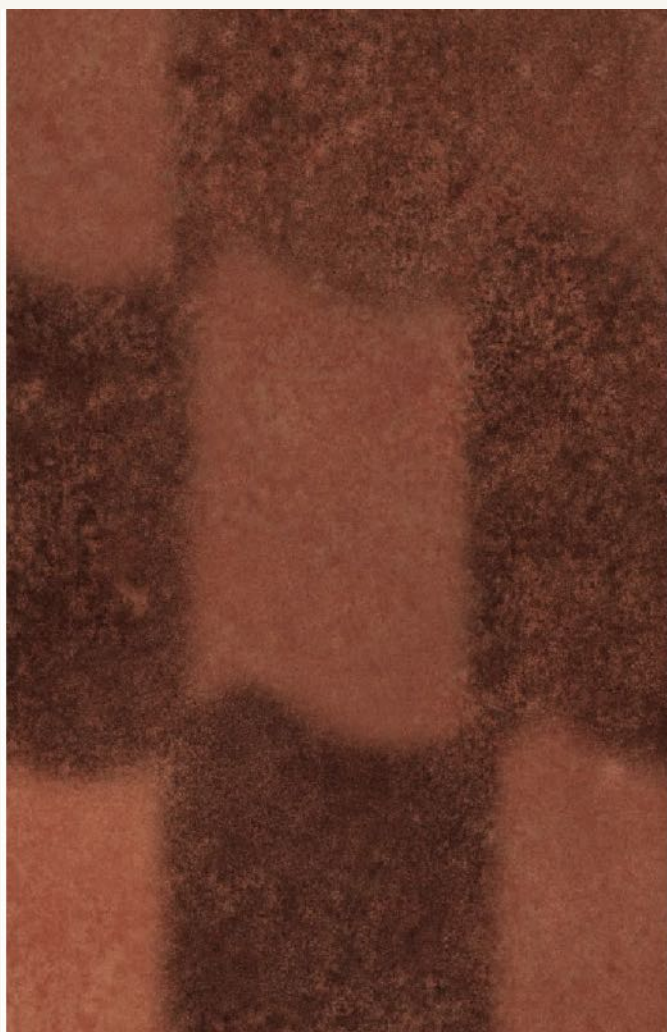
The roof of PrinCoat seeks beauty for your architecture. Meet the roof of the PrinCoat with various patterns.

프린코트의 지붕패턴은 여러분의 건축물을
아름답게 보일 수 있도록 만들었습니다.
다양한 패턴을 가진 프린코트의 지붕을 만나보세요.

Supplier design statement and finish variants from the original catalogue. Colour and scale are indicative.

SPANISH ROOF

PrinCoat | Material and application



Pattern and application imagery from the original supplier catalogue. Colour and scale are indicative.

COLOURCOAT

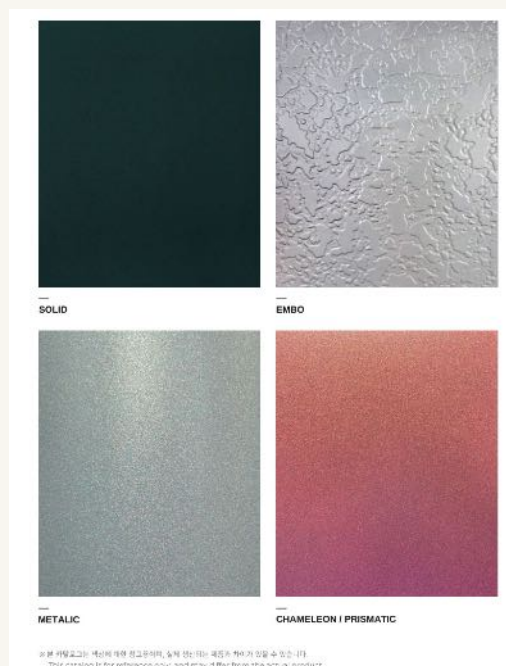
Makes the world beautiful



ColourCoat는 GI, GL, GA, EGI 등의 소재에 고객의 요구에 부합하는 다양한 컬러와 질감의 페인트를 코팅하거나, 인쇄 필름을 접착한 세아씨엠의 단색 강판 브랜드입니다. 세아씨엠은 1992년 부터 현재까지 개발한 8,700 종의 ColourCoat를 통하여 세상을 아름답게, 공간을 다채롭게 만들어 나가고 있습니다.

ColourCoat is SeAH Coated Metal's brand of monochromatic colour steel plate. It is coated with paint of various colours and textures, or film bonded.

Application _ 가전제품, 건축용 내/외장재



Historical bilingual supplier claims and finish examples. The published colour / product caveat is retained above.

MATTCOAT

Texture and abrasion resistance



MattCoat는 Texture 입자를 사용하여 다양한 Wrinkle의 무늬를 더욱 부드럽고 고급스럽게 설계한 제품이며, 내마모성이 보강된 제품입니다.

MattCoat is a product brand designed with a softer and more luxurious wrinkle pattern, and reinforced with abrasion resistance.

Application _ 건축용 내/외장재



Historical bilingual supplier claims and finish examples. The published colour / product caveat is retained above.

PRINCOAT

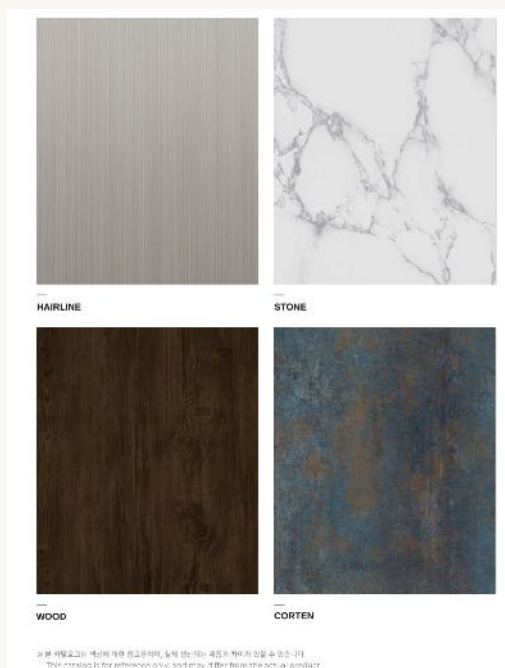
Cold steel, meets warm sensibility



천연 재료의 아름다움을 감각적 디자인으로 탁월하게 구현한 PrinCoat는 건축, 모빌리티, 가전 등 다양한 산업 분야에 활용되며 가치와 신뢰를 쌓아왔습니다.

PrinCoat embodies the beauty of natural materials with sensuous design. It is used in industries such as architecture, mobility and home appliances.

Application _ 가전제품, 건축 내/외장재, 도어용



Historical bilingual supplier claims and finish examples. The published colour / product caveat is retained above.

ALUMCOAT

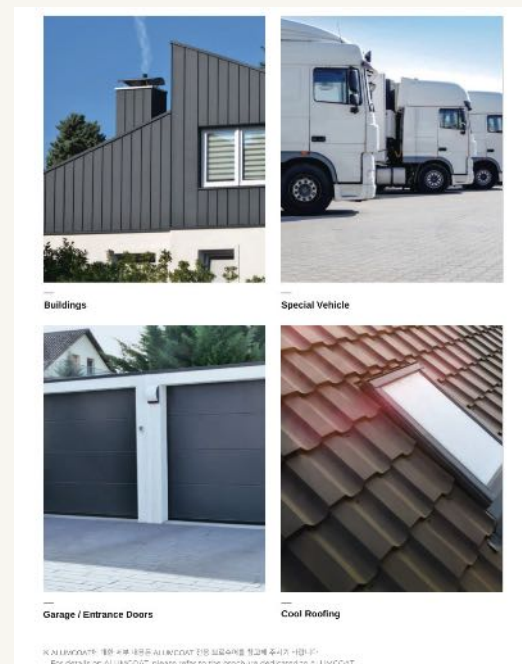
Longer, lighter and more beautiful



수십 년을 함께 해야 할 소중한 자산에는 현명한 선택이 필요합니다.
 우수한 내구성, 가벼운 중량, 아름다운 외관, 그리고 재활용성까지 갖춘 알루미늄 컬러강판 'ALUMCOAT'는
 스틸 컬러 강판의 새로운 대안입니다.
 환경과 삶을 생각하는 내일의 소재, ALUMCOAT를 통해 한발 더 앞아가십시오.

Valuable assets which last decades require a smart choice. With excellent durability, light weight, beautiful appearance and recyclability, ALUMCOAT is a new alternative to colour steel sheets. Take a step forward with ALUMCOAT, the material of the future to consider our environment and lives.

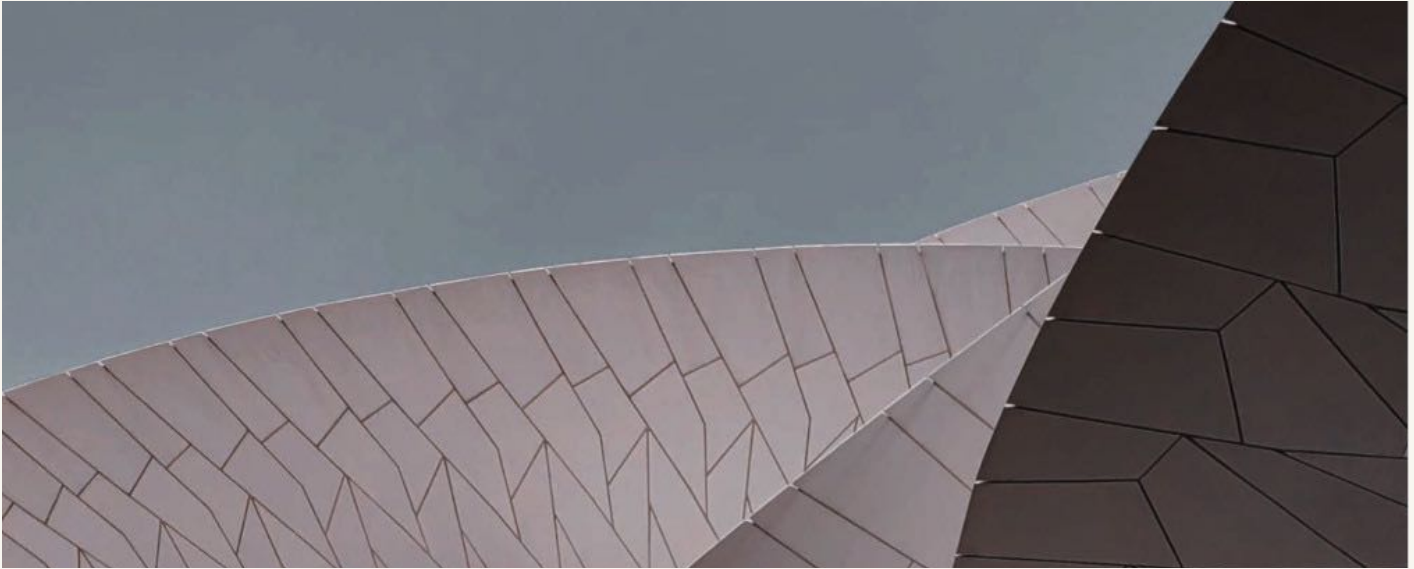
Application _ 자동차용, 건축용 내/외장재, 산업기자재



Historical bilingual supplier claims and finish examples. The published colour / product caveat is retained above.

PRIN-ANODIZING

High-end design solution | Premium finishing material



PRIN-ANODIZING은 섬세한 표현과 밀도 있는 인쇄를 통해, 알루미늄 및 스테인리스 스틸의 아노다이징 표면 처리 특유의 질감과 색상을 프린트 코팅으로 생동감 있게 구현하였습니다.
아노다이징 알루미늄에 비해 두텁고 균일한 도장 표면 처리로 색차 안정성이 탁월합니다.
또한 가격이 저렴하면서도 변색과 부식에 강해 내식성과 경제성이 우수합니다.

PRIN-ANODIZING realizes the unique texture and colour of anodized aluminium and stainless steel through print coating with delicate expressiveness and density. Compared to anodized metal, it is cheaper, has excellent colour-difference stability and excellent corrosion resistance.



Application _ 건축용 내/외장재, 산업기자재
BuildingInterior/Exteriormaterials, Industrial Equipments.

Historical bilingual supplier claims and finish examples. The published colour / product caveat is retained above.

OTHER PRODUCTS & TOP SUPPLIERS

Steel forms, forged components and industrial gases

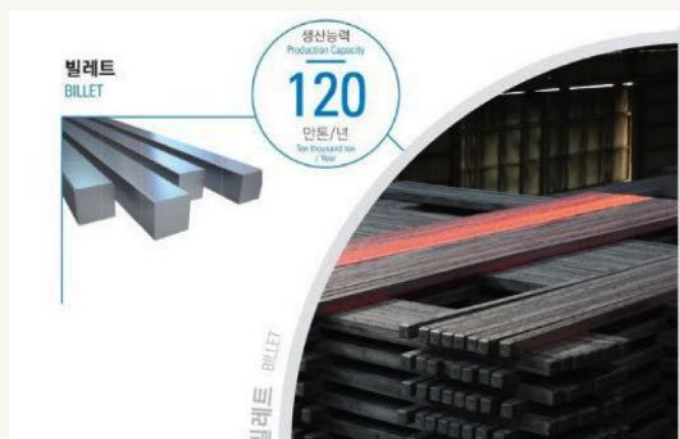


DUCT AND TOP SUPPLIE

FOUR STEEL FORMS

Billet · Reinforcing bar · Ingot · Forged steel

BILLET



REINFORCING BAR



INGOT



FORGED STEEL



Production-capacity figures and units are historical supplier statements retained from source page 91.

BILLET

From the mill to the application



The source describes billet as the main material for iron and steel products, produced in a fully automated electric furnace, secondary refining facility and continuous casting process.



Product description, production-capacity claim and process photography retained from the original catalogue.

REINFORCING BAR

From the mill to the application



The source defines reinforcing bar under KS D3504 for concrete reinforcement. It describes building and civil engineering uses, including bridges, buildings and nuclear power plants, and reduction of concrete crack widths.



Product description, production-capacity claim and process photography retained from the original catalogue.

REBAR CHEMISTRY

Reinforcing bar | Chemical composition

Max. 이하
Min. 이상
Over 초과

〈표1〉 화학성분

기호 Symbol	용도 Application	화학성분 (%) Chemical Composition							
		C ^a	Si	Mn	P	S	Cu	N ^b	Ceq ^a
SD300	일반용 General Use	-	-	-	Max. 0.050	Max. 0.050			-
SD400		-	-	-	Max. 0.045	Max. 0.045			-
SD500		-	-	-	Max. 0.040	Max. 0.040			-
SD600					Max. 0.040	Max. 0.040			Max. 0.63
SD700		-	-	-	Max. 0.040	Max. 0.040			Max. 0.63
SD400W	용접용 Welding	Max. 0.22	Max. 0.60	Max. 1.60	Max. 0.040	Max. 0.040		Max. 0.012	Max. 0.50
SD500W									
SD400 S	특수내진용 Special Seismic	Max. 0.29	Max. 0.30	Max. 1.50	Max. 0.040	Max. 0.040	Min. 0.20		Max. 0.55
SD500 S		Max. 0.32	Max. 0.30	Max. 1.80	Max. 0.040	Max. 0.040	Min. 0.20		Max. 0.60
SD600 S		Max. 0.37	Max. 0.30	Max. 1.80	Max. 0.040	Max. 0.040	Min. 0.20		Max. 0.67

a. SD400W와 SD500W에서 치수가 호칭명 D 32를 초과하는 것에 대해서는 탄소 함량 0.25% 이하, 탄소당량은 0.55% 이하로 한다.
또한 SD600S에서 치수가 호칭명 D35를 초과하는 것에 대해서는 탄소 함량 0.40% 이하, 탄소당량은 0.70% 이하로 한다.
In case the dimension exceeds D 32 in SD400W and SD500W, the carbon content and carbon equivalent shall be 0.25 % or less and 0.55 % or less, respectively.
Also in case the dimension exceeds D35 in SD600S, the carbon content and carbon equivalent shall be 0.40% or less and 0.70% or less, respectively.

b. 질소 결합 원소가 충분히 있을 경우에는 질소 함량이 높아도 좋다.
The higher content of nitrogen may be used if sufficient quantities of nitrogen-binding elements are present.

The source chemical-composition table includes general-use, welding and special-seismic grades, together with its carbon / carbon-equivalent and nitrogen notes.

SD300 / SD400 / SD500 / SD600 / SD700

SD400W / SD500W / SD400 S / SD500 S / SD600 S

Grade symbols, composition limits and footnotes retained as published. Refer to the governing current standard for use.

REBAR MECHANICS

Reinforcing bar | Mechanical and bending properties

〈표2〉 기계적성질

기호 Symbol	항복점 또는 항복 강도 N/mm ² Yield Point or Yield Strength	인장 강도 ^a N/mm ² Tensile Strength	인장 시험편 Tensile Test Piece	연신율 ^b Elongation	굽힘성 Bending Properties	
					굽힘각도 Bending Angle	안쪽 반지름 Internal Radius
SD300	300~420	항복강도의 1.15배 이상 Min. 1.15 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 16	180°	Max. D16 / 공칭 지름의 1.5배 1.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 18		Over D16 / 공칭 지름의 2배 2 Times the Nominal Diameter
SD400	400~520	항복강도의 1.15배 이상 Min. 1.15 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 16	180°	공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 18		
SD500	500~650	항복강도의 1.08배 이상 Min. 1.08 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 12	90°	Max. D25 / 공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 14		Over D25 / 공칭 지름의 3배 3 Times the Nominal Diameter
SD600	600~780	항복강도의 1.08배 이상 Min. 1.08 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 10	90°	Max. D25 / 공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3			Over D25 / 공칭 지름의 3배 3 Times the Nominal Diameter
SD700	700~910	항복강도의 1.08배 이상 Min. 1.08 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 10	90°	Max. D25 / 공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3			Over D25 / 공칭 지름의 3배 3 Times the Nominal Diameter
SD400W	400~520	항복강도의 1.15배 이상 Min. 1.15 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 16	180°	공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 18		
SD500W	500~650	항복강도의 1.15배 이상 Min. 1.15 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 12	180°	Max. D25 / 공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 14		Over D25 / 공칭 지름의 3배 3 Times the Nominal Diameter
SD400 S	400~520	항복강도의 1.25배 이상 Min. 1.25 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 16	180°	공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 18		
SD500 S	500~620	항복강도의 1.25배 이상 Min. 1.25 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 12	180°	Max. D25 / 공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3	Min. 14		Over D25 / 공칭 지름의 3배 3 Times the Nominal Diameter
SD600 S	600~720	항복강도의 1.25배 이상 Min. 1.25 Times the YP or YS	2호에 준한 것. Based on No.2	Min. 10	90°	Max. D25 / 공칭 지름의 2.5배 2.5 Times the Nominal Diameter
			3호에 준한 것. Based on No.3			Over D25 / 공칭 지름의 3배 3 Times the Nominal Diameter

a. 인장강도는 실측한 항복강도의 비율로서 규정된 비율이상 이어야 한다.

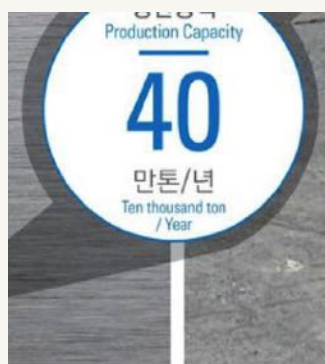
Tensile strength defined using the aforementioned ratio of measured yield strength, should be equal to or more than the ratio.

b. 이형봉강에서 치수가 호칭명 D32를 초과하는 것에 대해서는 호칭명 3을 증가할 때마다 표 2의 연신율의 값에서 각각 2를 감한다.
다만, 감하는 한도는 4로 한다.

In case the dimension of the ribbed bar exceeds D 32, subtract 2% from the elongation in Table 2 whenever the designation is increased by 3.
However, the limit of subtraction shall not exceed 4.

INGOT

Industrial steel production



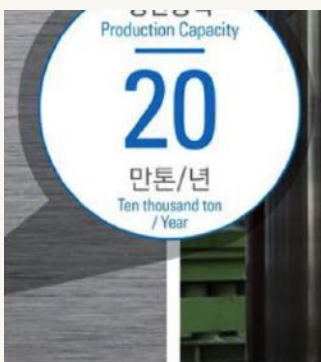
Production capacity as published in the original catalogue.



Source production-capacity figures, process description and photography retained from the original catalogue.

FORGED STEEL

Industrial steel production



Production capacity as published in the original catalogue.



Source production-capacity figures, process description and photography retained from the original catalogue.

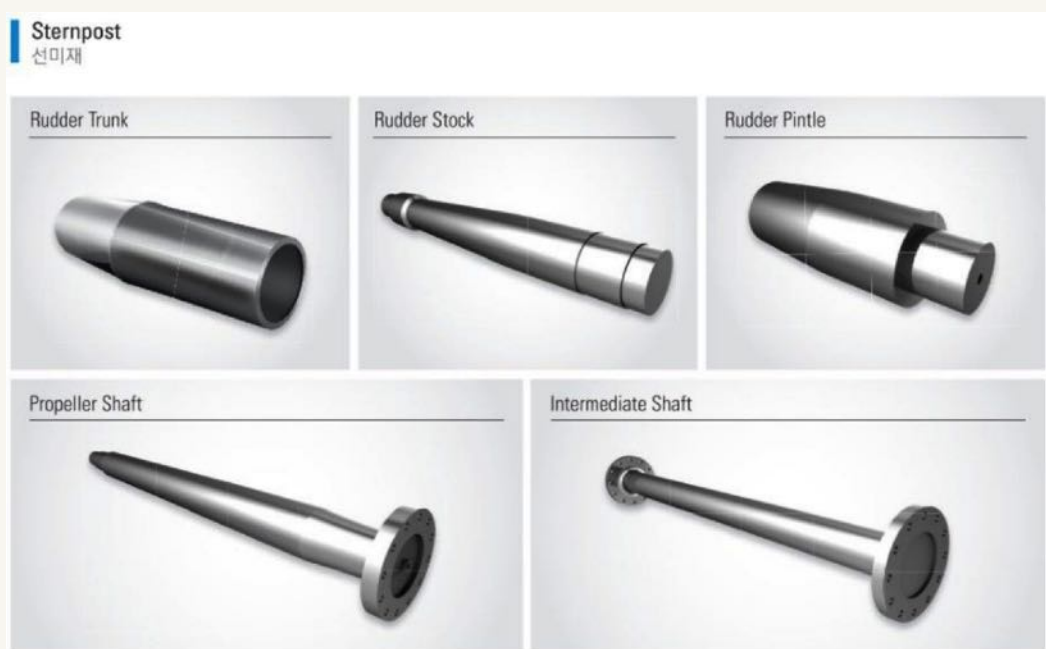
MARINE ENGINE FORGINGS

Engine and sternpost components

MARINE ENGINE



STERNPOST

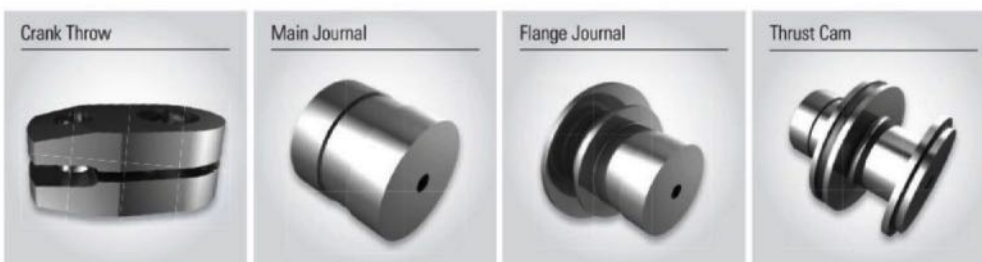


All source component names and product images are retained (source page 97).

INDUSTRIAL FORGINGS

Crankshaft assembly and specialist components

Crankshaft Assembly 크랭크샤프트



Industrial Forgings 산업품



Offshore Plants 해양플랜트



R/BAR, S/BAR R/BAR, S/BAR



Plastic Mold Steel 플라스틱 금형강



Main Shaft 동력



INDUSTRIAL GASES

Production capacity, purity and applications



경합금의 특수강 용접, 반도체, 티타늄 등의 제조에 사용되는 공업용 가스는 산업발전의 필수적인 제품입니다.

The source describes industrial gas for welding special steel and light alloys, and for semiconductor and titanium manufacture.

PRODUCT / CAPACITY / PURITY

Product	Capacity	Purity 순도
Liquid Oxygen(LO ₂) 액체산소	1,000Nm ³ /H	99.7% 이상
Liquid Nitrogen(LN ₂) 액체질소	2,500Nm ³ /H	1ppm O ₂ 이하
Liquid Argon(LAr) 액체아르곤	280Nm ³ /H	1ppm O ₂ 미만 3ppm N ₂ 이하
Oxygen Gas(GO ₂) 기체산소	6,000Nm ³ /H	99.7% 이상
Nitrogen Gas(GN ₂) 기체질소	1,000Nm ³ /H	1ppm O ₂ 이하

Historical industrial-gas capability and purity specifications. Confirm current supply, grade and safety requirements.

GAS CONVERSION TABLES

Liquid oxygen, nitrogen and argon | Published reference data

LIQUID OXYGEN / OXYGEN GAS

Liquid Oxygen(LO ₂)		Oxygen Gas(GO ₂)		
kg	L	0°C(m ³)	15°C(m ³)	35°C(m ³)
1,000	877	700	738	790
1,140	1,000	798	842	900
1,429	1,253	1,000	1,055	1,128
1,355	1,188	948	1,000	1,060
1,267	1,111	886	935	1,000

LIQUID ARGON / ARGON GAS

Liquid Argon(LAr)		Argon Gas(Ar)		
kg	L	0°C(m ³)	15°C(m ³)	35°C(m ³)
1,000	713	561	592	563
1,402	1,000	786	830	887
1,783	1,272	1,000	1,055	1,128
1,690	1,205	948	1,000	1,069
1,580	1,127	886	935	1,000

LIQUID NITROGEN / NITROGEN GAS

Liquid Nitrogen(LN ₂)		Nitrogen Gas(N ₂)		
kg	L	0°C(m ³)	15°C(m ³)	35°C(m ³)
1,000	1,238	800	843	9,802
808	1,000	646	682	729
1,251	1,518	1,000	1,055	1,128
1,186	1,467	948	1,000	1,060
1,109	1,372	886	935	1,000

Conversion values and stated temperatures retained as published; verify conditions before engineering use.

INDUSTRIAL GAS INFRASTRUCTURE

Supplier installation photography



Source page 100. The photograph is a supplier reference, not a statement of STEELN factory ownership.

PREPAINTED ALUMINIUM COIL

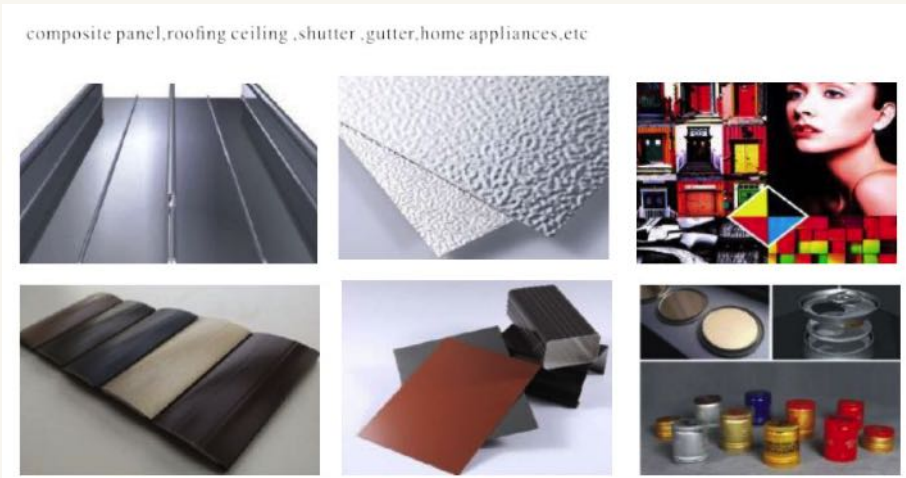
Product specification and applications

PUBLISHED SPECIFICATION



Alumimium Alloy	1000series 3000series 5000series 8000series			
Thickness	0.2-1.5mm	0.3-0.5mm	0.209-0.425mm	0.03-1.5mm
Max Width	2000mm			
Min Width	600mm (Less than 600mm should be slitted)			
Coating Type	PE/HDP/PVDF/NANO special effect surface like anti-scratch, Anti-static, Chamclcon, Etefood grade			
Color	RAL / PUPA/Wooden/ Marble	Embossed	Gold/Silver/Blue etc	Mirror-RAL /Wooden /Marble
Applications	Roofing/Ceiling Sycterm	Home Appliances	EOE Packing	Food Packing/ ACP

APPLICATIONS



PROJECT EXAMPLES



SPECIFICATION DETAIL

Prepainted aluminium coil

Alumimum Alloy	1000series 3000series 5000series 8000series			
Thickness	0.2-1.5mm	0.3-0.5mm	0.209-0.425mm	0.03-1.5mm
Max Width	2000mm			
Min Width	600mm (Less than 600mm should be slitted)			
Coating Type	PE/HDP/PVDF/NANO special effect surface like anti-serach, Anti-static, Chameleon, Etefood grade			
Color	RAL / PUPA/Wooden/ Marble	Embossed	Gold/Silver/Blue etc	Mirror/RAL /Wooden /Marble
Applications	Roofing/Ceiling Syesterm	Home Appliances	EOE Packing	Food Packing/ACP

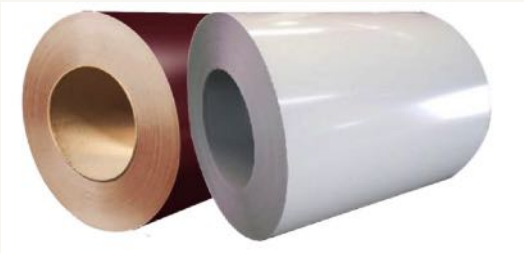
Prepainted aluminium coil for composite panels, roofing, ceilings, shutters, gutters and home appliances.

All alloy / material, gauge, width, coating, colour and application entries retained verbatim from the source specification.

PREPAINTED STEEL COIL / PCM

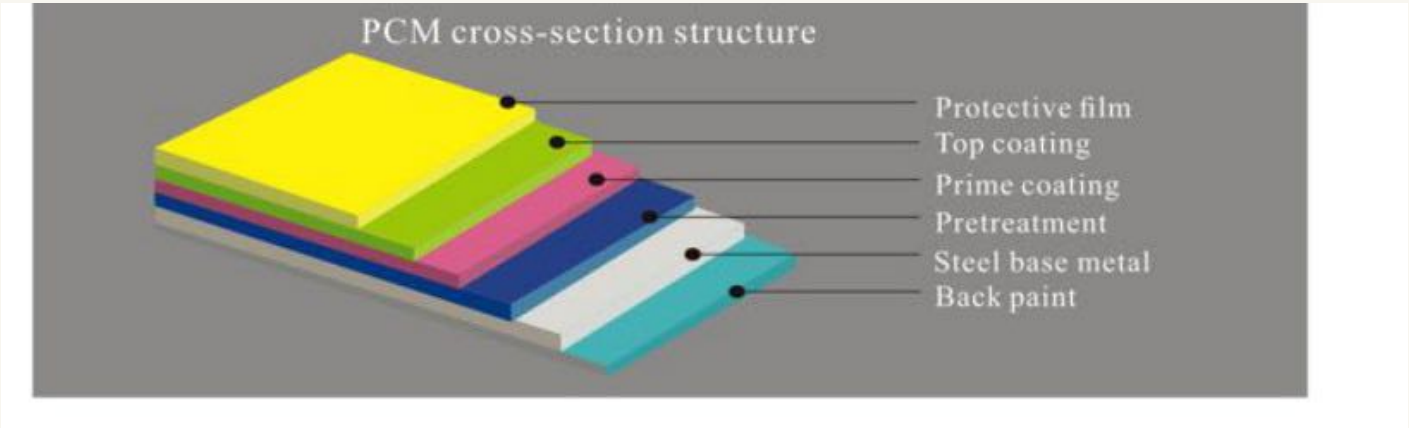
Product specification and applications

PUBLISHED SPECIFICATION



Steel Grade	DX51D	DX52D	DX53D	DX54D
Thickness	0.2-0.8mm			
Max Width	1400mm as per request			
Min Width	500mm as per request (Less than 500mm should be slitted)			
Max Length	5800mm normally			
Coating Type	Food Grade Coating			
Certificate	SGS & RoHS Certificates			
Color	RAL Color (White, Silver, Brown, Grey, Champagne, Red), Wooden, Marble			

CONSTRUCTION / LAYERS



APPLICATIONS

PCM is used special steel coil as raw material and high quality polyester painting, which need to be clean ,free of impurities. Widely used for White Goods & Black Goods, such as:

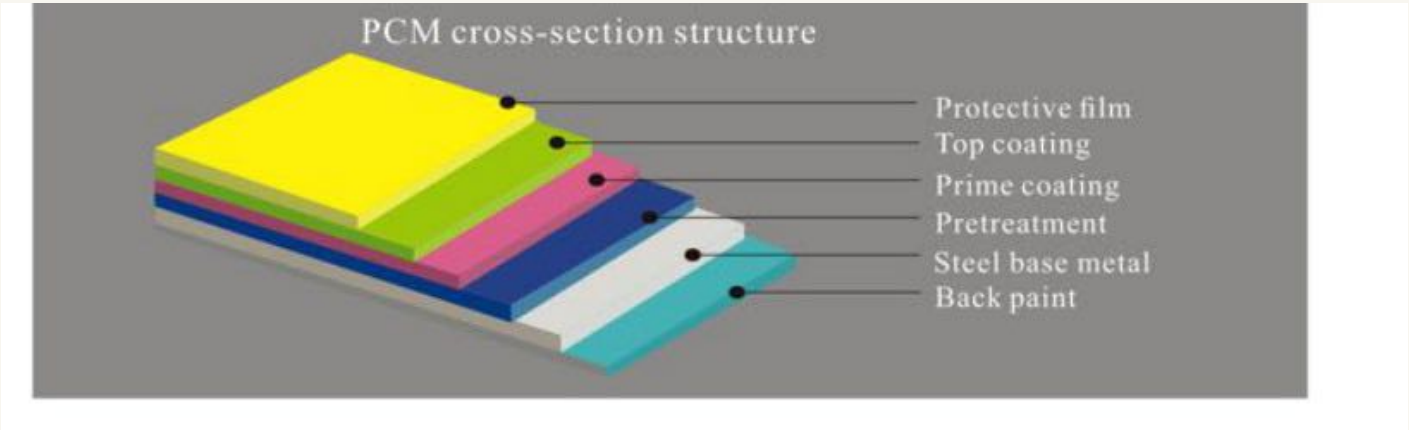
- 1) Washing machines
- 2) Freezers and Refrigerators
- 3) Air-conditioners
- 4) TV backside board and so on.



SPECIFICATION DETAIL

Prepainted steel coil / PCM

Steel Grade	DX51D	DX52D	DX53D	DX54D
Thickness	0.2-0.8mm			
Max Width	1400mm as per request			
Min Width	500mm as per request (Less than 500mm should be slitted)			
Max Length	5800mm normally			
Coating Type	Food Grade Coating			
Certificate	SGS & RoHS Certificates			
Color	RAL Color (White, Silver, Brown, Grey, Champagne, Red), Wooden, Marble			



All alloy / material, gauge, width, coating, colour and application entries retained verbatim from the source specification.

FILM LAMINATED METAL / VCM

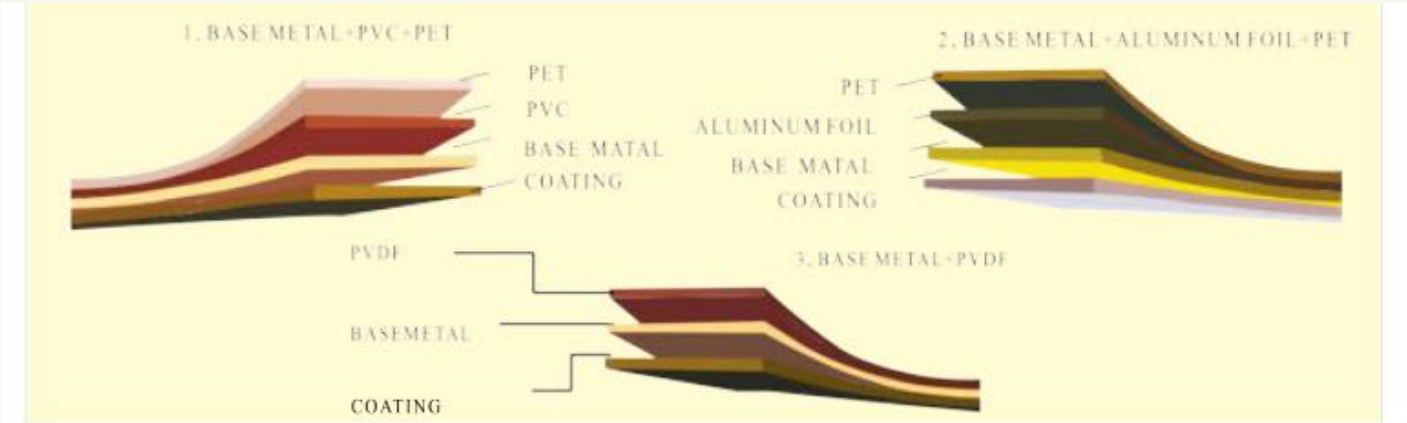
Product specification and applications

PUBLISHED SPECIFICATION



Material	Steel	Aluminum
Thickness	0.2-0.8mm	0.2-1.5mm
Max Width	1400mm	2000mm
Min Width	600mm (less than 600mm could be slitted)	
Max Length	Coil 2~3 Tons, Sheet 5800mm normally	
Surface Film	PET+PVC Film	
Color	Wooden, Flower, Brushed, Marble	
Applications	Home appliances, Doors, Cabinets, Furnitures	

CONSTRUCTION / LAYERS



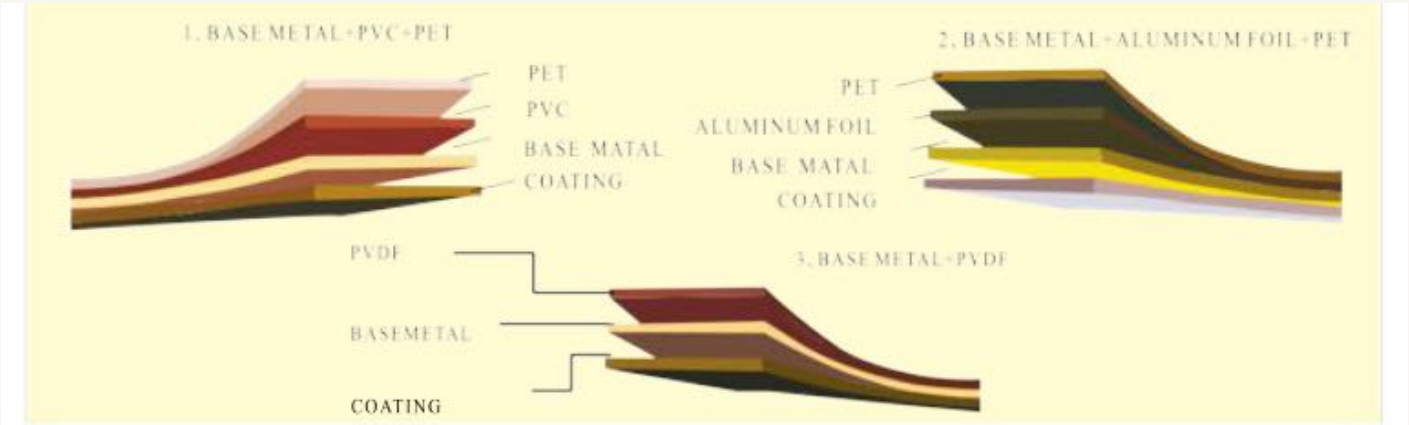
APPLICATIONS



SPECIFICATION DETAIL

Film laminated metal / VCM

Material	Steel	Aluminum
Thickness	0.2-0.8mm	0.2-1.5mm
Max Width	1400mm	2000mm
Min Width	600mm (less than 600mm could be slitted)	
Max Length	Coil 2~3Tons, Sheet 5800mm normally	
Surface Film	PET+PVC Film	
Color	Wooden, Flower, Brushed, Marble	
Applications	Home appliances, Doors, Cabinets, Furnitures	



All alloy / material, gauge, width, coating, colour and application entries retained verbatim from the source specification.

ALUMINIUM COMPOSITE PANEL

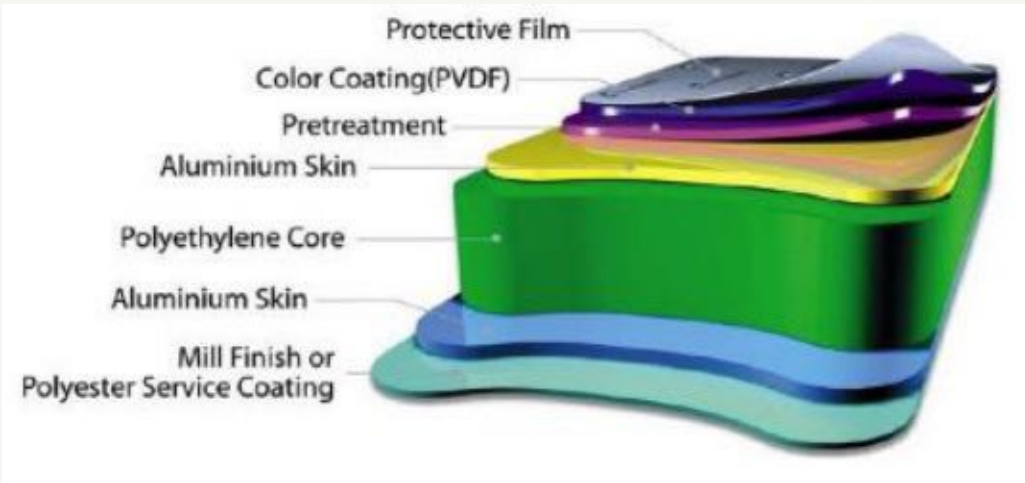
Product specification and applications

PUBLISHED SPECIFICATION



Panel Thickness	2mm/3mm/4mm/5mm/6mm/8mm
Aluminum Thickness	0.2-0.5mm normally
Max Width	2000mm (1220/1350/1500/1650mm etc)
Max Width	5800mm normally
Coating Type	PE, PVDF, FEVE, NANO, Anti-scratch, Fireproof
Color	RAL Color (Solid Color, Metallic Color), Wooden, Marble, Brushed, Mirror
Surface Film	Protective Film
Applications	Curtain Wall, Roofing, Advertisement Board

CONSTRUCTION / LAYERS



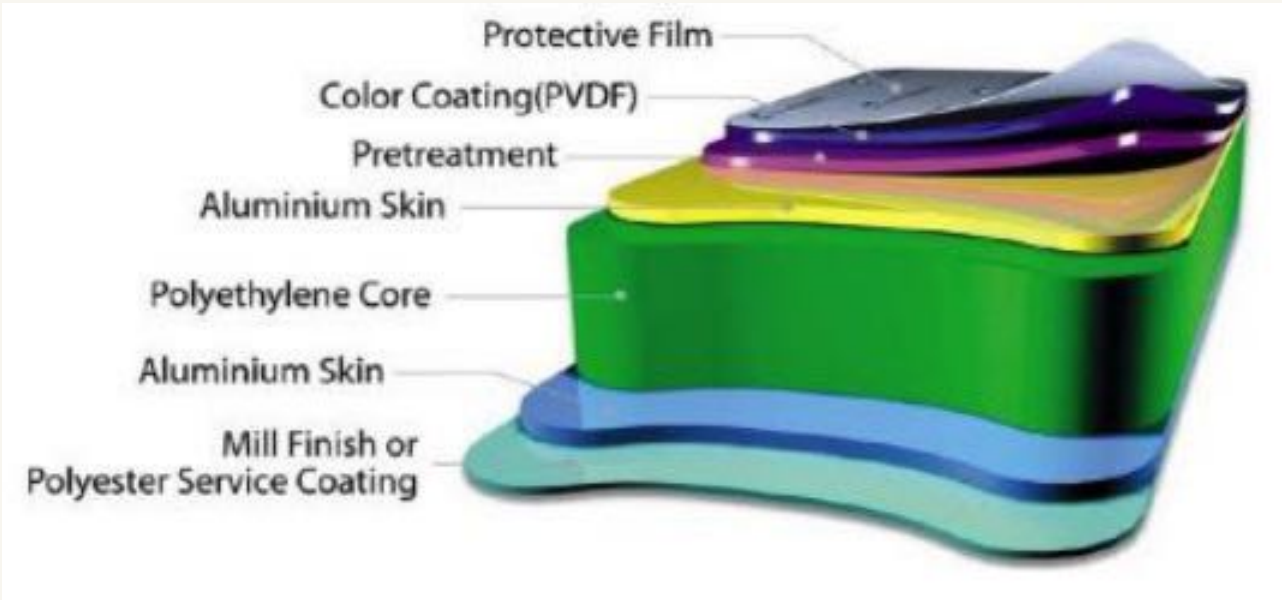
APPLICATIONS



SPECIFICATION DETAIL

Aluminium composite panel

Panel Thickness	2mm/3mm/4mm/5mm/6mm/8mm
Aluminum Thickness	0.2-0.5mm normally
Max Width	2000mm (1220/1350/1500/1650mm etc)
Max Width	5800mm normally
Coating Type	PE, PVDF, FEVE, NANO, Anti-scratch, Fireproof
Color	RAL Color (Solid Color, Metallic Color), Wooden, Marble, Brushed, Mirror
Surface Film	Protective Film
Applications	Curtain Wall, Roofing, Advertisement Board

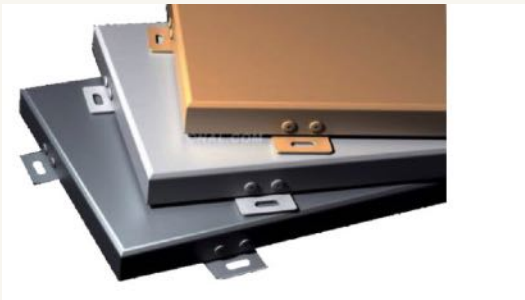


All alloy / material, gauge, width, coating, colour and application entries retained verbatim from the source specification.

SOLID ALUMINIUM SHEET

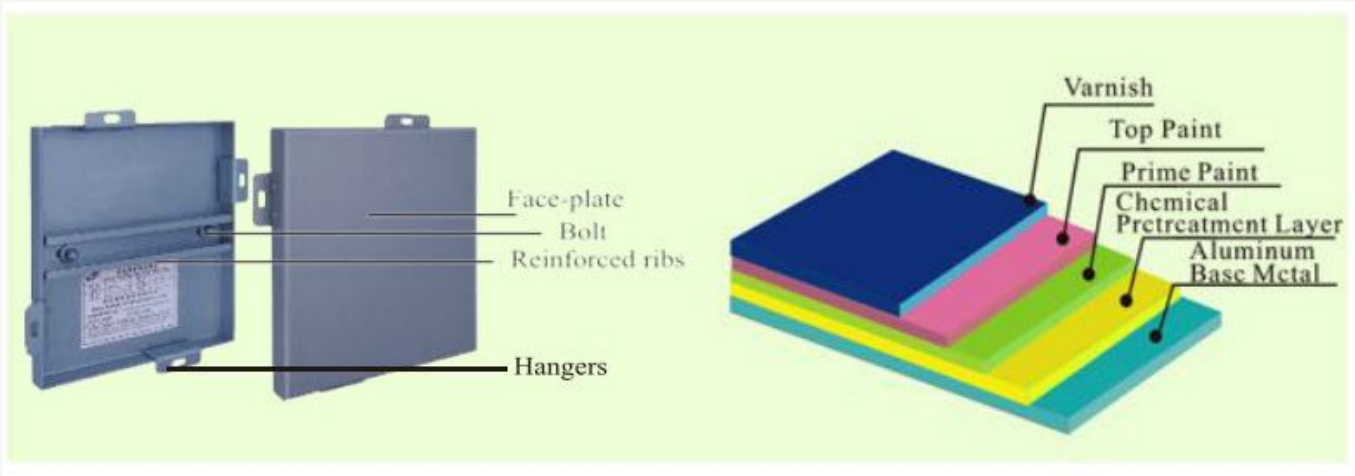
Product specification and applications

PUBLISHED SPECIFICATION

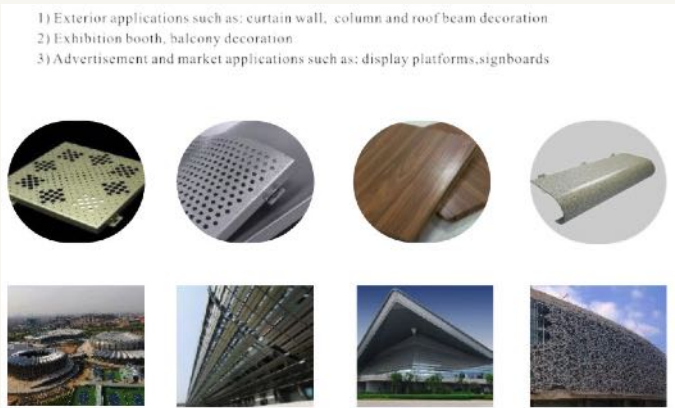


Panel Thickness	2mm/2.5mm/3mm/4mm
Alloy	1100 3003 5005 normally
Max Width	1900mm
Max Length	5800mm normally
Coating Type	PE, PVDF
Surface Treatment	Powder Spraying
Color	RAL Color (Solid Color, Metallic Color), Wooden, Marble
Applications	Curtain Wall, Roofing

CONSTRUCTION / LAYERS



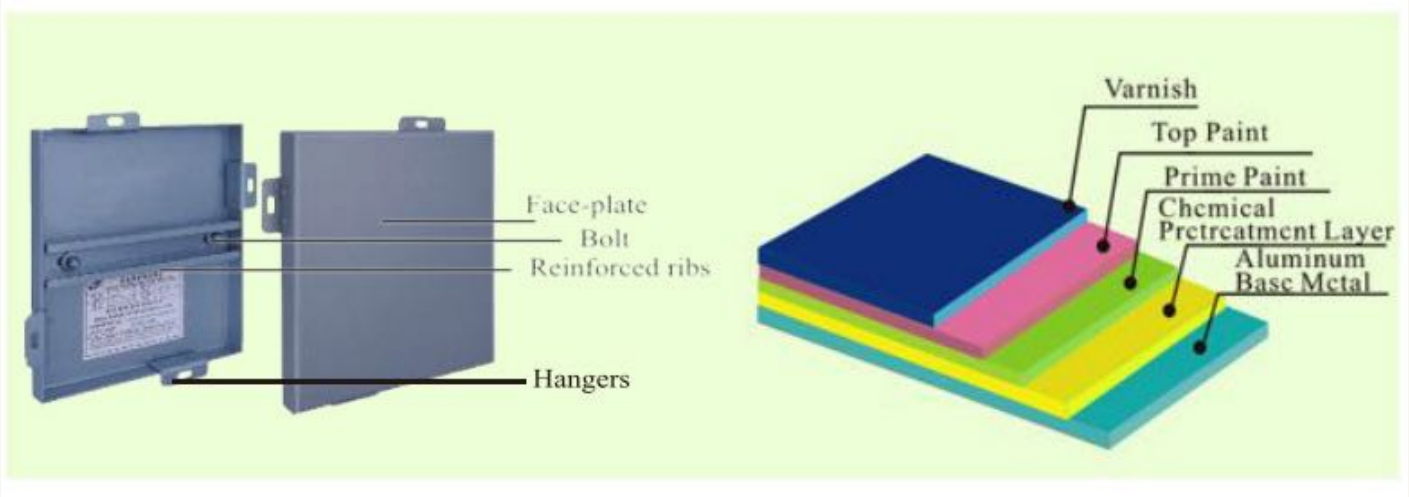
APPLICATIONS



SPECIFICATION DETAIL

Solid aluminium sheet

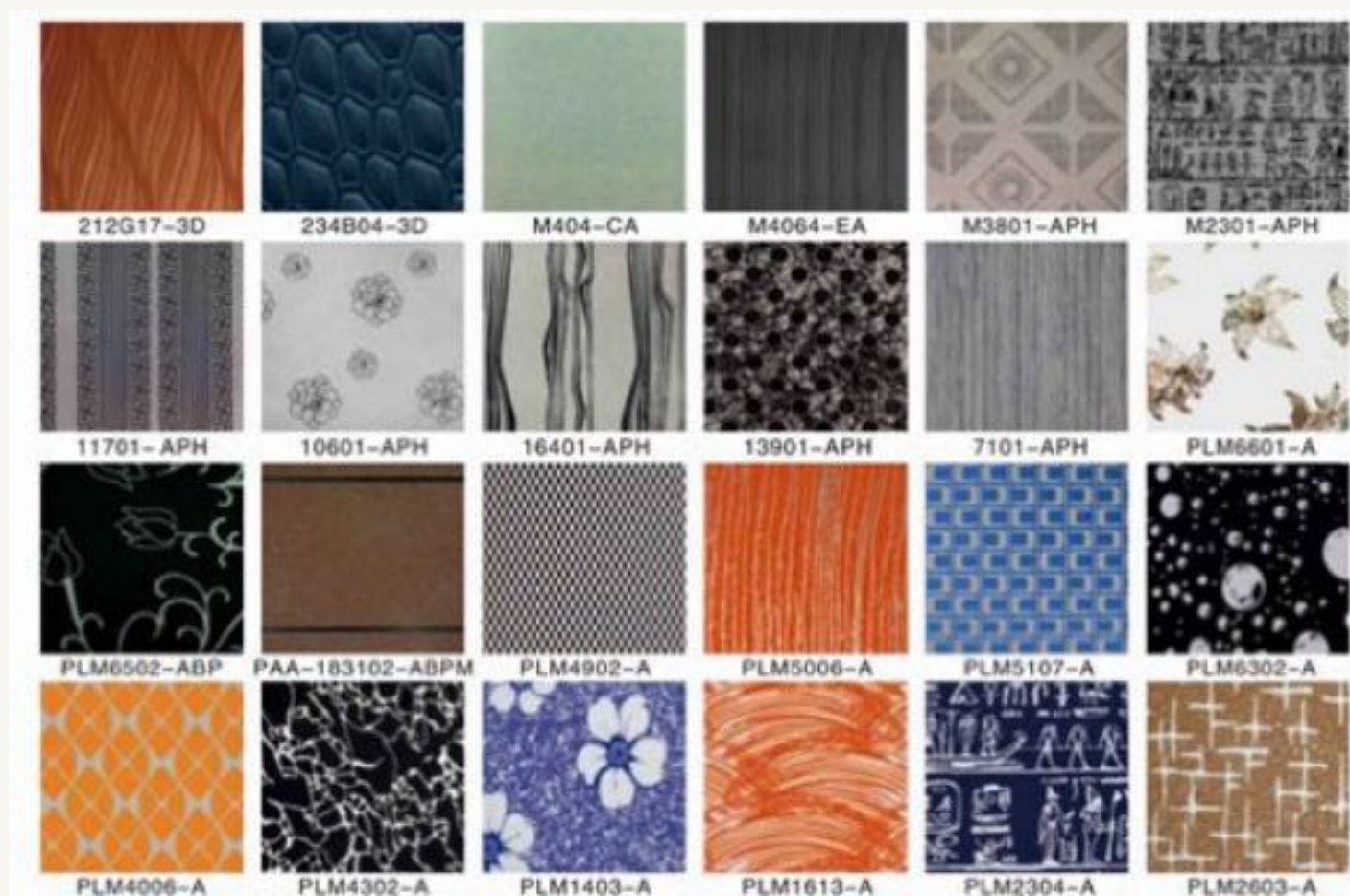
Panel Thickness	2mm/2.5mm/3mm/4mm
Alloy	1100 3003 5005 normally
Max Width	1900mm
Max Length	5800mm normally
Coating Type	PE, PVDF
Surface Treatment	Powder Spraying
Color	RAL Color (Solid Color, Metallic Color), Wooden, Marble
Applications	Curtain Wall, Roofing



All alloy / material, gauge, width, coating, colour and application entries retained verbatim from the source specification.

FILM LAMINATED FINISHES

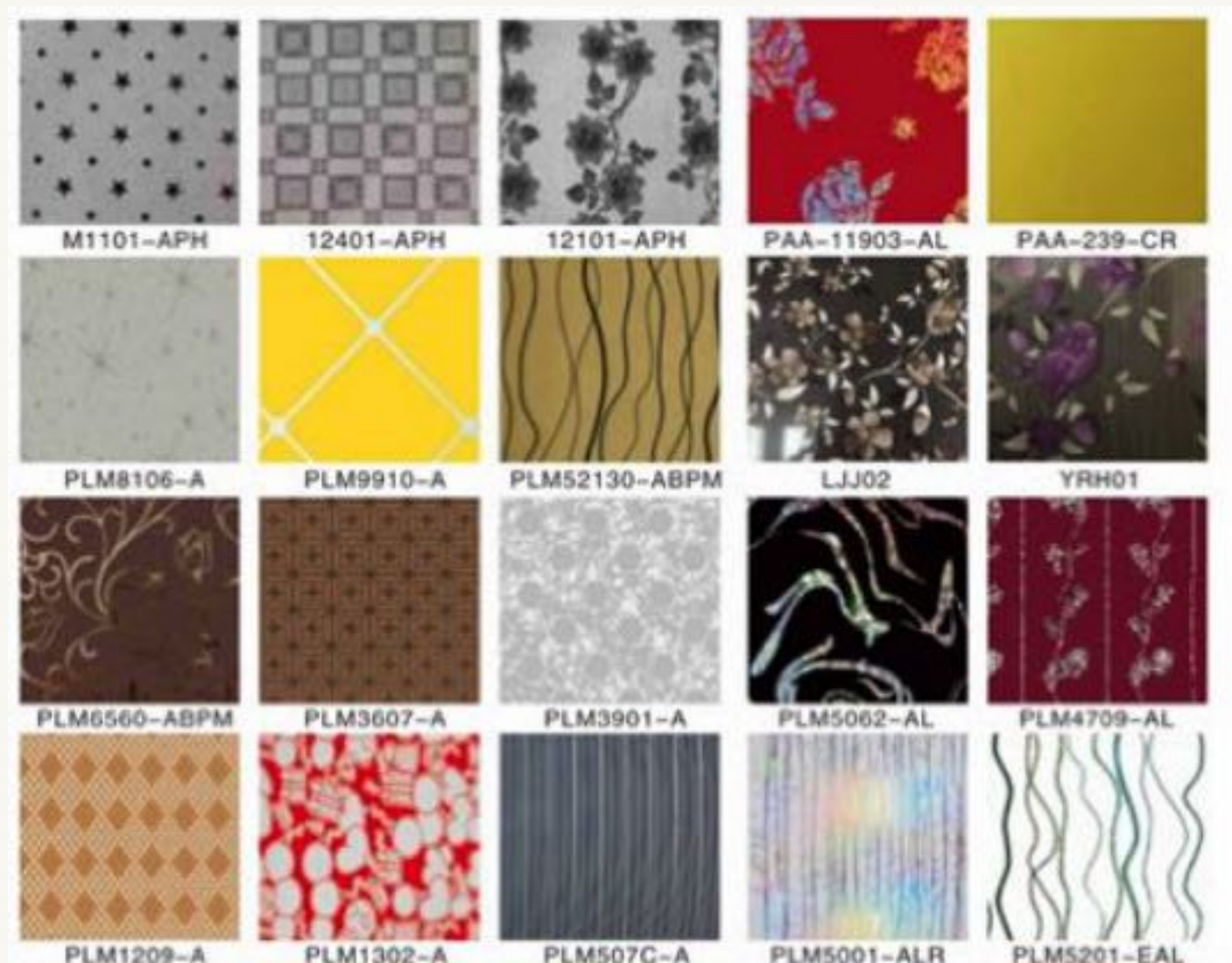
Aluminium / steel | Coded collection 01



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

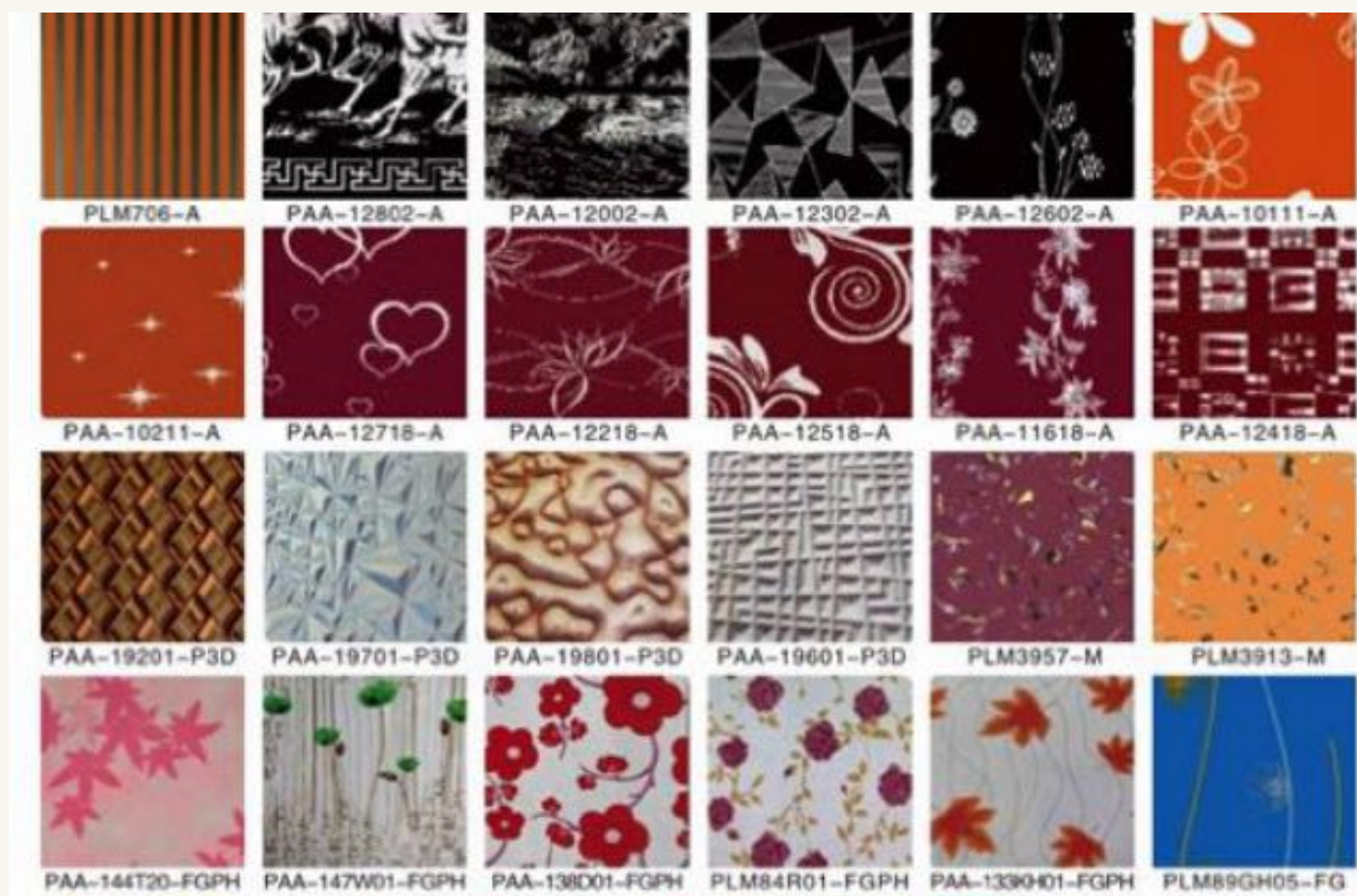
Aluminium / steel | Coded collection 02



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

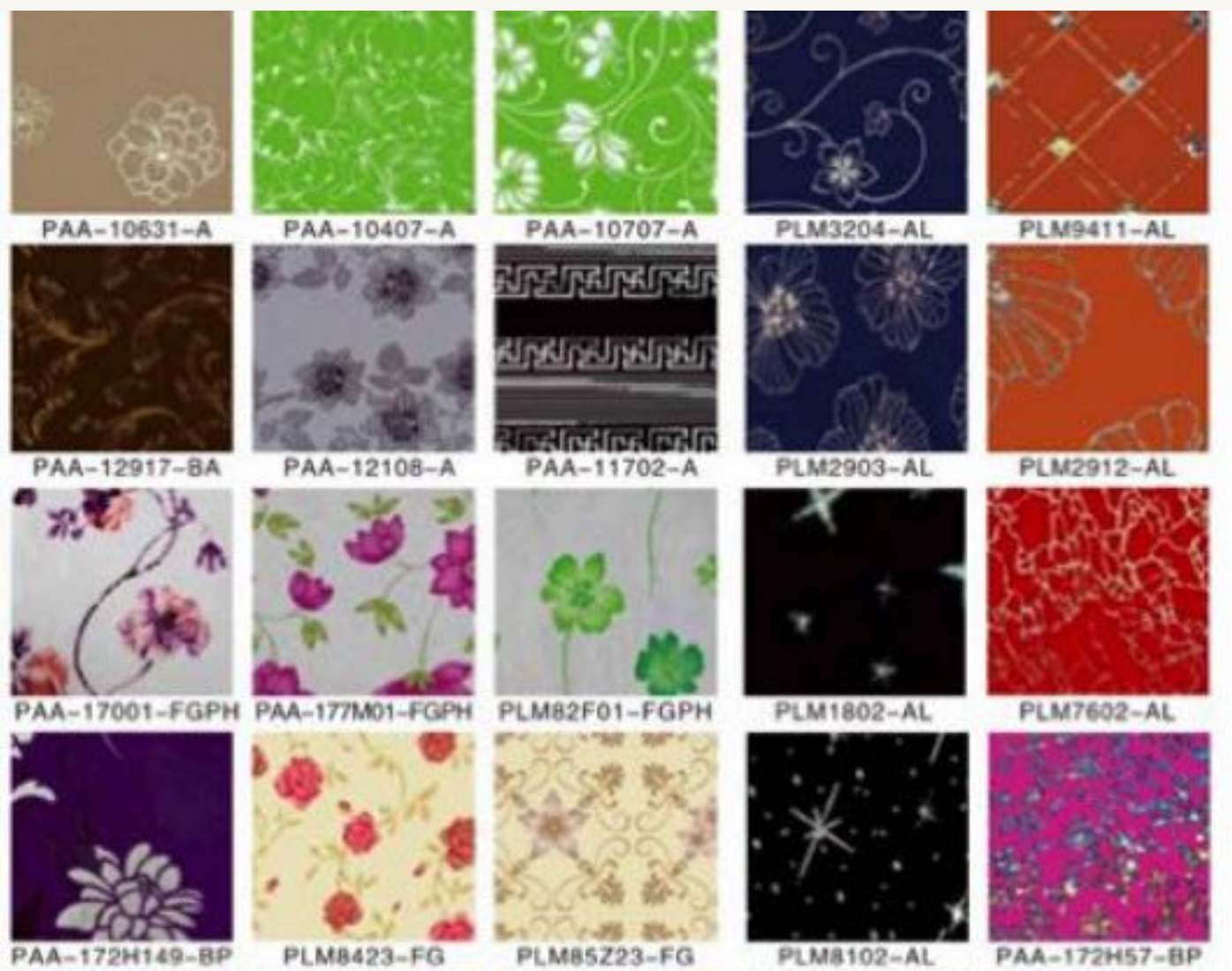
Aluminium / steel | Coded collection 03



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

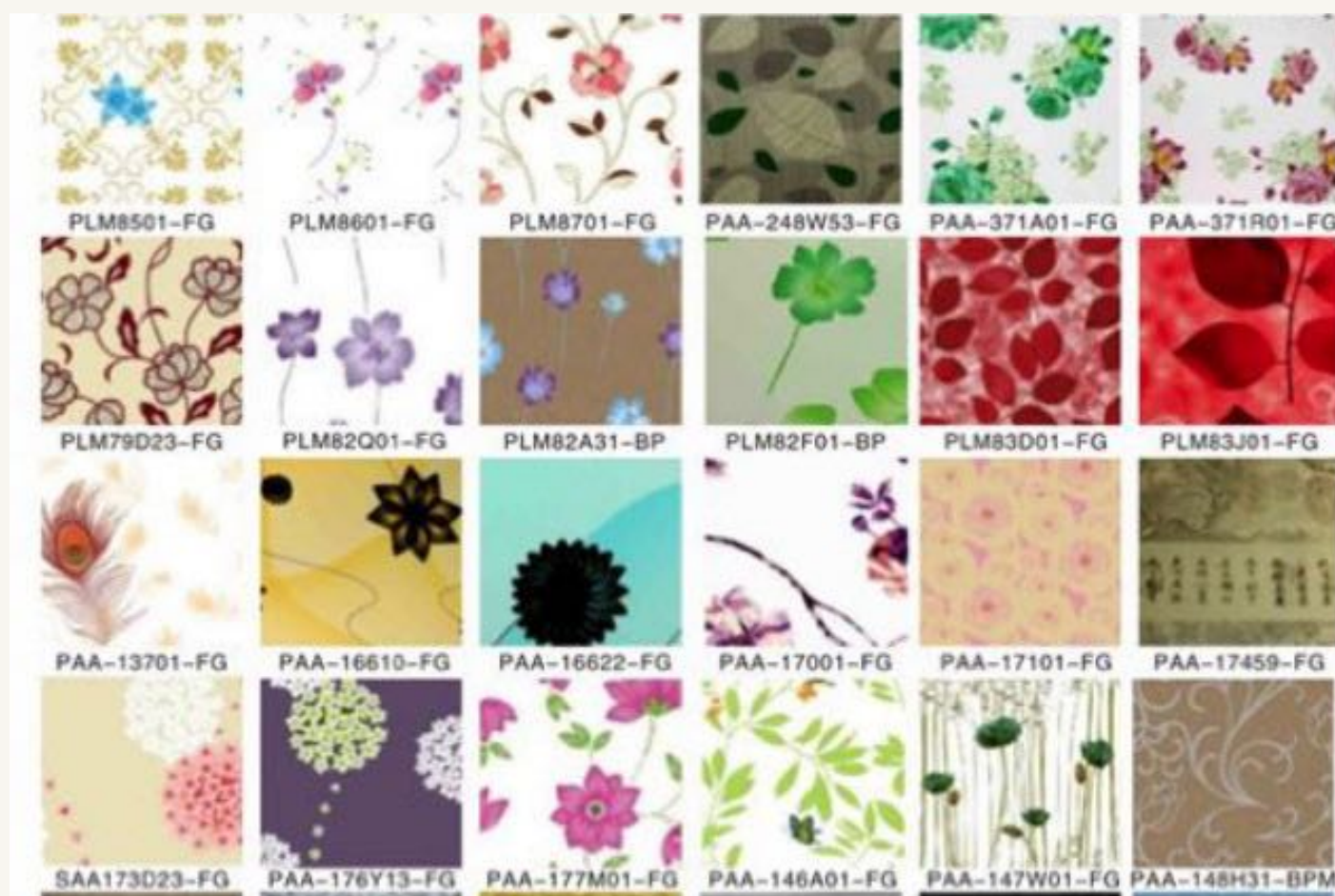
Aluminium / steel | Coded collection 04



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

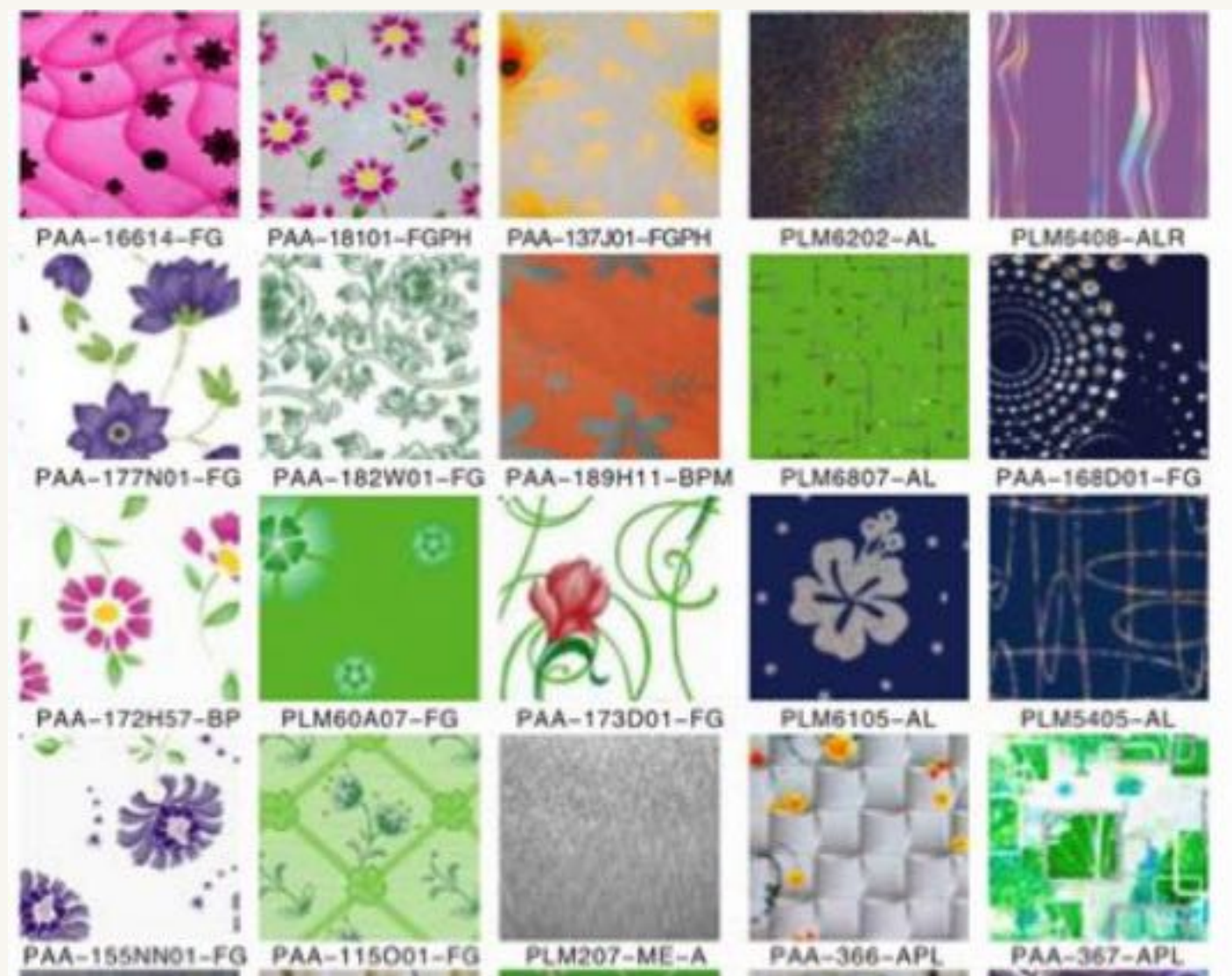
Aluminium / steel | Coded collection 05



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

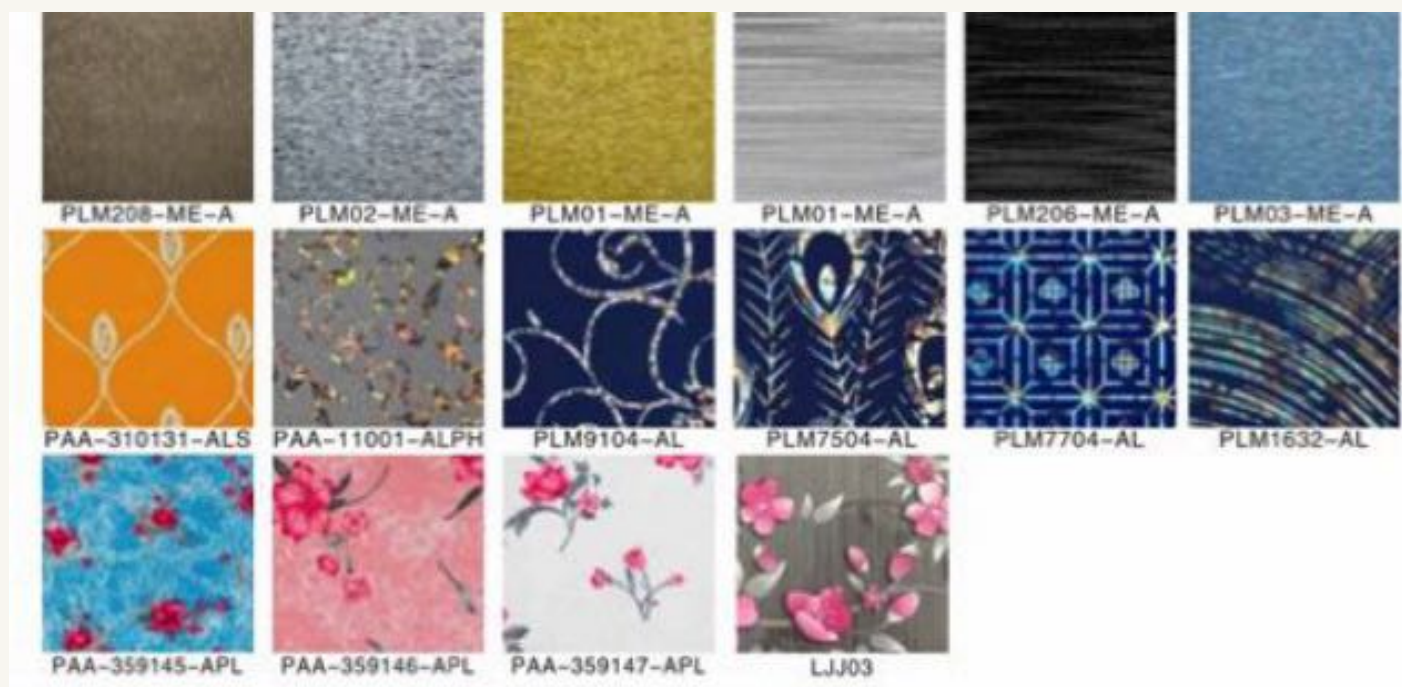
Aluminium / steel | Coded collection 06



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

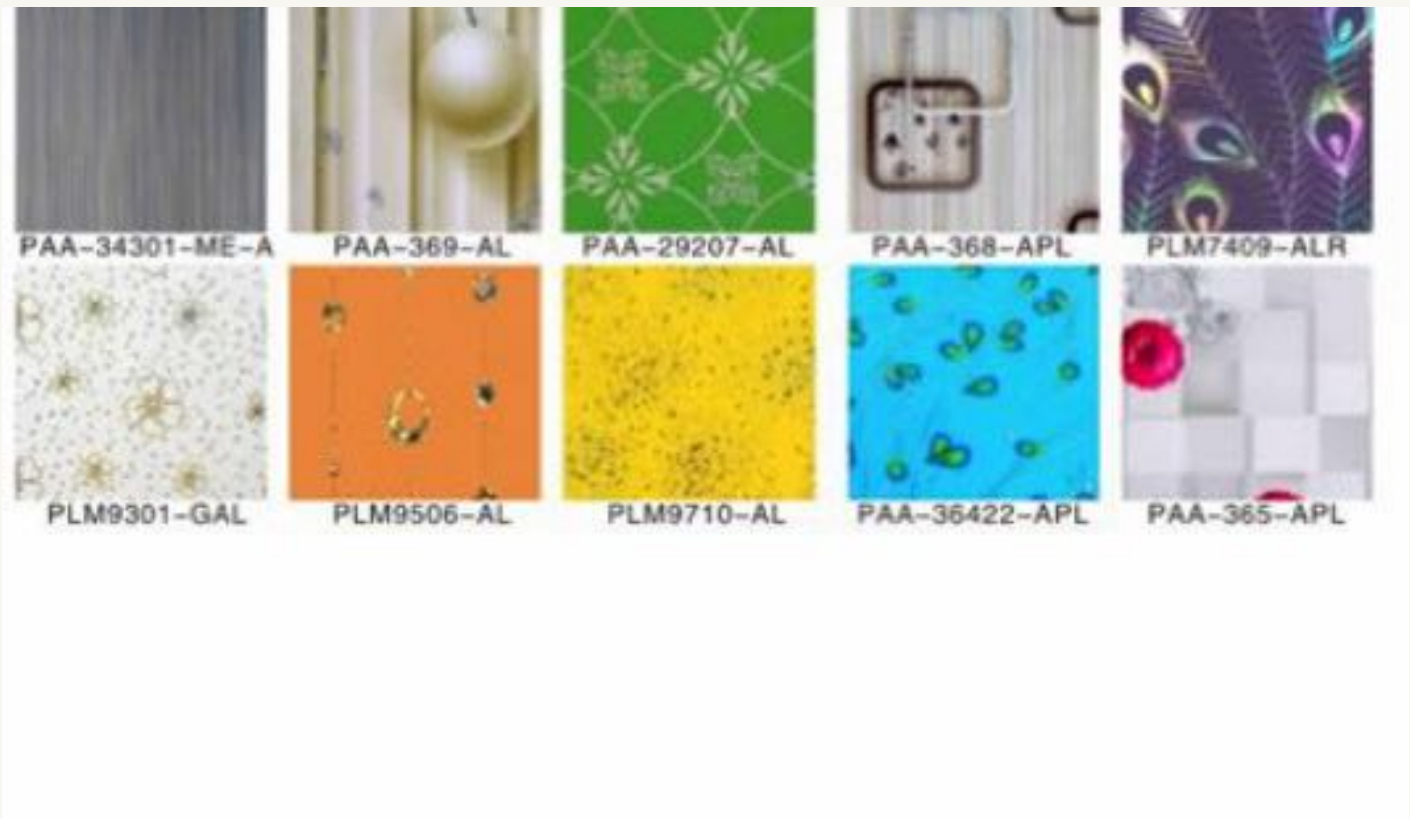
Aluminium / steel | Coded collection 07



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

FILM LAMINATED FINISHES

Aluminium / steel | Coded collection 08



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

WOOD FINISHES

Aluminium / steel | Coded collection 01



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

WOOD FINISHES

Aluminium / steel | Coded collection 02



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

WOOD FINISHES

Aluminium / steel | Coded collection 03



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

WOOD FINISHES

Aluminium / steel | Coded collection 04



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

WOOD FINISHES

Aluminium / steel | Coded collection 05



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

WOOD FINISHES

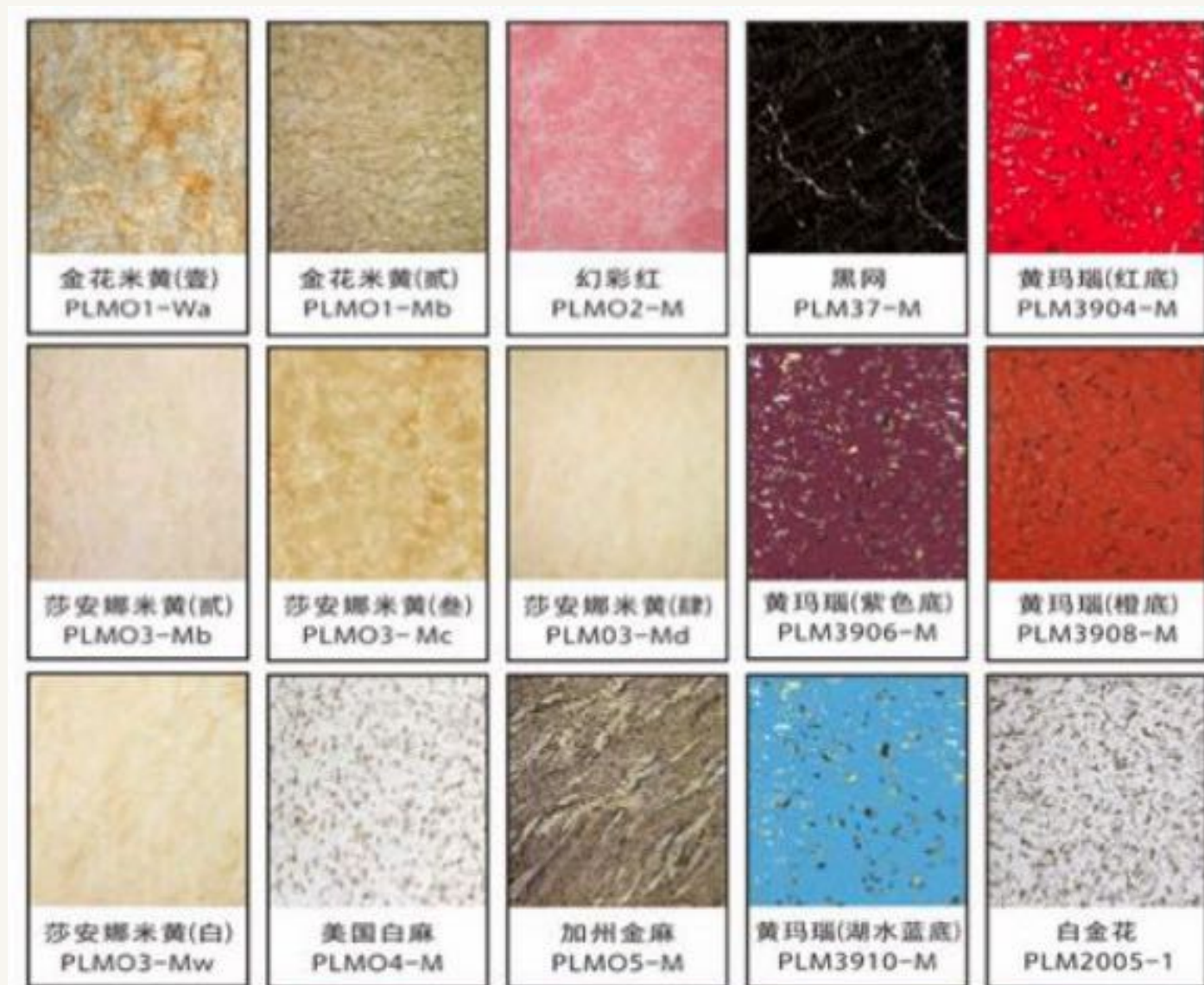
Aluminium / steel | Coded collection 06



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

MARBLE FINISHES

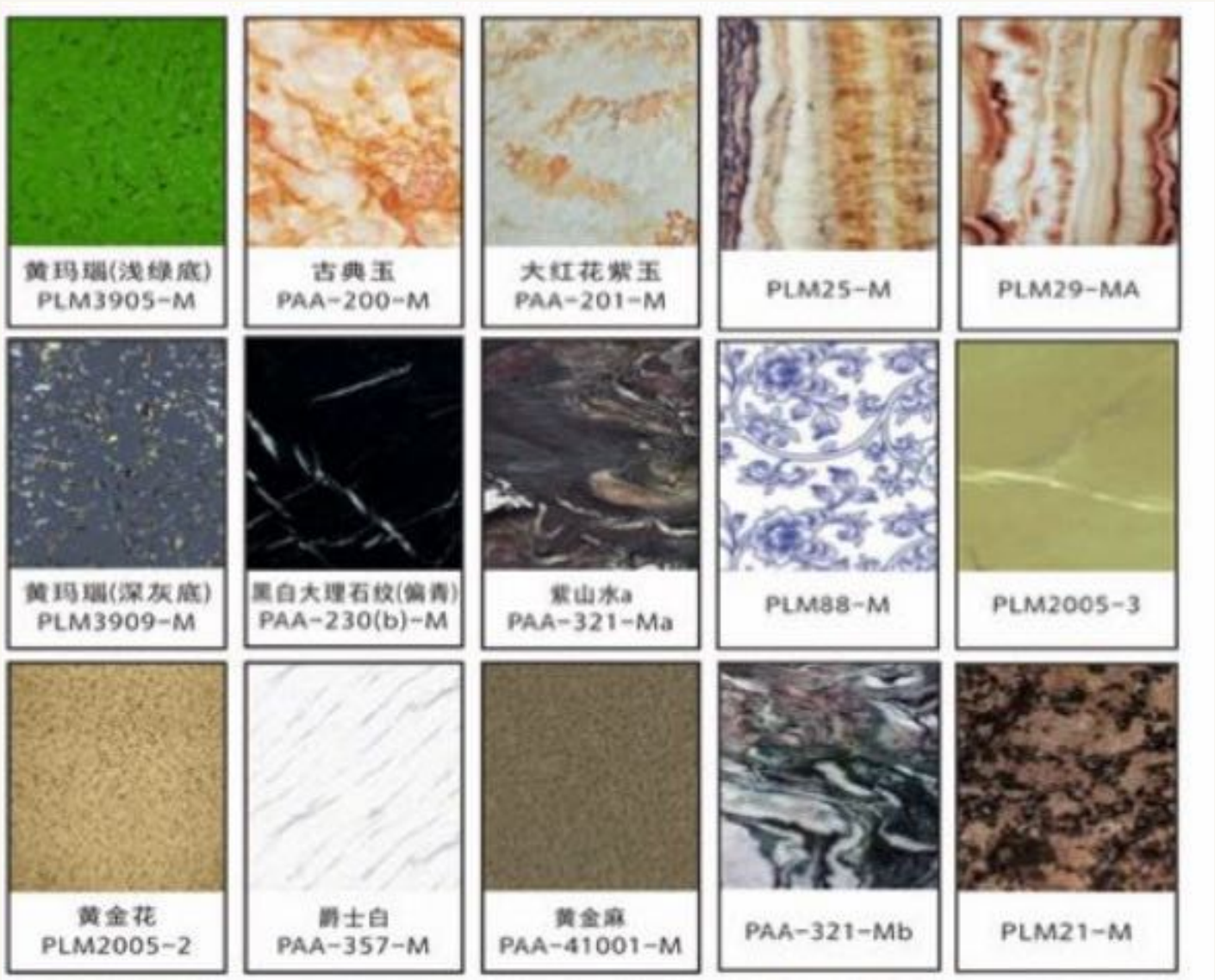
Aluminium / steel | Coded collection 01



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

MARBLE FINISHES

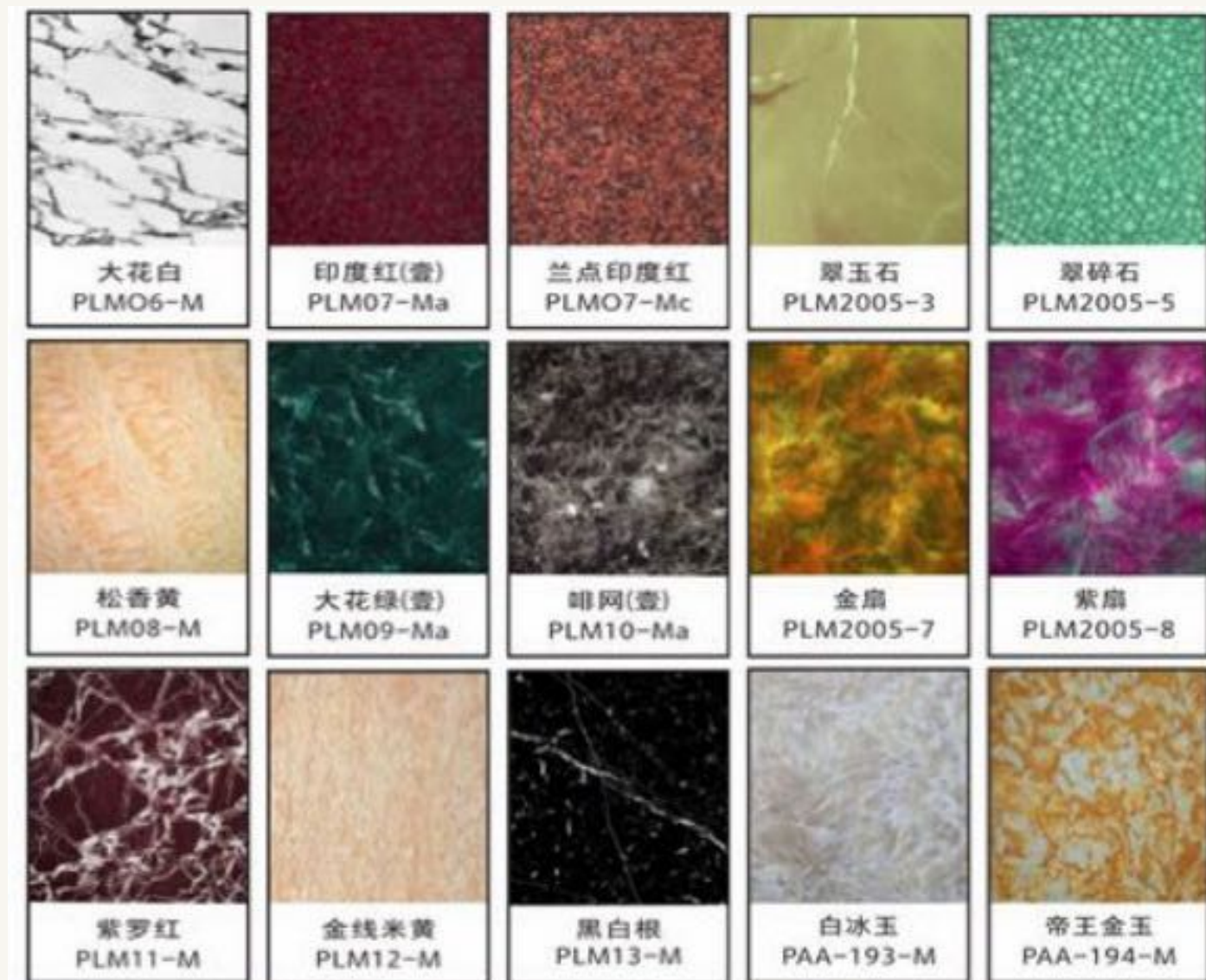
Aluminium / steel | Coded collection 02



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

MARBLE FINISHES

Aluminium / steel | Coded collection 03



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

MARBLE FINISHES

Aluminium / steel | Coded collection 04



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

MARBLE FINISHES

Aluminium / steel | Coded collection 05



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

MARBLE FINISHES

Aluminium / steel | Coded collection 06



Original colour and model identifiers are preserved beneath each swatch. Printed colours are indicative; request a physical sample for specification.

VCM AVAILABLE PATTERNS

Material textures | Bilingual pattern reference

VCM可实现效果 VCM Available Pattern

Metallic Texture

金属质感



Texture

肌理



Floral Pattern

图案花纹



PCM AVAILABLE PATTERNS

Material textures | Bilingual pattern reference

PCM可实现效果 PCM Available Pattern

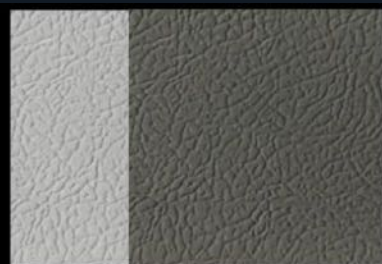
Plain Colour
素色



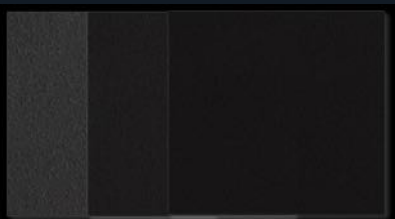
Glossy
闪银



Embossing
压花



Frosted
磨砂



SUS Brush
不锈钢
拉丝



MCM AVAILABLE PATTERNS

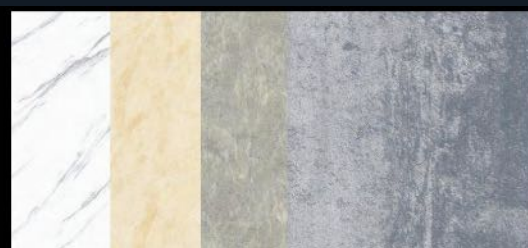
Material textures | Bilingual pattern reference

MCM可实现效果MCM Available Pattern

木纹
Wood grain



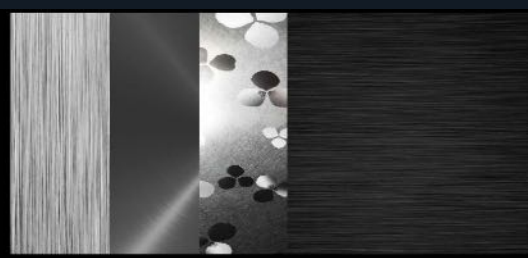
石纹
Stone grain



皮纹
Leather
布纹
Cloth

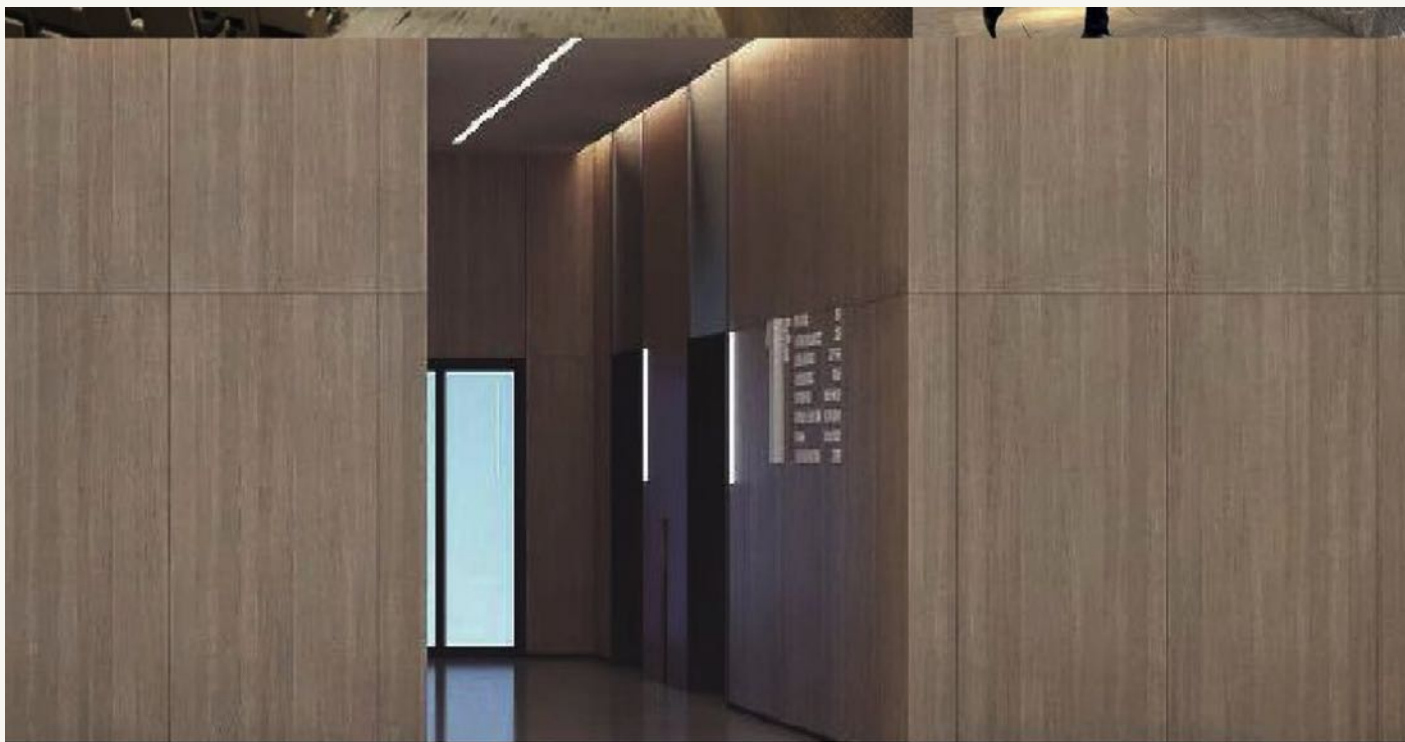


金属质感
Metal
texture



SURFACES IN INTERIORS

Ceilings, walls and reception spaces



Interior application photography from the original catalogue, source page 112.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



VCM

LELS3162

Silver-grey hairline

APPLICATION

Door



VCM

LELS3163

Grey hairline

APPLICATION

Door

Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



VCM

LELS3164

Dark grey hairline

APPLICATION

Door



VCM

LELS3165

Light grey hairline

APPLICATION

Door

Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



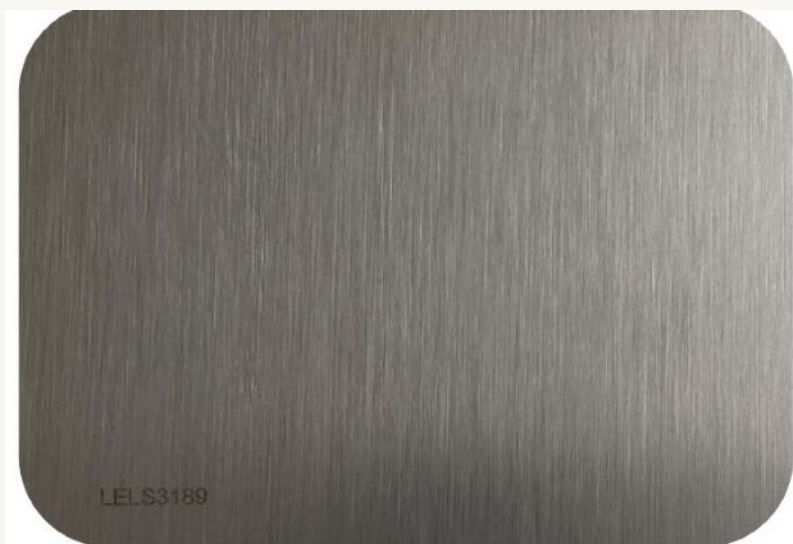
VCM

LELS3185

Grey hairline

APPLICATION

Door



VCM

LELS3189

White hairline

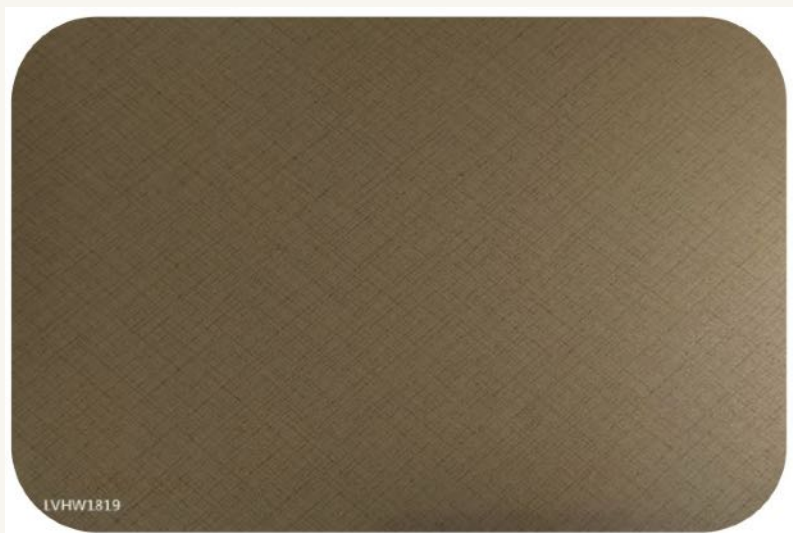
APPLICATION

Door

Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



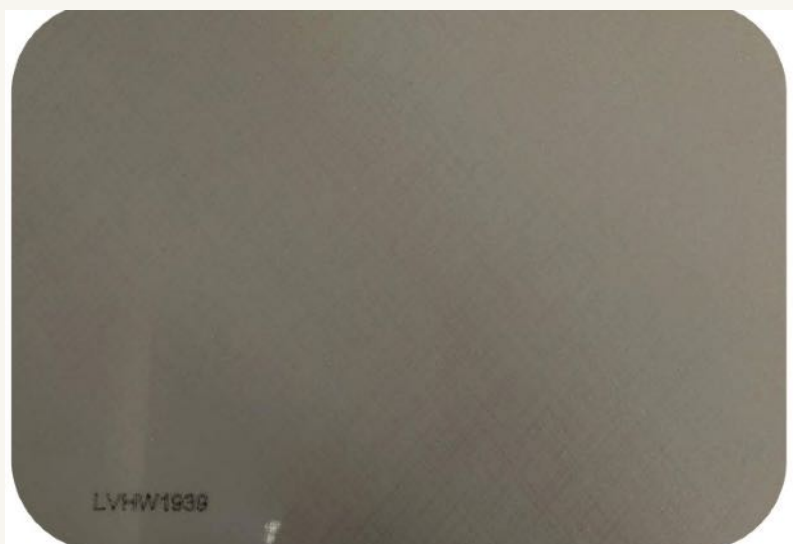
VCM

LVHW1819

Gold texture

APPLICATION

Door



VCM

LVHW1939

White with sparkling texture

APPLICATION

Door

Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



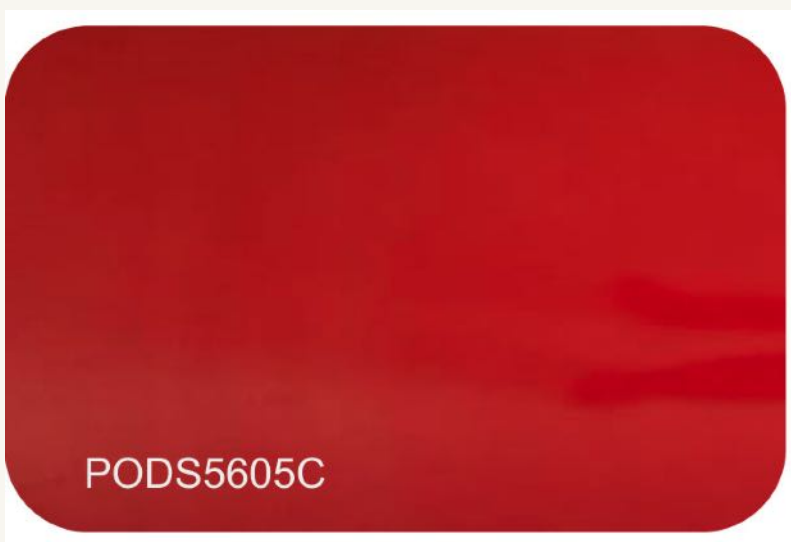
VCM

LVLS1062

Silver hairline

APPLICATION

Door



PCM

PODS5605C

High-gloss red

APPLICATION

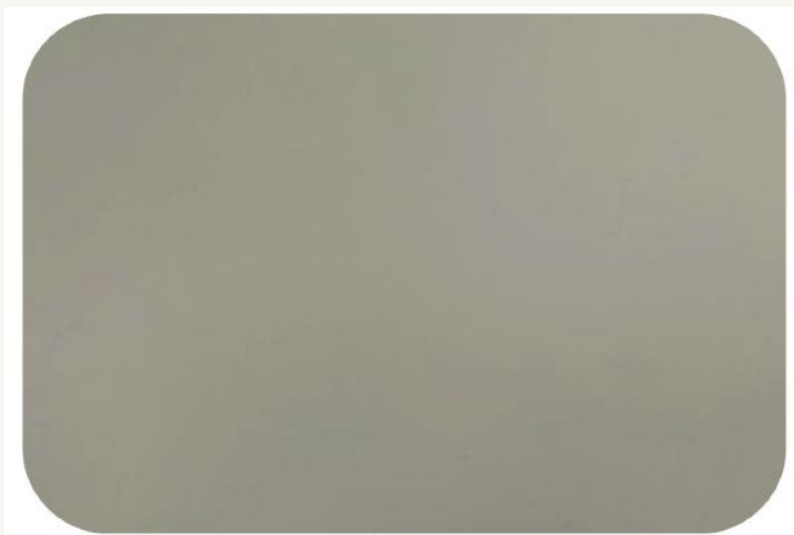
Door / Cabinet



Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



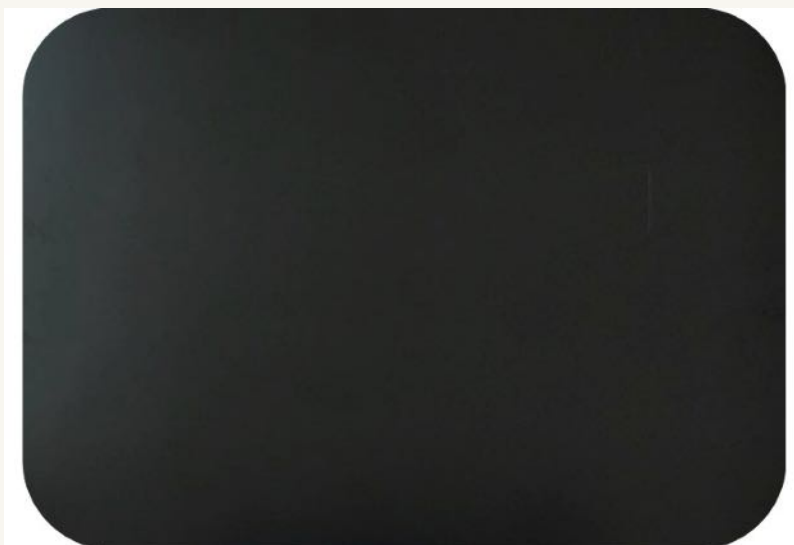
VCM

LEDS3241

Mono white

APPLICATION

Cabinet



VCM

LEDS3249

Mono black

APPLICATION

Cabinet

Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

REFRIGERATOR FINISHES

Speedbird | Appliance surface collection



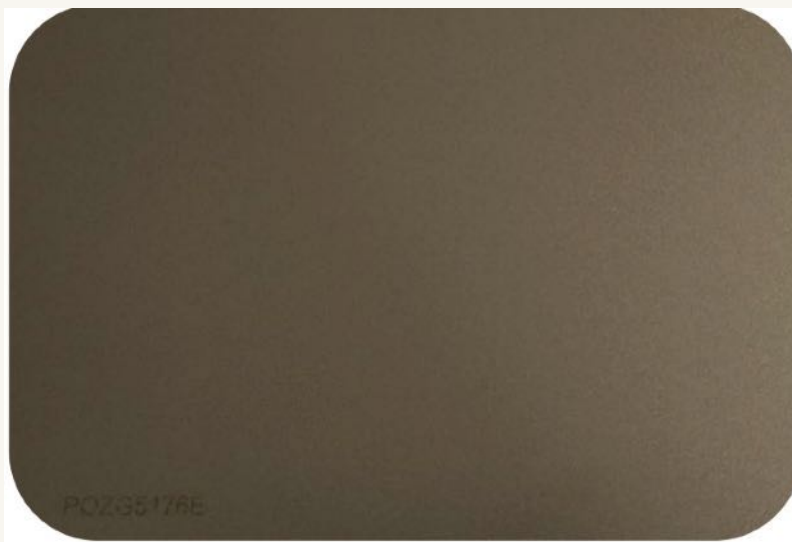
PCM

POZG5154G

Golden with sparkling

APPLICATION

Cabinet



PCM

POZG5176E

Champagne golden with sparkling

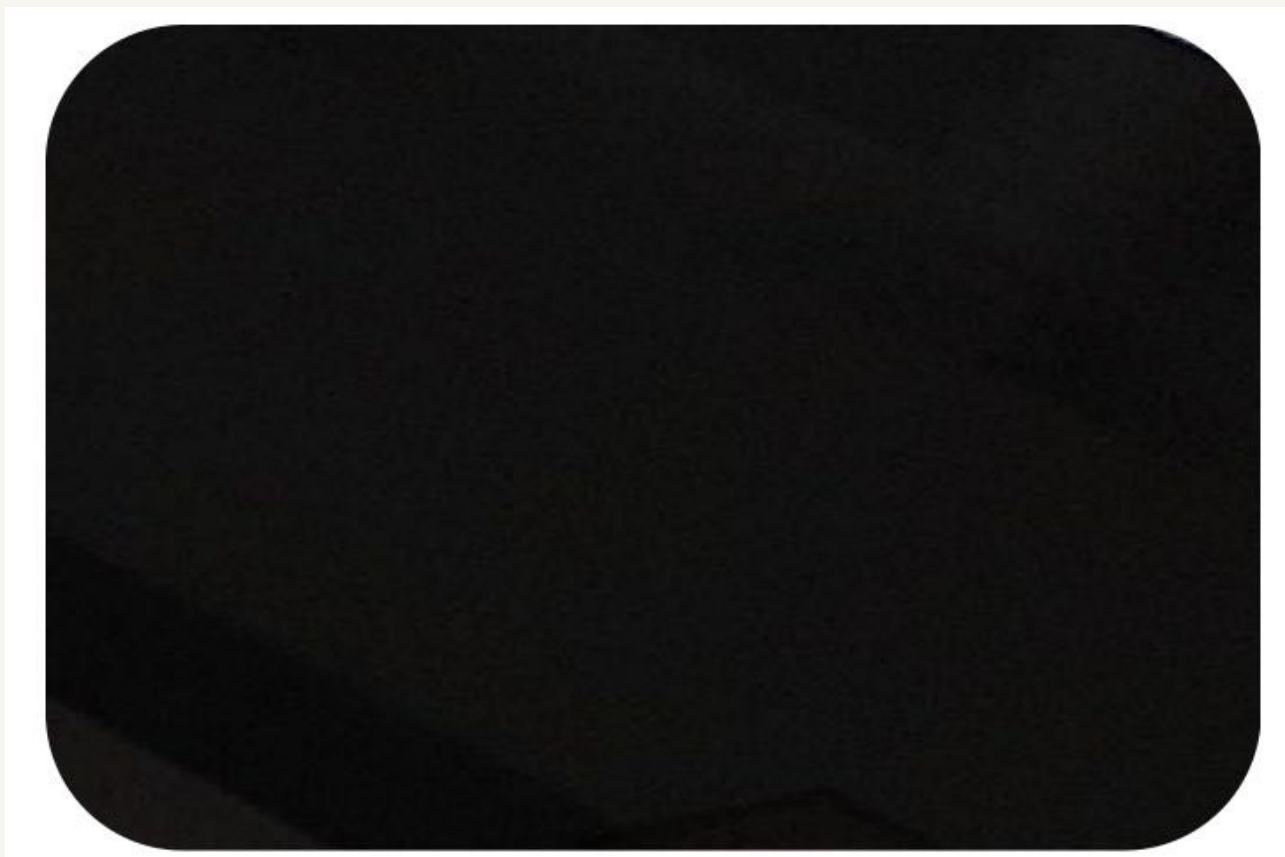
APPLICATION

Cabinet

Source comparison category: similar refrigerators in the market / Speedbird product. Finish colours are indicative.

BLACK GLASS

Speedbird | Oven surface collection



SILK PRINTING GLASS

Colour code: Black Glass

Source comparison: Similar Oven in market / Speedbird's product



The original application cell is blank. No appliance-specific performance claim has been added.

LET'S CONNECT

From Korea to your next project



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