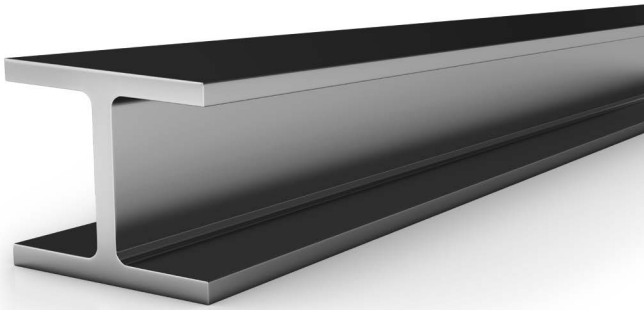
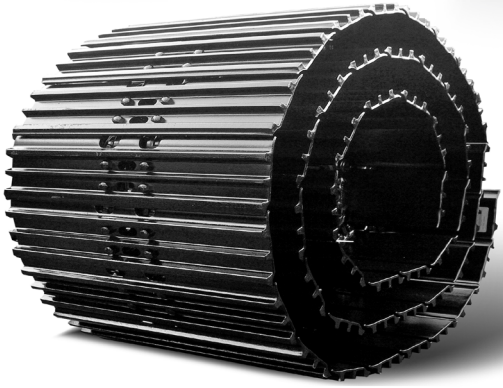












Product Guide

현대제철 종합 제품소개 | **PART 2**

HYUNDAI STEEL

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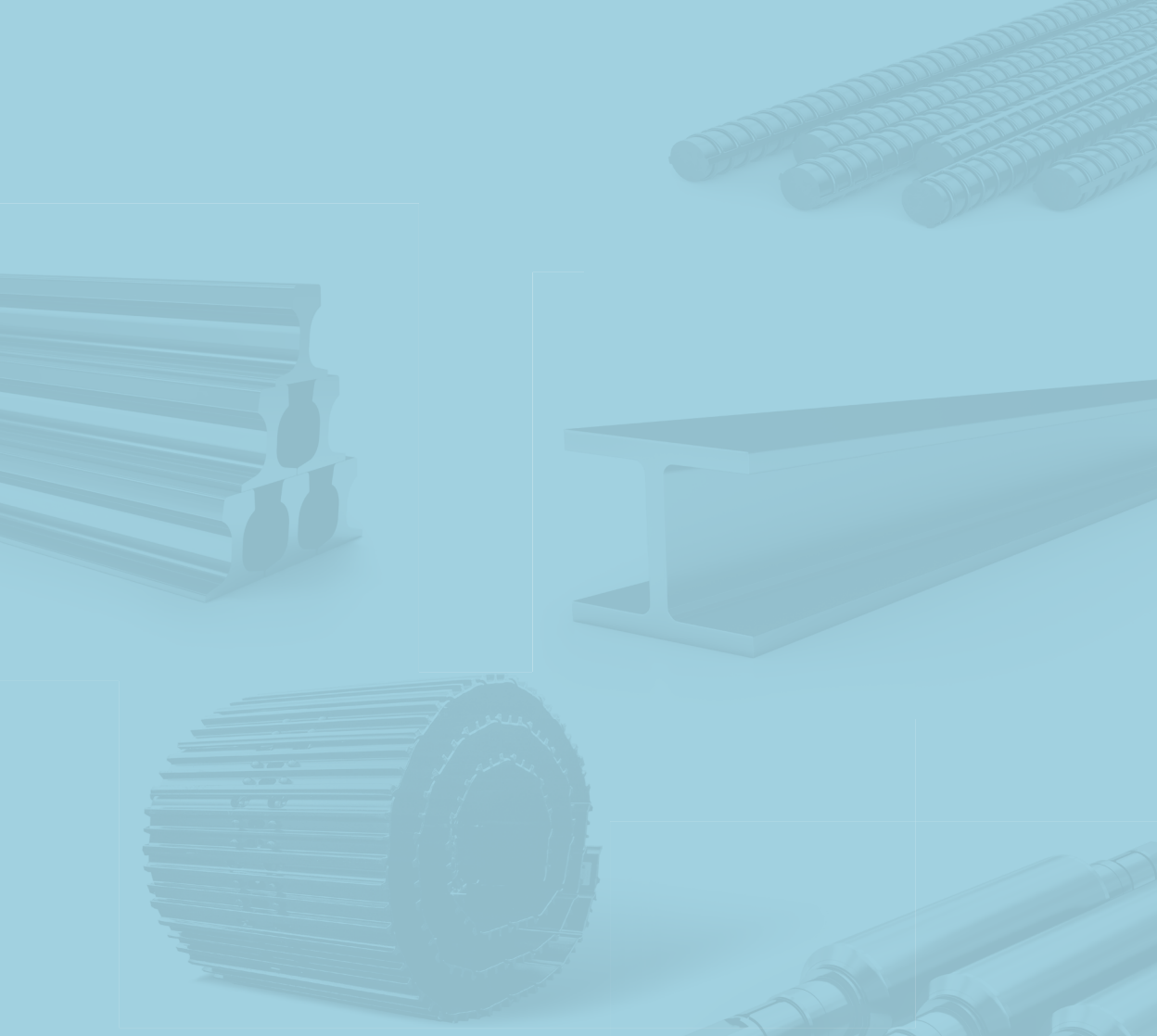
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HYUNDAI STEEL

현대제철 사명을 부각시킨 심벌 H는 High Spirit(진취적 기상), Harmony(조화), Humanity (인류애)를 상징합니다. H의 견고한 양축은 현대제철의 신·기존사업과 기업, 고객을 뜻하며 가운데 교량(Bridge)은 양축의 균형적 만남과 통합으로 성장하는 미래를 의미합니다.

The 'H' symbol of Hyundai Steel highlights the company's mission for High Spirit, Harmony and Humanity. Like its shape, the firm axes on both sides signify Hyundai Steel's new and existing businesses and the company and clients, and the bridge in the middle balances both axes and their future growing in consolidation.



현대제철은 미래 사업환경의 핵심 기반인 철을 생산하고, 첨단 기술을 바탕으로 최적의 소재를 공급하는 파트너입니다. 고객의 기대를 뛰어넘는 혁신적인 제품과 서비스로 사업영역을 확장하고, 차별화된 방식으로 고객이 원하는 가치의 제품을 생산하고 있습니다. 현대제철은 철, 그 이상의 가치를 창조하고, 상생 속에 발전하는 새로운 산업 생태계 모델을 만들어갈 것입니다.

HYUNDAI STEEL manufactures steel, a key foundation for future business environment, and supplies optimal materials through cutting-edge technologies. The company is a reliable partner for an increasing number of businesses around the world. We are expanding our business territories with innovative products and services that exceed our customers' expectations while manufacturing products that transcend targeted values through differentiation. HYUNDAI STEEL will continue to create values and new industrial ecosystems that develop in harmony.

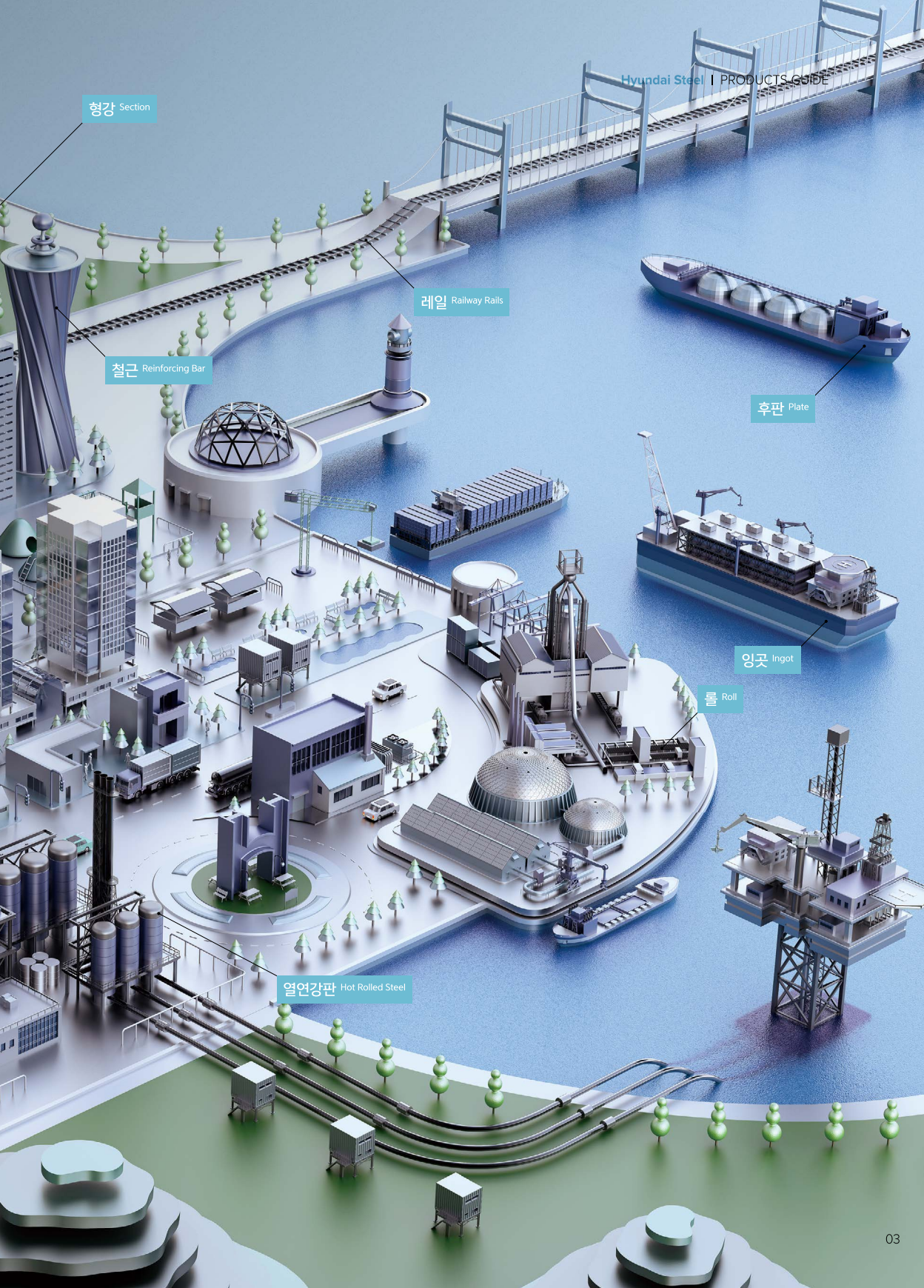
Engineering the Future Beyond Steel

철, 그 이상의 가치창조

현대제철은 언제나 고객과 함께합니다. 뛰어난 기술력과 차별화된 제품 경쟁력을 바탕으로 고객의 기대를 뛰어넘는 최적의 소재를 공급함으로써 <철, 그 이상의 가치창조>라는 비전을 실현합니다. 더불어 기존 사업의 한계를 넘어 변화와 혁신으로 세계 최고의 철강기업을 향해 나아갑니다.

Hyundai Steel is always with the clients. The company realizes the vision of <Engineering the Future Beyond Steel> by providing optimized materials that exceed the expectations of clients based on its advanced technologies and differentiated product competitiveness.

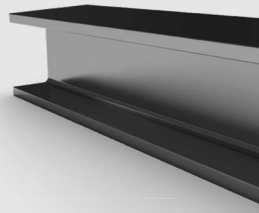



형강 Section
레일 Railway Rails
철근 Reinforcing Bar
후판 Plate
잉곳 Ingot
롤 Roll
열연강판 Hot Rolled Steel

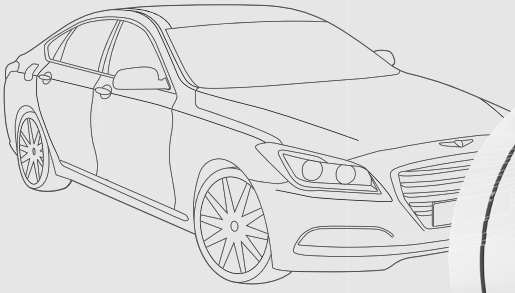
Hyundai Steel Products & Application

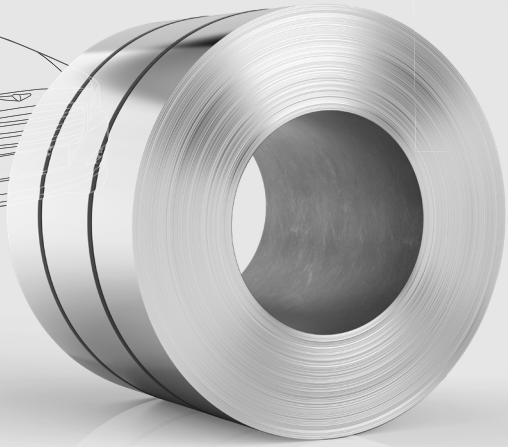
현대제철은 지속적인 연구개발과 고도화된 기술력을 바탕으로 철이 활용되는 다양한 산업군의 요구에 부응하는 탁월한 제품을 공급하고 있습니다.

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
자동차





냉연강판 | Cold Rolled Steel 열연강판을 상온에서 압연한 제품으로 두께가 균일하고 표면이 미려합니다. 차체 내·외판 등 자동차 강재의 가장 많은 부분에 적용되는 제품입니다.

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.

자동차부품 | Automotive Parts 자동차의 안전성과 연비를 향상시키는 제품으로 강도를 높이고 무게를 낮추는 복합적 기술을 필요로 하며 주요 충돌부, 도어 내판, 샤시 부품 등에 적용됩니다.

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.

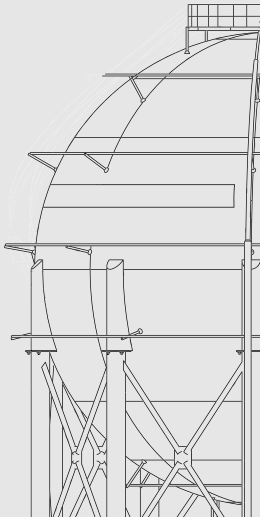
특수강 | Special Steel 크랭크샤프트, 콘로드 및 각종 기어류 등 자동차의 핵심 부품에 사용되는 제품으로 고강도와 고내구성이 요구됩니다.

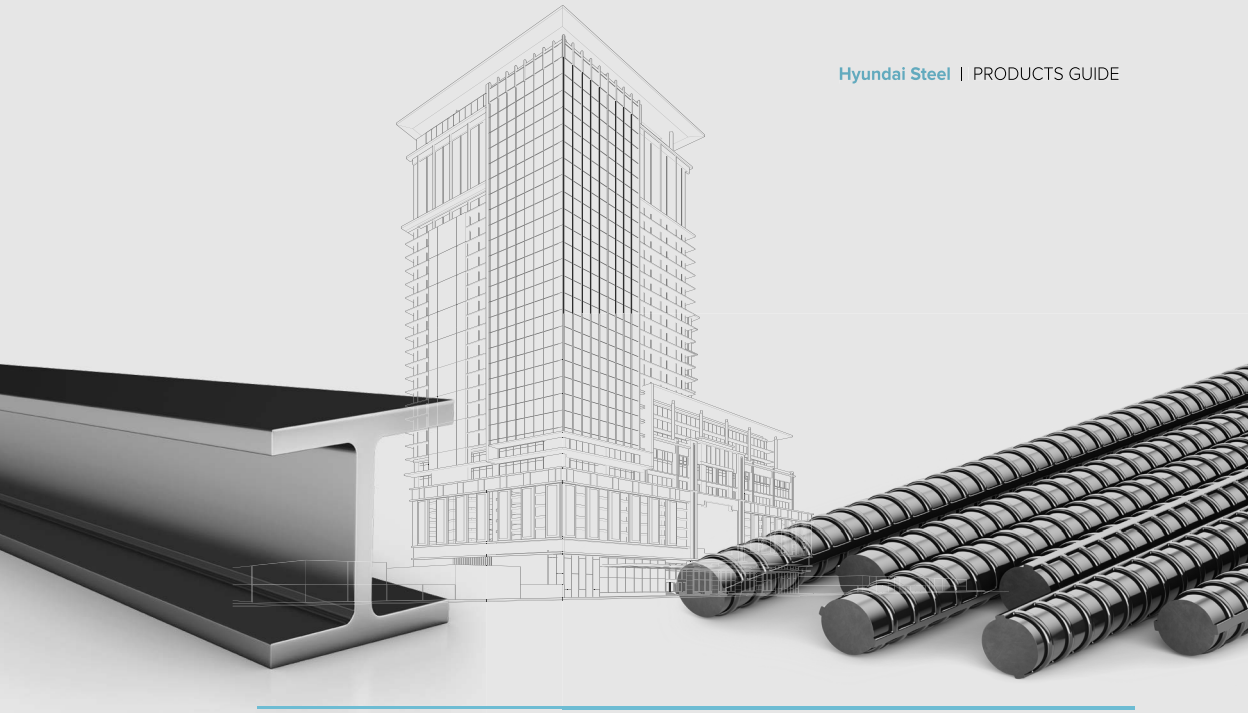
Special steels are employed in critical automotive parts such as crankshaft, connecting rod and many other gear parts where high intensity and durability are necessary.

Energy
에너지

후판 | Plate 시추된 석유나 가스를 분류, 정제하고 저장하는 압력용기 제작에 사용됩니다. 압력용기는 처리하는 석유나 가스의 종류에 따라 저온, 고온, 부식 등을 견딜 수 있어야 합니다.

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
건설

H형강 | H-Section H형강은 건물의 뼈대를 이루는 철강의 대표적인 제품입니다. SHN은 용접 성능과 내충격 성능이 월등한 H형강으로서 타 철강재 대비 강재 사용량을 줄이고 공사 기간을 단축시키는 장점이 있습니다.

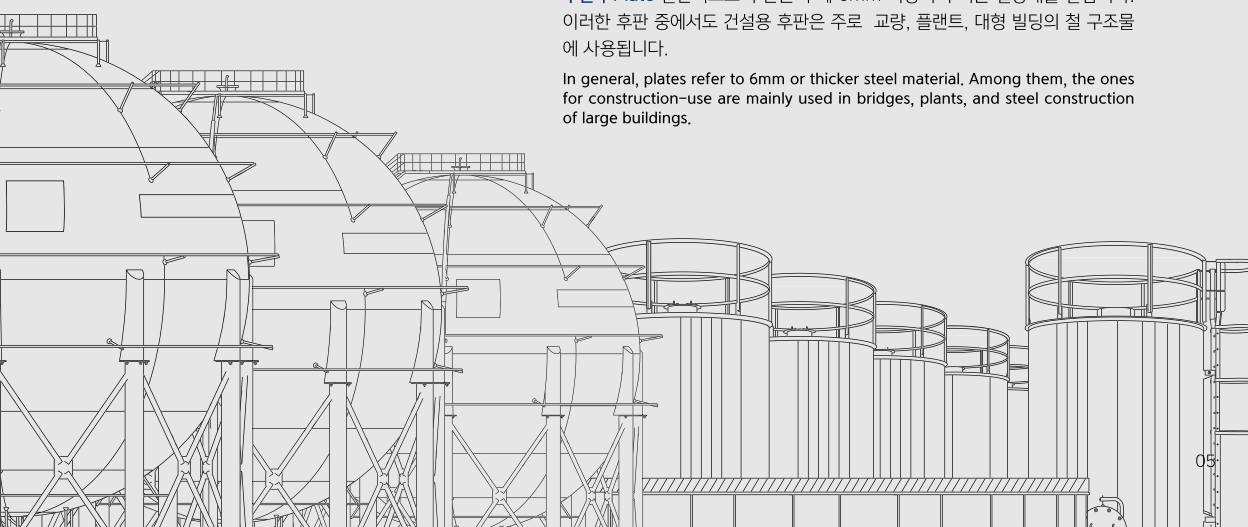
H-Section comprises the structure of a building as one of the main steel product. SHN is an H-Section with outstanding welding performance and impact resistance and its advantage is in reducing volume of steel materials used in comparison to other steel materials and shortening the construction period.

철근 | Reinforcing Bar 철근은 H형강과 마찬가지로 건설용 철강재의 대표 제품입니다. 초고강도 철근은 철근 사용량을 줄여 시공성을 높여주며 나사형 철근은 철근 이음시 나사선을 만드는 공정이 불필요해 공사기간을 단축시킬 수 있습니다. 그리고 내진용 철근은 지진저항에 최적화되어 구조물의 안전성을 한층 높일 수 있습니다.

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.

후판 | Plate 일반적으로 후판은 두께 6mm 이상의 두꺼운 철강재를 말합니다. 이러한 후판 중에서도 건설용 후판은 주로 교량, 플랜트, 대형 빌딩의 철 구조물에 사용됩니다.

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.



Home Appliances
가전



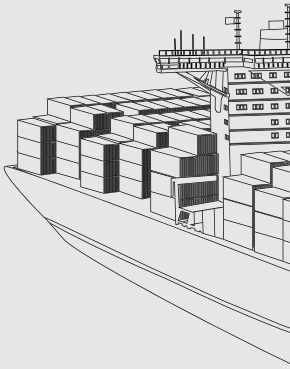
냉연강판 | Cold Rolled Steel 가전용 냉연강판은 TV, 냉장고, 세탁기의 외판 등 가전제품 곳곳에 적용됩니다. 다양한 디자인을 위해 뛰어난 가공성을 비롯해 고내식성, 전도성 등의 여러 특징을 지니고 있습니다.

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.

스테인리스 강판 | Stainless Steel 스테인리스 강판은 다른 철강재에 비해 녹이 잘 슬지 않습니다. 일반강의 수십에서 수천 배 이상의 내식성을 가지며 뛰어난 내열성을 지녀 식기 세척기, 세탁기 등의 가전제품에 널리 이용됩니다.

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
조선



후판 | Plate 조선용 후판은 저온인성, 내충격성 등의 특성을 보이는데 주로 벌크선, 컨테이너선, LNG선 등의 내외벽과 상부 갑판 및 해치 덮개 등에 적용됩니다. 현대제철은 각국 선급협회로부터 제조법 승인을 받아 선급 일반용과 고장력강을 생산하고 있습니다.

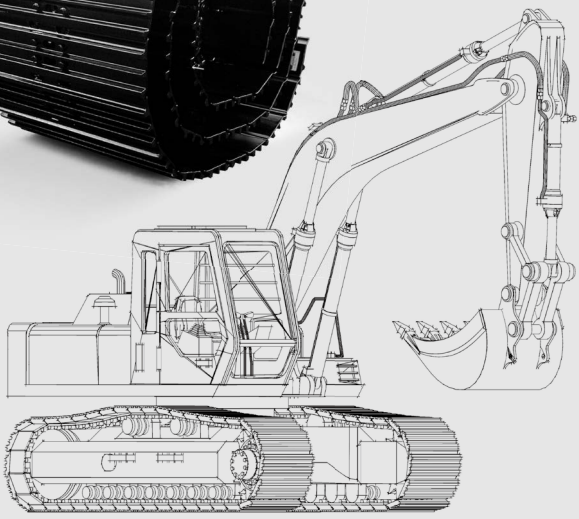
Ship plates show properties such as low temperature toughness and impact resistance and are usually applied to inner and outer walls, upper decks, and hatch covers of bulk carriers, container ships, and LNG ships. Hyundai Steel manufactures regular and high strength steels after its manufacturing process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

형강 | Section 형강은 모양에 따라 H, I, ㄱ, ㄷ형강 등으로 구분됩니다. 선박의 후판 보강재나 데크 하우스 등에 사용되며 고강도와 충격 흡수력 등의 기술이 요구됩니다.

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
기타산업





레일 | Railway Rails 고속열차, 일반열차, 자기부상열차 등의 선로에 사용되는 레일은 다른 형강에 비해 강도가 높으며 내마모성이 뛰어난 특징을 가지고 있습니다.

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.

무한궤도 | Track Shoe Assembly 무한궤도는 굴삭기의 하부 구조로 모래와 자갈 등이 많은 공사 현장에서 안정적으로 무게를 지탱하고 경사면에서 기동하기 위한 고강도 정밀 제품입니다.

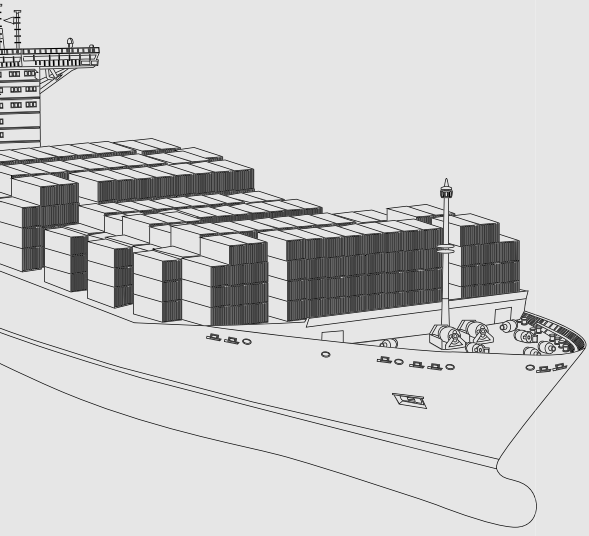
Built as substructure of an excavator, track shoe assembly is a high-strength/precision product for stably sustain the weight on sandy and gritty sites and function on the slope.

롤 | Roll 철강재의 반제품인 슬래브, 빌릿 등을 압연하는 롤은 압연기에 장착되어 고온의 반제품을 압연하는데 사용되어 내마모성, 내열성, 내구성이 필요합니다.

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.

강널말뚝 | Sheet Pile 강널말뚝은 토목, 건축 공사 및 하천 해안 공사의 물막이, 흙막이 용도로 사용되며 연결부의 견고함으로 우수한 차수성능을 발휘합니다.

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.





Manufacturing Work Sites


1


2


3

생산 공장

1

인천공장 Incheon Plant

한국 철강산업의 효시가 된 공장으로 세계 최대 단일 전기로 공장의 위용을 갖춘 인천공장은 친환경, 고효율의 시설을 갖추고 있습니다. 특히 인천 북항 철재부두를 통해 물류비 효율성을 한층 높입니다.

Being the pioneer in Korean steel industry, Incheon Plant is the world's largest single electric furnace plant and equipped with eco-friendly and high-efficiency facilities. Incheon North Port's steel pier, in particular, enhances cost efficiency.

생산제품 H형강, 철근, 일반형강, 스테인리스 강판
Products H-Section, Re-Bar, Regular Section, Stainless Steel

2

포항공장 Pohang Plant

최고 수준의 기술력과 높은 경쟁력을 바탕으로 세계에서 두 번째로 자기부상열차 레일개발에 성공해 국내에서 유일하게 고속 철도용 레일을 공급하고 있습니다.

With its top level technology and high competitiveness, Pohang Plant is the only source manufacturing railroads for high-speed railways in Korea after successful development of Maglev train railroads as the second in the world.

생산제품 H형강, 철근, 레일, 원형강, 롤, 중기, 특수강
Products Re-Bar, Railway Rails, Round Steel, Rolls, Heavy Equipment

3

당진제철소 Dangjin Steelworks

2010년 국내 민간기업 최초로 일관제철소를 가동해 한국 철강사를 다시 쓰고 있는 당진제철소는 고로 및 전기로 공정을 모두 갖춘 종합제철소입니다.

Dangjin Steelworks, rewriting the history of Korean steel industry by being the first private corporation in the nation to run an integrated steel plant in 2010, is an integrated steel mill equipped with blast furnace and electric furnace processes.

생산제품 열연강판, 냉연강판, 후판, 철근, 특수강
Products Hot Rolled Steel, Cold Rolled Steel, Heavy Plate, Re-Bar, Special Steel



4



5



6

4

순천공장 Suncheon Plant

단일설비로는 세계 최대인 120만 톤 규모의 연속소둔 설비를 갖춘 순천공장은 연간 200만 톤의 냉연제품을 생산할 수 있는 공장입니다.

Suncheon plant boasts the world's largest single unit—1.2 million-ton-scale Continuous Annealing Line (CAL) with the annual capacity of producing 2-million-ton of cold rolled coils.

생산제품 냉연강판, 용융아연도금강판, 전기아연도금강판, 컬러강판
Products Cold Rolled Steel, Hot-dip Galvanizing Steel, Electro Galvanizing Steel, Color Steel

5

예산공장 Yesan Plant (위탁생산 Consignment Production)

자동차 경량화 제품 생산의 중심인 예산공장은 핫스탬핑(Hot-Stamping) 설비 21기, TWB(Tailor Welded Blanks) 설비 6기 등을 보유하고 있습니다.

As the center of automobile weight-reduction products plant, Yesan Plant possesses twenty one Hot-Stamping machines and six TWB(Tailor Welded Blanks) equipments.

생산제품 자동차 경량화 부품
Products Automotive Lightweight Materials

6

청도공장 Qingdao Plant

중국 시장의 잠재력과 무한한 가능성을 내다보며 2000년 설립된 청도공장은 무한궤도 부품을 조립·생산하고 있습니다.

Established from the perspective of the Chinese market's potential and infinite possibility, Qingdao Plant is an integral overseas plant serving as the bridge for Hyundai Steel to enter into the global market.

생산제품 중기
Products Heavy Equipment

Company History

60년이 넘는 시간 동안 대한민국 철강 역사를 새로이 써왔습니다. 앞으로도 현대제철은
대한민국 최고의 철강기업이라는 명성에 걸맞게 인류의 삶에 기여하며 새로운 철강 시대를 열어나갈 것입니다.

For more than six decades, Hyundai Steel rewrote the foundation of Korea's steel history.
With the responsibility as the nation's top-notch steel maker, we will stay committed to bettering lives
for people and opening a new chapter in the steel industry.

1950s

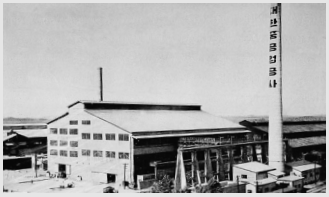
1953. 06. **대한중공업공사 창립**
Korea Heavy Industry Corporation founded

1962. 11. **인천중공업주식회사로 상호변경**
Renamed as Incheon Heavy Industry Co., Ltd.

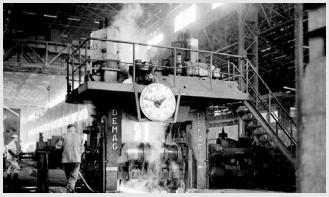
1964. 09. **인천제철주식회사 설립(양사 체제)**
Incheon Steel Corporation (two-company system) established

1970. 04. **인천제철로 통합**
Integrated as Incheon Steel

창립 초기의 대한중공업공사 전경
Panoramic view of
Korea Heavy Industry Corporation in its early days



분괴압연공장
Blooming mill



1980s

1982. 03. **H형강공장 조업 개시**
Starting of H-section plant operation

1987. 05. **기업공개**
Company opening

H형강공장
H-section plant



1990s

1990. 09. **12만 톤 스테인리스 냉연공장 증설 준공**
Expansion of 120,000 ton stainless cold rolling mills completed

1999. 12. **청도 현대 기계 유한공사 설립**
Establishment of Hyundai Machinery limited in Cheongdo, China

중국 청도 현대 기계 유한공사 전경
Panorama of Hyundai Machinery
limited in Cheongdo, China





스테인리스 공장 준공
Completed stainless steel plant

2010s

2010. 01. **일관제철소 1고로 화입식**
Integrated Steelworks the 1st blast furnace firing ceremony

2010. 04. **일관제철소 준공식**
Integrated Steelworks completion ceremony

2010. 11. **일관제철소 2고로 화입식**
Integrated Steelworks the 2nd blast furnace firing ceremony

2013. 09. **일관제철소 3고로 화입식**
Integrated Steelworks the 3rd blast furnace firing ceremony

2015. 07. **현대하이스코 합병**
Merger of Hyundai HYSCO

2015. 10. **특수강 공장 준공**
Completion of special steel plant

2017. 11. **내진강재 브랜드 H CORE 론칭**
Launching 'H-Core' earthquake resistant steel brand

2019. 04. **자동차용 철강 솔루션 브랜드 H-Solution 출시**
Launching 'H-Solution' automotive specialized steel brand

2019. 11. **내마모강 브랜드 웨어렉스 론칭**
Wear resistant steel brand WEAREX launching

2020. 09. **고강도강 브랜드 울트렉스 론칭**
High strength steel brand ULTREX launching

2022. 09. **프리미엄 건설용 강재 브랜드 H CORE 리론칭**
Premium construction steel brand H CORE Relaunchng

2006년 일관제철소 기공식
Ground-breaking ceremony of Integrated Steelworks



2010년 제2고로 화입식
2010 the 2nd blast furnace firing ceremony





현대자동차그룹으로 출범하는 기념식에 참석한 정몽구 회장
Chairman Chung Mong-Koo attending at the ceremony of the launching of Hyundai Motor Group



2009년 밀폐형 원료처리시스템 가동
Launched closed-type raw materials handling system in 2009



2019년 H-Solution 상해모터쇼 참가
Participated in 2019 H-Solution Shanghai Motor Show

2001. 04. **현대자동차그룹으로 출범**
Launched as Hyundai Motor Group

2004. 10. **한보철강 당진공장 인수합병식**
M&A ceremony of Hanbo Steel Dangjin Plant

2006. 10. **일관제철소 기공식**
Ground-breaking ceremony of Integrated Steelworks

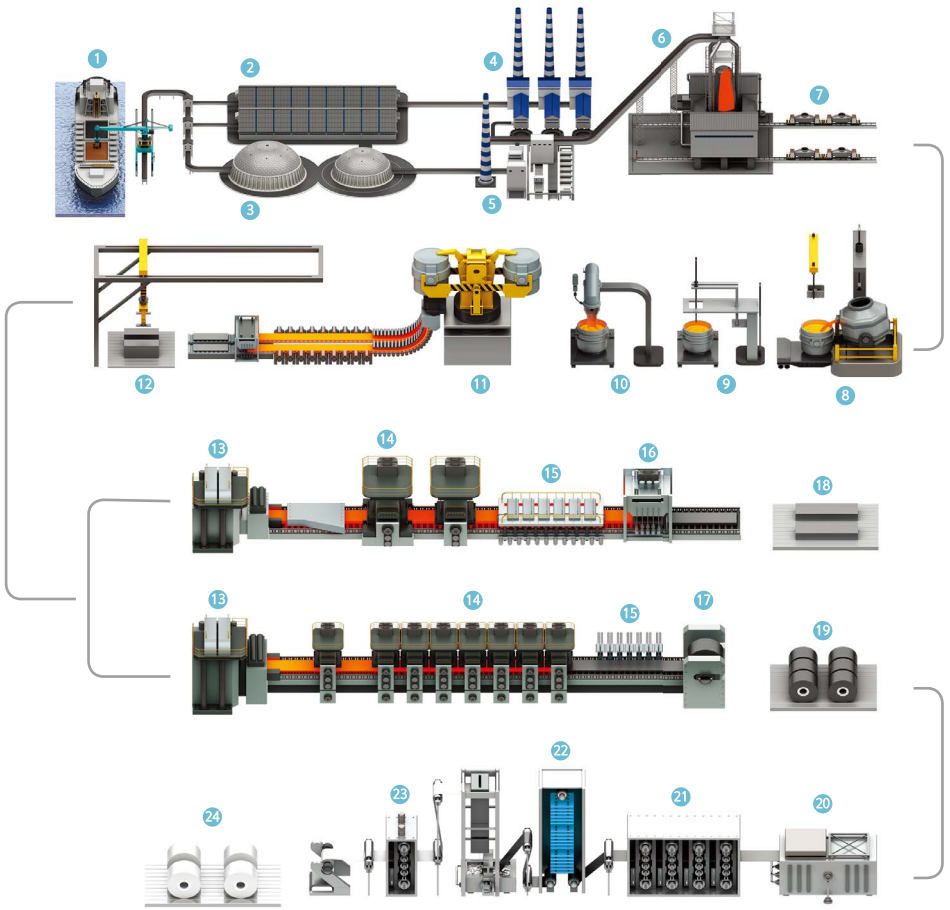
2000s

Process

일관제철공정

일관제철공정은 철광석과 석탄을 원료로 자동차와 조선, 가전제품 등에 사용되는 열연·냉연강판, 후판, 강관, 자동차 경량화용 부품 등을 생산합니다. 덩어리 형태의 원료를 고로에서 쇳물로 만든 후 불순물을 제거하고 연속주조기를 거쳐 고체 상태의 반제품인 슬래브로 만듭니다. 이 슬래브를 1,100도 이상 가열한 다음, 눌러 얇게 만드는 압연 공정을 거치면 열연강판, 후판이 됩니다. 열연강판을 상온에서 다시 한 번 압연하면 냉연강판이 되며, 냉연강판을 최종 온도에 맞게 가공하면 자동차 경량화용 부품이 만들어집니다.

Hyundai Steel's integrated steelworks manufacture hot-rolled and cold-rolled coils, heavy plates, pipes, and lightweight automotive parts out of iron ore and coal. By melting lumps of raw materials, molten metal is generated in blast furnaces, after which it is purified in the steelmaking process and then goes on to the continuous casting process to make slabs that can also be hardened half-finished products. Those of slabs are thoroughly rolled at a high temperature (above 1,100°C) in order to make hot-rolled coils. After that, the cold-rolled coils are made by rolling the HRC (hot-rolled coils) at room temperature to process for final usage, which is mainly for lightweight automotive parts.

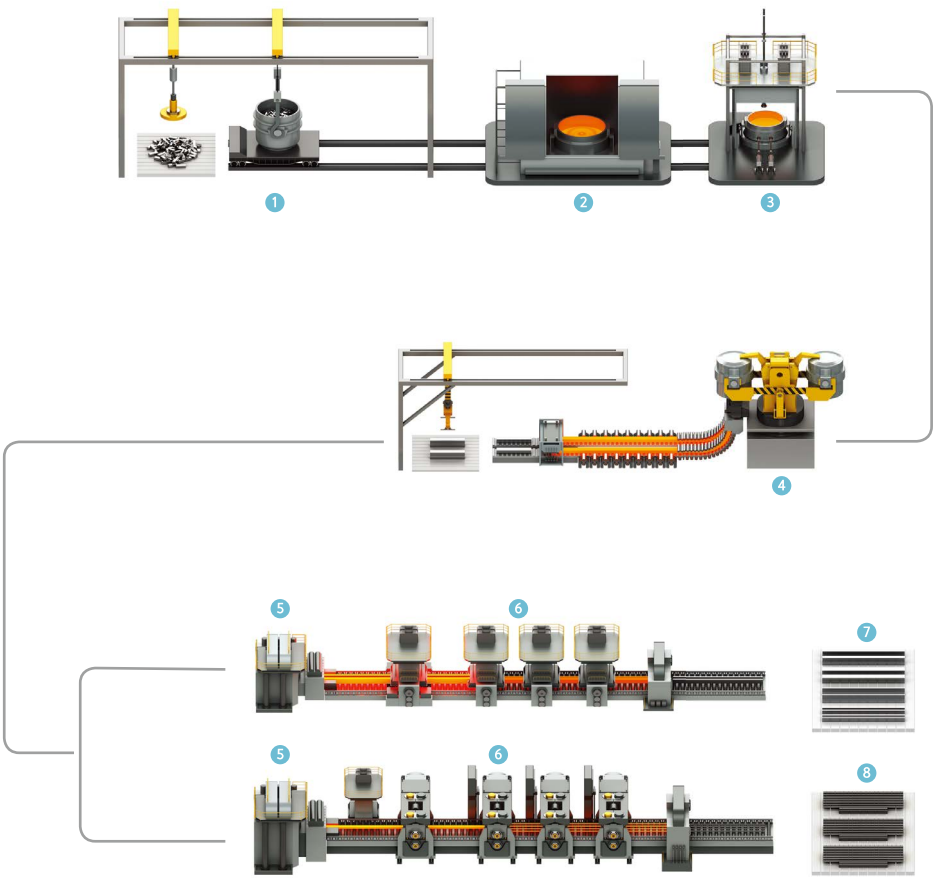


1 항만 Ports 2 선형저장고 Linear storages 3 원형저장고 Circular storages 4 코크스공장 Cokes plant 5 소결공장 Sinter plant 6 고로 Blast furnace 7 토페도카 Torpedo ladle car 8 용선예비처리기 Molten iron pretreating equipment 9 전로 Converter 10 정련기 Ladle furnace 11 연속주조기 Continuous casting machine 12 슬래브(반제품) Slabs (half-finished) 13 가열로 Heating furnace 14 압연기 Rolling machine 15 냉각기 Cooler 16 절단기 Cutter 17 권취기 Winder 18 후판 Plates 19 열연강판 Hot-rolled coils 20 산세공정 Pickling process 21 압연공정 Rolling process 22 열처리(소둔)공정 Annealing process 23 도금공정 Galvanizing process 24 냉연강판 Cold-rolled coils

전기로공정

전기로공정에서는 철 스크랩을 원료로 건물과 교량, 철도레일 등에 사용되는 형강, 철근, 레일 등을 생산합니다. 철 스크랩을 녹여 쇳물을 만들고 정련 과정을 통해 불순물을 제거한 뒤 연속주조공정을 거쳐 블룸, 빌렛 등의 반제품을 만듭니다. 반제품을 다시 가열한 다음 최종제품의 규격에 맞게 압연해 다양한 두께와 길이의 형강, 철근 등이 완성됩니다.

Hyundai Steel's electric arc furnace uses steel scrap to manufacture sections, reinforcing bars, and railway rails that are used for buildings, bridges and railways. After melting the steel scrap to make molten metal, it is then smelted to eliminate impurities before proceeding to the continuous casting process to manufacture half-finished products, such as blooms and billets. These half-finished products can be rolled by reheating to increase their size as finished products, such as sections and reinforcing bars, in various sizes and thickness.



① 철스크랩 Steel scrap ② 전기로 Electric arc furnace ③ 정련기 Ladle furnace ④ 연속주조기 Continuous casting machine
⑤ 가열로 Heating furnace ⑥ 압연기 Rolling machine ⑦ 철근 Reinforcing bars ⑧ 형강 Sections

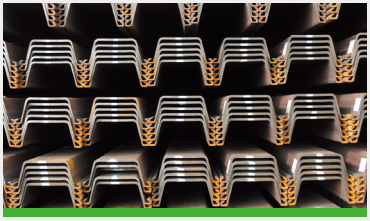
Main Products



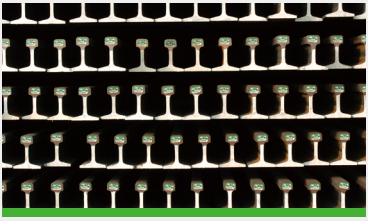
H SECTION H형강



ANGLE/CHANNEL ㄱㄷ형강



SHEET PILE 강널말뚝



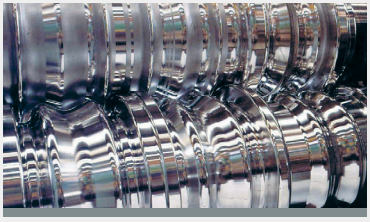
RAIL 레일



REINFORCING BAR 철근



SPECIAL STEEL 특수강



ROLL 롤



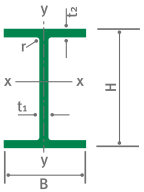
HEAVY MACHINERY 중기

Products Guide
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01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(1) Metric Series – KS, JIS '90

호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
100 x 100	17.2	100	100	6	8	10	21.90	383	134
125 x 125	23.8	125	125	6.5	9	10	30.31	847	293
150 x 75	14.0	150	75	5	7	8	17.85	666	49.5
150 x 100	21.1	148	100	6	9	11	26.84	1,020	151
150 x 150	31.5	150	150	7	10	11	40.14	1,640	563
200 x 100	18.2	198	99	4.5	7	11	23.18	1,580	114
	21.3	200	100	5.5	8	11	27.16	1,840	134
200 x 150	30.6	194	150	6	9	13	39.01	2,690	507
200 x 200	49.9	200	200	8	12	13	63.53	4,720	1,600
	56.2	200	204	12	12	13	71.53	4,980	1,700
	65.7	208	202	10	16	13	83.69	6,530	2,200
250 x 125	25.7	248	124	5	8	12	32.68	3,540	255
	29.6	250	125	6	9	12	37.66	4,050	294
250 x 175	44.1	244	175	7	11	16	56.24	6,120	984
250 x 250	64.4	244	252	11	11	16	82.06	8,790	2,940
	66.5	248	249	8	13	16	84.70	9,930	3,350
	72.4	250	250	9	14	16	92.18	10,800	3,650
	82.2	250	255	14	14	16	104.7	11,500	3,880
300 x 150	32.0	298	149	5.5	8	13	40.80	6,320	442
	36.7	300	150	6.5	9	13	46.78	7,210	508
300 x 200	56.8	294	200	8	12	18	72.38	11,300	1,600
	65.4	298	201	9	14	18	83.36	13,300	1,900
300 x 300	84.5	294	302	12	12	18	107.7	16,900	5,520
	87.0	298	299	9	14	18	110.8	18,800	6,240
	94.0	300	300	10	15	18	119.8	20,400	6,750
	106	300	305	15	15	18	134.8	21,500	7,100
	106	304	301	11	17	18	134.8	23,400	7,730
	130	310	305	15	20	18	165.3	28,600	9,470
	142	310	310	20	20	18	180.8	29,900	10,000

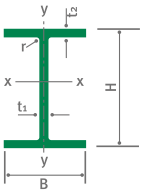
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Dimension : KS D 3502 JIS G 3192:1990
Dimensional Tolerance : KS D 3502 JIS G 3192:1990
Surface Condition : KS D 3502 JIS G 3192:1990

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
4.18	2.47	76.5	26.7	87.6	41.2	2.83	5.17	100 x 100
5.29	3.11	136	47.0	154	71.9	9.87	8.43	125 x 125
6.11	1.66	88.8	13.2	102	20.8	2.53	2.81	150 x 75
6.17	2.37	138	30.1	157	46.7	7.28	7.37	150 x 100
6.39	3.75	219	75.1	246	115	27.6	13.5	150 x 150
8.26	2.21	160	23.0	180	35.7	10.4	3.86	200 x 100
8.24	2.22	184	26.8	209	41.9	12.3	5.77	
8.30	3.61	277	67.6	309	104	43.4	10.9	200 x 150
8.62	5.02	472	160	525	244	142	29.8	200 x 200
8.35	4.88	498	167	565	257	150	39.6	
8.83	5.13	628	218	710	332	203	66.7	
10.4	2.79	285	41.1	319	63.6	36.7	6.74	250 x 125
10.4	2.79	324	47.0	366	73.1	42.7	9.68	
10.4	4.18	502	113	558	173	134	23.2	250 x 175
10.3	5.98	720	233	805	358	399	39.5	250 x 250
10.8	6.29	801	269	883	408	462	46.7	
10.8	6.29	867	292	960	444	508	58.7	
10.5	6.09	919	304	1,040	468	540	79.0	
12.4	3.29	424	59.3	475	91.8	92.9	8.65	300 x 150
12.4	3.29	481	67.7	542	105	107	12.4	
12.5	4.71	771	160	859	247	319	35.8	300 x 200
12.6	4.77	893	189	1,000	291	383	53.4	
12.5	7.16	1,150	365	1,280	560	1,097	61.4	300 x 300
13.0	7.50	1,270	417	1,390	634	1,258	71.3	
13.1	7.51	1,360	450	1,500	684	1,372	88.1	
12.6	7.26	1,440	466	1,610	716	1,443	116	
13.2	7.57	1,540	514	1,710	781	1,592	125	
13.2	7.57	1,850	621	2,080	949	1,991	215	
12.9	7.44	1,930	645	2,200	992	2,093	271	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(1) Metric Series – KS, JIS '90

호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
350 x 175	41.4	346	174	6	9	14	52.68	11,100	792
	49.6	350	175	7	11	14	63.14	13,600	984
	57.8	354	176	8	13	14	73.68	16,100	1,180
350 x 250	69.2	336	249	8	12	20	88.15	18,500	3,090
	79.7	340	250	9	14	20	101.5	21,700	3,650
350 x 350	106	338	351	13	13	20	135.3	28,200	9,380
	115	344	348	10	16	20	146.0	33,300	11,200
	131	344	354	16	16	20	166.6	35,300	11,800
	137	350	350	12	19	20	173.9	40,300	13,600
	156	350	357	19	19	20	198.4	42,800	14,400
400 x 200	56.6	396	199	7	11	16	72.16	20,000	1,450
	66.0	400	200	8	13	16	84.12	23,700	1,740
	*75.5	404	201	9	15	16	96.16	27,500	2,030
400 x 300	*94.3	386	299	9	14	22	120.1	33,700	6,240
	107	390	300	10	16	22	136.0	38,700	7,210
400 x 400	140	388	402	15	15	22	178.5	49,000	16,300
	147	394	398	11	18	22	186.8	56,100	18,900
	168	394	405	18	18	22	214.4	59,700	20,000
	172	400	400	13	21	22	218.7	66,600	22,400
	197	400	408	21	21	22	250.7	70,900	23,800
	200	406	403	16	24	22	254.9	78,000	26,200
	232	414	405	18	28	22	295.4	92,800	31,000
	283	428	407	20	35	22	360.7	119,000	39,400
	349	442	413	26	42	22	444.2	150,000	49,400
	392	452	416	29	47	22	499.0	173,000	56,500
	415	458	417	30	50	22	528.6	187,000	60,500
	435	462	419	32	52	22	554.5	198,000	63,900
	479	472	422	35	57	22	610.5	223,000	71,500
	534	484	426	39	63	22	680.5	256,000	81,400
	605	498	432	45	70	22	770.1	298,000	94,400
450 x 200	66.2	446	199	8	12	18	84.30	28,700	1,580
	76.0	450	200	9	14	18	96.76	33,500	1,870

* 는 KS(JIS)에 없는 규격

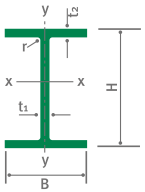
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Dimension : KS D 3502 JIS G 3192:1990
Dimensional Tolerance : KS D 3502 JIS G 3192:1990
Surface Condition : KS D 3502 JIS G 3192:1990

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
14.5	3.88	641	91.0	716	140	225	13.6	350 x 175
14.7	3.95	775	112	868	174	283	23.0	
14.8	4.01	909	135	1,020	208	344	36.1	
14.5	5.92	1,100	248	1,210	380	812	44.6	340 x 250
14.6	6.00	1,280	292	1,410	447	970	66.3	
14.4	8.33	1,670	534	1,850	818	2,477	90.3	350 x 350
15.1	8.78	1,940	646	2,120	980	3,024	121	
14.6	8.43	2,050	669	2,300	1,030	3,186	164	
15.2	8.84	2,300	776	2,550	1,180	3,721	199	
14.7	8.53	2,450	809	2,760	1,240	3,953	270	
16.7	4.48	1,010	145	1,130	224	536	27.1	400 x 200
16.8	4.54	1,190	174	1,330	268	650	42.2	
16.9	4.60	1,360	202	1,530	312	770	62.3	
16.7	7.21	1,750	418	1,920	637	2,160	79.9	400 x 300
16.9	7.28	1,980	481	2,190	733	2,521	114	
16.6	9.54	2,520	809	2,800	1,240	5,655	156	400 x 400
17.3	10.1	2,850	951	3,120	1,440	6,688	194	
16.7	9.65	3,030	985	3,390	1,510	7,053	264	
17.5	10.1	3,330	1,120	3,670	1,700	8,048	303	
16.8	9.75	3,540	1,170	3,990	1,790	8,550	415	
17.5	10.1	3,840	1,300	4,280	1,980	9,558	462	
17.7	10.2	4,480	1,530	5,030	2,330	11,557	714	
18.2	10.4	5,570	1,930	6,310	2,940	15,198	1,317	
18.4	10.5	6,810	2,390	7,840	3,650	19,800	2,340	
18.6	10.6	7,670	2,720	8,920	4,150	23,200	3,270	
18.8	10.7	8,170	2,900	9,540	4,440	25,188	3,890	
18.9	10.7	8,550	3,050	10,030	4,660	26,800	4,420	
19.1	10.8	9,450	3,390	11,180	5,190	30,800	5,820	
19.4	10.9	10,600	3,820	12,620	5,860	36,100	7,890	
19.7	11.1	12,000	4,370	14,500	6,720	43,214	11,063	
18.5	4.33	1,290	159	1,450	247	744	38.3	450 x 200
18.6	4.40	1,490	187	1,680	291	890	56.9	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(1) Metric Series – KS, JIS '90

호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
450 x 300	106	434	299	10	15	24	135.0	46,800	6,690
	124	440	300	11	18	24	157.4	56,100	8,110
500 x 200	79.5	496	199	9	14	20	101.3	41,900	1,840
	89.6	500	200	10	16	20	114.2	47,800	2,140
	103	506	201	11	19	20	131.3	56,500	2,580
500 x 300	114	482	300	11	15	26	145.5	60,400	6,760
	128	488	300	11	18	26	163.5	71,000	8,110
600 x 200	94.6	596	199	10	15	22	120.5	68,700	1,980
	106	600	200	11	17	22	134.4	77,600	2,280
	120	606	201	12	20	22	152.5	90,400	2,720
	134	612	202	13	23	22	170.7	103,000	3,180
600 x 300	137	582	300	12	17	28	174.5	103,000	7,670
	151	588	300	12	20	28	192.5	118,000	9,020
	175	594	302	14	23	28	222.4	137,000	10,600
700 x 300	166	692	300	13	20	28	211.5	172,000	9,020
	175	696	300	13	22	28	223.5	187,000	9,920
	185	700	300	13	24	28	235.5	201,000	10,800
	195	702	301	14	25	28	248.5	212,000	11,400
	215	708	302	15	28	28	273.6	237,000	12,900
	235	714	303	16	31	28	298.9	263,000	14,400
800 x 300	191	792	300	14	22	28	243.4	254,000	9,930
	200	796	300	14	24	28	255.4	273,000	10,800
	210	800	300	14	26	28	267.4	292,000	11,700
	221	802	301	15	27	28	281.5	306,000	12,300
	241	808	302	16	30	28	307.6	339,000	13,800
	262	814	303	17	33	28	333.9	374,000	15,300
900 x 300	213	890	299	15	23	28	270.9	345,000	10,300
	222	894	299	15	25	28	282.8	369,000	11,200
	243	900	300	16	28	28	309.8	411,000	12,600
	264	906	301	17	31	28	336.8	454,000	14,100
	286	912	302	18	34	28	364.0	498,000	15,700
	307	918	303	19	37	28	391.3	542,000	17,200

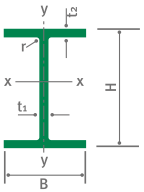
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Dimension : KS D 3502 JIS G 3192:1990
Dimensional Tolerance : KS D 3502 JIS G 3192:1990
Surface Condition : KS D 3502 JIS G 3192:1990

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
18.6	7.04	2,160	448	2,380	686	2,937	104	450 x 300
18.9	7.18	2,550	541	2,820	828	3,611	163	
20.3	4.27	1,690	185	1,910	290	1,072	60.8	500 x 200
20.5	4.33	1,910	214	2,180	335	1,254	85.9	
20.7	4.43	2,230	257	2,540	401	1,530	132	
20.4	6.82	2,500	451	2,790	695	3,688	118	500 x 300
20.8	7.04	2,910	541	3,230	830	4,481	172	
23.9	4.05	2,310	199	2,650	315	1,671	82.4	600 x 200
24.0	4.12	2,590	228	2,980	361	1,936	113	
24.3	4.22	2,980	271	3,430	429	2,336	167	
24.6	4.31	3,380	314	3,890	498	2,755	237	
24.3	6.63	3,530	511	3,960	793	6,121	173	600 x 300
24.8	6.85	4,020	601	4,490	928	7,275	241	
24.9	6.90	4,620	701	5,200	1,080	8,628	356	
28.6	6.53	4,980	602	5,630	936	10,189	260	700 x 300
28.9	6.66	5,370	662	6,050	1,030	11,300	317	
29.3	6.78	5,760	722	6,460	1,120	12,367	383	
29.2	6.77	6,030	757	6,800	1,170	13,100	438	
29.4	6.86	6,700	853	7,560	1,320	14,897	588	
29.7	6.94	7,370	951	8,330	1,470	16,800	772	
32.3	6.39	6,410	662	7,290	1,040	14,720	341	800 x 300
32.7	6.51	6,850	722	7,760	1,130	16,100	408	
33.0	6.62	7,290	782	8,240	1,220	17,569	486	
33.0	6.61	7,620	818	8,640	1,270	18,500	551	
33.2	6.70	8,400	915	9,530	1,430	20,902	726	
33.5	6.78	9,180	1,010	10,430	1,580	23,400	936	
35.7	6.16	7,760	688	8,910	1,080	19,308	403	900 x 300
36.1	6.29	8,260	748	9,450	1,170	21,100	476	
36.4	6.39	9,140	843	10,500	1,320	24,015	633	
36.7	6.48	10,000	940	11,500	1,480	27,100	823	
37.0	6.56	10,900	1,040	12,500	1,630	30,169	1,050	
37.2	6.63	11,800	1,140	13,500	1,790	33,391	1,316	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(1) Metric Series – JIS '21

호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
100 x 100	16.9	100	100	6	8	8	21.59	378	134
125 x 125	23.6	125	125	6.5	9	8	30.00	840	293
150 x 75	14.0	150	75	5	7	8	17.85	666	49.5
150 x 100	20.7	148	100	6	9	8	26.35	1,000	150
150 x 150	31.1	150	150	7	10	8	39.65	1,620	563
200 x 100	17.8	198	99	4.5	7	8	22.69	1,540	113
	20.9	200	100	5.5	8	8	26.67	1,810	134
200 x 150	29.9	194	150	6	9	8	38.11	2,630	507
200 x 200	49.9	200	200	8	12	13	63.53	4,720	1,600
250 x 125	25.1	248	124	5	8	8	31.99	3,450	255
	29.0	250	125	6	9	8	36.97	3,960	294
250 x 175	43.6	244	175	7	11	13	55.49	6,040	984
250 x 250	71.8	250	250	9	14	13	91.43	10,700	3,650
300 x 150	32.0	298	149	5.5	8	13	40.80	6,320	442
	36.7	300	150	6.5	9	13	46.78	7,210	508
300 x 200	55.8	294	200	8	12	13	71.05	11,100	1,600
300 x 300	93.0	300	300	10	15	13	118.5	20,200	6,750
350 x 175	41.2	346	174	6	9	13	52.45	11,000	791
	49.4	350	175	7	11	13	62.91	13,500	984
350 x 250	78.1	340	250	9	14	13	99.53	21,200	3,650
350 x 350	135	350	350	12	19	13	171.9	39,800	13,600
400 x 200	56.1	396	199	7	11	13	71.41	19,800	1,450
	65.4	400	200	8	13	13	83.37	23,500	1,740
400 x 300	105	390	300	10	16	13	133.3	37,900	7,200
400 x 400	172	400	400	13	21	22	218.7	66,600	22,400
	232	414	405	18	28	22	295.4	92,800	31,000
	283	428	407	20	35	22	360.7	119,000	39,400
	415	458	417	30	50	22	528.6	187,000	60,500
	605	498	432	45	70	22	770.1	298,000	94,400
450 x 200	65.1	446	199	8	12	13	82.97	28,100	1,580
	74.9	450	200	9	14	13	95.43	32,900	1,870

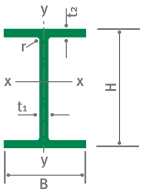
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Dimension : JIS G 3192:2021
Dimensional Tolerance : JIS G 3192:1994 JIS G 3192:2021 JIS G 3136:2022
Surface Condition : JIS G 3192:2021

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
4.18	2.49	75.6	26.7	86.4	41.0	2.82	4.91	100 x 100
5.29	3.13	134	46.9	152	71.7	9.86	8.10	125 x 125
6.11	1.67	88.8	13.2	102	20.8	2.52	2.90	150 x 75
6.16	2.39	135	30.1	154	46.4	7.25	6.66	150 x 100
6.39	3.77	216	75.1	243	114	27.6	12.7	150 x 150
8.24	2.24	156	22.9	175	35.5	10.3	3.32	200 x 100
8.24	2.24	181	26.7	205	41.6	12.3	5.17	
8.31	3.65	271	67.6	301	103	43.3	9.43	200 x 150
8.62	5.02	472	160	526	244	141	30.2	200 x 200
10.4	2.82	278	41.1	312	63.2	36.6	5.80	250 x 125
10.3	2.82	317	47.0	358	72.7	42.5	8.61	
10.4	4.21	495	112	551	172	133	21.3	250 x 175
10.8	6.32	856	292	953	443	508	56.2	250 x 250
12.4	3.29	424	59.3	475	91.8	92.7	8.79	300 x 150
12.4	3.29	481	67.7	542	105	107	12.7	
12.5	4.75	755	160	842	245	318	31.8	300 x 200
13.1	7.55	1,350	450	1,480	683	1,370	82.9	300 x 300
14.5	3.88	636	91.0	713	140	224	13.3	350 x 175
14.6	3.96	771	113	864	173	282	22.5	
14.6	6.06	1,250	292	1,380	445	969	58.4	350 x 250
15.2	8.89	2,270	777	2,520	1,180	3,720	187	350 x 350
16.7	4.51	1,000	146	1,110	223	535	25.1	400 x 200
16.8	4.57	1,180	174	1,310	267	649	39.7	
16.9	7.35	1,940	480	2,140	730	2,520	100	400 x 300
17.5	10.1	3,330	1,120	3,670	1,700	8,040	304	400 x 400
17.7	10.2	4,480	1,530	5,030	2,330	11,500	721	
18.2	10.5	5,560	1,940	6,310	2,940	15,200	1,320	
18.8	10.7	8,170	2,900	9,540	4,440	25,100	3,930	
19.7	11.1	12,000	4,370	14,500	6,720	43,100	11,300	
18.4	4.36	1,260	159	1,420	245	742	34.3	450 x 200
18.6	4.43	1,460	187	1,650	290	887	52.0	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(1) Metric Series – JIS '21

호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
450 x 300	121	440	300	11	18	13	153.9	54,700	8,110
500 x 200	77.9	496	199	9	14	13	99.29	40,800	1,840
	88.2	500	200	10	16	13	112.3	46,800	2,140
500 x 300	111	482	300	11	15	13	141.2	58,300	6,760
	125	488	300	11	18	13	159.2	68,900	8,110
600 x 200	92.5	596	199	10	15	13	117.8	66,600	1,980
	103	600	200	11	17	13	131.7	75,600	2,270
600 x 300	133	582	300	12	17	13	169.2	99,000	7,660
	147	588	300	12	20	13	187.2	114,000	9,010
	170	594	302	14	23	13	217.1	134,000	10,600
700 x 300	163	692	300	13	20	18	207.5	168,000	9,020
	182	700	300	13	24	18	231.5	197,000	10,800
800 x 300	188	792	300	14	22	18	239.5	248,000	9,920
	207	800	300	14	26	18	263.5	286,000	11,700
900 x 300	210	890	299	15	23	18	266.9	339,000	10,300
	240	900	300	16	28	18	305.8	404,000	12,600
	283	912	302	18	34	18	360.1	491,000	15,700
	304	918	303	19	37	18	387.4	535,000	17,200

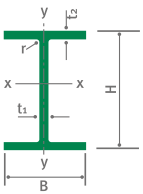
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Dimension : JIS G 3192:2021
Dimensional Tolerance : JIS G 3192:1994 JIS G 3192:2021 JIS G 3136:2022
Surface Condition : JIS G 3192:2021

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
18.9	7.26	2,490	541	2,760	823	3,610	142	450 x 300
20.3	4.30	1,650	185	1,870	288	1,070	52.9	500 x 200
20.4	4.37	1,870	214	2,130	333	1,250	76.4	
20.3	6.92	2,420	451	2,700	690	3,680	95.5	500 x 300
20.8	7.14	2,820	541	3,130	825	4,470	144	
23.8	4.10	2,230	199	2,580	312	1,660	70.0	600 x 200
24.0	4.15	2,520	227	2,900	358	1,930	98.2	
24.2	6.73	3,400	511	3,820	786	6,110	139	600 x 300
24.7	6.94	3,880	601	4,350	921	7,260	200	
24.8	6.99	4,510	702	5,060	1,080	8,610	306	
28.5	6.59	4,860	601	5,500	931	10,200	228	700 x 300
29.2	6.83	5,630	720	6,340	1,110	12,300	342	
32.2	6.44	6,260	661	7,140	1,030	14,700	305	800 x 300
32.9	6.66	7,150	780	8,100	1,210	17,500	440	
35.6	6.21	7,620	689	8,750	1,080	19,300	365	900 x 300
36.3	6.42	8,980	840	10,300	1,320	24,000	581	
36.9	6.60	10,770	1,040	12,300	1,620	30,100	981	
37.2	6.66	11,660	1,140	13,400	1,780	33,300	1,240	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Designation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t_1	t_2	r
W4 x 4	13	4.16	4.060	0.280	0.345	0.30	19.35	105.7	103.1	7.1	8.8	7.6
W5 x 5	16	5.01	5.000	0.240	0.360	0.30	23.81	127.3	127.0	6.1	9.1	7.6
	19	5.15	5.030	0.270	0.430	0.30	28.28	130.8	127.8	6.9	10.9	7.6
W6 x 4	8.5	5.83	3.940	0.170	0.194	0.30	12.65	148.0	100.1	4.3	4.9	7.6
	9	5.90	3.940	0.170	0.215	0.30	13.39	149.9	100.1	4.3	5.5	7.6
	12	6.03	4.000	0.230	0.280	0.30	17.86	153.2	101.6	5.8	7.1	7.6
	16	6.28	4.030	0.260	0.405	0.30	23.81	159.5	102.4	6.6	10.3	7.6
W6 x 6	15	5.99	5.990	0.230	0.260	0.30	22.32	152.1	152.1	5.8	6.6	7.6
	20	6.20	6.020	0.260	0.365	0.30	29.76	157.5	152.9	6.6	9.3	7.6
	25	6.38	6.080	0.320	0.455	0.30	37.20	162.1	154.4	8.1	11.6	7.6
W8 x 4	10	7.89	3.940	0.170	0.205	0.30	14.88	200.4	100.1	4.3	5.2	7.6
	13	7.99	4.000	0.230	0.255	0.30	19.35	202.9	101.6	5.8	6.5	7.6
	15	8.11	4.015	0.245	0.315	0.30	22.32	206.0	102.0	6.2	8.0	7.6
W8 x 5¼	18	8.14	5.250	0.230	0.330	0.30	26.79	206.8	133.4	5.8	8.4	7.6
	21	8.28	5.270	0.250	0.400	0.30	31.25	210.3	133.9	6.4	10.2	7.6
W8 x 6½	24	7.93	6.495	0.245	0.400	0.40	35.72	201.4	165.0	6.2	10.2	10.2
	28	8.06	6.535	0.285	0.465	0.40	41.67	204.7	166.0	7.2	11.8	10.2
W8 x 8	31	8.00	7.995	0.285	0.435	0.40	46.13	203.2	203.1	7.2	11.0	10.2
	35	8.12	8.020	0.310	0.495	0.40	52.09	206.2	203.7	7.9	12.6	10.2
	40	8.25	8.070	0.360	0.560	0.40	59.53	209.6	205.0	9.1	14.2	10.2
	48	8.50	8.110	0.400	0.685	0.40	71.43	215.9	206.0	10.2	17.4	10.2
	58	8.75	8.220	0.510	0.810	0.40	86.31	222.3	208.8	13.0	20.6	10.2
	67	9.00	8.280	0.570	0.935	0.40	99.71	228.6	210.3	14.5	23.7	10.2
W10 x 4	12	9.87	3.960	0.190	0.210	0.30	17.86	250.7	100.6	4.8	5.3	7.6
	15	9.99	4.000	0.230	0.270	0.30	22.32	253.7	101.6	5.8	6.9	7.6
	17	10.11	4.010	0.240	0.330	0.30	25.30	256.8	101.9	6.1	8.4	7.6
	19	10.24	4.020	0.250	0.395	0.30	28.28	260.1	102.1	6.4	10.0	7.6
W10 x 5¾	22	10.17	5.750	0.240	0.360	0.30	32.74	258.3	146.1	6.1	9.1	7.6
	26	10.33	5.770	0.260	0.440	0.30	38.69	262.4	146.6	6.6	11.2	7.6
	30	10.47	5.810	0.300	0.510	0.30	44.64	265.9	147.6	7.6	13.0	7.6

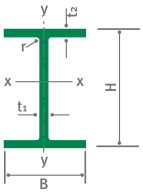
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
24.90	477	161	4.37	2.54	90.2	31.3	104	48.1	3.77	6.91	W4 x 4
30.26	889	311	5.42	3.21	140	49.0	157	74.6	10.9	8.02	W5 x 5
35.88	1,090	380	5.51	3.25	167	59.4	190	90.6	13.6	13.2	
16.25	620	82.1	6.17	2.25	83.7	16.4	94.1	25.4	4.19	1.58	W6 x 4
17.48	693	92.1	6.30	2.30	92.5	18.4	104	28.4	4.79	1.90	
22.99	923	124	6.34	2.33	121	24.5	137	38.0	6.62	4.09	
30.76	1,350	185	6.62	2.45	169	36.1	193	55.8	10.3	9.72	
28.63	1,220	387	6.53	3.68	160	50.9	177	77.7	20.5	4.58	W6 x 6
38.10	1,730	555	6.74	3.81	220	72.5	246	111	30.4	10.5	
47.57	2,240	712	6.86	3.87	276	92.3	312	141	40.3	20.0	
19.08	1,280	87.1	8.19	2.14	128	17.4	145	27.1	8.28	1.87	W8 x 4
24.72	1,650	114	8.17	2.15	163	22.4	187	35.4	11.0	3.86	
28.60	2,000	142	8.36	2.23	194	27.8	222	43.7	13.9	5.86	
33.93	2,580	333	8.72	3.13	250	49.9	279	76.6	32.7	7.25	W8 x 5¼
39.97	3,150	409	8.88	3.20	300	61.0	336	93.6	40.9	12.0	
45.78	3,460	764	8.69	4.09	344	92.6	380	141	69.8	14.6	W8 x 6½
53.11	4,070	901	8.75	4.12	398	109	445	166	83.7	22.4	
58.62	4,560	1,540	8.82	5.13	449	152	496	230	142	22.3	W8 x 8
66.52	5,280	1,780	8.91	5.17	512	175	570	265	166	32.5	
75.60	6,090	2,040	8.98	5.19	581	199	651	303	195	46.9	
91.05	7,650	2,540	9.17	5.28	709	247	803	375	250	82.3	
110.5	9,490	3,130	9.27	5.32	854	300	982	458	318	141	
126.8	11,300	3,680	9.44	5.39	989	350	1,150	535	386	212	
22.68	2,230	90.2	9.92	1.99	178	17.9	206	28.4	13.5	2.41	W10 x 4
28.43	2,870	121	10.0	2.06	226	23.8	262	37.9	18.4	4.55	
32.26	3,410	149	10.3	2.15	266	29.2	306	46.1	22.9	6.67	
36.28	4,000	178	10.5	2.22	308	34.9	354	54.8	27.7	9.78	
41.73	4,900	474	10.8	3.37	379	64.8	425	100	73.4	10.0	W10 x 5¾
49.17	6,010	589	11.1	3.46	458	80.3	513	123	92.8	16.9	
57.10	7,090	698	11.1	3.50	533	94.5	601	145	111	26.2	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Designation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t_1	t_2	r
W10 x 8	33	9.73	7.960	0.290	0.435	0.50	49.11	247.1	202.2	7.4	11.0	12.7
	39	9.92	7.985	0.315	0.530	0.50	58.04	252.0	202.8	8.0	13.5	12.7
	45	10.10	8.020	0.350	0.620	0.50	66.97	256.5	203.7	8.9	15.7	12.7
W10 x 10	49	9.98	10.000	0.340	0.560	0.50	72.92	253.5	254.0	8.6	14.2	12.7
	54	10.09	10.030	0.370	0.615	0.50	80.36	256.3	254.8	9.4	15.6	12.7
	60	10.22	10.080	0.420	0.680	0.50	89.29	259.6	256.0	10.7	17.3	12.7
	68	10.40	10.130	0.470	0.770	0.50	101.2	264.2	257.3	11.9	19.6	12.7
	77	10.60	10.190	0.530	0.870	0.50	114.6	269.2	258.8	13.5	22.1	12.7
	88	10.84	10.265	0.605	0.990	0.50	131.0	275.3	260.7	15.4	25.1	12.7
	100	11.10	10.340	0.680	1.120	0.50	148.8	281.9	262.6	17.3	28.4	12.7
	112	11.36	10.415	0.755	1.250	0.50	167.0	288.5	264.5	19.2	31.8	12.7
W12 x 4	14	11.91	3.970	0.200	0.225	0.30	20.83	302.5	100.8	5.1	5.7	7.6
	16	11.99	3.990	0.220	0.265	0.30	23.81	304.5	101.3	5.6	6.7	7.6
	19	12.16	4.005	0.235	0.350	0.30	28.28	308.9	101.7	6.0	8.9	7.6
	22	12.31	4.030	0.260	0.425	0.30	32.74	312.7	102.4	6.6	10.8	7.6
W12 x 6½	26	12.22	6.490	0.230	0.380	0.30	38.69	310.4	164.8	5.8	9.7	7.6
	30	12.34	6.520	0.260	0.440	0.30	44.64	313.4	165.6	6.6	11.2	7.6
	35	12.50	6.560	0.300	0.520	0.30	52.09	317.5	166.6	7.6	13.2	7.6
W12 x 8	40	11.94	8.005	0.295	0.515	0.60	59.53	303.3	203.3	7.5	13.1	15.2
	45	12.06	8.045	0.335	0.575	0.60	66.97	306.3	204.3	8.5	14.6	15.2
	50	12.19	8.080	0.370	0.640	0.60	74.41	309.6	205.2	9.4	16.3	15.2
W12 x 10	53	12.06	9.995	0.345	0.575	0.60	78.87	306.3	253.9	8.8	14.6	15.2
	58	12.19	10.010	0.360	0.640	0.60	86.31	309.6	254.3	9.1	16.3	15.2
W12 x 12	65	12.12	12.000	0.390	0.605	0.60	96.73	307.8	304.8	9.9	15.4	15.2
	72	12.25	12.040	0.430	0.670	0.60	107.1	311.2	305.8	10.9	17.0	15.2
	79	12.38	12.080	0.470	0.735	0.60	117.6	314.5	306.8	11.9	18.7	15.2

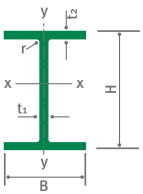
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
62.53	7,070	1,520	10.6	4.93	572	150	634	229	211	24.4	W10 x 8
74.14	8,720	1,880	10.8	5.04	692	185	769	282	267	40.9	
85.38	10,300	2,210	11.0	5.09	803	217	898	331	321	62.3	
92.88	11,300	3,880	11.0	6.46	892	306	987	463	555	57.6	W10 x 10
102.0	12,600	4,300	11.1	6.49	983	338	1,090	512	623	75.9	
114.0	14,200	4,840	11.2	6.52	1,090	378	1,220	575	710	104	
129.0	16,400	5,570	11.3	6.57	1,240	433	1,400	658	832	150	
146.1	19,000	6,390	11.4	6.61	1,410	494	1,600	752	975	215	
166.9	22,200	7,420	11.5	6.67	1,610	569	1,850	868	1,160	315	
189.5	25,900	8,580	11.7	6.73	1,840	654	2,120	998	1,380	455	
212.8	29,800	9,820	11.8	6.79	2,070	743	2,420	1,130	1,620	637	
26.83	3,680	97.7	11.7	1.91	243	19.4	286	31.1	21.4	3.12	W12 x 4
30.37	4,260	117	11.8	1.96	280	23.0	328	36.9	25.7	4.44	
36.06	5,410	157	12.2	2.08	350	30.8	406	48.9	35.1	7.66	
41.83	6,500	194	12.5	2.15	416	37.9	481	60.0	44.0	12.3	
49.35	8,520	724	13.1	3.83	549	87.9	611	134	164	12.6	W12 x 6½
56.80	9,930	849	13.2	3.87	634	103	707	157	194	19.2	
66.60	11,900	1,020	13.4	3.91	750	122	837	188	236	30.9	
76.03	12,900	1,840	13.0	4.92	851	181	944	276	386	39.4	W12 x 8
85.19	14,600	2,080	13.1	4.94	953	204	1,060	311	441	54.3	
94.92	16,400	2,350	13.1	4.98	1,060	229	1,190	351	505	74.3	
100.5	17,700	3,990	13.3	6.30	1,160	314	1,280	478	847	65.7	W12 x 10
110.1	19,800	4,470	13.4	6.37	1,280	352	1,420	534	961	87.2	
123.3	22,200	7,270	13.4	7.68	1,440	477	1,590	724	1,550	91.7	W12 x 12
136.2	24,800	8,110	13.5	7.72	1,590	530	1,770	805	1,750	122	
149.7	27,600	9,010	13.6	7.76	1,760	587	1,950	892	1,970	161	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Designation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t_1	t_2	r
W12 x 12	87	12.53	12.125	0.515	0.810	0.60	129.5	318.3	308.0	13.1	20.6	15.2
	96	12.71	12.160	0.550	0.900	0.60	142.9	322.8	308.9	14.0	22.9	15.2
	106	12.89	12.220	0.610	0.990	0.60	157.7	327.4	310.4	15.5	25.1	15.2
	120	13.12	12.320	0.710	1.105	0.60	178.6	333.2	312.9	18.0	28.1	15.2
	136	13.41	12.400	0.790	1.250	0.60	202.4	340.6	315.0	20.1	31.8	15.2
	152	13.71	12.480	0.870	1.400	0.60	226.2	348.2	317.0	22.1	35.6	15.2
	*161	13.88	12.535	0.906	1.484	0.60	239.6	352.5	318.4	23.0	37.7	15.2
	170	14.03	12.570	0.960	1.560	0.60	253.0	356.4	319.3	24.4	39.6	15.2
	190	14.38	12.670	1.060	1.735	0.60	282.8	365.3	321.8	26.9	44.1	15.2
	210	14.71	12.790	1.180	1.900	0.60	312.5	373.6	324.9	30.0	48.3	15.2
	230	15.05	12.895	1.285	2.070	0.60	342.3	382.3	327.5	32.6	52.6	15.2
	252	15.41	13.005	1.395	2.250	0.60	375.0	391.4	330.3	35.4	57.2	15.2
	279	15.85	13.140	1.530	2.470	0.60	415.2	402.6	333.8	38.9	62.7	15.2
	305	16.32	13.235	1.625	2.705	0.60	453.9	414.5	336.2	41.3	68.7	15.2
W14 x 5	22	13.74	5.000	0.230	0.335	0.40	32.74	349.0	127.0	5.8	8.5	10.2
	26	13.91	5.025	0.255	0.420	0.40	38.69	353.3	127.6	6.5	10.7	10.2
W14 x 6¾	30	13.84	6.730	0.270	0.385	0.40	44.64	351.5	170.9	6.9	9.8	10.2
	34	13.98	6.745	0.285	0.455	0.40	50.60	355.1	171.3	7.2	11.6	10.2
	38	14.10	6.770	0.310	0.515	0.40	56.55	358.1	172.0	7.9	13.1	10.2
W14 x 8	43	13.66	7.995	0.305	0.530	0.60	63.99	347.0	203.1	7.7	13.5	15.2
	48	13.79	8.030	0.340	0.595	0.60	71.43	350.3	204.0	8.6	15.1	15.2
	53	13.92	8.060	0.370	0.660	0.60	78.87	353.6	204.7	9.4	16.8	15.2
W14 x 10	61	13.89	9.995	0.375	0.645	0.60	90.78	352.8	253.9	9.5	16.4	15.2
	68	14.04	10.035	0.415	0.720	0.60	101.2	356.6	254.9	10.5	18.3	15.2
	74	14.17	10.070	0.450	0.785	0.60	110.1	359.9	255.8	11.4	19.9	15.2
	82	14.31	10.130	0.510	0.855	0.60	122.0	363.5	257.3	13.0	21.7	15.2
W14 x 14½	90	14.02	14.520	0.440	0.710	0.60	133.9	356.1	368.8	11.2	18.0	15.2
	99	14.16	14.565	0.485	0.780	0.60	147.3	359.7	370.0	12.3	19.8	15.2
	109	14.32	14.605	0.525	0.860	0.60	162.2	363.7	371.0	13.3	21.8	15.2

* 표시는 BS규격

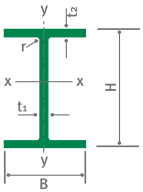
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
165.2	30,800	10,000	13.7	7.78	1,940	649	2,170	991	2,220	215	W12 x 12
182.2	34,700	11,300	13.8	7.88	2,150	732	2,420	1,110	2,530	289	
200.8	38,800	12,500	13.9	7.89	2,370	805	2,680	1,230	2,860	381	
227.7	44,600	14,400	14.0	7.95	2,680	920	3,050	1,400	3,340	544	
258.0	51,900	16,600	14.2	8.02	3,050	1,050	3,510	1,610	3,950	784	
288.9	59,700	18,900	14.4	8.09	3,430	1,190	3,980	1,830	4,620	1,090	
305.8	64,200	20,300	14.5	8.15	3,640	1,280	4,250	1,950	5,020	1,290	
322.5	68,500	21,500	14.6	8.16	3,840	1,350	4,500	2,060	5,390	1,500	
360.4	78,800	24,500	14.8	8.24	4,310	1,520	5,100	2,340	6,320	2,060	
398.9	89,300	27,700	15.0	8.33	4,780	1,710	5,710	2,620	7,300	2,740	
436.8	100,600	30,900	15.2	8.41	5,260	1,890	6,330	2,900	8,370	3,550	
477.9	113,200	34,500	15.4	8.50	5,780	2,090	7,020	3,210	9,590	4,580	
528.4	129,500	39,000	15.7	8.59	6,430	2,340	7,890	3,600	11,230	6,070	
578.4	147,600	43,700	16.0	8.69	7,120	2,600	8,810	4,010	13,010	7,880	
41.74	8,270	291	14.1	2.64	474	45.8	542	71.8	84.1	8.71	W14 x 5
49.77	10,200	372	14.3	2.73	577	58.2	661	91.1	109	15.1	
57.29	12,100	817	14.5	3.78	689	95.6	777	148	238	16.3	W14 x 6¾
64.53	14,200	973	14.8	3.88	800	114	896	175	287	23.9	
72.18	16,100	1,110	14.9	3.92	899	129	1,010	200	331	33.6	
81.46	17,800	1,890	14.8	4.82	1,030	186	1,140	285	524	43.4	W14 x 8
91.12	20,200	2,140	14.9	4.85	1,150	210	1,280	322	600	59.9	
100.8	22,600	2,410	15.0	4.89	1,280	236	1,430	361	681	80.8	
115.7	26,700	4,480	15.2	6.22	1,510	353	1,680	538	1,270	91.4	W14 x 10
128.9	30,100	5,060	15.3	6.27	1,690	397	1,880	605	1,450	125	
140.3	33,100	5,560	15.4	6.30	1,840	435	2,050	663	1,600	161	
155.3	36,700	6,170	15.4	6.30	2,020	480	2,270	734	1,800	212	
170.6	41,500	15,100	15.6	9.41	2,330	819	2,560	1,240	4,300	169	W14 x 14½
187.9	46,200	16,700	15.7	9.43	2,570	903	2,840	1,370	4,830	224	
206.3	51,500	18,600	15.8	9.50	2,830	1,000	3,140	1,520	5,420	296	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Desig-nation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t_1	t_2	r
W14 x 14½	120	14.48	14.670	0.590	0.940	0.60	178.6	367.8	372.6	15.0	23.9	15.2
	132	14.66	14.725	0.645	1.030	0.60	196.4	372.4	374.0	16.4	26.2	15.2
W14 x 16	145	14.78	15.500	0.680	1.090	0.60	215.8	375.4	393.7	17.3	27.7	15.2
	159	14.98	15.565	0.745	1.190	0.60	236.6	380.5	395.4	18.9	30.2	15.2
	176	15.22	15.650	0.830	1.310	0.60	261.9	386.6	397.5	21.1	33.3	15.2
	193	15.48	15.710	0.890	1.440	0.60	287.2	393.2	399.0	22.6	36.6	15.2
	211	15.72	15.800	0.980	1.560	0.60	314.0	399.3	401.3	24.9	39.6	15.2
	233	16.04	15.890	1.070	1.720	0.60	346.7	407.4	403.6	27.2	43.7	15.2
	257	16.38	15.995	1.175	1.890	0.60	382.5	416.1	406.3	29.8	48.0	15.2
	283	16.74	16.110	1.290	2.070	0.60	421.2	425.2	409.2	32.8	52.6	15.2
	311	17.12	16.230	1.410	2.260	0.60	462.8	434.8	412.2	35.8	57.4	15.2
	342	17.54	16.360	1.540	2.470	0.60	509.0	445.5	415.5	39.1	62.7	15.2
	370	17.92	16.475	1.655	2.660	0.60	550.6	455.2	418.5	42.0	67.6	15.2
W16 x 5½	26	15.69	5.500	0.250	0.345	0.40	38.69	398.5	139.7	6.4	8.8	10.2
	31	15.88	5.525	0.275	0.440	0.40	46.13	403.4	140.3	7.0	11.2	10.2
W16 x 7	36	15.86	6.985	0.295	0.430	0.40	53.57	402.8	177.4	7.5	10.9	10.2
	40	16.01	6.995	0.305	0.505	0.40	59.53	406.7	177.7	7.7	12.8	10.2
	45	16.13	7.035	0.345	0.565	0.40	66.97	409.7	178.7	8.8	14.4	10.2
	50	16.26	7.070	0.380	0.630	0.40	74.41	413.0	179.6	9.7	16.0	10.2
	57	16.43	7.120	0.430	0.715	0.40	84.83	417.3	180.8	10.9	18.2	10.2
W16 x 10¼	67	16.33	10.235	0.395	0.665	0.40	99.71	414.8	260.0	10.0	16.9	10.2
	77	16.52	10.295	0.455	0.760	0.40	114.6	419.6	261.5	11.6	19.3	10.2
	89	16.75	10.365	0.525	0.875	0.40	132.4	425.4	263.3	13.3	22.2	10.2
	100	16.97	10.425	0.585	0.985	0.40	148.8	431.0	264.8	14.9	25.0	10.2
W18 x 6	35	17.70	6.000	0.300	0.425	0.40	52.09	449.6	152.4	7.6	10.8	10.2
	40	17.90	6.015	0.315	0.525	0.40	59.53	454.7	152.8	8.0	13.3	10.2
	46	18.06	6.060	0.360	0.605	0.40	68.46	458.7	153.9	9.1	15.4	10.2
W18 x 7½	*41	17.70	7.450	0.320	0.425	0.40	61.01	449.6	189.2	8.1	10.8	10.2
	*45	17.86	7.475	0.335	0.500	0.40	66.97	453.6	189.9	8.5	12.7	10.2
	50	17.99	7.495	0.355	0.570	0.40	74.41	456.9	190.4	9.0	14.5	10.2

* 표시는 BS규격

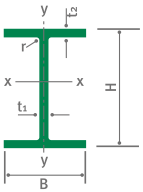
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
228.1	57,300	20,600	15.8	9.50	3,120	1,110	3,480	1,680	6,090	394	W14 x 14½
250.4	63,800	22,900	16.0	9.56	3,430	1,220	3,840	1,860	6,840	518	
275.5	71,300	28,200	16.1	10.1	3,800	1,430	4,270	2,170	8,510	638	W14 x 16
301.3	79,100	31,100	16.2	10.2	4,160	1,570	4,700	2,390	9,550	827	
334.2	89,100	34,900	16.3	10.2	4,610	1,760	5,250	2,670	10,900	1,120	
366.4	99,800	38,800	16.5	10.3	5,080	1,940	5,820	2,960	12,300	1,470	
399.5	111,000	42,700	16.7	10.3	5,560	2,130	6,390	3,240	13,800	1,870	
441.8	125,000	47,900	16.8	10.4	6,140	2,370	7,140	3,620	15,800	2,510	
487.4	142,000	53,700	17.1	10.5	6,830	2,640	7,970	4,040	18,200	3,330	
537.4	160,000	60,200	17.3	10.6	7,530	2,940	8,890	4,490	20,800	4,400	
589.7	180,000	67,100	17.5	10.7	8,280	3,260	9,880	4,980	23,900	5,740	
648.2	204,000	75,100	17.7	10.8	9,160	3,610	11,010	5,540	27,500	7,510	
702.2	227,000	82,800	18.0	10.9	9,970	3,960	12,070	6,070	31,000	9,430	
49.86	12,600	401	15.9	2.84	632	57.4	728	90.3	152	11.3	W16 x 5½
58.99	15,600	517	16.3	2.96	773	73.7	887	115	198	19.4	
68.14	18,600	1,020	16.5	3.87	924	115	1,050	177	389	22.9	W16 x 7
75.73	21,500	1,200	16.8	3.98	1,060	135	1,190	208	464	32.9	
85.88	24,500	1,370	16.9	3.99	1,200	153	1,350	238	535	47.1	
95.32	27,400	1,550	17.0	4.03	1,330	173	1,510	268	609	64.1	
108.2	31,600	1,800	17.1	4.08	1,510	199	1,730	310	714	93.2	
126.9	39,700	4,950	17.7	6.25	1,910	381	2,130	581	1,960	100	W16 x 10¼
146.0	46,100	5,760	17.8	6.28	2,200	441	2,460	673	2,300	150	
168.5	54,000	6,760	17.9	6.33	2,540	514	2,860	787	2,740	228	
190.1	61,800	7,750	18.0	6.38	2,870	585	3,250	899	3,190	324	
66.34	21,200	639	17.9	3.10	943	83.9	1,090	132	307	21.4	W18 x 6
75.79	25,400	793	18.3	3.23	1,120	104	1,280	163	385	33.7	
87.23	29,600	939	18.4	3.28	1,290	122	1,490	192	460	51.2	
76.56	25,400	1,220	18.2	3.99	1,130	129	1,290	201	587	26.2	W18 x 7½
85.52	29,400	1,450	18.5	4.12	1,300	153	1,470	237	704	37.5	
94.62	33,300	1,670	18.8	4.20	1,460	175	1,650	272	816	52.1	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Desig-nation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t_1	t_2	r
W18 x 7½	55	18.11	7.530	0.390	0.630	0.40	81.85	460.0	191.3	9.9	16.0	10.2
	60	18.24	7.555	0.415	0.695	0.40	89.29	463.3	191.9	10.5	17.7	10.2
	65	18.35	7.590	0.450	0.750	0.40	96.73	466.1	192.8	11.4	19.1	10.2
	*66	18.39	7.590	4.450	0.770	0.40	98.22	467.2	192.8	11.4	19.6	10.2
	71	18.47	7.635	0.495	0.810	0.40	105.7	469.1	193.9	12.6	20.6	10.2
W18 x 11	76	18.21	11.035	0.425	0.680	0.40	113.1	462.5	280.3	10.8	17.3	10.2
	86	18.39	11.090	0.480	0.770	0.40	128.0	467.1	281.7	12.2	19.6	10.2
	97	18.59	11.145	0.535	0.870	0.40	144.4	472.2	283.1	13.6	22.1	10.2
	106	18.73	11.200	0.590	0.940	0.40	157.7	475.7	284.5	15.0	23.9	10.2
	119	18.97	11.265	0.655	1.060	0.40	177.1	481.8	286.1	16.6	26.9	10.2
	130	19.25	11.160	0.670	1.200	0.40	193.5	489.0	283.5	17.0	30.5	10.2
	143	19.49	11.220	0.730	1.320	0.40	212.8	495.0	285.0	18.5	33.5	10.2
	158	19.72	11.300	0.810	1.440	0.40	235.1	500.9	287.0	20.6	36.6	10.2
	175	20.04	11.375	0.890	1.590	0.40	260.4	509.0	288.9	22.6	40.4	10.2
	192	20.35	11.455	0.960	1.750	0.40	285.7	516.9	291.0	24.4	44.4	10.2
	211	20.67	11.555	1.060	1.910	0.40	314.0	525.0	293.5	26.9	48.5	10.2
	234	21.06	11.650	1.160	2.110	0.40	348.2	534.9	295.9	29.5	53.6	10.2
	258	21.46	11.770	1.280	2.300	0.40	383.9	545.1	299.0	32.5	58.4	10.2
	283	21.85	11.890	1.400	2.500	0.40	421.2	555.0	302.0	35.6	63.5	10.2
	311	22.32	12.005	1.520	2.740	0.40	462.8	566.9	304.9	38.6	69.6	10.2
W21 x 6½	44	20.66	6.500	0.350	0.450	0.50	65.48	524.8	165.1	8.9	11.4	12.7
	50	20.83	6.530	0.380	0.535	0.50	74.41	529.1	165.9	9.7	13.6	12.7
	57	21.06	6.555	0.405	0.650	0.50	84.83	534.9	166.5	10.3	16.5	12.7
W21 x 8¼	48	20.62	8.140	0.350	0.430	0.50	71.43	523.7	206.8	8.9	10.9	12.7
	55	20.80	8.220	0.375	0.522	0.50	81.85	528.3	208.8	9.5	13.3	12.7
	62	20.99	8.240	0.400	0.615	0.50	92.27	533.1	209.3	10.2	15.6	12.7
	68	21.13	8.270	0.430	0.685	0.50	101.2	536.7	210.1	10.9	17.4	12.7
	73	21.24	8.295	0.455	0.740	0.50	108.6	539.5	210.7	11.6	18.8	12.7
	83	21.43	8.355	0.515	0.835	0.50	123.5	544.3	212.2	13.1	21.2	12.7
	93	21.62	8.420	0.580	0.930	0.50	138.4	549.1	213.9	14.7	23.6	12.7
W21 x 12¼	101	21.36	12.290	0.500	0.800	0.50	150.3	542.5	312.2	12.7	20.3	12.7
	111	21.51	12.340	0.550	0.875	0.50	165.2	546.4	313.4	14.0	22.2	12.7
	122	21.68	12.390	0.600	0.960	0.50	181.6	550.7	314.7	15.2	24.4	12.7

* 표시는 BS규격

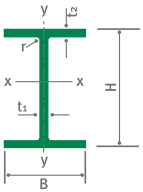
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
104.5	37,100	1,870	18.8	4.23	1,610	196	1,830	304	920	69.7	W18 x 7½
113.8	41,000	2,090	19.0	4.29	1,770	218	2,010	338	1,030	91.3	
123.3	44,700	2,290	19.0	4.31	1,920	238	2,190	370	1,140	115	
125.3	45,700	2,350	19.1	4.33	1,960	244	2,230	379	1,170	122	
134.7	48,800	2,510	19.0	4.32	2,080	259	2,390	405	1,260	147	
144.1	55,500	6,350	19.6	6.64	2,400	453	2,670	693	3,150	119	W18 x 11
163.5	63,700	7,310	19.7	6.69	2,730	519	3,050	794	3,660	173	
184.2	72,700	8,370	19.9	6.74	3,080	591	3,460	906	4,230	246	
201.1	79,700	9,190	19.9	6.76	3,350	646	3,780	992	4,680	315	
225.9	91,000	10,500	20.1	6.82	3,780	734	4,280	1,130	5,430	445	
246.6	103,000	11,600	20.4	6.86	4,210	818	4,760	1,260	6,090	609	
271.0	114,000	12,900	20.5	6.90	4,610	905	5,270	1,400	6,880	804	
299.1	127,000	14,500	20.6	6.96	5,070	1,010	5,840	1,550	7,770	1,060	
331.1	144,000	16,300	20.9	7.02	5,660	1,130	6,520	1,740	8,910	1,420	
363.8	161,000	18,300	21.0	7.09	6,230	1,260	7,240	1,940	10,180	1,880	
400.7	180,000	20,500	21.2	7.15	6,860	1,400	8,030	2,170	11,600	2,470	
444.3	204,000	23,200	21.4	7.23	7,630	1,570	9,000	2,440	13,400	3,320	
489.3	229,000	26,100	21.6	7.30	8,400	1,750	10,000	2,730	15,410	4,340	
536.8	257,000	29,300	21.9	7.39	9,260	1,940	11,100	3,030	17,600	5,620	
590.4	290,000	33,100	22.2	7.49	10,200	2,170	12,300	3,400	20,330	7,390	
83.71	35,000	859	20.4	3.20	1,330	104	1,560	166	563	33.1	W21 x 6½
95.19	41,100	1,040	20.8	3.31	1,550	125	1,810	200	688	48.9	
108.0	48,600	1,270	21.2	3.43	1,820	153	2,110	243	853	74.4	
91.14	39,900	1,610	20.9	4.20	1,520	156	1,750	244	1,060	34.6	W21 x 8¼
104.6	47,700	2,020	21.4	4.39	1,810	194	2,060	302	1,340	52.7	
117.9	55,300	2,390	21.7	4.50	2,070	228	2,370	356	1,600	77.0	
129.2	61,600	2,700	21.8	4.57	2,300	257	2,620	400	1,810	102	
138.8	66,800	2,940	21.9	4.60	2,480	279	2,830	435	1,990	127	
157.1	76,200	3,390	22.0	4.65	2,800	320	3,210	500	2,310	182	
176.1	86,100	3,860	22.1	4.68	3,140	361	3,610	568	2,660	253	
191.9	101,000	10,300	22.9	7.33	3,720	660	4,140	1,010	7,020	218	W21 x 12¼
210.8	111,000	11,400	22.9	7.35	4,060	728	4,560	1,120	7,820	286	
231.2	123,000	12,700	23.1	7.41	4,470	807	5,030	1,240	8,780	377	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Designation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t1	t2	r
W21 x 12¼	132	21.83	12.440	0.650	1.035	0.50	196.4	554.5	316.0	16.5	26.3	12.7
	147	22.06	12.510	0.720	1.150	0.50	218.8	560.3	317.8	18.3	29.2	12.7
	166	22.48	12.420	0.750	1.360	0.50	247.0	571.0	315.5	19.1	34.5	12.7
	182	22.72	12.500	0.830	1.480	0.50	270.8	577.1	317.5	21.1	37.6	12.7
	201	23.03	12.575	0.910	1.630	0.50	299.1	585.0	319.4	23.1	41.4	12.7
	*223	23.35	12.673	1.791	1.000	0.50	331.9	593.1	321.9	25.4	45.5	12.7
	*248	23.74	12.776	1.988	1.114	0.50	369.1	603.0	324.5	28.3	50.5	12.7
	*275	24.13	12.890	2.189	1.220	0.50	409.2	612.9	327.4	31.0	55.6	12.7
	*300	24.53	12.988	2.382	1.319	0.50	446.4	623.1	329.9	33.5	60.5	12.7
	*333	25.00	13.130	2.618	1.461	0.50	495.6	635.0	333.5	37.1	66.5	12.7
W24 x 7	55	23.57	7.005	0.395	0.505	0.50	81.85	598.7	177.9	10.0	12.8	12.7
	62	23.74	7.040	0.430	0.590	0.50	92.27	603.0	178.8	10.9	15.0	12.7
W24 x 9	68	23.73	8.965	0.415	0.585	0.50	101.2	602.7	227.7	10.5	14.9	12.7
	76	23.92	8.990	0.440	0.680	0.50	113.1	607.6	228.3	11.2	17.3	12.7
	84	24.10	9.020	0.470	0.770	0.50	125.0	612.1	229.1	11.9	19.6	12.7
	94	24.31	9.065	0.515	0.875	0.50	139.9	617.5	230.3	13.1	22.2	12.7
	103	24.53	9.000	0.550	0.980	0.50	153.3	623.1	228.6	14.0	24.9	12.7
W24 x 12¾	104	24.06	12.750	0.500	0.750	0.65	154.8	611.1	323.9	12.7	19.1	16.5
	117	24.26	12.800	0.550	0.850	0.65	174.1	616.2	325.1	14.0	21.6	16.5
	131	24.48	12.855	0.605	0.960	0.65	194.9	621.8	326.5	15.4	24.4	16.5
	146	24.74	12.900	0.650	1.090	0.65	217.3	628.4	327.7	16.5	27.7	16.5
	162	25.00	12.955	0.705	1.220	0.65	241.1	635.0	329.1	17.9	31.0	16.5
	176	25.24	12.890	0.750	1.340	0.65	261.9	641.1	327.4	19.1	34.0	16.5
	192	25.47	12.950	0.810	1.460	0.65	285.7	646.9	328.9	20.6	37.1	16.5
	207	25.71	13.010	0.870	1.570	0.65	308.0	653.0	330.5	22.1	39.9	16.5
	229	26.02	13.110	0.960	1.730	0.65	340.8	660.9	333.0	24.4	43.9	16.5
	250	26.34	13.185	1.040	1.890	0.65	372.0	669.0	334.9	26.4	48.0	16.5
	279	26.73	13.305	1.160	2.090	0.65	415.2	678.9	337.9	29.5	53.1	16.5
	306	27.13	13.405	1.260	2.280	0.65	455.4	689.1	340.5	32.0	57.9	16.5
	335	27.52	13.520	1.380	2.480	0.65	498.5	699.0	343.4	35.1	63.0	16.5
	370	27.99	13.660	1.520	2.720	0.65	550.6	710.9	347.0	38.6	69.1	16.5

* 표시는 BS규격

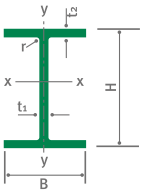
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
250.4	134,000	13,900	23.1	7.45	4,830	880	5,460	1,350	9,650	474	W21 x 12¼
278.8	151,000	15,600	23.3	7.48	5,390	982	6,120	1,520	11,000	648	
315.0	178,000	18,100	23.8	7.58	6,230	1,150	7,080	1,760	13,000	988	
346.0	197,000	20,100	23.9	7.62	6,830	1,270	7,800	1,950	14,600	1,290	
381.9	221,000	22,500	24.1	7.68	7,560	1,410	8,680	2,180	16,600	1,720	
421.8	248,000	25,400	24.2	7.76	8,360	1,580	9,660	2,440	19,000	2,290	
471.2	281,000	28,900	24.4	7.83	9,320	1,780	10,900	2,760	21,900	3,140	
521.0	317,000	32,600	24.7	7.91	10,300	1,990	12,100	3,100	25,300	4,190	
568.8	353,000	36,400	24.9	8.00	11,300	2,210	13,400	3,440	28,600	5,390	
631.2	400,000	41,300	25.2	8.09	12,600	2,480	15,000	3,870	33,200	7,220	
104.2	55,900	1,210	23.2	3.41	1,870	136	2,190	218	1,030	50.3	W24 x 7
117.5	64,600	1,440	23.4	3.50	2,140	161	2,510	258	1,240	72.4	
129.4	76,200	2,940	24.3	4.77	2,530	258	2,900	403	2,530	79.2	W24 x 9
144.6	87,500	3,440	24.6	4.88	2,880	301	3,290	470	2,990	113	
159.4	98,600	3,940	24.9	4.97	3,220	344	3,680	536	3,450	155	
178.7	112,000	4,530	25.0	5.03	3,630	393	4,160	615	4,000	220	
195.5	125,000	4,970	25.3	5.04	4,010	435	4,590	680	4,440	297	
198.8	130,000	10,800	25.6	7.37	4,250	667	4,770	1,030	9,480	206	W24 x 12¼
223.0	148,000	12,400	25.8	7.46	4,800	763	5,390	1,170	10,900	291	
249.9	168,000	14,200	25.9	7.54	5,400	870	6,090	1,340	12,600	410	
278.4	192,000	16,300	26.3	7.65	6,110	995	6,870	1,530	14,700	575	
308.9	216,000	18,400	26.4	7.72	6,800	1,120	7,700	1,730	16,800	790	
334.4	237,000	19,900	26.6	7.71	7,390	1,220	8,390	1,880	18,300	1,020	
364.4	261,000	22,000	26.8	7.77	8,070	1,340	9,200	2,070	20,500	1,310	
392.8	285,000	24,100	26.9	7.83	8,730	1,460	10,000	2,250	22,600	1,630	
434.5	319,000	27,100	27.1	7.90	9,650	1,630	11,100	2,520	25,700	2,180	
475.1	354,000	30,100	27.3	7.96	10,600	1,800	12,200	2,800	29,000	2,830	
530.2	400,000	34,300	27.5	8.04	11,800	2,030	13,700	3,160	33,400	3,870	
580.1	446,000	38,300	27.7	8.13	12,900	2,250	15,100	3,510	37,900	5,010	
636.2	496,000	42,700	27.9	8.19	14,200	2,490	16,700	3,900	43,000	6,490	
702.9	558,000	48,400	28.2	8.30	15,700	2,790	18,600	4,380	49,500	8,610	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Designation	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t1	t2	r
W27 x 10	84	26.71	9.960	0.460	0.640	0.60	125.0	678.4	253.0	11.7	16.3	15.2
	94	26.92	9.990	0.490	0.745	0.60	139.9	683.8	253.7	12.4	18.9	15.2
	102	27.09	10.015	0.515	0.830	0.60	151.8	688.1	254.4	13.1	21.1	15.2
	114	27.29	10.070	0.570	0.930	0.60	169.7	693.2	255.8	14.5	23.6	15.2
	129	27.63	10.010	0.610	1.100	0.60	192.0	701.8	254.3	15.5	27.9	15.2
W30 x 10½	90	29.53	10.400	0.470	0.610	1.10	133.9	750.1	264.2	11.9	15.5	28.0
	99	29.65	10.450	0.520	0.670	1.10	147.3	753.1	265.4	13.2	17.0	28.0
	108	29.83	10.475	0.545	0.760	1.10	160.7	757.7	266.1	13.8	19.3	28.0
	116	30.01	10.495	0.565	0.850	1.10	172.6	762.3	266.6	14.4	21.6	28.0
	124	30.17	10.515	0.585	0.930	1.10	184.5	766.3	267.1	14.9	23.6	28.0
	132	30.31	10.545	0.615	1.000	1.10	196.4	769.9	267.8	15.6	25.4	28.0
	148	30.67	10.480	0.650	1.180	1.10	220.2	779.0	266.2	16.5	30.0	28.0
W33 x 11½	118	32.86	11.480	0.550	0.740	1.18	175.6	834.6	291.6	14.0	18.8	30.0
	130	33.09	11.510	0.580	0.855	1.18	193.5	840.5	292.4	14.7	21.7	30.0
	141	33.30	11.535	0.605	0.960	1.18	209.8	845.8	293.0	15.4	24.4	30.0
	152	33.49	11.565	0.635	1.055	1.18	226.2	850.6	293.8	16.1	26.8	30.0
	169	33.82	11.500	0.670	1.220	1.18	251.5	859.0	292.1	17.0	31.0	30.0
W36 x 12	135	35.55	11.950	0.600	0.790	1.18	200.9	903.0	303.5	15.2	20.1	30.0
	150	35.85	11.975	0.625	0.940	1.18	223.2	910.6	304.2	15.9	23.9	30.0
	160	36.01	12.000	0.650	1.020	1.18	238.1	914.7	304.8	16.5	25.9	30.0
	170	36.17	12.030	0.680	1.100	1.18	253.0	918.7	305.6	17.3	27.9	30.0
	182	36.33	12.075	0.725	1.180	1.18	270.8	922.8	306.7	18.4	30.0	30.0
	194	36.49	12.115	0.765	1.260	1.18	288.7	926.8	307.7	19.4	32.0	30.0
	210	36.69	12.180	0.830	1.360	1.18	312.5	931.9	309.4	21.1	34.5	30.0
	232	37.12	12.120	0.870	1.570	1.18	345.3	942.8	307.8	22.1	39.9	30.0

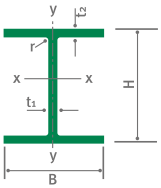
W

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6, $x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
160.0	119,000	4,410	27.3	5.25	3,510	349	4,010	546	4,820	120	W27 x 10
178.0	136,000	5,160	27.6	5.38	3,980	407	4,550	635	5,680	169	
194.0	151,000	5,800	27.9	5.47	4,390	456	5,010	713	6,440	222	
216.4	170,000	6,600	28.0	5.52	4,900	516	5,620	808	7,380	307	
244.0	198,000	7,670	28.5	5.61	5,640	603	6,460	943	8,680	464	
174.4	156,000	4,780	29.9	5.24	4,160	362	4,790	575	6,420	154	W30 x 10½
192.1	172,000	5,330	29.9	5.27	4,570	402	5,270	639	7,180	199	
209.0	191,000	6,090	30.2	5.40	5,040	458	5,820	727	8,260	251	
225.0	211,000	6,850	30.6	5.52	5,540	514	6,360	813	9,350	313	
239.8	228,000	7,540	30.8	5.61	5,950	565	6,840	892	10,300	380	
255.1	245,000	8,170	31.0	5.66	6,360	610	7,320	964	11,300	456	
285.0	283,000	9,470	31.5	5.76	7,270	712	8,350	1,120	13,200	662	
228.7	253,000	7,800	33.3	5.84	6,060	535	6,990	849	12,900	274	W33 x 11½
252.2	287,000	9,090	33.7	6.00	6,830	622	7,840	983	15,200	362	
273.1	318,000	10,300	34.1	6.14	7,520	703	8,610	1,100	17,200	462	
293.8	347,000	11,400	34.4	6.23	8,160	776	9,350	1,220	19,200	578	
324.4	394,000	12,900	34.9	6.31	9,170	883	10,500	1,390	22,100	805	
261.1	333,000	9,400	35.7	6.00	7,380	619	8,540	986	18,200	349	W36 x 12
290.0	385,000	11,300	36.4	6.24	8,460	743	9,730	1,170	22,000	480	
308.1	414,000	12,300	36.7	6.32	9,050	807	10,400	1,270	24,100	577	
327.5	445,000	13,300	36.9	6.37	9,690	870	11,100	1,380	26,400	694	
350.5	479,000	14,500	37.0	6.43	10,400	946	12,000	1,500	28,700	844	
372.3	512,000	15,600	37.1	6.47	11,000	1,010	12,800	1,610	31,100	1,010	
403.3	557,000	17,100	37.2	6.51	12,000	1,110	13,800	1,760	34,300	1,270	
444.0	633,000	19,500	37.8	6.63	13,400	1,270	15,500	2,010	39,500	1,760	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(3) Wide flange beams : HE

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
HE100	A	16.7	96.0	100.0	5.0	8.0	12.0	21.2	349	134
	B	20.4	100.0	100.0	6.0	10.0	12.0	26.0	450	167
	M	41.8	120.0	106.0	12.0	20.0	12.0	53.2	1,140	399
HE120	A	19.9	114.0	120.0	5.0	8.0	12.0	25.3	606	231
	B	26.7	120.0	120.0	6.5	11.0	12.0	34.0	864	318
	M	52.1	140.0	126.0	12.5	21.0	12.0	66.4	2,020	703
HE140	A	24.7	133.0	140.0	5.5	8.5	12.0	31.4	1,030	389
	B	33.7	140.0	140.0	7.0	12.0	12.0	43.0	1,510	550
	M	63.2	160.0	146.0	13.0	22.0	12.0	80.6	3,290	1,140
HE160	A	30.4	152.0	160.0	6.0	9.0	15.0	38.8	1,670	616
	B	42.6	160.0	160.0	8.0	13.0	15.0	54.3	2,490	889
	M	76.2	180.0	166.0	14.0	23.0	15.0	97.1	5,100	1,760
HE180	A	35.5	171.0	180.0	6.0	9.5	15.0	45.3	2,510	925
	B	51.2	180.0	180.0	8.5	14.0	15.0	65.3	3,830	1,360
	M	88.9	200.0	186.0	14.5	24.0	15.0	113.3	7,480	2,580
HE200	A	42.3	190.0	200.0	6.5	10.0	18.0	53.8	3,690	1,340
	B	61.3	200.0	200.0	9.0	15.0	18.0	78.1	5,700	2,000
	M	103	220.0	206.0	15.0	25.0	18.0	131.3	10,600	3,650
HE220	A	50.5	210.0	220.0	7.0	11.0	18.0	64.3	5,410	1,950
	B	71.5	220.0	220.0	9.5	16.0	18.0	91.0	8,090	2,840
	M	117	240.0	226.0	15.5	26.0	18.0	149.4	14,600	5,010
HE240	AA	47.4	224.0	240.0	6.5	9.0	21.0	60.4	5,840	2,080
	A	60.3	230.0	240.0	7.5	12.0	21.0	76.8	7,760	2,770
	B	83.2	240.0	240.0	10.0	17.0	21.0	106.0	11,300	3,920
	M	157	270.0	248.0	18.0	32.0	21.0	199.6	24,300	8,150
HE260	AA	54.1	244.0	260.0	6.5	9.5	24.0	69.0	7,980	2,790
	A	68.2	250.0	260.0	7.5	12.5	24.0	86.8	10,500	3,670
	B	93.0	260.0	260.0	10.0	17.5	24.0	118.4	14,900	5,130
	M	172	290.0	268.0	18.0	32.5	24.0	219.6	31,300	10,400

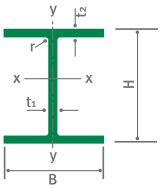
HE

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
4.05	2.51	72.8	26.8	83.0	41.1	2.58	5.24	HE100
4.15	2.53	89.9	33.5	104	51.4	3.38	9.25	
4.63	2.74	190	75.3	236	116	9.93	68.2	
4.89	3.02	106	38.5	120	58.9	6.47	5.99	HE120
5.04	3.06	144	52.9	165	81.0	9.41	13.8	
5.52	3.25	289	112	351	172	24.8	91.7	
5.73	3.52	155	55.6	174	84.8	15.1	8.13	HE140
5.93	3.58	216	78.5	245	120	22.5	20.1	
6.39	3.76	411	156	494	241	54.3	120	
6.56	3.98	220	77.0	245	118	31.4	12.2	HE160
6.77	4.05	311	111	354	170	47.9	31.2	
7.25	4.26	567	212	675	326	108	162	
7.45	4.52	294	103	325	157	60.2	14.8	HE180
7.66	4.57	426	151	481	231	93.8	42.2	
8.13	4.77	748	277	883	425	199	203	
8.28	4.99	388	134	430	204	108	21.0	HE200
8.54	5.06	570	200	643	306	171	59.3	
8.99	5.27	964	354	1,140	543	346	259	
9.17	5.51	515	177	569	271	193	28.5	HE220
9.43	5.59	736	258	827	394	295	76.6	
9.89	5.79	1,220	443	1,420	679	573	315	
9.83	5.87	521	173	571	264	240	23.0	HE240
10.0	6.00	675	231	745	352	328	41.6	
10.3	6.08	942	327	1,050	498	487	103	
11.0	6.39	1,800	657	2,120	1,010	1,150	628	
10.8	6.36	654	215	715	328	383	30.3	HE260
11.0	6.50	840	282	920	430	516	52.4	
11.2	6.58	1,150	395	1,280	602	754	124	
11.9	6.88	2,160	776	2,520	1,190	1,730	719	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(3) Wide flange beams : HE

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
HE280	AA	61.2	264.0	280.0	7.0	10.0	24.0	78.0	10,600	3,660
	A	76.4	270.0	280.0	8.0	13.0	24.0	97.3	13,700	4,760
	B	103	280.0	280.0	10.5	18.0	24.0	131.4	19,300	6,590
	M	189	310.0	288.0	18.5	33.0	24.0	240.2	39,500	13,200
HE300	AA	69.8	283.0	300.0	7.5	10.5	27.0	88.9	13,800	4,730
	A	88.3	290.0	300.0	8.5	14.0	27.0	112.5	18,300	6,310
	B	117	300.0	300.0	11.0	19.0	27.0	149.1	25,200	8,560
	M	238	340.0	310.0	21.0	39.0	27.0	303.1	59,200	19,400
HE320	AA	74.2	301.0	300.0	8.0	11.0	27.0	94.6	16,400	4,960
	A	97.6	310.0	300.0	9.0	15.5	27.0	124.4	22,900	6,990
	B	127	320.0	300.0	11.5	20.5	27.0	161.3	30,800	9,240
	M	245	359.0	309.0	21.0	40.0	27.0	312.0	68,100	19,700
HE340	AA	78.9	320.0	300.0	8.5	11.5	27.0	100.5	19,600	5,180
	A	105	330.0	300.0	9.5	16.5	27.0	133.5	27,700	7,440
	B	134	340.0	300.0	12.0	21.5	27.0	170.9	36,700	9,690
	M	248	377.0	309.0	21.0	40.0	27.0	315.8	76,400	19,700
HE360	AA	83.7	339.0	300.0	9.0	12.0	27.0	106.6	23,000	5,410
	A	112	350.0	300.0	10.0	17.5	27.0	142.8	33,100	7,890
	B	142	360.0	300.0	12.5	22.5	27.0	180.6	43,200	10,100
	M	250	395.0	308.0	21.0	40.0	27.0	318.8	84,900	19,500
HE400	AA	92.4	378.0	300.0	9.5	13.0	27.0	117.7	31,300	5,860
	A	125	390.0	300.0	11.0	19.0	27.0	159.0	45,100	8,560
	B	155	400.0	300.0	13.5	24.0	27.0	197.8	57,700	10,800
	M	256	432.0	307.0	21.0	40.0	27.0	325.8	104,000	19,300
HE450	AA	99.7	425.0	300.0	10.0	13.5	27.0	127.1	41,900	6,090
	A	140	440.0	300.0	11.5	21.0	27.0	178.0	63,700	9,470
	B	171	450.0	300.0	14.0	26.0	27.0	218.0	79,900	11,700
	M	263	478.0	307.0	21.0	40.0	27.0	335.4	131,000	19,300

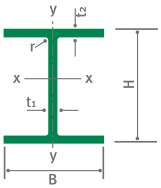
HE

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
11.7	6.85	803	261	873	399	590	36.2	HE280
11.9	7.00	1,010	340	1,110	518	785	62.1	
12.1	7.08	1,380	471	1,530	718	1,130	144	
12.8	7.41	2,550	917	2,970	1,400	2,520	807	
12.5	7.29	975	315	1,070	482	877	49.4	HE300
12.8	7.49	1,260	421	1,380	641	1,200	85.2	
13.0	7.58	1,680	571	1,870	870	1,690	185	
14.0	8.00	3,480	1,250	4,080	1,910	4,390	1,410	
13.2	7.24	1,090	331	1,200	506	1,040	55.9	HE320
13.6	7.50	1,480	466	1,630	710	1,510	108	
13.8	7.57	1,930	616	2,150	939	2,070	225	
14.8	7.95	3,790	1,280	4,440	1,950	5,000	1,500	
14.0	7.18	1,230	345	1,340	529	1,230	63.1	HE340
14.4	7.47	1,680	496	1,850	756	1,820	127	
14.7	7.53	2,160	646	2,410	986	2,450	257	
15.6	7.90	4,050	1,280	4,720	1,950	5,580	1,510	
14.7	7.12	1,360	361	1,500	553	1,440	71.0	HE360
15.2	7.43	1,890	526	2,090	802	2,180	149	
15.5	7.48	2,400	673	2,680	1,030	2,880	292	
16.3	7.82	4,300	1,270	4,990	1,940	6,140	1,510	
16.3	7.06	1,660	391	1,820	600	1,950	84.7	HE400
16.8	7.34	2,310	571	2,560	873	2,940	189	
17.1	7.39	2,890	720	3,230	1,100	3,820	356	
17.9	7.70	4,810	1,260	5,570	1,930	7,410	1,510	
18.2	6.92	1,970	406	2,180	624	2,570	95.6	HE450
18.9	7.29	2,900	631	3,220	966	4,150	244	
19.1	7.33	3,550	780	3,980	1,200	5,260	440	
19.8	7.59	5,480	1,260	6,330	1,940	9,250	1,530	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(3) Wide flange beams : HE

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
HE500	AA	107	472.0	300.0	10.5	14.0	27.0	136.9	54,600	6,310
	A	155	490.0	300.0	12.0	23.0	27.0	197.5	87,000	10,400
	B	187	500.0	300.0	14.5	28.0	27.0	238.6	107,000	12,600
	M	270	524.0	306.0	21.0	40.0	27.0	344.3	162,000	19,200
HE550	AA	120	522.0	300.0	11.5	15.0	27.0	152.8	72,900	6,770
	A	166	540.0	300.0	12.5	24.0	27.0	211.8	112,000	10,800
	B	199	550.0	300.0	15.0	29.0	27.0	254.1	137,000	13,100
	M	278	572.0	306.0	21.0	40.0	27.0	354.4	198,000	19,200
HE600	AA	129	571.0	300.0	12.0	15.5	27.0	164.1	91,900	6,990
	A	178	590.0	300.0	13.0	25.0	27.0	226.5	141,000	11,300
	B	212	600.0	300.0	15.5	30.0	27.0	270.0	171,000	13,500
	M	285	620.0	305.0	21.0	40.0	27.0	363.7	237,000	19,000
HE650	AA	138	620.0	300.0	12.5	16.0	27.0	175.8	114,000	7,220
	A	190	640.0	300.0	13.5	26.0	27.0	241.6	175,000	11,700
	B	225	650.0	300.0	16.0	31.0	27.0	286.3	211,000	14,000
	M	293	668.0	305.0	21.0	40.0	27.0	373.7	282,000	19,000
HE700	AA	150	670.0	300.0	13.0	17.0	27.0	190.9	143,000	7,670
	A	204	690.0	300.0	14.5	27.0	27.0	260.5	215,000	12,200
	B	241	700.0	300.0	17.0	32.0	27.0	306.4	257,000	14,400
	M	301	716.0	304.0	21.0	40.0	27.0	383.0	329,000	18,800
HE800	AA	172	770.0	300.0	14.0	18.0	30.0	218.5	209,000	8,130
	A	224	790.0	300.0	15.0	28.0	30.0	285.8	303,000	12,600
	B	262	800.0	300.0	17.5	33.0	30.0	334.2	359,000	14,900
	M	317	814.0	303.0	21.0	40.0	30.0	404.3	443,000	18,600
HE900	AA	198	870.0	300.0	15.0	20.0	30.0	252.2	301,000	9,040
	A	252	890.0	300.0	16.0	30.0	30.0	320.5	422,000	13,500
	B	291	900.0	300.0	18.5	35.0	30.0	371.3	494,000	15,800
	M	333	910.0	302.0	21.0	40.0	30.0	423.6	570,000	18,500

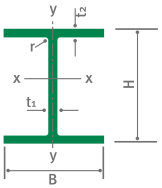
HE

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
20.0	6.79	2,310	421	2,580	649	3,300	108	HE500
21.0	7.26	3,550	693	3,950	1,060	5,640	309	
21.2	7.27	4,280	840	4,810	1,290	7,020	538	
21.7	7.47	6,180	1,250	7,090	1,930	11,200	1,540	
21.8	6.66	2,790	451	3,130	699	4,340	134	HE550
23.0	7.14	4,150	720	4,620	1,110	7,190	352	
23.2	7.18	4,980	873	5,590	1,340	8,860	600	
23.6	7.36	6,920	1,250	7,930	1,940	13,500	1,550	
23.7	6.53	3,220	466	3,620	725	5,380	150	HE600
25.0	7.06	4,780	753	5,350	1,160	8,980	398	
25.2	7.07	5,700	900	6,430	1,390	11,000	667	
25.5	7.23	7,650	1,250	8,770	1,930	15,900	1,560	
25.5	6.41	3,680	481	4,160	751	6,570	168	HE650
26.9	6.96	5,470	780	6,140	1,200	11,000	448	
27.1	6.99	6,490	933	7,320	1,440	13,400	739	
27.5	7.13	8,440	1,250	9,660	1,940	18,600	1,580	
27.4	6.34	4,270	511	4,840	800	8,160	195	HE700
28.7	6.84	6,230	813	7,030	1,260	13,400	514	
29.0	6.86	7,340	960	8,330	1,500	16,100	831	
29.3	7.01	9,190	1,240	10,500	1,930	21,400	1,590	
30.9	6.10	5,430	542	6,220	857	11,500	257	HE800
32.6	6.64	7,670	840	8,700	1,310	18,300	597	
32.8	6.68	8,980	993	10,200	1,550	21,800	946	
33.1	6.78	10,900	1,230	12,500	1,930	27,800	1,650	
34.5	5.99	6,920	603	8,000	958	16,300	335	HE900
36.3	6.49	9,480	900	10,800	1,410	25,000	737	
36.5	6.52	11,000	1,050	12,600	1,660	29,500	1,140	
36.7	6.61	12,500	1,230	14,400	1,930	34,700	1,670	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(4) Parallel flange I sections : IPE

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
IPE120	A	8.7	117.6	64.0	3.8	5.1	7.0	11.0	257	22.4
	-	10.4	120.0	64.0	4.4	6.3	7.0	13.2	318	27.7
IPE140	A	10.5	137.4	73.0	3.8	5.6	7.0	13.4	435	36.4
	-	12.9	140.0	73.0	4.7	6.9	7.0	16.4	541	44.9
IPE160	A	12.7	157.0	82.0	4.0	5.9	9.0	16.2	689	54.4
	-	15.8	160.0	82.0	5.0	7.4	9.0	20.1	869	68.3
IPE180	A	15.4	177.0	91.0	4.3	6.5	9.0	19.6	1,060	81.9
	-	18.8	180.0	91.0	5.3	8.0	9.0	23.9	1,320	101
	O	21.3	182.0	92.0	6.0	9.0	9.0	27.1	1,510	117
IPE200	A	18.4	197.0	100.0	4.5	7.0	12.0	23.5	1,590	117
	-	22.4	200.0	100.0	5.6	8.5	12.0	28.5	1,940	142
	O	25.1	202.0	102.0	6.2	9.5	12.0	32.0	2,210	169
IPE220	A	22.2	217.0	110.0	5.0	7.7	12.0	28.3	2,320	171
	-	26.2	220.0	110.0	5.9	9.2	12.0	33.4	2,770	205
	O	29.4	222.0	112.0	6.6	10.2	12.0	37.4	3,130	240
IPE240	A	26.2	237.0	120.0	5.2	8.3	15.0	33.3	3,290	240
	-	30.7	240.0	120.0	6.2	9.8	15.0	39.1	3,890	284
	O	34.3	242.0	122.0	7.0	10.8	15.0	43.7	4,370	329
IPE270	A	30.7	267.0	135.0	5.5	8.7	15.0	39.2	4,920	358
	-	36.1	270.0	135.0	6.6	10.2	15.0	45.9	5,790	420
	O	42.3	274.0	136.0	7.5	12.2	15.0	53.8	6,950	514
IPE300	A	36.5	297.0	150.0	6.1	9.2	15.0	46.5	7,170	519
	-	42.2	300.0	150.0	7.1	10.7	15.0	53.8	8,360	604
	O	49.3	304.0	152.0	8.0	12.7	15.0	62.8	10,000	746
IPE330	A	43.0	327.0	160.0	6.5	10.0	18.0	54.7	10,200	685
	-	49.1	330.0	160.0	7.5	11.5	18.0	62.6	11,800	788
	O	57.0	334.0	162.0	8.5	13.5	18.0	72.6	13,900	960
IPE360	A	50.2	357.6	170.0	6.6	11.5	18.0	64.0	14,500	944
	-	57.1	360.0	170.0	8.0	12.7	18.0	72.7	16,300	1,040
	O	66.0	364.0	172.0	9.2	14.7	18.0	84.1	19,000	1,250

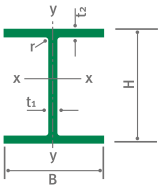
IPE

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
4.83	1.43	43.8	7.00	49.9	11.0	0.71	1.04	IPE120
4.90	1.45	53.0	8.70	60.7	13.6	0.89	1.74	
5.70	1.65	63.3	10.0	71.6	15.5	1.58	1.36	IPE140
5.74	1.65	77.3	12.3	88.3	19.2	1.98	2.45	
6.53	1.83	87.8	13.3	99.1	20.7	3.09	1.96	IPE160
6.58	1.84	109	16.7	124	26.1	3.96	3.60	
7.36	2.05	120	18.0	135	28.0	5.93	2.70	IPE180
7.42	2.05	147	22.2	166	34.6	7.43	4.79	
7.46	2.08	166	25.5	189	39.9	8.74	6.76	
8.23	2.23	161	23.4	182	36.5	10.5	4.11	IPE200
8.25	2.24	194	28.5	221	44.6	13.0	6.98	
8.32	2.30	219	33.1	249	51.9	15.6	9.45	
9.06	2.46	214	31.2	240	48.5	18.7	5.69	IPE220
9.11	2.48	252	37.3	285	58.1	22.7	9.07	
9.15	2.53	282	42.8	321	66.9	26.8	12.3	
9.94	2.68	278	40.0	312	62.4	31.3	8.35	IPE240
9.97	2.69	324	47.3	367	73.9	37.4	12.9	
10.0	2.74	361	53.9	410	84.4	43.7	17.2	
11.2	3.02	369	53.0	413	82.3	59.5	10.3	IPE270
11.2	3.02	429	62.2	484	97.0	70.6	15.9	
11.4	3.09	507	75.5	575	118	87.6	24.9	
12.4	3.34	483	69.2	542	107	107	13.4	IPE300
12.5	3.35	557	80.5	628	125	126	20.1	
12.6	3.45	658	98.1	744	153	158	31.1	
13.7	3.54	624	85.7	702	133	172	19.6	IPE330
13.7	3.55	715	98.5	804	154	199	28.2	
13.8	3.64	832	119	943	185	246	42.2	
15.1	3.84	811	111	907	172	282	26.5	IPE360
15.0	3.78	906	122	1,020	191	314	37.3	
15.0	3.85	1,040	145	1,190	227	380	55.8	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(4) Parallel flange I sections : IPE

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
IPE400	A	57.4	397.0	180.0	7.0	12.0	21.0	73.1	20,300	1,170
	-	66.3	400.0	180.0	8.6	13.5	21.0	84.5	23,100	1,320
	O	75.7	404.0	182.0	9.7	15.5	21.0	96.4	26,700	1,560
IPE450	A	67.2	447.0	190.0	7.6	13.1	21.0	85.6	29,800	1,500
	-	77.6	450.0	190.0	9.4	14.6	21.0	98.8	33,700	1,680
	O	92.4	456.0	192.0	11.0	17.6	21.0	117.7	40,900	2,090
IPE500	A	79.4	497.0	200.0	8.4	14.5	21.0	101.1	42,900	1,940
	-	90.7	500.0	200.0	10.2	16.0	21.0	115.5	48,200	2,140
	O	107	506.0	202.0	12.0	19.0	21.0	136.7	57,800	2,620
IPE550	A	92.1	547.0	210.0	9.0	15.7	24.0	117.3	60,000	2,430
	-	106	550.0	210.0	11.1	17.2	24.0	134.4	67,100	2,670
	O	123	556.0	212.0	12.7	20.2	24.0	156.1	79,200	3,220
IPE600	A	108	597.0	220.0	9.8	17.5	24.0	137.0	82,900	3,120
	-	122	600.0	220.0	12.0	19.0	24.0	156.0	92,100	3,390
	O	154	610.0	224.0	15.0	24.0	24.0	196.8	118,000	4,520

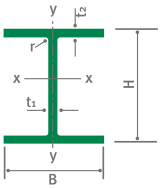
IPE

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
16.7	4.00	1,020	130	1,140	202	432	34.8	IPE400
16.5	3.95	1,160	147	1,310	229	490	51.1	
16.6	4.02	1,320	171	1,500	269	588	73.1	
18.7	4.19	1,330	158	1,490	246	705	45.7	IPE450
18.5	4.12	1,500	177	1,700	276	791	66.9	
18.6	4.21	1,790	218	2,050	341	998	109	
20.6	4.38	1,730	194	1,950	302	1,130	62.8	IPE500
20.4	4.30	1,930	214	2,190	336	1,250	89.3	
20.6	4.38	2,280	259	2,610	409	1,550	143	
22.6	4.55	2,190	231	2,470	362	1,710	86.5	IPE550
22.3	4.46	2,440	254	2,790	401	1,880	123	
22.5	4.54	2,850	304	3,260	481	2,300	188	
24.6	4.77	2,780	284	3,140	442	2,610	119	IPE600
24.3	4.66	3,070	308	3,510	486	2,850	165	
24.5	4.79	3,870	404	4,470	640	3,860	318	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(5) Wide flange columns : HD

호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
HD260	68.2	250.0	260.0	7.5	12.5	24.0	86.8	10,500	3,670
	93.0	260.0	260.0	10.0	17.5	24.0	118.4	14,900	5,130
	114	268.0	262.0	12.5	21.5	24.0	145.7	18,900	6,460
	142	278.0	265.0	15.5	26.5	24.0	180.3	24,300	8,240
	172	290.0	268.0	18.0	32.5	24.0	219.6	31,300	10,400
HD320	97.6	310.0	300.0	9.0	15.5	27.0	124.4	22,900	6,990
	127	320.0	300.0	11.5	20.5	27.0	161.3	30,800	9,240
	158	330.0	303.0	14.5	25.5	27.0	201.2	39,600	11,800
	198	343.0	306.0	18.0	32.0	27.0	252.3	51,900	15,300
	245	359.0	309.0	21.0	40.0	27.0	312.0	68,100	19,700
	300	375.0	313.0	27.0	48.0	27.0	382.1	86,900	24,600
HD360	134	356.0	369.0	11.2	18.0	15.0	170.6	41,500	15,100
	147	360.0	370.0	12.3	19.8	15.0	187.9	46,300	16,700
	162	364.0	371.0	13.3	21.8	15.0	206.3	51,500	18,600
	179	368.0	373.0	15.0	23.9	15.0	228.3	57,400	20,700
	196	372.0	374.0	16.4	26.2	15.0	250.3	63,600	22,900

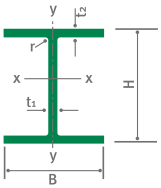
HD

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,$x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
11.0	6.50	840	282	920	430	516	52.4	HD260
11.2	6.58	1,150	395	1,280	602	754	124	
11.4	6.66	1,410	493	1,600	753	979	222	
11.6	6.76	1,750	622	2,020	951	1,300	407	
11.9	6.88	2,160	776	2,520	1,190	1,730	719	
13.6	7.50	1,480	466	1,630	710	1,510	108	HD320
13.8	7.57	1,930	616	2,150	939	2,070	225	
14.0	7.66	2,400	779	2,720	1,190	2,740	420	
14.3	7.79	3,030	1,000	3,480	1,530	3,700	805	
14.8	7.95	3,790	1,280	4,440	1,950	5,000	1,500	
15.1	8.02	4,630	1,570	5,520	2,410	6,560	2,650	
15.6	9.41	2,330	818	2,560	1,240	4,310	169	HD360
15.7	9.43	2,570	903	2,840	1,370	4,840	224	
15.8	9.50	2,830	1,000	3,140	1,520	5,430	296	
15.9	9.52	3,120	1,110	3,480	1,680	6,120	394	
15.9	9.57	3,420	1,220	3,840	1,860	6,830	517	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(6) Wide flange bearing piles : HP

호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
HP200	53.5	204.0	207.0	11.3	11.3	10.0	68.4	4,980	1,670
HP220	57.2	210.0	224.5	11.0	11.0	18.0	72.9	5,730	2,080
HP260	75.0	249.0	265.0	12.0	12.0	24.0	95.5	10,600	3,730
	87.3	253.0	267.0	14.0	14.0	24.0	111.0	12,600	4,460
HP305	78.9	299.3	306.4	11.0	11.1	15.2	100.5	16,400	5,330
	88.5	301.7	307.8	12.4	12.3	15.2	112.1	18,400	5,980
	94.9	303.7	308.7	13.3	13.3	15.2	121.0	20,000	6,530
	110	307.9	310.7	15.3	15.4	15.2	140.1	23,600	7,710
	126	312.3	312.9	17.5	17.6	15.2	160.6	27,400	9,000
	149	318.5	316.0	20.6	20.7	15.2	189.9	33,100	10,900
	180	326.7	319.7	24.8	24.8	15.2	229.3	41,000	13,500
	186	328.3	320.9	25.5	25.6	15.2	236.9	42,600	14,100
	223	337.9	325.7	30.3	30.4	15.2	284.0	52,700	17,600
HP320	88.5	303.0	304.0	12.0	12.0	27.0	112.7	18,700	5,630
	103	307.0	306.0	14.0	14.0	27.0	131.0	22,100	6,700
	117	311.0	308.0	16.0	16.0	27.0	149.5	25,500	7,810
	147	319.0	312.0	20.0	20.0	27.0	186.9	32,700	10,200
	184	329.0	317.0	25.0	25.0	27.0	234.5	42,300	13,300
HP360	84.3	340.0	367.0	10.0	10.0	15.2	107.4	23,200	8,240
	109	346.4	371.0	12.8	12.9	15.2	138.7	30,600	11,000
	133	352.0	373.8	15.6	15.7	15.2	169.4	38,000	13,700
	152	356.4	376.0	17.8	17.9	15.2	193.7	44,000	15,900
	174	361.4	378.5	20.3	20.4	15.2	221.5	51,000	18,500
	180	362.9	378.8	21.1	21.1	15.2	229.5	53,000	19,100

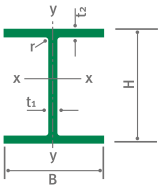
HP

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
8.55	4.95	488	161	551	249	155	34.2	HP200
8.87	5.34	546	185	614	286	205	44.2	HP220
10.5	6.25	851	282	959	435	523	79.3	HP260
10.6	6.33	996	334	1,120	516	634	116	
12.8	7.28	1,100	348	1,220	531	1,110	51.4	HP305
12.8	7.30	1,220	389	1,360	595	1,250	70.1	
12.9	7.35	1,320	423	1,470	648	1,370	86.7	
13.0	7.42	1,530	496	1,720	762	1,650	131	
13.1	7.49	1,750	575	1,990	885	1,950	194	
13.2	7.58	2,080	690	2,370	1,070	2,410	314	
13.4	7.67	2,510	845	2,900	1,310	3,080	542	
13.4	7.71	2,600	879	3,000	1,370	3,230	594	
13.6	7.87	3,120	1,080	3,650	1,680	4,140	998	
12.9	7.07	1,230	370	1,380	572	1,190	99.0	HP320
13.0	7.15	1,440	438	1,610	677	1,430	142	
13.1	7.23	1,640	507	1,850	786	1,700	198	
13.2	7.39	2,050	654	2,340	1,010	2,260	357	
13.4	7.53	2,570	839	2,980	1,310	3,070	662	
14.7	8.76	1,360	449	1,500	683	2,240	44.4	HP360
14.9	8.91	1,770	593	1,960	903	3,050	90.7	
15.0	8.99	2,160	733	2,410	1,120	3,860	161	
15.1	9.06	2,470	846	2,770	1,290	4,540	236	
15.2	9.14	2,820	978	3,190	1,500	5,360	348	
15.2	9.12	2,920	1,010	3,310	1,550	5,580	387	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(7) Universal beams : UB

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
203 x 102	23	23.1	203.2	101.8	5.4	9.3	7.6	29.4	2,100	164
203 x 133	25	25.1	203.2	133.2	5.7	7.8	7.6	32.0	2,340	308
	30	30.0	206.8	133.9	6.4	9.6	7.6	38.2	2,900	385
254 x 102	22	22.0	254.0	101.6	5.7	6.8	7.6	28.0	2,840	119
	25	25.2	257.2	101.9	6.0	8.4	7.6	32.0	3,410	149
	28	28.3	260.4	102.2	6.3	10.0	7.6	36.1	4,000	179
254 x 146	31	31.1	251.4	146.1	6.0	8.6	7.6	39.7	4,410	448
	37	37.0	256.0	146.4	6.3	10.9	7.6	47.2	5,540	571
	43	43.0	259.6	147.3	7.2	12.7	7.6	54.8	6,540	677
305 x 102	25	24.8	305.1	101.6	5.8	7.0	7.6	31.6	4,460	123
	28	28.2	308.7	101.8	6.0	8.8	7.6	35.9	5,370	155
	33	32.8	312.7	102.4	6.6	10.8	7.6	41.8	6,500	194
305 x 165	40	40.3	303.4	165.0	6.0	10.2	8.9	51.3	8,500	764
	46	46.1	306.6	165.7	6.7	11.8	8.9	58.7	9,900	896
	54	54.0	310.4	166.9	7.9	13.7	8.9	68.8	11,700	1,060
356 x 127	33	33.1	349.0	125.4	6.0	8.5	10.2	42.1	8,250	280
	39	39.1	353.4	126.0	6.6	10.7	10.2	49.8	10,200	358
356 x 171	45	45.0	351.4	171.1	7.0	9.7	10.2	57.3	12,100	811
	51	51.0	355.0	171.5	7.4	11.5	10.2	64.9	14,100	968
	57	57.0	358.0	172.2	8.1	13.0	10.2	72.6	16,000	1,110
	67	67.1	363.4	173.2	9.1	15.7	10.2	85.5	19,500	1,360
406 x 140	39	39.0	398.0	141.8	6.4	8.6	10.2	49.7	12,500	410
	46	46.0	403.2	142.2	6.8	11.2	10.2	58.6	15,700	538
406 x 178	54	54.1	402.6	177.7	7.7	10.9	10.2	69.0	18,700	1,020
	60	60.1	406.4	177.9	7.9	12.8	10.2	76.5	21,600	1,200
	67	67.1	409.4	178.8	8.8	14.3	10.2	85.5	24,300	1,360
	74	74.2	412.8	179.5	9.5	16.0	10.2	94.5	27,300	1,550
457 x 152	52	52.3	449.8	152.4	7.6	10.9	10.2	66.6	21,400	645
	60	59.8	454.6	152.9	8.1	13.3	10.2	76.2	25,500	795
	67	67.2	458.0	153.8	9.0	15.0	10.2	85.6	28,900	913
	74	74.2	462.0	154.4	9.6	17.0	10.2	94.5	32,700	1,050
	82	82.1	465.8	155.3	10.5	18.9	10.2	104.5	36,600	1,180

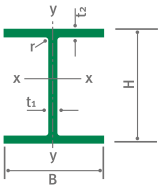
UB

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
8.45	2.36	207	32.2	234	49.8	15.4	7.02	203 x 102
8.56	3.10	230	46.2	258	70.9	29.3	6.10	203 x 133
8.71	3.17	281	57.5	314	88.2	37.3	10.4	
10.1	2.06	224	23.5	259	37.3	18.2	4.35	254 x 102
10.3	2.15	265	29.2	306	46.0	22.9	6.56	
10.5	2.22	307	34.9	353	54.8	27.9	9.66	
10.5	3.36	351	61.3	393	94.1	65.9	8.68	254 x 146
10.8	3.48	433	78.0	483	119	85.6	15.4	
10.9	3.52	504	92.0	566	141	103	24.0	
11.9	1.97	292	24.2	342	38.8	27.2	4.98	305 x 102
12.2	2.08	348	30.5	403	48.5	34.8	7.51	
12.5	2.15	416	37.9	481	60.0	44.0	12.3	
12.9	3.86	560	92.7	623	142	164	14.7	305 x 165
13.0	3.90	646	108	720	166	194	22.2	
13.0	3.93	754	127	846	196	234	34.9	
14.0	2.58	473	44.7	543	70.3	81.0	8.97	356 x 127
14.3	2.68	577	56.8	659	89.1	105	15.2	
14.5	3.76	689	94.8	775	147	236	16.2	356 x 171
14.7	3.86	794	113	896	174	285	24.0	
14.8	3.91	894	129	1,010	199	329	33.6	
15.1	3.99	1,070	157	1,210	243	411	55.9	
15.9	2.87	628	57.8	724	90.8	155	11.0	406 x 140
16.4	3.03	779	75.7	888	118	206	19.1	
16.5	3.85	929	115	1,050	178	391	23.5	406 x 178
16.8	3.96	1,060	135	1,200	209	465	33.5	
16.9	3.99	1,190	152	1,350	237	532	46.4	
17.0	4.05	1,320	173	1,500	267	607	63.1	
17.9	3.11	952	84.6	1,100	133	310	21.7	457 x 152
18.3	3.23	1,120	104	1,290	163	386	34.0	
18.4	3.27	1,260	119	1,450	187	446	48.0	
18.6	3.33	1,420	136	1,630	213	516	66.2	
18.7	3.36	1,570	152	1,810	240	589	89.7	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(7) Universal beams : UB

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
457 x 191	67	67.1	453.4	189.9	8.5	12.7	10.2	85.5	29,400	1,450
	74	74.3	457.0	190.4	9.0	14.5	10.2	94.6	33,300	1,670
	82	82.0	460.0	191.3	9.9	16.0	10.2	104.5	37,100	1,870
	89	89.3	463.4	191.9	10.5	17.7	10.2	113.8	41,000	2,090
	98	98.3	467.2	192.8	11.4	19.6	10.2	125.3	45,700	2,350
533 x 210	82	82.2	528.3	208.8	9.6	13.2	12.7	104.7	47,500	2,010
	92	92.1	533.1	209.3	10.1	15.6	12.7	117.4	55,200	2,390
	101	101	536.7	210.0	10.8	17.4	12.7	128.7	61,500	2,690
	109	109	539.5	210.8	11.6	18.8	12.7	138.9	66,800	2,940
	122	122	544.5	211.9	12.7	21.3	12.7	155.4	76,000	3,390
610 x 229	101	101	602.6	227.6	10.5	14.8	12.7	128.9	75,800	2,910
	113	113	607.6	228.2	11.1	17.3	12.7	143.9	87,300	3,430
	125	125	612.2	229.0	11.9	19.6	12.7	159.3	98,600	3,930
	140	140	617.2	230.2	13.1	22.1	12.7	178.2	112,000	4,510
610 x 305	149	149	612.4	304.8	11.8	19.7	16.5	190.0	126,000	9,310
	179	179	620.2	307.1	14.1	23.6	16.5	228.1	153,000	11,400
	238	238	635.8	311.4	18.4	31.4	16.5	303.3	209,000	15,800
686 x 254	125	125	677.9	253.0	11.7	16.2	15.2	159.5	118,000	4,380
	140	140	683.5	253.7	12.4	19.0	15.2	178.4	136,000	5,180
	152	152	687.5	254.5	13.2	21.0	15.2	194.1	150,000	5,780
	170	170	692.9	255.8	14.5	23.7	15.2	216.8	170,000	6,630
762 x 267	134	134	750.0	264.4	12.0	15.5	16.5	170.6	151,000	4,790
	147	147	754.0	265.2	12.8	17.5	16.5	187.2	169,000	5,460
	173	173	762.2	266.7	14.3	21.6	16.5	220.4	205,000	6,850
	197	197	769.8	268.0	15.6	25.4	16.5	250.6	240,000	8,170
838 x 292	176	176	834.9	291.7	14.0	18.8	17.8	224.0	246,000	7,800
	194	194	840.7	292.4	14.7	21.7	17.8	246.8	279,000	9,070
	226	226	850.9	293.8	16.1	26.8	17.8	288.6	340,000	11,400
914 x 305	201	201	903.0	303.3	15.1	20.2	19.1	255.9	325,000	9,420
	224	224	910.4	304.1	15.9	23.9	19.1	285.6	376,000	11,200
	253	253	918.4	305.5	17.3	27.9	19.1	322.8	436,000	13,300
	289	289	926.6	307.7	19.5	32.0	19.1	368.3	504,000	15,600

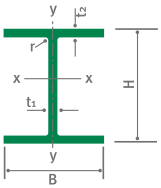
UB

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
18.5	4.12	1,300	153	1,470	237	704	37.5	457 x 191
18.8	4.20	1,460	175	1,650	272	817	52.1	
18.8	4.23	1,610	196	1,830	304	920	69.7	
19.0	4.29	1,770	218	2,010	338	1,040	91.3	
19.1	4.33	1,960	244	2,230	379	1,170	122	
21.3	4.38	1,800	193	2,060	300	1,330	52.5	533 x 210
21.7	4.51	2,070	228	2,360	356	1,600	76.3	
21.9	4.57	2,290	256	2,610	399	1,810	102	
21.9	4.60	2,480	279	2,830	436	1,990	127	
22.1	4.67	2,790	320	3,200	500	2,310	180	
24.2	4.75	2,520	256	2,880	400	2,510	78.2	610 x 229
24.6	4.88	2,870	301	3,280	469	2,980	112	
24.9	4.97	3,220	343	3,680	535	3,440	155	
25.1	5.03	3,630	392	4,140	611	3,980	218	
25.8	7.00	4,110	611	4,590	937	8,170	200	610 x 305
25.9	7.07	4,930	742	5,550	1,140	10,100	342	
26.3	7.22	6,570	1,010	7,490	1,570	14,400	791	
27.2	5.24	3,480	346	3,990	542	4,790	118	686 x 254
27.6	5.39	3,980	408	4,560	638	5,710	170	
27.8	5.46	4,360	454	5,000	710	6,410	221	
28.0	5.53	4,910	518	5,630	811	7,400	310	
29.8	5.30	4,030	362	4,640	570	6,440	122	762 x 267
30.0	5.40	4,480	412	5,160	647	7,380	162	
30.5	5.57	5,380	514	6,200	808	9,360	270	
30.9	5.71	6,240	610	7,170	959	11,300	407	
33.1	5.90	5,890	535	6,810	842	12,900	226	838 x 292
33.6	6.06	6,640	620	7,640	974	15,200	310	
34.3	6.28	7,990	776	9,150	1,210	19,200	517	
35.6	6.07	7,200	621	8,350	982	18,300	298	914 x 305
36.3	6.26	8,260	737	9,530	1,160	22,000	427	
36.8	6.42	9,490	871	10,900	1,370	26,300	631	
37.0	6.51	10,900	1,010	12,600	1,600	31,100	934	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(8) British Standard (BS) – Universal Column

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
152 x 152	23	23.0	152.4	152.2	5.8	6.8	7.6	29.2	1,250	400
	30	30.0	157.6	152.9	6.5	9.4	7.6	38.3	1,750	561
	37	37.0	161.8	154.4	8.0	11.5	7.6	47.1	2,210	706
203 x 203	46	46.1	203.2	203.6	7.2	11.0	10.2	58.7	4,570	1,550
	52	52.0	206.2	204.3	7.9	12.5	10.2	66.3	5,260	1,780
	60	60.0	209.6	205.8	9.4	14.2	10.2	76.4	6,120	2,060
	71	71.0	215.8	206.4	10.0	17.3	10.2	90.4	7,620	2,540
	86	86.1	222.2	209.1	12.7	20.5	10.2	109.6	9,450	3,130
254 x 254	73	73.1	254.1	254.6	8.6	14.2	12.7	93.1	11,400	3,910
	89	88.9	260.3	256.3	10.3	17.3	12.7	113.3	14,300	4,860
	107	107	266.7	258.8	12.8	20.5	12.7	136.4	17,500	5,930
	132	132	276.3	261.3	15.3	25.3	12.7	168.1	22,500	7,530
	167	167	289.1	265.2	19.2	31.7	12.7	212.9	30,000	9,870
305 x 305	97	96.9	307.9	305.3	9.9	15.4	15.2	123.4	22,200	7,310
	118	118	314.5	307.4	12.0	18.7	15.2	150.2	27,700	9,060
	137	137	320.5	309.2	13.8	21.7	15.2	174.4	32,800	10,700
	158	158	327.1	311.2	15.8	25.0	15.2	201.4	38,700	12,600
	198	198	339.9	314.5	19.1	31.4	15.2	252.4	50,900	16,300
	240	240	352.5	318.4	23.0	37.7	15.2	305.8	64,200	20,300
	283	283	365.3	322.2	26.8	44.1	15.2	360.4	78,900	24,600
356 x 368	129	129	355.6	368.6	10.4	17.5	15.2	164.3	40,200	14,600
	153	153	362.0	370.5	12.3	20.7	15.2	194.8	48,600	17,600
	177	177	368.2	372.6	14.4	23.8	15.2	225.5	57,100	20,500
	202	202	374.6	374.7	16.5	27.0	15.2	257.2	66,300	23,700
356 x 406	235	235	381.0	394.8	18.4	30.2	15.2	299.0	79,100	31,000
	287	287	393.6	399.0	22.6	36.5	15.2	365.7	99,900	38,700
	340	340	406.4	403.0	26.6	42.9	15.2	433.0	122,500	46,900
	393	393	419.0	407.0	30.6	49.2	15.2	500.6	146,600	55,400
	467	467	436.6	412.2	35.8	58.0	15.2	594.9	183,000	67,800
	551	551	455.6	418.5	42.1	67.5	15.2	701.9	227,000	82,700
	634	634	474.6	424.0	47.6	77.0	15.2	807.5	275,000	98,100

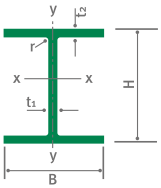
UC

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,$x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
6.54	3.70	164	52.5	182	80.2	21.2	4.86	152 x 152
6.76	3.83	222	73.3	248	112	30.8	10.7	
6.85	3.87	273	91.5	309	140	39.8	19.5	
8.82	5.14	450	152	497	231	143	22.3	203 x 203
8.91	5.18	510	174	567	264	167	32.0	
8.95	5.19	584	200	656	305	197	47.8	
9.18	5.30	706	246	799	374	250	80.6	
9.29	5.34	851	299	977	456	318	138	
11.1	6.48	897	307	992	465	562	57.7	254 x 254
11.2	6.55	1,100	379	1,220	575	717	103	
11.3	6.59	1,310	458	1,480	697	897	174	
11.6	6.69	1,630	576	1,870	878	1,180	321	
11.9	6.81	2,080	744	2,420	1,140	1,630	634	
13.4	7.70	1,440	479	1,590	726	1,560	91.8	305 x 305
13.6	7.77	1,760	590	1,960	895	1,980	162	
13.7	7.83	2,050	692	2,300	1,050	2,390	251	
13.9	7.91	2,370	810	2,680	1,230	2,870	382	
14.2	8.04	2,990	1,040	3,440	1,580	3,870	741	
14.5	8.15	3,640	1,280	4,250	1,950	5,020	1,290	
14.8	8.26	4,320	1,530	5,110	2,340	6,340	2,060	
15.6	9.43	2,260	792	2,480	1,200	4,170	153	356 x 368
15.8	9.51	2,690	950	2,960	1,430	5,110	251	
15.9	9.53	3,100	1,100	3,460	1,670	6,080	383	
16.1	9.60	3,540	1,270	3,970	1,920	7,150	561	
16.3	10.2	4,150	1,570	4,690	2,380	9,530	818	356 x 406
16.5	10.3	5,080	1,940	5,810	2,950	12,320	1,460	
16.8	10.4	6,030	2,330	7,000	3,540	15,460	2,370	
17.1	10.5	7,000	2,720	8,220	4,150	18,900	3,590	
17.5	10.7	8,380	3,290	10,000	5,030	24,300	5,900	
18.0	10.9	9,960	3,950	12,100	6,060	31,100	9,400	
18.5	11.0	11,600	4,630	14,200	7,110	38,700	14,000	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(9) British Standard (BS) – Universal Bearing Pile

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
203 x 203	54	53.9	204.0	207.7	11.3	11.4	10.2	68.7	5,030	1,710
254 x 254	63	63.0	247.1	256.6	10.6	10.7	12.7	80.2	8,860	3,020
	71	71.0	249.7	258.0	12.0	12.0	12.7	90.4	10,100	3,440
	85	85.1	254.3	260.4	14.4	14.3	12.7	108.4	12,300	4,220
305 x 305	79	78.9	299.3	306.4	11.0	11.1	15.2	100.5	16,400	5,330
	88	88.0	301.7	307.8	12.4	12.3	15.2	112.1	18,400	5,980
	95	94.9	303.7	308.7	13.3	13.3	15.2	120.9	20,000	6,530
	110	110	307.9	310.7	15.3	15.4	15.2	140.1	23,600	7,710
	126	126	312.3	312.9	17.5	17.6	15.2	160.6	27,400	9,000
	149	149	318.5	316.0	20.6	20.7	15.2	189.9	33,100	10,900
	186	186	328.3	320.9	25.5	25.6	15.2	236.9	42,600	14,100
	223	223	337.9	325.7	30.3	30.4	15.2	284.0	52,700	17,600
356 x 368	109	109	346.4	371.0	12.8	12.9	15.2	138.7	30,600	11,000
	133	133	352.0	373.8	15.6	15.7	15.2	169.4	38,000	13,700
	152	152	356.4	376.0	17.8	17.9	15.2	193.7	44,000	15,900
	174	174	361.4	378.5	20.3	20.4	15.2	221.5	51,000	18,500

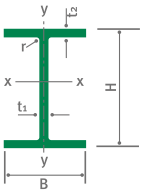
UBP

Dimension : EN 10365
Dimensional Tolerance : EN 10034
Surface Condition : EN 10163-3 CLASS C Subclass1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,$x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
8.56	4.99	493	165	557	252	158	35.0	203 x 203
10.5	6.14	717	235	799	360	421	37.2	254 x 254
10.6	6.17	809	267	904	409	485	52.3	
10.7	6.24	967	324	1,090	498	606	87.8	
12.8	7.28	1,100	348	1,220	531	1,110	51.4	305 x 305
12.8	7.30	1,220	389	1,360	595	1,250	70.1	
12.9	7.35	1,320	423	1,470	648	1,370	86.7	
13.0	7.42	1,530	496	1,720	762	1,650	131	
13.1	7.49	1,750	575	1,990	885	1,950	194	
13.2	7.58	2,080	690	2,370	1,070	2,410	314	
13.4	7.71	2,600	879	3,000	1,370	3,230	594	
13.6	7.87	3,120	1,080	3,650	1,680	4,140	998	
14.9	8.91	1,770	593	1,960	903	3,050	90.7	356 x 368
15.0	8.99	2,160	733	2,410	1,120	3,860	161	
15.1	9.06	2,470	846	2,770	1,290	4,540	236	
15.2	9.14	2,820	978	3,190	1,500	5,360	348	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(10) Australian/New Zealand Universal Beams (AS/NZS) – UB

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm²)	단면 2차 모멘트 Moment of Inertia (cm⁴)	
		W	H	B	t1	t2	r	A	Ix	Iy
150UB	14	14.0	150.0	75.0	5.0	7.0	8.0	17.85	666	49.5
	18	18.0	155.0	75.0	6.0	9.5	8.0	22.96	905	67.2
200UB	18	18.2	198.0	99.0	4.5	7.0	11.0	23.18	1,580	114
	23	22.3	201.6	133.0	5.0	7.0	8.9	28.68	2,100	275
	25	25.4	203.2	133.0	5.8	7.8	8.9	32.31	2,360	306
	30	29.8	207.0	134.0	6.3	9.6	8.9	38.24	2,910	386
250UB	26	25.7	248.0	124.0	5.0	8.0	12.0	32.68	3,540	255
	31	31.4	251.5	146.0	6.1	8.6	8.9	40.08	4,450	447
	37	37.3	256.2	146.0	6.4	10.9	8.9	47.51	5,570	566
310UB	32	32.0	298.0	149.0	5.5	8.0	13.0	40.80	6,320	442
	41	40.4	304.0	165.0	6.1	10.2	11.4	52.08	8,640	765
	47	46.2	307.2	166.0	6.7	11.8	11.4	59.29	10,000	901
360UB	45	44.7	352.0	171.0	6.9	9.7	11.4	57.24	12,100	810
	51	50.7	355.6	171.0	7.3	11.5	11.4	64.73	14,200	960
	57	56.7	358.6	172.0	8.0	13.0	11.4	72.44	16,100	1,100
410UB	54	53.7	402.6	178.0	7.6	10.9	11.4	68.86	18,800	1,030
	60	59.7	406.4	178.0	7.8	12.8	11.4	76.39	21,600	1,210
460UB	67	67.1	453.8	190.0	8.5	12.7	11.4	85.79	29,600	1,450
	75	74.6	457.4	190.0	9.1	14.5	11.4	95.20	33,500	1,660
	82	82.1	460.4	191.0	9.9	16.0	11.4	104.6	37,200	1,860
530UB	82	82.0	528.2	209.0	9.6	13.2	14.0	105.0	47,700	2,010
	93	92.4	533.0	209.0	10.2	15.6	14.0	118.1	55,400	2,380
610UB	102	101	602.0	228.0	10.6	14.8	14.0	129.8	76,100	2,930
	114	113	607.0	228.0	11.2	17.3	14.0	144.7	87,500	3,430
	125	125	611.6	229.0	11.9	19.6	14.0	159.6	98,600	3,930
690UB	125	125	677.9	253.0	11.7	16.2	15.2	159.5	118,000	4,380
	140	140	683.5	253.7	12.4	19.0	15.2	178.4	136,000	5,180
760UB	147	147	754.0	265.2	12.8	17.5	16.5	187.2	169,000	5,460
	173	173	762.2	266.7	14.3	21.6	16.5	220.4	205,000	6,850
	197	197	769.8	268.0	15.6	25.4	16.5	250.6	240,000	8,170
	220	220	775.5	269.8	17.4	28.3	16.5	280.1	270,000	9,300
	244	244	781.3	271.6	19.3	31.3	16.5	311.1	302,000	10,500

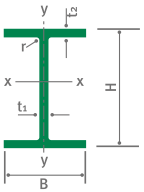
AS/NZS

Dimension : AS/NZS 3679.1
Dimensional Tolerance : AS/NZS 3679.1
Surface Condition : AS/NZS 3679.1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
6.11	1.67	88.8	13.2	102	20.8	2.52	2.90	150UB
6.28	1.71	117	17.9	135	28.2	3.54	6.12	
8.26	2.21	160	22.9	180	35.7	10.3	3.85	200UB
8.56	3.10	208	41.3	231	63.4	26.0	4.59	
8.55	3.08	232	46.1	260	70.9	29.2	6.46	
8.72	3.18	281	57.6	316	88.4	37.5	10.7	
10.4	2.79	286	41.1	319	63.6	36.6	6.69	250UB
10.5	3.34	354	61.2	397	94.2	65.8	9.09	
10.8	3.45	435	77.5	486	119	85.1	15.8	
12.4	3.29	424	59.3	475	91.8	92.7	8.79	310UB
12.9	3.83	568	92.7	633	142	165	15.7	
13.0	3.90	651	109	729	166	196	23.2	
14.5	3.76	688	94.7	777	146	237	16.4	360UB
14.8	3.85	799	112	897	173	284	24.3	
14.9	3.90	898	128	1,010	198	329	33.9	
16.5	3.87	934	116	1,060	179	393	23.8	410UB
16.8	3.98	1,060	136	1,200	209	466	33.8	
18.6	4.11	1,300	153	1,480	238	706	38.3	460UB
18.8	4.18	1,460	175	1,660	271	813	53.3	
18.9	4.22	1,620	195	1,840	303	917	70.6	
21.3	4.38	1,810	192	2,070	301	1,330	53.8	530UB
21.7	4.49	2,080	228	2,370	355	1,590	78.3	
24.2	4.75	2,530	257	2,900	402	2,520	80.5	610UB
24.6	4.87	2,880	301	3,290	469	2,970	115	
24.9	4.96	3,220	343	3,680	536	3,440	157	
27.2	5.24	3,480	346	3,990	542	4,790	118	690UB
27.6	5.39	3,980	408	4,560	638	5,710	170	
30.0	5.40	4,480	412	5,160	647	7,380	162	760UB
30.5	5.57	5,380	514	6,200	808	9,360	270	
30.9	5.71	6,240	610	7,170	959	11,300	407	
31.0	5.76	6,960	689	8,040	1,090	12,900	563	
31.2	5.81	7,730	773	8,950	1,220	14,700	763	

01. H Section H형강

Dimensions and Sectional Properties 치수 및 단면성능



(10) Australian/New Zealand Universal Columns (AS/NZS) – UC

호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
		W	H	B	t_1	t_2	r	A	Ix	Iy
100UC	15	14.8	97.0	99.0	5.0	7.0	10.0	18.87	318	114
150UC	23	23.4	152.4	152.0	6.1	6.8	8.9	29.82	1,260	399
	30	30.0	157.6	153.0	6.6	9.4	8.9	38.60	1,760	562
	37	37.2	161.8	154.0	8.1	11.5	8.9	47.34	2,220	701
200UC	46	46.2	203.4	203.0	7.3	11.0	11.4	59.02	4,590	1,530
	52	52.2	206.4	204.0	8.0	12.5	11.4	66.63	5,280	1,770
	59	59.5	209.8	205.0	9.3	14.2	11.4	76.21	6,130	2,040
250UC	73	72.9	253.8	254.0	8.6	14.2	14.0	93.20	11,400	3,880
	89	89.5	260.0	256.0	10.5	17.3	14.0	113.9	14,300	4,840
310UC	97	96.8	308.0	305.0	9.9	15.4	16.5	123.7	22,300	7,290
	118	118	314.6	307.0	11.9	18.7	16.5	150.1	27,700	9,020
	137	137	320.6	309.0	13.8	21.7	16.5	174.7	32,900	10,700
	158	158	327.2	311.0	15.7	25.0	16.5	201.4	38,800	12,500

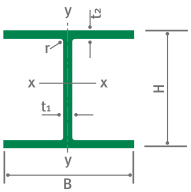
AS/NZS

Dimension : AS/NZS 3679.1
Dimensional Tolerance : AS/NZS 3679.1
Surface Condition : AS/NZS 3679.1

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Desig-nation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
4.11	2.45	65.6	22.9	74.4	35.2	2.29	3.61	100UC
6.50	3.66	165	52.4	185	80.2	21.1	5.40	150UC
6.75	3.81	223	73.4	250	112	30.8	11.1	
6.85	3.85	274	91.0	310	139	39.5	20.1	
8.82	5.09	451	151	500	230	142	23.0	200UC
8.90	5.15	512	174	570	264	166	32.8	
8.97	5.17	584	199	656	303	195	48.2	
11.1	6.45	898	306	992	464	557	58.6	250UC
11.2	6.52	1,100	378	1,230	575	712	105	
13.4	7.68	1,450	478	1,600	725	1,560	93.3	310UC
13.6	7.75	1,760	588	1,960	893	1,970	164	
13.7	7.83	2,050	693	2,300	1,050	2,380	254	
13.9	7.88	2,370	804	2,680	1,230	2,860	384	

02. Steel H Pile H형강 말뚝

Dimensions and Sectional Properties 치수 및 단면성능



(1) Metric Series

호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
200 x 200	56.2	200	204	12	12	13	71.53	4,980	1,700
250 x 250	64.4	244	252	11	11	16	82.06	8,790	2,940
	82.2	250	255	14	14	16	104.7	11,500	3,880
300 x 300	84.5	294	302	12	12	18	107.7	16,900	5,520
	94.0	300	300	10	15	18	119.8	20,400	6,750
	106	300	305	15	15	18	134.8	21,500	7,100
350 x 350	106	338	351	13	13	20	135.3	28,200	9,380
	131	344	354	16	16	20	166.6	35,300	11,800
	137	350	350	12	19	20	173.9	40,300	13,600
	156	350	357	19	19	20	198.4	42,800	14,400
400 x 400	140	388	402	15	15	22	178.5	49,000	16,300
	168	394	405	18	18	22	214.4	59,700	20,000
	172	400	400	13	21	22	218.7	66,600	22,400
	197	400	408	21	21	22	250.7	70,900	23,800
	232	414	405	18	28	22	295.4	92,800	31,000
	283	428	407	20	35	22	360.7	119,000	39,400

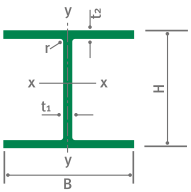
HP

Dimension : KS F 4603
Dimensional Tolerance : KS D 3502
Surface Condition : KS D 3502

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,x10^3)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
8.35	4.88	498	167	566	257	150	43.6	200 x 200
10.3	5.98	720	233	805	358	398	44.6	250 x 250
10.5	6.09	919	304	1,040	468	539	87.3	
12.5	7.16	1,150	365	1,280	560	1,100	69.1	300 x 300
13.1	7.51	1,360	450	1,500	684	1,370	89.0	
12.6	7.26	1,440	466	1,610	716	1,440	128	
14.4	8.33	1,670	534	1,850	818	2,470	101	350 x 350
14.6	8.43	2,050	669	2,300	1,030	3,180	180	
15.2	8.84	2,300	776	2,550	1,180	3,720	200	
14.7	8.53	2,450	809	2,760	1,240	3,950	294	
16.6	9.54	2,520	809	2,800	1,240	5,650	174	400 x 400
16.7	9.65	3,030	985	3,390	1,510	7,040	290	
17.5	10.1	3,330	1,120	3,670	1,700	8,040	304	
16.8	9.75	3,540	1,170	3,990	1,790	8,540	450	
17.7	10.2	4,480	1,530	5,030	2,330	11,500	721	
18.2	10.4	5,570	1,930	6,310	2,940	15,200	1,320	

02. Steel H Pile H형강 말뚝

Dimensions and Sectional Properties 치수 및 단면성능



(2) ASTM

호칭치수 Division (depth x width)	단위무게 Unit Weight (lbs/ft)	표준단면치수 Standard Sectional Dimension (in)					단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				
	W	H	B	t_1	t_2	r	M	H	B	t1	t2	r
HP8 x 8	36	8.02	8.155	0.445	0.445	0.40	53.5	203.7	207.1	11.3	11.3	10.2
HP10 x 10	42	9.70	10.075	0.420	0.415	0.50	62.6	246.4	255.9	10.5	10.7	12.7
	57	9.99	10.225	0.565	0.565	0.50	85.3	253.7	259.7	14.4	14.4	12.7
HP12 x 12	53	11.78	12.045	0.435	0.435	0.60	78.3	299.2	305.9	11.0	11.0	15.2
	63	11.94	12.125	0.515	0.515	0.60	93.4	303.3	308.0	13.1	13.1	15.2
	74	12.13	12.215	0.610	0.605	0.60	111	308.1	310.3	15.4	15.5	15.2
	84	12.28	12.295	0.685	0.685	0.60	125	311.9	312.3	17.4	17.4	15.2
HP14 x 14½	73	13.61	14.585	0.505	0.505	0.60	108	345.7	370.5	12.8	12.8	15.2
	89	13.83	14.695	0.615	0.615	0.60	132	351.3	373.3	15.6	15.6	15.2
	102	14.01	14.785	0.705	0.705	0.60	152	355.9	375.5	17.9	17.9	15.2
	117	14.21	14.885	0.805	0.805	0.60	174	360.9	378.1	20.4	20.4	15.2

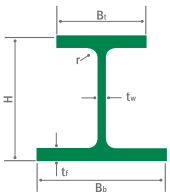
HP

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6,$x10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
A	Ix	Iy	ix	iy	Sx	Sy	Zx	Zy	Cw	J	
68.17	4,970	1,680	8.54	4.96	488	162	551	249	155	34.4	HP8 x 8
79.77	8,770	2,990	10.5	6.12	712	234	794	358	415	36.7	HP10 x 10
108.6	12,300	4,210	10.6	6.23	970	324	1,090	499	602	88.7	
99.77	16,300	5,250	12.8	7.25	1,090	343	1,210	525	1,090	50.6	HP12 x 12
119.0	19,700	6,390	12.9	7.33	1,300	415	1,450	635	1,340	82.9	
140.8	23,700	7,730	13.0	7.41	1,540	498	1,730	765	1,650	134	
158.9	27,000	8,850	13.0	7.46	1,730	567	1,960	872	1,920	189	
137.8	30,300	10,900	14.8	8.89	1,750	588	1,940	893.6	3,010	89.4	HP14 x 14½
168.4	37,600	13,500	14.9	8.95	2,140	723	2,390	1,110	3,810	159	
193.7	43,800	15,800	15.0	9.03	2,460	842	2,760	1,290	4,510	238	
221.5	50,800	18,400	15.1	9.11	2,820	973	3,180	1,490	5,330	350	

03. Asymmetric H - Beam 비대칭 H형강

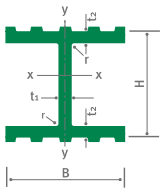
Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation	표준단면치수 Standard Sectional Dimension (mm)				단위무게 Unit Weight (kg/m)	단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)	
	H x Bt x Bb	tw	tf	r	W	A	Ix	Iy	ix	iy
312 x 234 x 344	312 x 234 x 344	12	18	22	111	141.3	24,751	8,038	13.2	7.5
320 x 236 x 346	320 x 236 x 346	14	22	22	134	170.8	30,907	10,017	13.5	7.7
328 x 238 x 348	328 x 238 x 348	16	26	22	158	200.7	37,437	12,069	13.7	7.8
336 x 240 x 350	336 x 240 x 350	18	30	22	181	230.8	44,354	14,197	13.9	7.8

04. Checkered H-Beam 무늬 H형강(복공용)

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r	A	Ix	Iy
190 x 197	32.6	190	197	5	7	13	41.60	2,998	1,037
192 x 198	37.2	192	198	6	8	13	47.50	3,427	1,184

ASY

Dimension : KS D 3502
Dimensional Tolerance : KS D 3502
Surface Condition : KS D 3502

탄성중립축 Elestic Neutral Axis Position (cm)	탄성단면계수 Modulus of Elastic (cm^3)			소성중립축 Plastic Neutral Axis Position (cm)	소성단면계수 Modulus of Plastic (cm^3)		뒤틀림상수 Warping Constant (cm^6)	비틀림상수 Torisonal Constant (cm^4)
ye	Sxt	Sxb	Sy	yp	Zx	Zy	H	J
13.5	1,402	1,828	467	7.3	1,732	793	1,263,539	153
13.9	1,707	2,225	579	7.4	2,125	983	1,624,487	265
14.2	2,018	2,627	694	7.5	2,533	1,178	2,018,371	424
14.6	2,336	3,035	811	7.6	2,955	1,379	2,447,064	636

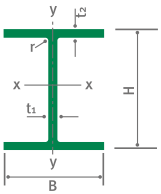
CH,HB

Dimension : KS D 3502
Dimensional Tolerance : KS D 3502
Surface Condition : KS D 3502

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant (cm^6)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Designation
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
8.49	4.99	312	105	303	138	74.7	7.10	190 x 197
8.49	4.99	353	120	350	159	87.6	10.54	192 x 198

05. Junior Beam 경량 H형강

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)						단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)	
	W	H	B	t_1	t_2	r1	r2	A	Ix	Iy
150 x 75	9.01	150	75	3.2	4.5	5	-	11.48	442	31.7
150 x 100	10.8	150	100	3.2	4.5	5	-	13.73	562	75.1
175 x 90	10.7	175	90	3.2	4.5	5	-	13.63	725	54.7
200 x 100	12.0	200	100	3.2	4.5	5	-	15.33	1,070	75.1
	14.3	200	100	3.2	6.0	5	-	18.23	1,330	100
200 x 150	15.6	200	150	3.2	4.5	5	-	19.83	1,500	253
250 x 125	15.1	250	125	3.2	4.5	5	-	19.18	2,100	147
	20.4	250	125	4.5	6.0	5	-	25.92	2,770	196
300 x 150	24.5	300	150	4.5	6.0	5	-	31.17	4,830	338
350 x 175	28.6	350	175	4.5	6.0	5	-	36.42	7,720	536

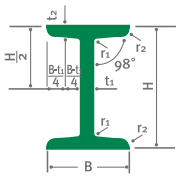
Note : 위 제품은 수요자 주문 사양으로 별도주문판매(These sizes are not included in regular rolling schedules.)

JB

단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		소성단면계수 Plastic Modulus (cm^3)		뒤틀림상수 Warping Constant ($cm^6 \times 10^3$)	비틀림상수 Torsional Constant (cm^4)	호칭치수 Division (depth x width)
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
6.21	1.66	59.0	8.50	66.5	13.1	1.67	0.71	150 x 75
6.40	2.34	74.9	15.0	82.9	22.9	3.97	0.86	150 x 100
7.29	2.00	82.9	12.2	92.9	18.7	3.97	0.83	175 x 90
8.35	2.21	107	15.0	119	23.0	7.17	0.91	200 x 100
8.54	2.34	133	20.0	147	30.5	9.41	1.73	
8.70	3.57	150	33.8	163	51.2	24.2	1.22	200 x 150
10.5	2.76	168	23.5	187	35.8	22.1	1.12	250 x 125
10.3	2.75	222	31.3	249	48.2	29.1	2.72	
12.4	3.29	322	45.0	361	69.0	72.9	3.23	300 x 150
14.6	3.84	441	61.3	493	93.7	159	3.75	350 x 175

06. I-Beam I형강

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					
	W	H	B	t1	t2	r1	r2
100 x 75*	12.9	100	75	5	8	7	3.5
125 x 75*	16.1	125	75	5.5	9.5	9	4.5
150 x 75	17.1	150	75	5.5	9.5	9	4.5
200 x 100	26.0	200	100	7	10	10	5
250 x 125	38.3	250	125	7.5	12.5	12	6
300 x 150	65.5	300	150	10	18.5	19	9.5
300 x 150*	76.8	300	150	11.5	22	23	11.5
350 x 150	87.2	350	150	12	24	25	12.5
400 x 150	95.8	400	150	12.5	25	27	13.5
450 x 175	115	450	175	13	26	27	13.5

Note : * 는 별도주문판매 (These sizes indicated by an asterisk(*) are not included in regular rolling schedules.)

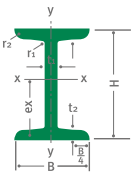
IB

Dimension : KS D 3502 JIS G 3192
Dimensional Tolerance : KS D 3502 JIS G 3192
Surface Condition : KS D 3502 JIS G 3192

단면적 Sectional Area (cm^2)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		호칭치수 Division (depth x width)
A	Ix	Iy	ix	iy	Sx	Sy	
16.43	281	47.3	4.14	1.70	56.2	12.6	100 x 75*
20.45	538	57.5	5.13	1.68	86.0	15.3	125 x 75*
21.83	819	57.5	6.12	1.62	109	15.3	150 x 75
33.06	2,170	138	8.11	2.05	217	27.7	200 x 100
48.79	5,180	337	10.3	2.63	414	53.9	250 x 125
83.47	12,700	886	12.3	3.26	849	118	300 x 150
97.88	14,700	1,080	12.2	3.32	978	143	300 x 150*
111.1	22,400	1,180	14.2	3.26	1,280	158	350 x 150
122.1	31,700	1,240	16.1	3.18	1,580	165	400 x 150
146.1	48,800	2,020	18.3	3.72	2,170	231	450 x 175

07. I-Beam For Mine Support 광산지보용 I형강

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Division (depth x width)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)				단면적 Sectional Area (cm^2)
H x B	W	t_1	t_2	r_1	r_2	A
100 x 80	20.7	9	12.5	13	4	26.4
130 x 100	35.0	12	17	16	7	44.6

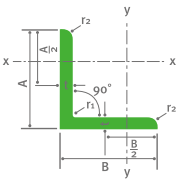
GI

Dimension : KS E 4002
Dimensional Tolerance : KS E 4002

단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		호칭치수 Division (depth x width)
Ix	Iy	ix	iy	Sx	Sy	H x B
403	80.5	3.91	1.75	80.7	20.1	100 x 80
1,130	211	5.05	2.18	175	42.3	130 x 100

08. Equal Angle 등변 ㄱ형강

Dimensions and Sectional Properties 치수 및 단면성능 – KS, JIS



표준단면치수 Standard Sectional Dimension (mm)				단위무게 Unit Weight (kg/m)	단면적 Sectional Area (cm²)	중심의 위치 Center of Gravity (cm)	
A x B	t	r_1	r_2	W	A	Cx=Cy	Ix=Iy
25 x 25	3	4	2	1.12	1.427	0.719	0.797
30 x 30	3	4	2	1.36	1.727	0.844	1.42
40 x 40	5	4.5	3	2.95	3.755	1.17	5.42
45 x 45	4	6.5	3	2.74	3.492	1.24	6.50
45 x 45	5	6.5	3	3.38	4.302	1.28	7.91
50 x 50	4	6.5	3	3.06	3.892	1.37	9.06
50 x 50	5	6.5	3	3.77	4.802	1.41	11.1
50 x 50	6	6.5	4.5	4.43	5.644	1.44	12.6
60 x 60	4	6.5	3	3.68	4.692	1.61	16.0
60 x 60	5	6.5	3	4.55	5.802	1.66	19.6
60 x 60	*6	6.5	4.5	5.37	6.844	1.69	22.6
65 x 65	5	8.5	3	5.00	6.367	1.77	25.3
65 x 65	6	8.5	4	5.91	7.527	1.81	29.4
65 x 65	8	8.5	6	7.66	9.761	1.88	36.8
70 x 70	6	8.5	4	6.38	8.127	1.93	37.1
75 x 75	6	8.5	4	6.85	8.727	2.06	46.1
75 x 75	9	8.5	6	9.96	12.69	2.17	64.4
75 x 75	12	8.5	6	13.0	16.56	2.29	81.9
80 x 80	6	8.5	4	7.32	9.327	2.18	56.4
80 x 80	*7	8.5	4	8.48	10.80	2.23	64.2
80 x 80	*8	8.5	4	9.60	12.20	2.26	72.8
90 x 90	6	10	5	8.28	10.55	2.42	80.7
90 x 90	7	10	5	9.59	12.22	2.46	93.0
90 x 90	*8	10	7	10.8	13.76	2.50	104
90 x 90	*9	10	7	12.1	15.39	2.54	114
90 x 90	10	10	7	13.3	17.00	2.57	125
90 x 90	13	10	7	17.0	21.71	2.69	156

* 는 KS 및 JIS에 없는 규격
** A90 x 10t 11m는 25톤 이하 10m와 함께 들어올 시 생산가능
These sizes indicated by an asterisk(*) are not included in regular rolling schedules.

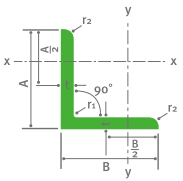
L

Dimension : KS D 3502 JIS G 3192
Dimensional Tolerance : KS D 3502 JIS G 3192
Surface Condition : KS D 3502 JIS G 3192

단면 2차 모멘트 Moment of Inertia (cm⁴)		단면 2차 반경 Radius of Gyration (cm)			단면계수 Modulus of Section (cm³)	생산불가길이 Not Available Length
Max. Iu	Min. Iy	ix=iy	Max. iu	Min. iy	Zx=Zy	m
1.26	0.332	0.747	0.940	0.483	0.448	
2.26	0.59	0.908	1.14	0.585	0.661	
8.59	2.25	1.20	1.51	0.774	1.91	
10.3	2.70	1.36	1.72	0.880	2.00	
12.5	3.29	1.36	1.71	0.874	2.46	
14.4	3.76	1.53	1.92	0.983	2.49	
17.5	4.58	1.52	1.91	0.976	3.08	
20.0	5.23	1.50	1.88	0.963	3.55	
25.4	6.62	1.85	2.33	1.19	3.66	
31.2	8.09	1.84	2.32	1.18	4.52	
35.9	9.30	1.82	2.29	1.17	5.24	10.5
40.1	10.5	1.99	2.51	1.28	5.35	7.5/8.5/9.5/10.5/11/11.5
46.6	12.2	1.98	2.49	1.27	6.26	
58.3	15.3	1.94	2.44	1.25	7.96	
58.9	15.3	2.14	2.69	1.37	7.33	
73.2	19.0	2.30	2.90	1.48	8.47	
102	26.7	2.25	2.84	1.45	12.1	10.5(JIS)/11/11.5(KS)
129	34.5	2.22	2.79	1.44	15.7	8(JIS)/8.5/11/11.5/12
89.6	23.2	2.46	3.10	1.58	9.70	11.5(JIS)
102	26.8	2.44	3.08	1.58	11.1	
115	29.7	2.44	3.06	1.56	12.7	11(JIS)/11.5
128	33.4	2.77	3.48	1.78	12.3	
148	38.3	2.76	3.48	1.77	14.2	11(JIS)/11.5
165	42.8	2.74	3.46	1.76	16.0	10/10.5
182	47.3	2.72	3.44	1.75	17.7	9/11.5(JIS)/12
199	51.7	2.71	3.42	1.74	19.5	8/8.5(KS)/10.5(JIS)/11**/11.5/12
248	65.3	2.68	3.38	1.73	24.8	6.5/8.5/9/9.5/10(KS)

08. Equal Angle 등변 ㄱ형강

Dimensions and Sectional Properties 치수 및 단면성능 – KS, JIS



표준단면치수 Standard Sectional Dimension (mm)				단위무게 Unit Weight (kg/m)	단면적 Sectional Area (cm²)	중심의 위치 Center of Gravity (cm)	
A x B	t	r_1	r_2	W	A	Cx=Cy	Ix=Iy
100 x 100	7	10	5	10.7	13.62	2.71	129
100 x 100	*8	10	8	12.1	15.36	2.75	144
100 x 100	10	10	7	14.9	19.00	2.82	175
100 x 100	13	10	7	19.1	24.31	2.94	220
120 x 120	8	12	5	14.7	18.76	3.24	258
130 x 130	9	12	6	17.9	22.74	3.53	366
130 x 130	*10	12	6	19.7	25.16	3.57	403
130 x 130	12	12	8.5	23.4	29.76	3.64	467
130 x 130	15	12	8.5	28.8	36.75	3.76	568
150 x 150	*10	14	7	22.9	29.21	4.06	627
150 x 150	12	14	7	27.3	34.77	4.14	740
150 x 150	15	14	10	33.6	42.74	4.24	888
150 x 150	19	14	10	41.9	53.38	4.40	1,090
175 x 175	12	15	11	31.8	40.52	4.73	1,170
175 x 175	15	15	11	39.4	50.21	4.85	1,440
200 x 200	15	17	12	45.3	57.75	5.46	2,180
200 x 200	20	17	12	59.7	76.00	5.67	2,820
200 x 200	25	17	12	73.6	93.75	5.86	3,420
250 x 250	25	24	12	93.7	119.4	7.10	6,950
250 x 250	35	24	18	128	162.6	7.45	9,110

* 는 KS 및 JIS에 없는 규격

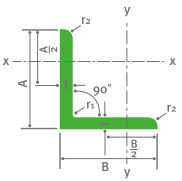
L

Dimension : KS D 3502 JIS G 3192
Dimensional Tolerance : KS D 3502 JIS G 3192
Surface Condition : KS D 3502 JIS G 3192

단면 2차 모멘트 Moment of Inertia (cm⁴)		단면 2차 반경 Radius of Gyration (cm)			단면계수 Modulus of Section (cm³)	생산불가길이 Not Available Length
Max. Iu	Min. Iy	ix=iy	Max. iu	Min. iy	Zx=Zy	m
205	53.2	3.08	3.88	1.98	17.7	
229	59.4	3.06	3.86	1.97	19.9	
278	72.0	3.04	3.83	1.95	24.4	
348	91.1	3.00	3.78	1.94	31.1	
410	106	3.71	4.67	2.38	29.5	
583	150	4.01	5.06	2.57	38.7	
641	165	4.00	5.05	2.56	42.8	
743	192	3.96	5.00	2.54	49.9	
902	234	3.93	4.95	2.53	61.5	
997	258	4.63	5.84	2.97	57.3	
1,180	304	4.61	5.82	2.96	68.1	
1,410	365	4.56	5.75	2.92	82.6	
1,730	451	4.52	5.69	2.91	103	
1,860	480	5.38	6.78	3.44	91.8	
2,290	589	5.35	6.75	3.42	114	
3,470	891	6.14	7.75	3.93	150	
4,490	1,160	6.09	7.68	3.90	197	
5,420	1,410	6.04	7.61	3.88	242	
11,000	2,860	7.63	9.62	4.90	388	
14,400	3,790	7.49	9.42	4.83	519	

08. Equal Angle 등변 ㄱ형강

Dimensions and Sectional Properties 치수 및 단면성능 – EN



표준단면치수 Standard Sectional Dimension (mm)				단위무게 Unit Weight (kg/m)	단면적 Sectional Area (cm²)	중심의 위치 Center of Gravity (cm)	
A x B	t	r_1	r_2	W	A	Cx=Cy	Ix=Iy
25 x 25	3	3.5	2.0	1.12	1.42	0.72	0.80
30 x 30	3	5	2.5	1.36	1.74	0.84	1.40
40 x 40	5	6	3.0	2.97	3.79	1.16	5.43
45 x 45	4	7	3.5	2.74	3.49	1.23	6.43
45 x 45	5	7	3.5	3.38	4.30	1.28	7.84
50 x 50	4	7	3.5	3.06	3.89	1.36	8.97
50 x 50	5	7	3.5	3.77	4.80	1.40	11.0
50 x 50	6	7	3.5	4.47	5.69	1.45	12.8
60 x 60	4	8	4.0	3.70	4.71	1.60	15.8
60 x 60	5	8	4.0	4.57	5.82	1.64	19.4
60 x 60	6	8	4.0	5.42	6.91	1.69	22.8
65 x 65	5	9	4.5	4.97	6.34	1.76	24.7
65 x 65	6	9	4.5	5.91	7.53	1.80	29.2
65 x 65	8	9	4.5	7.73	9.85	1.89	37.5
70 x 70	6	9	4.5	6.38	8.13	1.93	36.9
75 x 75	6	9	4.5	6.85	8.73	2.05	45.8
75 x 75	9	9	4.5	10.0	12.8	2.18	65.4
80 x 80	6	10	5.0	7.34	9.35	2.17	55.8
80 x 80	7	10	5.0	8.49	10.8	2.21	64.2
90 x 90	6	11	5.5	8.3	10.6	2.41	80.3
90 x 90	7	11	5.5	9.61	12.2	2.45	92.6
90 x 90	8	11	5.5	10.9	13.9	2.50	104
90 x 90	9	11	5.5	12.2	15.5	2.54	116
90 x 90	10	11	5.5	13.4	17.1	2.58	127
90 x 90	*13	11	5.5	17.0	21.7	2.69	156

*는 EN에 없는 규격
** A90 x 10t 11m는 25톤 이하 10m와 함께 들어올 시 생산가능
These sizes indicated by an asterisk(*) are not included in regular rolling schedules.

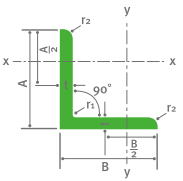
L

Dimension : EN 10056-1
Dimensional Tolerance : EN 10056-2
Surface Condition : EN 10163-3 CLASS C

단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)			단면계수 Modulus of Section (cm^3)	생산불가길이 Not Available Length
Max. Iu	Min. Iy	ix=iy	Max. iu	Min. iy	Zx=Zy	m
1.27	0.33	0.75	0.95	0.48	0.45	
2.22	0.59	0.90	1.13	0.58	0.65	
8.60	2.26	1.20	1.51	0.77	1.91	
10.2	2.65	1.35	1.71	0.87	1.97	
12.5	3.24	1.52	1.70	0.87	2.43	
14.2	3.73	1.51	1.91	0.98	2.46	
17.4	4.55	1.52	1.90	0.97	3.05	
20.3	5.34	1.50	1.89	0.97	3.61	
25.0	6.51	1.83	2.31	1.18	3.58	
30.7	8.03	1.82	2.30	1.17	4.45	
36.1	9.44	1.82	2.29	1.17	5.29	10.5
39.3	10.2	1.98	2.49	1.27	5.22	7.5/8.5/9.5/10.5/11/11.5
46.4	12.0	1.97	2.48	1.26	6.21	
59.5	15.5	1.95	2.46	1.26	8.13	
58.5	15.3	2.13	2.68	1.37	7.27	
72.7	18.9	2.29	2.89	1.47	8.41	
104	27.0	2.26	2.85	1.45	12.3	10.5(JIS)/11/11.5(KS)
88.7	23.0	2.44	3.08	1.57	9.57	11.5(JIS)
102	26.4	2.44	3.07	1.56	11.1	
128	33.1	2.76	3.47	1.77	12.2	
147	38.3	2.75	3.46	1.77	14.1	11(JIS)/11.5
166	43.1	2.74	3.45	1.76	16.1	10/10.5
184	47.9	2.73	3.44	1.76	17.9	9/11.5(JIS)/12
201	52.6	2.72	3.42	1.75	19.8	8/8.5(KS)/10.5(JIS)/11**/11.5/12
248	65.3	2.68	3.38	1.73	24.8	6.5/8.5/9/9.5/10(KS)

08. Equal Angle 등변 ㄱ형강

Dimensions and Sectional Properties 치수 및 단면성능 – EN



표준단면치수 Standard Sectional Dimension (mm)				단위무게 Unit Weight (kg/m)	단면적 Sectional Area (cm²)	중심의 위치 Center of Gravity (cm)	
A x B	t	r_1	r_2	W	A	Cx=Cy	Ix=Iy
100 x 100	7	12	6	10.7	13.7	2.69	128
100 x 100	8	12	6	12.2	15.5	2.74	145
100 x 100	10	12	6	15.0	19.2	2.82	177
100 x 100	13	12	6	19.2	24.5	2.94	221
120 x 120	8	13	6.5	14.7	18.7	3.23	255
120 x 120	10	13	6.5	18.2	23.2	3.31	313
120 x 120	12	13	6.5	21.6	27.5	3.40	368
120 x 120	15	13	6.5	26.6	33.9	3.51	445
130 x 130	9	14	7	17.9	22.8	3.51	364
130 x 130	10	14	7	19.8	25.2	3.55	401
130 x 130	12	14	7	23.6	30.0	3.64	472
130 x 130	15	14	7	29.0	37.0	3.76	573
150 x 150	10	16	8	23.0	29.3	4.03	624
150 x 150	12	16	8	27.3	34.8	4.12	737
150 x 150	15	16	8	33.8	43.0	4.25	898
150 x 150	18	16	8	40.1	51.0	4.37	1,050
150 x 150	19	16	8	42.1	53.7	4.40	1,099
175 x 175	*12	18	9	32.1	40.5	4.73	1,170
175 x 175	*15	18	9	39.7	50.2	4.85	1,440
180 x 180	*12	18	9	32.1	40.5	4.73	1,170
180 x 180	15	18	9	40.9	52.1	4.98	1,589
200 x 200	15	18	9	45.6	58.1	5.48	2,209
200 x 200	20	18	9	59.9	76.3	5.68	2,850
200 x 200	25	18	9	73.9	94.1	5.88	3,446
250 x 250	25	18	9	93.2	119	7.11	6,917
250 x 250	35	18	9	128	163	7.50	9,260

*는 EN에 없는 규격

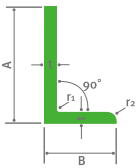
L

Dimension : EN 10056-1
Dimensional Tolerance : EN 10056-2
Surface Condition : EN 10163-3 CLASS C

단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)			단면계수 Modulus of Section (cm^3)	생산불가길이 Not Available Length
Max. Iu	Min. Iy	ix=iy	Max. iu	Min. iy	Zx=Zy	m
204	52.7	3.06	3.86	1.96	17.5	
230	59.9	3.06	3.85	1.96	19.9	
280	73.0	3.04	3.83	1.95	24.6	
350	91.7	3.01	3.78	1.94	31.3	
406	105	3.69	4.65	2.37	29.1	
497	129	3.67	4.63	2.36	36.0	
584	152	3.65	4.6	2.35	42.7	
706	184	3.62	4.56	2.33	52.4	
579	150	4.00	5.04	2.56	38.4	
638	165	3.99	5.03	2.55	42.5	
750	194	3.97	5.00	2.54	50.4	
909	236	3.94	4.96	2.53	62	
990	258	4.62	5.82	2.97	56.9	
1,170	303	4.60	5.80	2.95	67.7	
1,430	370	4.57	5.76	2.93	83.5	
1,666	434	4.54	5.71	2.92	98.7	
1,742	455	4.52	5.70	2.91	104	
1,860	480	5.38	6.78	3.44	91.8	
2,290	589	5.35	6.75	3.42	114	
1,860	480	5.38	6.78	3.44	91.8	
2,527	651	5.52	6.96	3.53	122	
3,516	903	6.17	7.78	3.94	152	
4,530	1,170	6.11	7.70	3.92	199	
5,467	1,426	6.05	7.62	3.89	244	
11,000	2,837	7.63	9.63	4.89	387	
14,700	3,860	7.54	9.48	4.87	529	

09. Unequal Angle 부등변 ㄱ형강

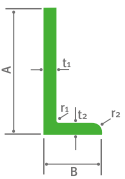
Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)					단면적 Sectional Area (cm²)	중심의 위치 Center of Gravity (cm)		
	W	A	B	t	r_1	r_2	A	Cx	Cy	Ix
100 x 75	9.32	100	75	7	10	5	11.87	3.06	1.83	118
	13.0	100	75	10	10	7	16.50	3.17	1.94	159
125 x 75	10.7	125	75	7	10	5	13.62	4.10	1.64	219
	13.6	125	75	*9	10	7	17.30	4.23	1.70	278
	14.9	125	75	10	10	7	19.00	4.22	1.75	299
	19.1	125	75	13	10	7	24.31	4.35	1.87	376
150 x 90	16.4	150	90	9	12	6	20.94	4.95	1.99	485
	18.2	150	90	*10	12	6	23.23	5.03	2.03	541
	21.5	150	90	12	12	8.5	27.36	5.07	2.10	619

10. Inverted Angle 부등변 부등후ㄱ형강

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)						단면적 Sectional Area (cm²)	중심의 위치 Center of Gravity (cm)		
	W	A	B	t_1	t_2	r_1	r_2	A	Cx	Cy	Ix
200 x 90	24.7	200	90	*10	14	14	7	29.66	6.36	2.15	1,210
250 x 90	29.4	250	90	10	15	17	8.5	37.47	8.61	1.92	2,440
	33.7	250	90	12	16	17	8.5	42.95	8.99	1.89	2,790
300 x 90	36.3	300	90	11	16	19	9.5	46.22	11.0	1.76	4,370
	41.3	300	90	13	17	19	9.5	52.67	11.3	1.75	4,940
350 x 100	45.3	350	100	12	17	22	11	57.74	13.0	1.87	7,440
400 x 100	48.0	400	100	*11.5	16	24	12	61.08	15.3	1.71	10,284
	53.8	400	100	13	18	24	12	68.59	15.4	1.77	11,500

* 는 KS 및 JIS에 없는 규격

UA

Dimension : KS D 3502 JIS G 3192
Dimensional Tolerance : KS D 3502 JIS G 3192
Surface Condition : KS D 3502 JIS G 3192

단면 2차 모멘트 Moment of Inertia (cm⁴)			단면 2차 반경 Radius of Gyration (cm)				tan α	단면계수 Modulus of Section (cm³)		호칭치수 Designation
Iy	Max. Iu	Min. Iy	ix	iy	Max. iu	Min. iy		Zx	Zy	
56.9	144	30.8	3.15	2.19	3.49	1.61	0.548	17.0	10.0	100 x 75
76.1	194	41.3	3.11	2.15	3.43	1.58	0.543	23.3	13.7	
60.4	243	36.4	4.01	2.11	4.23	1.64	0.362	26.1	10.3	125 x 75
73.8	307	44.9	4.01	2.06	4.21	1.61	0.352	32.8	13.6	
80.8	330	49.0	3.96	2.06	4.17	1.61	0.357	36.1	14.1	
101	415	61.9	3.93	2.04	4.13	1.60	0.352	46.1	17.9	
133	537	80.4	4.81	2.52	5.06	1.96	0.361	48.5	19.0	150 x 90
146	598	88.7	4.82	2.51	5.07	1.95	0.356	53.1	22.5	
167	685	102	4.76	2.47	5.00	1.93	0.357	62.3	24.3	

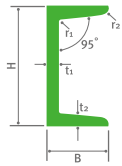
IA

Dimension : KS D 3502 JIS G 3192
Dimensional Tolerance : KS D 3502 JIS G 3192
Surface Condition : KS D 3502 JIS G 3192

단면 2차 모멘트 Moment of Inertia (cm⁴)			단면 2차 반경 Radius of Gyration (cm)				tan α	단면계수 Modulus of Section (cm³)		호칭치수 Designation
Iy	Max. Iu	Min. Iy	ix	iy	Max. iu	Min. iy		Zx	Zy	
200	1,290	125	6.39	2.60	6.58	2.05	0.263	88.7	29.2	200 x 90
223	2,520	147	8.08	2.44	8.20	1.98	0.182	149	31.5	250 x 90
238	2,870	160	8.07	2.35	8.18	1.93	0.173	174	33.5	
245	4,440	168	9.72	2.30	9.80	1.90	0.136	229	33.8	300 x 90
259	5,020	181	9.68	2.22	9.76	1.85	0.128	265	35.8	
362	7,550	251	11.3	2.50	11.4	2.08	0.124	338	44.5	350 x 100
349	–	–	13.0	2.39	–	–	–	416	42.1	400 x 100
388	11,600	277	12.9	2.38	13	2.01	0.0996	467	47.1	

11. Channel ㄷ형강

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)						단면적 Sectional Area (cm^2)
	W	H	B	t_1	t_2	r_1	r_2	A
75 x 40	6.92	*75	40	5	7	8	4	8.818
100 x 50	9.36	*100	50	5	7.5	8	4	11.92
125 x 65	13.4	125	65	6	8	8	4	17.11
150 x 75	18.6	150	75	6.5	10	10	5	23.71
200 x 80	24.6	200	80	7.5	11	12	6	31.33
200 x 90	30.3	200	90	8	13.5	14	7	38.65
250 x 90	34.6	250	90	9	13	14	7	44.07
300 x 90	38.1	300	90	9	13	14	7	48.57
380 x 100	54.5	380	100	10.5	16	18	9	69.39
	67.3	*380	100	13	20	24	12	85.71

Note : * 는 별도주문판매 (These sizes indicated by an asterisk(*) are not included in regular rolling schedules.)

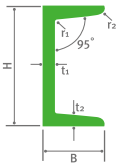
CN

Dimension : KS D 3502 JIS G 3192
Dimensional Tolerance : KS D 3502 JIS G 3192
Surface Condition : KS D 3502 JIS G 3192

중심의 위치 Center of Gravity (cm)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		호칭치수 Designation
Cy	Ix	Iy	ix	iy	Zx	Zy	
1.28	75.3	12.2	2.92	1.17	20.1	4.47	75 x 40
1.54	188	26.0	3.97	1.48	37.6	7.52	100 x 50
1.90	424	61.8	4.98	1.90	67.8	13.4	125 x 65
2.28	861	117	6.03	2.22	115	22.4	150 x 75
2.21	1,950	168	7.88	2.32	195	29.1	200 x 80
2.74	2,490	277	8.02	2.68	249	44.2	200 x 90
2.40	4,180	294	9.74	2.58	334	44.5	250 x 90
2.22	6,440	309	11.5	2.52	429	45.7	300 x 90
2.41	14,500	535	14.5	2.78	763	70.5	380 x 100
2.54	17,600	655	14.3	2.76	926	87.8	

11. Channel ㄷ형강

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation	단위무게 Unit Weight (lbs/ft)	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)						단면적 Sectional Area (cm²)
		W	H	B	t_1	t_2	r_1	r_2	A
6"	8.2	12.2	152	48	5.1	8.7	-	-	15.50
	10.5	15.6	152	51	8.0	8.7	-	-	19.90
	13	19.3	152	54	11.1	8.7	-	-	24.70
8"	11.5	17.1	203	57	5.6	9.9	-	-	21.80
	13.75	20.5	203	59	7.7	9.9	-	-	26.10
	18.75	27.9	203	64	12.4	9.9	-	-	35.50
10"	15.3	22.8	254	65	6.1	11.1	-	-	29.00
	20	30.0	254	69	9.6	11.1	-	-	37.90
	25	37.0	254	73	13.4	11.1	-	-	47.40
	30	45.0	254	76	17.1	11.1	-	-	56.90
12"	20.7	30.8	305	74	7.2	12.7	-	-	39.30
	25	37.0	305	77	9.8	12.7	-	-	47.40
	30	45.0	305	80	13.0	12.7	-	-	56.90
15"	33.9	50.4	381	86	10.2	16.5	-	-	64.30
	40	60.0	381	89	13.2	16.5	-	-	76.10
	50	74.0	381	94	18.2	16.5	-	-	94.80

※ Actual flange and web thicknesses vary due to mill rolling practices: however permitted variations for such dimensions are not addressed.

Dimensions and Sectional Properties 치수 및 단면성능

호칭치수 Designation	단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)						단면적 Sectional Area (cm²)
	W	H	B	t_1	t_2	r_1	r_2	A
UPN200	25.3	200	75	8.5	11.5	11.5	6	32.2
UPN240	33.2	240	85	9.5	13	13	6.5	42.3
UPN300	46.2	300	100	10	16	16	8	58.8

CN

Dimension : ASTM A6
Dimensional Tolerance : ASTM A6
Surface Condition : ASTM A6

중심의 위치 Center of Gravity (cm)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		호칭치수 Designation
Cy	Ix	Iy	ix	iy	Zx	Zy	
1.26	548	29.2	5.94	1.37	72.0	8.3	6"
1.24	630	36.0	5.63	1.35	82.7	9.36	
1.28	721	42.4	5.41	1.31	94.6	10.3	
1.44	1,340	53.8	7.86	1.57	132	12.6	8"
1.39	1,490	62.0	7.57	1.54	147	13.7	
1.43	1,820	81.7	7.15	1.51	179	16.4	
1.58	2,770	91.2	9.81	1.78	218	18.5	10"
1.53	3,260	114	9.29	1.74	257	21.2	
1.56	3,790	138	8.93	1.70	298	24.0	
1.63	4,270	158	8.68	1.67	336	26.5	
1.74	5,340	157	11.7	2.00	350	27.7	12"
1.70	5,970	183	11.2	1.97	391	30.5	
1.70	6,720	209	10.9	1.92	441	33.2	
1.99	13,100	337	14.3	2.28	688	50.5	15"
1.97	14,400	379	13.8	2.24	758	54.7	
2.02	16,700	454	13.3	2.19	877	61.5	

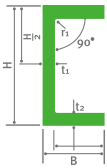
UPN

Dimension : EN 10365
Dimensional Tolerance : EN 10279
Surface Condition : EN 10163-3 CLASS C Subclass 1

중심의 위치 Center of Gravity (cm)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		호칭치수 Designation
Cy	Ix	Iy	ix	iy	Zx	Zy	
2.01	1,910	148	7.70	2.14	191	27.0	UPN200
2.23	3,600	248	9.22	2.42	300	39.6	UPN240
2.70	8,030	495	11.7	2.90	535	67.8	UPN300

12. Parallel Flange Channel 평행채널

Dimensions and Sectional Properties 치수 및 단면성능



호칭치수 Designation		단위무게 Unit Weight (kg/m)	표준단면치수 Standard Sectional Dimension (mm)						단면적 Sectional Area (cm^2)
		W	H	B	t_1	t_2	r_1	r_2	A
KS (KS D3502)	150 x 75	18.2	150	75	6	10	10	-	23.2
	200 x 80	24.0	200	80	6.5	11.5	12	-	30.5
EN (EN 10365)	150 x 75	17.9	150	75	5.5	10	12	-	22.8
	200 x 75	23.4	200	75	6	12.5	12	-	29.9
AS/NZS (AS/NZS 3679)	150 x 75	17.7	150	75	6	9.5	10	-	22.5
	200 x 75	22.9	200	75	6	12	12	-	29.2
	230 x 75	25.1	230	75	6.5	12	12	-	32.0
	250 x 90	35.5	250	90	8	15	12	-	45.2
	300 x 90	40.1	300	90	8	16	14	-	51.1

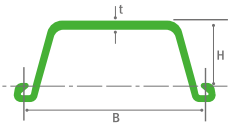
PFC

Dimension : KS D 3502 EN 10365 AS/NZS 3679.1
Dimensional Tolerance : KS D 3502 EN 10279 AS/NZS 3679.1
Surface Condition : KS D 3502 EN 10163-3 CLASS C Subclass 1 AS/NZS 3679.1

중심의 위치 Center of Gravity (cm)	단면 2차 모멘트 Moment of Inertia (cm^4)		단면 2차 반경 Radius of Gyration (cm)		단면계수 Modulus of Section (cm^3)		호칭치수 Designation	
Cy	Ix	Iy	ix	iy	Zx	Zy		
2.54	864.0	131.3	6.1	2.4	115.1	26.5	150 x 75	KS (KS D3502)
2.55	1,984	192.5	8.1	2.5	198.4	35.3	200 x 80	
2.58	861.0	131.0	6.2	2.4	114.8	26.6	150 x 75	BS (BS 4-1)
2.48	1,963	170.0	8.1	2.4	196.3	33.8	200 x 75	
2.49	834.0	129.0	6.1	2.4	129.0	46.0	150 x 75	AS/NZS (AS/NZS 3679)
2.44	1,910	165.0	8.1	2.4	221.0	58.9	200 x 75	
2.26	2,680	176.0	9.1	2.4	271.0	61.0	230 x 75	
2.86	4,510	364.0	10.0	2.8	421.0	107.0	250 x 90	
2.72	7,240	404.0	11.9	2.8	564.0	117.0	300 x 90	

13. Sheet Pile 강널말뚝

Dimensions and Sectional Properties 치수 및 단면성능



종류 Section Type	표준단면치수 Dimension			단위무게 Unit Weight	
	B	H	t	Per Pile	Per Wall Width
	mm	mm	mm	kg/m	kg/m²
SP-II	400	100	10.5	48.2	120.5
SP-III	400	125	13.0	59.1	147.8
SP-III_A	400	150	13.0	59.4	148.5
SP-IV	400	170	15.5	76.1	190.2
SP-V_M	500	175	16.5	86.3	172.6
SP-V_A	500	200	19.5	105.2	210.4
SP-II_W	600	130	10.3	62.0	103.3
SP-III_W	600	180	13.4	81.6	136.0

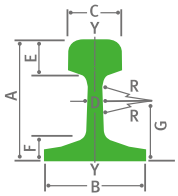
SP

Dimensional Tolerance : KS F 4604 & JIS A 5528
Surface Condition : KS D 3502 & JIS G 3192

단면적 Sectional Area		단면 2차 모멘트 Moment of Inertia		단면계수 Modulus of Section		종류 Section Type
Per Pile	Per Wall Width	Per Pile	Per Wall Width	Per Pile	Per Wall Width	
cm^2	cm^2/m	cm^4	cm^4/m	cm^3	cm^3/m	
61.4	153.5	1,224	8,315	150	831	SP-II
75.3	188.3	2,217	16,752	219	1,340	SP-III
75.6	189.1	2,952	22,519	265	1,501	$SP\text{-}III_A$
96.9	242.3	4,634	38,355	359	2,256	SP-IV
109.9	219.8	5,345	40,039	383	2,288	$SP\text{-}V_M$
134.0	268.0	8,108	63,032	521	3,152	$SP\text{-}V_A$
79.0	131.6	2,466	13,266	232	1,020	$SP\text{-}II_W$
104.0	173.3	5,124	32,192	369	1,788	$SP\text{-}III_W$

14. Railway Rail 철도레일

1) Dimensions and Sectional Properties 치수 및 단면성능



규격 Specifications	항목 Items	표준단면치수 Standard Sectional Dimension								
		단위 Unit	A	B	C	D	E	F	G	R
KS R 9106	37A	mm	122.24	122.24	62.71	13.49	36.12	21.43	53.78	304.8
	50N	mm	153.0	127.0	65.0	15.0	49.0	30.0	76.0	500.0
	60	mm	174.0	145.0	65.0	16.5	49.0	30.1	77.5	500.0
	60K	mm	174.0	145.0	65.0	16.5	49.0	30.1	77.5	500.0
	KR60	mm	174.0	145.0	65.0	16.5	49.0	30.1	77.5	500.0
	60E1	mm	172.0	150.0	74.3	16.5	51.0	31.5	81.0	120.0
JIS E 1101	37A	mm	122.24	122.24	62.71	13.49	36.12	21.43	53.78	304.8
	50N	mm	153.0	127.0	65.0	15.0	49.0	30.0	76.0	500.0
	60	mm	174.0	145.0	65.0	16.5	49.0	30.1	77.5	500.0
	70S	mm	148	140	65.3	35	52	28	62.2	-
HS	70S	mm	148	140	65.3	35	52	28	62.2	-
	73	mm	135	140.0	100	32.0	43.0	26.5	100	100

RL

단위무게 Unit Weight		단면적 Sectional Area		중심축의 거리 Distance from Rail Base to Neutral Axis		단면2차모멘트 Moment of Inertia		단면계수 Modulus of Section		규격 Specifications
W		S		Yd		J		Z		
kg/m	lb/yd	cm^2	in^2	mm	in	cm^4	in^4	cm^3	in^3	
37.2	–	47.3	–	53.78	–	952	–	163	–	KS R 9106
50.4	–	64.2	–	71.6	–	1,960	–	242	–	
60.8	–	77.45	–	77.8	–	3,090	–	321	–	
60.7	–	77.3	–	77.6	–	3,064	–	395	–	
60.7	–	77.3	–	77.6	–	3,064	–	395	–	
60.34	–	76.7	–	80.95	–	3,055	–	377.4	–	
37.2	–	47.3	–	53.78	–	952	–	163	–	JIS E 1101
50.4	–	64.2	–	71.6	–	1,960	–	242	–	
60.8	–	77.45	–	77.8	–	3,090	–	321	–	
69.5	–	88.5	–	62.2	–	2,120	–	341	–	
69.5	–	88.5	–	62.2	–	2,120	–	341	–	HS
73.3	–	93.39	–	66.9	–	2,000	–	294	–	

14. Railway Rail 철도레일

2) Chemical Composition & Mechanical Property

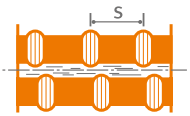
규격 Specification	강종 Grade	화학적성질 Chemical Composition (wt, %)									
		C	Si	Mn	P	S	Al	Cr	Mo	Ni	Cu
		x100			x1000			x100			
KS R 9106	37KG	55/70	10/35	60/95	45↓	50↓	–	–	–	–	–
	50N	63/75	10/35	70/110	30↓	25↓	–	–	–	–	–
	60	63/75	10/35	70/110	30↓	25↓	–	–	–	–	–
	60K	68/80	15/58	70/120	25↓	25↓	–	–	–	–	–
	KR60	63/75	10/35	70/110	30↓	25↓	–	–	–	–	–
	60E1	68/80	15/58	70/120	25↓	8/25	4↓	15↓	2↓	10↓	15↓
JIS E 1101	37KG	55/70	10/35	60/95	45↓	50↓	–	–	–	–	–
	50N	63/75	10/35	70/110	30↓	25↓	–	–	–	–	–
	60	63/75	10/35	70/110	30↓	25↓	–	–	–	–	–
	70S	63/75	15/30	70/110	30↓	25↓	–	–	–	–	–
KS R 9106	HH340	72/82	10/55	70/110	30↓	20↓	–	20↓	–	–	–
	HH370	72/82	10/65	80/120	30↓	20↓	–	25↓	–	–	–
HS	70S	68/80	15/58	70/120	25↓	25↓	–	–	–	–	–
	73	68/80	15/58	70/120	25↓	25↓	–	–	–	–	–

RL

					Gas			기계적 성질 Mechanical Property		
Sn	Sb	Ti	Nb	V	O2	N2	H2	인장강도 Tensile Strength Min. (N/mm²)	항복강도 (Min.) Yield Strength (N/mm²)	연신율 (Min.) Elongation (%)
x100	ppm	x1,000			ppm					
–	–	–	–	–	–	–	–	690	–	9
–	–	–	–	–	–	–	–	710	–	8
–	–	–	–	–	–	–	–	800	–	10
–	–	–	–	–	–	–	–	880	–	10
–	–	–	–	–	–	–	–	800	–	10
40↓	20↓	25↓	10↓	30↓	20↓	90↓	2.5↓	880	–	10
–	–	–	–	–	–	–	–	690	–	9
–	–	–	–	–	–	–	–	800	–	10
–	–	–	–	–	–	–	–	800	–	10
–	–	–	–	–	–	–	–	800	–	10
–	–	–	–	30↓	–	–	–	1080	–	8
–	–	–	–	30↓	–	–	–	1130	–	8
–	–	–	–	–	–	–	–	880	–	10
–	–	–	–	–	–	–	–	880	–	10

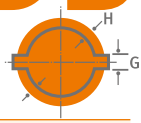
15. Reinforcing Bar 철근

1) Dimensions and Weight 치수 및 중량



규격명 Standard	호칭명 Designation	단위무게 Unit Weight	공칭치수 Nominal Dimensions		
			직경 Diameter	단면적 Sectional Area	둘레 Perimeter
	mm	kg/m	mm	mm²	mm
KS D 3504 JIS G 3112	D10	0.560	9.53	71.33	29.9
	D13	0.995	12.7	126.7	39.9
	D16	1.56	15.9	198.6	50.0
	D19	2.25	19.1	286.5	60.0
	D22	3.04	22.2	387.1	69.8
	D25	3.98	25.4	506.7	79.8
	D29	5.04	28.6	642.4	89.9
	D32	6.23	31.8	794.2	99.9
	D35	7.51	34.9	956.6	109.7
	D38	8.95	38.1	1,140	119.7
	D41	10.5	41.3	1,340	129.8
	D43	11.4	43.0	1,452	135.1
	D51	15.9	50.8	2,027	159.6
	D57	20.3	57.3	2,579	180.0

DB

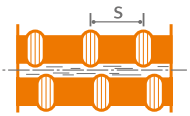


Dimension : KS D 3504 / JIS G 3112
Dimensional Tolerance : KS D 3504 / JIS G 3112
Surface Condition : KS D 3504 / JIS G 3112

마디 및 리브의 치수 Deformation Requirements				호칭명 Designation
마디의 평균간격 최대치 Max. Average Spacing	마디높이 최소치 Min. Height	마디높이 최대치 Max. Height	마디틈 합계의 최대치 Max. Gap	
mm	mm	mm	mm	mm
6.7	0.4	0.8	7.5	D10
8.9	0.5	1.0	10.0	D13
11.1	0.7	1.4	12.5	D16
13.4	1.0	2.0	15.0	D19
15.5	1.1	2.2	17.5	D22
17.8	1.3	2.6	20.0	D25
20.0	1.4	2.8	22.5	D29
22.3	1.6	3.2	25.0	D32
24.4	1.7	3.4	27.5	D35
26.7	1.9	3.8	30.0	D38
28.9	2.1	4.2	32.5	D41
30.1	2.2	4.4	33.8	D43
35.6	2.5	5.0	40.0	D51
40.1	2.9	5.8	45.0	D57

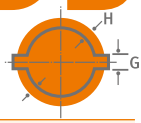
15. Reinforcing Bar 철근

1) Dimensions and Weight 치수 및 중량



규격명 Standard	호칭명 Designation	단위무게 Unit Weight		공칭치수 Nominal Dimensions		
				직경 Diameter	단면적 Sectional Area	둘레 Perimeter
	No.	lb/ft	kg/m	mm	mm²	mm
ASTM A615	3	0.376	0.560	9.5	71	29.9
	4	0.668	0.994	12.7	129	39.9
	5	1.043	1.552	15.9	199	49.9
	6	1.502	2.235	19.1	284	59.8
	7	2.044	3.042	22.2	387	69.8
	8	2.670	3.973	25.4	510	79.8
	9	3.400	5.060	28.7	645	90.0
	10	4.303	6.404	32.3	819	101.3
	11	5.313	7.907	35.8	1,006	112.5
	14	7.65	11.38	43.0	1,452	135.1
	18	13.60	20.24	57.3	2,581	180.1

DB

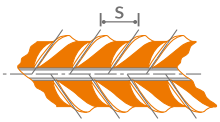


Dimension : ASTM A615
Dimensional Tolerance : ASTM A615
Surface Condition : ASTM A615

마디 및 리브의 치수 Deformation Requirements			호칭명 Designation
마디의 평균간격 최대치 Max. Average Spacing	마디높이 최소치 Min. Height	마디틈 합계의 최대치 Max. Gap	
mm	mm	mm	No.
6.7	0.38	3.6	3
8.9	0.51	4.9	4
11.1	0.71	6.1	5
13.3	0.97	7.3	6
15.5	1.12	8.5	7
17.8	1.27	9.7	8
20.1	1.42	10.9	9
22.6	1.63	12.4	10
25.1	1.80	13.7	11
30.1	2.16	16.5	14
40.1	2.86	21.9	18

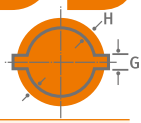
15. Reinforcing Bar 철근

1) Dimensions and Weight 치수 및 중량



규격명 Standard	호칭명 Designation	단위무게 Unit Weight	공칭치수 Nominal Dimensions	
			직경 Diameter	단면적 Sectional Area
	mm	kg/m	mm	mm²
BS 4449 (B500B)	10	0.617	10.0	78.5
	12	0.888	12.0	113
	13(Singapore)	1.042	13.0	133
	16	1.58	16.0	201
	20	2.47	20.0	314
	25	3.85	25.0	491
	32	6.31	32.0	804
	40	9.86	40.0	1,257
	50	15.4	50.0	1,963

DB

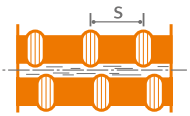


Dimension : BS 4449
Dimensional Tolerance : BS 4449
Surface Condition : BS 4449

	마디 및 리브의 치수 Deformation Requirements			호칭명 Designation
둘레 Perimeter	마디 평균간격 Average Spacing	마디높이 평균 Average Height	상대마디면적 Relative Rib Area	
mm	mm	mm	–	mm
–	4~12	0.3~1.5	0.040	10
–	4.8~14.4	0.36~1.8	0.040	12
–	5.2~15.6	0.39~1.95	0.056	13(Singapore)
–	6.4~19.2	0.48~2.4	0.056	16
–	8~24	0.6~3	0.056	20
–	10~30	0.75~3.75	0.056	25
–	12.8~38.4	0.96~4.8	0.056	32
–	16~48	1.2~6	0.056	40
–	20~60	1.5~7.5	0.056	50

15. Reinforcing Bar 철근

1) Dimensions and Weight 치수 및 중량

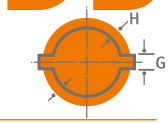


규격명 Standard	호칭명 Designation	단위무게 Unit Weight	공칭치수 Nominal Dimensions		
			직경 Diameter	단면적 Sectional Area	둘레 Perimeter
	mm	kg/m	mm	cm²	mm
CSA-G30 18-M92	10	0.785	11.3	1	35.5
	15	1.57	16	2	50.1
	20	2.355	19.5	3	61.3
	25	3.925	25.2	5	79.2
	30	5.495	29.9	7	93.9
	35	7.85	35.7	10	112.2

Dimension : SSA 2/1979
Dimensional Tolerance : SSA 2/1979
Surface Condition : SSA 2/1979

규격명 Standard	호칭명 Designation	단위무게 Unit Weight	단면적 Sectional Area
	mm	kg/m	cm²
SSA 2/1979	10	0.617	0.785
	12	0.888	0.13
	14	1.21	1.54
	16	1.58	2.01
	18	2.00	2.54
	20	2.47	3.14
	22	2.98	3.81
	25	3.85	4.91
	32	6.31	8.04
	40	9.87	12.60
	50	15.40	19.60

DB



Dimension : CSA-G30, 18-M92
Dimensional Tolerance : CSA-G30, 18-M92
Surface Condition : CSA-G30, 18-M92

마디 및 리브의 치수 Deformation Requirements			호칭명 Designation
마디의 평균간격 최대치 Max. Average Spacing	마디높이의 평균 최소치 Min. Average Height	공칭둘레 12.5%의 최대 마디간격 Max. Gapchord of 12.5% of Nominal Perimeter	
mm	mm	mm	mm
7.9	0.45	4.4	10
11.2	0.72	6.3	15
13.6	0.98	7.7	20
17.6	1.26	9.9	25
20.9	1.48	11.7	30
25.0	1.79	14.0	35

15. Reinforcing Bar 철근

2) 이형봉강포장(이론중량) 조견표(KS D 3504)

(1) 1톤 단위

호칭명 Designation	단위중량 Unit Weight (kg/m)	구분 Classification / 길이 Length (m)	6.0	6.5	7.0
D10	0.560	1본중량	3.36	3.64	3.92
		총본수	280	280	245
		중량	941	1,019	960
D13	0.995	1본중량	5.97	6.47	6.97
		총본수	168	144	140
		중량	1,003	931	976
D16	1.56	1본중량	9.36	10.14	10.92
		총본수	105	105	90
		중량	983	1,065	983
D19	2.25	1본중량	13.50	14.63	15.75
		총본수	70	70	60
		중량	945	1,024	945
D22	3.04	1본중량	18.24	19.76	21.28
		총본수	55	51	47
		중량	1,003	1,008	1,000
D25	3.98	1본중량	23.88	25.87	27.86
		총본수	42	39	36
		중량	1,003	1,009	1,003
D29	5.04	1본중량	30.24	32.76	35.28
		총본수	33	31	28
		중량	998	1,016	988
D32	6.23	1본중량	37.38	40.50	43.61
		총본수	27	25	23
		중량	1,009	1,012	1,003

환산중량 단중 : KS D 3504 기준
1본중량 : 단중×1본길이(소수2자리 맺음)
포장중량 : 1본중량×포장본수(kg단위로 맺음)

7.5	8.0	9.0	10.0	11.0	12.0	호칭명 Designation
4.20	4.48	5.04	5.60	6.16	6.72	D10
245	210	210	180	150	150	
1,029	941	1,058	1,008	924	1,008	
7.46	7.96	8.96	9.95	10.95	11.94	D13
140	120	120	100	100	80	
1,045	955	1,075	995	1,095	955	
11.70	12.48	14.04	15.60	17.16	18.72	D16
90	75	75	60	60	60	
1,053	936	1,053	936	1,030	1,123	
16.88	18.00	20.25	22.50	24.75	27.00	D19
60	60	50	50	40	40	
1,013	1,080	1,013	1,125	990	1,080	
22.80	24.32	27.36	30.40	33.44	36.48	D22
44	41	37	33	30	27	
1,003	997	1,012	1,003	1,003	985	
29.85	31.84	35.82	39.80	43.78	47.76	D25
33	32	28	25	23	21	
985	1,019	1,003	995	1,007	1,003	
37.80	40.32	45.36	50.40	55.44	60.48	D29
26	25	22	20	18	17	
983	1,008	998	1,008	998	1,028	
46.73	49.84	56.07	62.30	68.53	74.76	D32
21	20	18	16	15	13	
981	997	1,009	997	1,028	972	

15. Reinforcing Bar 철근

2) 이형봉강포장(이론중량) 조견표(KS D 3504)

(1) 1톤 단위

호칭명 Designation	단위중량 Unit Weight (kg/m)	구분 Classification / 길이 Length (m)	6.0	6.5	7.0
D35	7.51	1본중량	45.06	48.82	52.57
		총본수	22	20	19
		중량	991	976	999
D38	8.95	1본중량	53.70	58.18	62.65
		총본수	19	17	16
		중량	1,020	989	1,002
D41	10.5	1본중량	63.00	68.25	73.50
		총본수	16	15	14
		중량	1,008	1,024	1,029
D43	11.4	1본중량	68.40	74.10	79.80
		총본수	14	14	14
		중량	958	1,037	1,117
D51	15.9	1본중량	95.40	103.35	111.30
		총본수	11	10	10
		중량	1,049	1,034	1,113

환산중량 단중 : KS D 3504 기준
1본중량 : 단중×1본길이(소수2자리 맺음)
포장중량 : 1본중량×포장본수(kg단위로 맺음)

7.5	8.0	9.0	10.0	11.0	12.0	호칭명 Designation
56.33	60.08	67.59	75.10	82.61	90.12	D35
18	17	15	13	12	11	
1,014	1,021	1,014	976	991	991	
67.12	71.60	80.55	89.50	98.45	107.40	D38
15	14	12	11	10	9	
1,007	1,002	967	984	985	967	
78.75	84.00	94.50	105.00	115.50	126.00	D41
13	12	11	10	9	8	
1,024	1,008	1,040	1,050	1,040	1,008	
85.50	91.20	102.60	114.00	125.40	136.80	D43
12	11	10	9	8	7	
1,026	1,003	1,026	1,026	1,003	958	
119.25	127.20	143.10	159.00	174.90	190.80	D51
9	16	14	13	11	10	
1,073	2,035	2,003	2,067	1,924	1,908	

15. Reinforcing Bar 철근

2) 이형봉강포장(이론중량) 조견표(KS D 3504)

(2) 2톤 단위

호칭명 Designation	단위중량 Unit Weight (kg/m)	구분 Classification / 길이 Length (m)	6.0	6.5	7.0
D10	0.560	1본중량	3.36	3.64	3.92
		소속본수	70	70	70
		소속수	8	8	7
		총본수	560	560	490
		중량	1,882	2,038	1,921
D13	0.995	1본중량	5.97	6.47	6.97
		소속본수	48	48	40
		소속수	7	6	7
		총본수	336	288	280
		중량	2,006	1,863	1,952
D16	1.56	1본중량	9.36	10.14	10.92
		소속본수	35	35	30
		소속수	6	6	6
		총본수	210	210	180
		중량	1,966	2,129	1,966
D19	2.25	1본중량	13.50	14.63	15.75
		총본수	140	140	126
		중량	1,890	2,048	1,985
D22	3.04	1본중량	18.24	19.76	21.28
		총본수	110	102	94
		중량	2,006	2,016	2,000
D25	3.98	1본중량	23.88	25.87	27.86
		총본수	84	78	72
		중량	2,006	2,018	2,006
D29	5.04	1본중량	30.24	32.76	35.28
		총본수	66	62	56
		중량	1,996	2,032	1,976
D32	6.23	1본중량	37.38	40.50	43.61
		총본수	54	50	46
		중량	2,018	2,026	2,006

환산중량 단중 : KS D 3504 기준
1본중량 : 단중×1본길이(소수2자리 맺음)
포장중량 : 1본중량×포장본수(kg단위로 맺음)

7.5	8.0	9.0	10.0	11.0	12.0	호칭명 Designation
4.20	4.48	5.04	5.60	6.16	6.72	D10
70	70	70	60	60	60	
7	6	6	6	5	5	
490	420	420	360	300	300	
2,058	1,882	2,117	2,016	1,848	2,016	
7.46	7.96	8.96	9.95	10.95	11.94	D13
40	40	40	40	40	40	
7	6	6	5	5	4	
280	240	240	200	200	160	
2,089	1,910	2,150	1,990	2,190	1,910	
11.70	12.48	14.04	15.60	17.16	18.72	D16
30	25	25	30	30	30	
6	6	6	4	4	4	
180	150	150	120	120	120	
2,106	1,872	2,106	1,872	2,059	2,246	
16.88	18.00	20.25	22.50	24.75	27.00	D19
120	112	98	88	80	80	
2,026	2,016	1,985	1,980	1,980	2,160	
22.80	24.32	27.36	30.40	33.44	36.48	D22
88	82	74	66	60	54	
2,006	1,994	2,025	2,006	2,006	1,970	
29.85	31.84	35.82	39.80	43.78	47.76	D25
66	64	56	50	46	42	
1,970	2,038	2,006	1,990	2,014	2,006	
37.80	40.32	45.36	50.40	55.44	60.48	D29
52	50	44	40	36	34	
1,966	2,016	1,996	2,016	1,996	2,056	
46.73	49.84	56.07	62.30	68.53	74.76	D32
42	40	36	32	30	26	
1,962	1,994	2,018	1,994	2,056	1,944	

15. Reinforcing Bar 철근

2) 이형봉강포장(이론중량) 조견표(KS D 3504)

(2) 2톤 단위

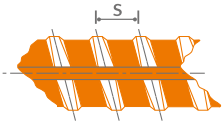
호칭명 Designation	단위중량 Unit Weight (kg/m)	구분 Classification / 길이 Length (m)	6.0	6.5	7.0
D35	7.51	1본중량	45.06	48.82	52.57
		총본수	44	40	38
		중량	1,983	1,952	1,998
D38	8.95	1본중량	53.70	58.18	62.65
		총본수	38	34	32
		중량	2,041	1,978	2,005
D41	10.5	1본중량	63.00	68.25	73.50
		총본수	32	30	28
		중량	2,016	2,048	2,058
D43	11.4	1본중량	68.40	74.10	79.80
		총본수	28	28	27
		중량	1,915	2,075	2,155
D51	15.9	1본중량	95.40	103.35	111.30
		총본수	21	20	18
		중량	2,003	2,067	2,003
D57	20.3	1본중량	121.80	131.95	142.10
		총본수	16	15	14
		중량	1,949	1,979	1,989

환산중량 단중 : KS D 3504 기준
1본중량 : 단중×1본길이(소수2자리 맺음)
포장중량 : 1본중량×포장본수(kg단위로 맺음)

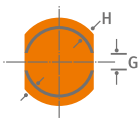
7.5	8.0	9.0	10.0	11.0	12.0	호칭명 Designation
56.33	60.08	67.59	75.10	82.61	90.12	D35
36	34	30	26	24	22	
2,028	2,043	2,028	1,953	1,983	1,983	
67.12	71.60	80.55	89.50	98.45	107.40	D38
30	28	24	22	20	18	
2,014	2,005	1,933	1,969	1,969	1,933	
78.75	84.00	94.50	105.00	115.50	126.00	D41
26	24	22	20	18	16	
2,048	2,016	2,079	2,100	2,079	2,016	
85.50	91.20	102.60	114.00	125.40	136.80	D43
24	22	20	18	16	15	
2,052	2,006	2,052	2,052	2,006	2,052	
119.25	127.20	143.10	159.00	174.90	190.80	D51
17	16	14	13	11	10	
2,027	2,035	2,003	2,067	1,924	1,908	
152.25	162.40	182.70	203.00	223.30	243.60	D57
13	12	11	10	9	8	
1,979	1,949	2,010	2,030	2,010	1,949	

16. Thread Bar 나사형 철근

Dimensions and Weight 치수 및 중량



규격명 Standard	호칭명 Designation	단위무게 Unit Weight	공칭치수 Nominal Dimensions		
			직경 Diameter	단면적 Sectional Area	둘레 Perimeter
	mm	kg/m	mm	mm²	mm
KS D 3504 JIS G 3112	D25	3.98	25.4	506.7	-
	D29	5.04	28.6	642.4	-
	D32	6.23	31.8	794.2	-
	D51	15.9	50.8	2027	-



마디치수 Deformation Requirements				호칭명 Designation
마디간격의 최대치 Max. Pitch	마디높이의 최소치 Min. Height	마디높이의 최대치 Max. Height	마디제외 최대직경 Max. Core Diameter	
mm	mm	mm	mm	mm
17.8	1.3	2.6	25.0	D25
20.0	1.4	2.8	28.0	D29
22.3	1.6	3.2	31.8	D32
35.6	2.5	5.0	50.0	D51

Chemical Composition 강재 성분표

1) Shapes (형강) KS

규격 Standard	명칭 Designation	종류의 기호 Grade	화학성분 Chemical Composition (%)				
			C	Si	Mn	P. Max.	S. Max.
KS D 3503	일반구조용 압연강재 Rolled Steel for General Structure	SS275 SS315 SS410 SS450	0.25 max. 0.28 max. 0.30 max. 0.30 max.	0.45 max. 0.50 max. 0.55 max. 0.55 max.	1.40 max. 1.50 max. 1.60 max. 1.60 max.	0.050 0.050 0.040 0.040	0.050 0.050 0.040 0.040
KS D 3515	용접구조용 압연강재 Rolled Steel for Welded Structure	SM275A SM275B SM275C SM275D SM355A SM355B SM355C SM355D SM420A SM420B SM420C SM420D SM460B SM460C	0.23 max. 0.20 max. 0.18 max. 0.18 max. 0.20 max. 0.18 max. 0.18 max. 0.18 max. 0.20 max. 0.20 max. 0.18 max. 0.18 max. 0.18 max. 0.18 max.	- 0.35 max. 0.35 max. 0.35 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max.	2.5 x C min. 0.05~1.40 1.40 max. 1.40 max. 1.60 max. 1.60 max. 1.60 max. 1.60 max. 1.60 max. 1.60 max. 1.60 max. 1.60 max. 1.70 max. 1.70 max.	0.035 0.030 0.025 0.020 0.035 0.030 0.025 0.020 0.035 0.030 0.025 0.020 0.030 0.025	0.035 0.030 0.025 0.020 0.035 0.030 0.025 0.020 0.035 0.030 0.025 0.020 0.030 0.025
KS D 3866	건축구조용 열간 압연 형강 Hot Rolled Steel Sections for Building Structure	SHN275 SHN355 SHN420 SHN460	0.20 max.	0.40 max.	2.5 x C min. 0.50~1.50 0.50~1.50 1.00~1.60	0.035	0.030
KS F 4603	H형강 말뚝 Steel H Pile	SHP275 SHP275W SHP355W SHP450W	- 0.23 max. 0.20 max. 0.22 max.	- - 0.55 max. 0.55 max.	- 2.5 x C min 1.50 max. 1.60 max.	0.050 0.040 0.040 0.040	0.050 0.040 0.040 0.040

( )안의 값은 제품분석의 경우에 적용한다.
※ 강재의 화학성분은 용강분석지(또는 래들분석지)로서 나타낸다.

CE, Max	PCM, Max	비고 Remarks	규격 Standard
–	–	Al: 0.300 max, Cu: 0.40 max, Mo: 0.08 max, Cr: 0.30 max, Pb: 4.00 max, B: 0.0008 max.	KS D 3503
0.42 0.42 0.42 0.42 0.47 0.47 0.47 0.47 0.48 0.48 0.48 0.48 0.49 0.49	0.26 0.26 0.26 0.26 0.27 0.27 0.27 0.27 0.28 0.28 0.28 0.28 0.30 0.30	$CE = C + \frac{Mn}{6} + \frac{(Cr+Mo+V)}{6} + \frac{(Ni+Cu)}{15}$ $PCM = C + \frac{Si}{30} + \frac{Mn}{20} + \frac{Cu}{20} + \frac{Ni}{60} + \frac{Cr}{20} + \frac{Mo}{15} + \frac{V}{10} + 5B$	KS D 3515
0.40 0.45 0.45 0.45	0.25 0.26 0.27 0.29	Cu: 0.60 max, Ni: 0.45 max, Cr: 0.35 max, Mo: 0.15 max, Mn/S=20 min, V: 0.110 max, Nb: 0.050 max, Nb+V < 0.15% (for SHN355, 420, 460)	KS D 3866
0.40 0.36 0.45 0.45	–	Cu: 0.25~0.50	KS F 4603

Chemical Composition 강재 성분표

1) Shapes (형강) KS

규격 Standard	명칭 Designation	종류의 기호 Grade	화학성분 Chemical Composition (%)		
			C	Si	Mn
KS E 4002	광산지보용 I형강 I-Beam for Mine Support	SG-1 SG-2	- -	- -	- -
KS F 4604	열간압연 강널말뚝 Hot rolled steel sheet piles	SY 300 SY 400 SY 300W SY 400W	- - 0.18 max. 0.20 max.	- - 0.55 max. 0.55 max.	- - 1.60 max. 1.60 max.
KS R 9110	열처리레일 Head Hardened Rail	HH 340 HH 370	0.72~0.82 0.72~0.82	0.10~0.55 0.10~0.65	0.70~1.10 0.80~1.20
KS R 9106	철도레일 Railway Rail	37KG 50N 60 60K KR60 60E1	0.55~0.70 0.63~0.75 0.63~0.75 0.68~0.80 0.63~0.75 0.68~0.80	0.10~0.35 0.10~0.35 0.10~0.35 0.15~0.58 0.10~0.35 0.15~0.58	0.60~0.95 0.70~1.10 0.70~1.10 0.70~1.20 0.70~1.10 0.70~1.20

※ 강재의 화학성분은 용강분석지(또는 래들분석지)로서 나타낸다.

P. Max.	S. Max.	비고 Remarks	규격 Standard
0.050 0.050	0.050 0.050	–	KS E 4002
0.040 0.040 0.035 0.035	0.040 0.040 0.035 0.035	Cu: 0.23~0.55. CE = SY300W: 0.44 max. SY400W: 0.46 max. $CE = C + \frac{Mn}{6} + \frac{Si}{24} + \frac{Ni}{40} + \frac{Cr}{5} + \frac{Mo}{4} + \frac{V}{14}$	KS F 4604
0.030 0.030	0.020 0.020	Cr: 0.20 max., V: 0.030 max. Cr: 0.25 max., V: 0.030 max.	KS R 9110
0.045 0.030 0.030 0.025 0.030 0.025	0.050 0.025 0.025 0.025 0.025 0.008~0.025	60E1 Al: 0.004 max., Cr: 0.15 max., Mo: 0.02 max., Ni: 0.10 max., Cr: 0.15 max., Sn: 0.40 max., Sb: 0.0020 max., Ti: 0.025 max., Nb: 0.010 max,. V: 0.030 max., O2: 20 ppm max., N2: 90 ppm max., H2: 2.5 ppm max.	KS R 9106

Chemical Composition 강재 성분표

2) Shapes (형강) JIS

규격 Standard	명칭 Designation	종류의 기호 Grade	화학성분 Chemical Composition (%)			
			C	Si	Mn	P. Max.
JIS G 3101	일반구조용 압연강재 Rolled Steel for General Structure	SS400 SS490 SS540	– – 0.30 max.	– – –	– – 1.60 max.	0.050 0.050 0.040
JIS G 3106	용접구조용 압연강재 Rolled Steel for Welded Structure	SM400A SM400B SM490A SM490B SM490YA SM490YB SM520B SM570	0.23 max. 0.20 max. 0.20 max. 0.18 max. 0.20 max. 0.20 max. 0.20 max. 0.18 max.	– 0.35 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max. 0.55 max.	2.5 x C min. 0.06~1.50 1.65 max. 1.65 max. 1.65 max. 1.65 max. 1.65 max. 1.70 max.	0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035
JIS G 3136	건축구조용 압연 강재 Rolled steels for Building Structure	SN400A SN400B SN400C SN490B SN490C	0.24 max. 0.20 max. 0.20 max. 0.18 max. 0.18 max.	– 0.35 max. 0.35 max. 0.55 max. 0.55 max.	– 0.60~1.50 0.60~1.50 1.65 max. 1.65 max.	0.050 0.030 0.020 0.030 0.020
JIS A 5523	용접용 열간압연 강널말뚝 Weldable hot rolled steel sheet piles	SYW295 SYW390 SYW430	0.18 max. 0.18 max. 0.18 max.	0.55 max. 0.55 max. 0.55 max.	1.50 max. 1.50 max. 1.50 max.	0.040 0.040 0.040
JIS A 5528	열간압연 강널말뚝 Hot rolled steel sheet piles	SY 295 SY 390	– –	– –	– –	0.040 0.040
JIS E 1101	보통레일 및 분기기류용 특수레일 Flat bottom railway rails and special rails for switches and crossings of non-treated steel	37KG 50N 60 70S	0.55~0.70 0.63~0.75 0.63~0.75 0.63~0.75	0.10~0.35 0.10~0.35 0.10~0.35 0.15~0.30	0.60~0.95 0.70~1.10 0.70~1.10 0.70~1.10	0.045 0.030 0.030 0.030

( )안의 값은 제품분석의 경우에 적용한다.
※ 강재의 화학성분은 용강분석지(또는 래들분석지)로서 나타낸다.

S. Max.	CE. Max.	비고 Remarks	규격 Standard
0.050 0.050 0.040	– – –	–	JIS G 3101
0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035	– – – – – – – 0.44	CE = SM570: 0.44 max. PCM = SM570: 0.28 max. $CE = C + \frac{Mn}{6} + \frac{Si}{24} + \frac{Ni}{40} + \frac{Cr}{5} + \frac{Mo}{4} + \frac{V}{14}$ $PCM = C + \frac{Si}{30} + \frac{Mn}{20} + \frac{Cu}{20} + \frac{Ni}{60} + \frac{Cr}{20} + \frac{Mo}{15} + \frac{V}{10} + 5B$ ※ SM570의 CE 적용은 퀜칭·템퍼링의 강재로 한다.	JIS G 3106
0.050 0.015 0.008 0.015 0.008	– 0.36 0.36 0.44 0.44	$CE = C + \frac{Mn}{6} + \frac{Si}{24} + \frac{Ni}{40} + \frac{Cr}{5} + \frac{Mo}{4} + \frac{V}{14}$	JIS G 3136
0.040 0.040 0.040	0.44 0.45 0.46	Free N2: 0.0060 max. $CE = C + \frac{Mn}{6} + \frac{Si}{24} + \frac{Ni}{40} + \frac{Cr}{5} + \frac{Mo}{4} + \frac{V}{14}$	JIS A 5523
0.040 0.040	– – –		JIS A 5528
0.050 0.025 0.025 0.025	– – – –		JIS E 1101

Chemical Composition 강재 성분표

3) Shapes (형강) ASTM, AS/NZS

규격 Standard	명칭 Designation	종류의 기호 Grade	화학성분 Chemical Composition (%)				
			C	Si	Mn	P. Max.	S. Max.
ASTM A36	Standard Specification for Carbon Structural Steel	ASTM A36	0.26 max.	0.40 max.	–	0.040	0.050
ASTM A572	Standard Specification for Hign-Strength Low-Alloy Columbium-Vanadium Structural Steel	ASTM G50 ASTM G60	0.23 max. 0.26 max.	0.40 max.	1.35 max.	0.040	0.050
ASTM A992	Standard Specification for Structural Steel Shape	ASTM A992	0.23 max.	0.40 max.	0.50~1.50	0.035	0.045
ASTM A572 G50/A992/ CSA 345WM		ASTM A572 G50/A992/ CSA 345WM (TRIPLE)	0.23 max.	0.40 max.	0.50~1.35	0.035	0.045
AS/NZS 3679.1	Structural Steel-Hot Rolled Bars and Section	300 300S0	0.25 max.	0.50 max.	1.60 max.	0.040	0.040

( )안의 값은 제품분석의 경우에 적용한다.
※ 강재의 화학성분은 용강분석지(또는 래들분석지)로서 나타낸다.

			비고 Remarks	규격 Standard
Cu Max.	CE	N2 ppm		
–	–	–	–	ASTM A36
–	–	–	C: 0.01% point ↑ → Mn: 0.06% point ↑ (Max.1.50%) V: 0.01–0.15 or Nb: 0.005–0.05 or V+Nb: 0.02~0.15	ASTM A572
–	–	–	Cu: 0.60 max. Ni: 0.45 max. Cr: 0.35 max. Mo: 0.15 max. N2: 0.0150 max. Nb+V < 0.15% Mn/S=20 min.	ASTM A992
–	–	–	Cu: 0.60 max. Ni: 0.45 max. Cr: 0.35 max. Mo: 0.15 max. N2: 0.0150 max. V: 0.01~0.15 or Nb: 0.005~0.05 or V+Nb: 0.02~0.15 Mn/S=20 min.	A572 G50/A992/ CSA345WM
0.50	0.44	–	Ni: 0.50 max. Cr: 0.30 max. Mo: 0.10 max. V: 0.030 max. Nb: 0.020 max. V+Nb: 0.030 max. B: 0.0008 max.	AS/NZS 3679.1

Chemical Composition 강재 성분표

4) Shapes (형강) EN

규격 Standard	명칭 Designation	종류의 기호 Grade	화학성분 Chemical Composition (%)				
			C	Si	Mn	P. Max.	S. Max.
EN10025-2	Hot Rolled Products for Structural Steel	S235JR	0.17 max.	-	1.40 max.	0.035	0.035
		S235J0	0.17 max.	-	1.40 max.	0.030	0.030
		S235J2	0.17 max.	-	1.40 max.	0.025	0.025
		S275JR	0.21 max.	-	1.50 max.	0.035	0.035
		S275J0	0.18 max.	-	1.50 max.	0.030	0.030
		S275J2	0.18 max.	-	1.50 max.	0.025	0.025
		S355JR	0.24 max.	0.55 max.	1.60 max.	0.035	0.035
		S355J0	0.20 max.	0.55 max.	1.60 max.	0.030	0.030
		S355J2	0.20 max.	0.55 max.	1.60 max.	0.025	0.025
		S355K2	0.20 max.	0.55 max.	1.60 max.	0.025	0.025
		S460JR	0.20 max.	0.55 max.	1.70 max.	0.030	0.030
		S460J0	0.20 max.	0.55 max.	1.70 max.	0.030	0.030
		S460J2	0.20 max.	0.55 max.	1.70 max.	0.030	0.030
		S460K2	0.20 max.	0.55 max.	1.70 max.	0.030	0.030
		S500J0	0.20 max.	0.55 max.	1.70 max.	0.030	0.030
EN10225	Weldable Structural Steels for Fixed Offshore Structures – Technical Delivery Conditions	S355MO[(1)(2)]	0.16 max	0.50 max	1.60 max	0.035	0.030
		S355NLO[(1)(2)] S355ML1O[(1)(2)]	0.14 max	0.55 max	1.00~1.65	0.025	0.015
		S355NL1O[(1)(2)] S355ML1O[(1)(2)]	0.14 max	0.55 max	1.00~1.65	0.020	0.007

(1) Total Al to N ratio shall be a minimum of 2:1. When other N binding elements are used, the min Al and Al/N-ratio do not apply.

(2) $PCM = C + \frac{Si}{30} + \frac{Mn+Cu+Cr}{20} + \frac{Ni}{60} + \frac{Mo}{15} + \frac{V}{10} + 5B \leq 0.24$

Cu Max.	CE	N_2 ppm	비고 Remarks	규격 Standard
0.55	0.35	120 max.	If it is total Al min 0.020%, the max. value for N2 does not apply For S460JR, J0, J2, K2, S500J0 grade, Nb: 0.050% max. V: 0.130% max. Ti: 0.050% max.	EN10025-2
0.55	0.35	120 max.		
0.55	0.35	–		
0.55	0.40	120 max.		
0.55	0.40	120 max.		
0.55	0.40	–		
0.55	0.45	120 max.		
0.55	0.45	120 max.		
0.55	0.45	–		
0.55	0.45	–		
0.55	0.47	250 max.		
0.55	0.47	250 max.		
0.55	0.47	250 max.		
0.55	0.47	250 max.		
0.55	0.49	250 max.		
0.35	0.43 max	150 max	Mo: 0.20 max, Ni: 0.30 max, Al: 0.015~0.055, Nb: 0.050 max, Ti: 0.050 max, V: 0.100 max	EN10225
0.30	0.43 max	120 max	Cr: 0.25 max, Mo: 0.08 max, Ni: 0.70 max, Al: 0.015~0.055, Nb: 0.050 max, Ti: 0.025 max, V: 0.060 max, Nb+V: 0.06 max, Nb+V+Ti: 0.08 max	
0.30	0.43 max	120 max	Cr: 0.25 max, Mo: 0.08 max, Ni: 0.70 max, Al: 0.015~0.055, Nb: 0.050 max, Ti: 0.025 max, V: 0.060 max, Nb+V: 0.06 max, Nb+V+Ti: 0.08 max	

Chemical Composition 강재 성분표

5) Steel Bars for Concrete Reinforcement 철근 콘크리트용 봉강

규격 Standard	종류의 기호 Grade	화학성분 Chemical Composition (%)		
		C	Si	Mn
KS D 3504	SD300	–	0.60 max.	–
	SD400	–	0.60 max.	–
	SD500	–	0.60 max.	–
	SD600	–	0.60 max.	–
	SD700	–	0.60 max.	–
	SD400W SD500W	0.22 max.	0.60 max.	1.60 max.
	SD400 S	0.29 max.	0.30 max.	1.50 max.
	SD500 S	0.32 max.	0.30 max.	1.80 max.
	SD600 S	0.37 max.	0.30 max.	1.80 max.
	SD700 S	0.40 max.	0.60 max.	2.00 max.
JIS G 3112	SD295A	–	–	–
	SD295B	0.27 max.	0.55 max.	1.50 max.
	SD345	0.27 max.	0.55 max.	1.60 max.
	SD390	0.29 max.	0.55 max.	1.80 max.
	SD490	0.32 max.	0.55 max.	1.80 max.
ASTM A615	Grade40	–	–	–
	Grade60	–	–	–
	Grade80	–	–	–
ASTM A706	Grade60	0.30 max.	0.50 max.	1.50 max.
	Grade80	0.30 max.	0.50 max.	1.50 max.
BS 4449	B500A	0.20 max.	–	–
	B500B	0.20 max.	–	–
	B500C	0.20 max.	–	–
CSA-G30 18-09	G400W	0.30 max.	0.50 max.	1.60 max.

※ SD400 W와 SD500 W에서 치수가 호칭명 D 32를 초과하는 것에 대해서는 탄소 함량 0.25% 이하, 탄소당량은 0.55 % 이하로 한다.
또한 SD600 S에서 치수가 호칭명 D 35를 초과하는 것에 대해서는 탄소함량 0.40 % 이하, 탄소당량은 0.70 % 이하로 한다.
※ 강재의 화학성분은 용강분석지(또는 래들분석지)로서 나타낸다.

P. Max.	S. Max.	비고 Remarks	규격 Standard
0.050 0.045 0.040 0.040 0.040	0.050 0.045 0.040 0.040 0.040	일반용 철근 CE: SD600 ≤ 0.67%, SD700 ≤ 0.67% $CE = \frac{C+Mn}{6} + \frac{Cr+V+Mo}{5} + \frac{Cu+Ni}{15}$	KS D 3504
0.040	0.040	용접용 철근 N 0.012% Max. CE: SD400W ≤ 0.50%, SD500W ≤ 0.50% $CE = \frac{C+Mn}{6} + \frac{Cr+V+Mo}{5} + \frac{Cu+Ni}{15}$	
0.040 0.040 0.040 0.040	0.040 0.040 0.040 0.040	특수 내진용 철근 Cu 0.20% Min. CE: SD400S ≤ 0.55%, SD500S ≤ 0.60% SD600S ≤ 0.67%, SD700S ≤ 0.80% $CE = \frac{C+Mn}{6} + \frac{Cr+V+Mo}{5} + \frac{Cu+Ni}{15}$	
0.050 0.040 0.040 0.040 0.040	0.050 0.040 0.040 0.040 0.040	이형철근/Deformed bar $C + \frac{Mn}{6} + \leq 0.50\%$ (SD345) $C + \frac{Mn}{6} + \leq 0.55\%$ (SD390) $C + \frac{Mn}{6} + \leq 0.60\%$ (SD490)	JIS G 3112
0.060 0.060 0.060	– – –	– – –	ASTM A615
0.035 0.035	0.045 0.045	CE: 0.55% max $CE = \frac{C+Mn}{6} + \frac{Cu}{40} + \frac{Ni}{20} + \frac{Cr}{10} - \frac{Mo}{50} - \frac{V}{10}$	ASTM A706
0.050 0.050 0.050	0.050 0.050 0.050	CE: 0.50% max N 0.012% max, Cu 0.80% max. $CE = \frac{C+Mn}{6} + \frac{Cr+V+Mo}{5} + \frac{Cu+Ni}{15}$	BS 4449
0.035	0.045	–	CSA-G30 18-09

Chemical Composition 강재 성분표

6) The Other 기타 강재

명칭 Spec.	종류의 기호 Grade	화학성분 Chemical Composition (%)		
		C	Si	Mn
기계구조용 탄소강재 Carbon Steel for Machine Structural Use	SM 10C	0.08~0.13	0.15~0.35	0.30~0.60
	SM 15C	0.13~0.18	0.15~0.35	0.30~0.60
	SM 20C	0.18~0.23	0.15~0.35	0.30~0.60
	SM 25C	0.22~0.28	0.15~0.35	0.30~0.60
	SM 30C	0.27~0.33	0.15~0.35	0.60~0.90
	SM 35C	0.32~0.38	0.15~0.35	0.60~0.90
	SM 38C	0.35~0.41	0.15~0.35	0.60~0.90
	SM 40C	0.37~0.43	0.15~0.35	0.60~0.90
	SM 45C	0.42~0.48	0.15~0.35	0.60~0.90
	SM 50C	0.47~0.53	0.15~0.35	0.60~0.90
	SM 55C	0.52~0.58	0.15~0.35	0.60~0.90
	SM 58C	0.55~0.61	0.15~0.35	0.60~0.90
	A 105	0.35 max.	0.35 max.	0.60~1.05
기계구조용 합금강 Alloy Steel for Machine Structural Use	SCr415	0.13~0.18	0.15~0.35	0.60~0.90
	SCr420	0.18~0.23	0.15~0.35	0.60~0.90
	SCr435	0.33~0.38	0.15~0.35	0.60~0.90
	SCr440	0.38~0.43	0.15~0.35	0.60~0.90
	SCr445	0.43~0.48	0.15~0.35	0.60~0.90
	SCM415	0.13~0.18	0.15~0.35	0.60~0.90
	SCM420	0.18~0.23	0.15~0.35	0.60~0.90
	SCM435	0.33~0.38	0.15~0.35	0.60~0.90
	SCM440	0.38~0.43	0.15~0.35	0.60~0.90
	SCM445	0.43~0.48	0.15~0.35	0.60~0.90
중기용 For Heavy Construction Equipment	S43BC	0.43~0.48	0.15~0.35	0.67~0.90
	15B23M	0.21~0.25	0.15~0.30	1.00~1.10
	15B37M	0.32~0.36	0.15~0.30	1.00~1.40
	10B35M	0.32~0.36	0.15~0.30	1.00~1.30
	30MnB4	0.32~0.36	0.15~0.30	1.20~1.50
	SCr440B	0.39~0.43	0.15~0.30	0.67~0.85
체인용 For Chain	SBC70	0.33 max.	0.15~0.35	1.00~1.90

※ 강재의 화학성분은 용강분석치(또는 래들분석치)로서 나타낸다.

P. Max.	S. Max.	비고 Remarks	명칭 Spec.
0.030 0.030 0.030 0.030 0.030 0.030 0.030 0.030 0.030 0.030 0.030 0.030 0.040	0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.050	-	기계구조용 탄소강재 Carbon Steel for Machine Structural Use
0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03	0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03	-	기계구조용 합금강 Alloy Steel for Machine Structural Use
0.03 0.03 0.03 0.03 0.03 0.03	0.015 0.015 0.025 0.025 0.025 0.025	-	중기용 For Heavy Construction Equipment
0.035	0.035	-	체인용 For Chain

Mechanical Properties 기계적 성질

1) Rolled Steel for General Structure 일반구조용 강재

규격 Standard	종류의 기호 Symbol of Grade	인장시험 Tensile Test				
		항복점 또는 내력 (Min.) Yield Point or Yield Strength (N/mm²)			인장강도 Tensile Strength (N/mm²)	연신율 Elongation
		두께 Thickness (mm)				두께 Thickness (mm)
		t ≤ 16	16 < t ≤ 40	40 < t		
KS D 3503	SS275	275	265	245	410~550	Steel Plate and Sheets, Steel Strip in Coil, Flat and Section t ≤ 5
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 5 < t ≤ 16
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 16 < t ≤ 40
						Steel Plate and Sheets, Flat and Section 40 < t
	SS315	315	305	295	490~630	Steel Plate and Sheets, Steel Strip in Coil, Flat and Section t ≤ 5
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 5 < t ≤ 16
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 16 < t ≤ 40
						Steel Plate and Sheets, Flat and Section 40 < t
	SS410	410	400	-	540 이상	Steel Plate and Sheets, Steel Strip in Coil, Flat and Section t ≤ 5
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 5 < t ≤ 16
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 16 < t ≤ 40
	SS450	450	440	-	590 이상	Steel Plate and Sheets, Steel Strip in Coil, Flat and Section t ≤ 5
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 5 < t ≤ 16
						Steel Plate and Sheets, Steel Strip in Coil, Flat and Section 16 < t ≤ 40

연신율 Elongation		굽힘시험 Bend Test			종류의 기호 Symbol of Grade
		굽힘각도 Angle of Bending	안쪽반지름 Inside Radius	시험편 Test Piece	
인장 시험편 Test Piece	Min. (%)				
No. 5	21	180°	1.5 x Thickness	No. 1A	SS275
No. 1A	18				
No. 1A	21				
No. 4	23				
No. 5	19	180°	2.0 x Thickness	No. 1A	SS315
No. 1A	16				
No. 1A	19				
No. 4	21				
No. 5	16	180°	2.0 x Thickness	No. 1A	SS410
No. 1A	14				
No. 1A	17				
No. 5	14	180°	2.0 x Thickness	No. 1A	SS450
No. 1A	12				
No. 1A	15				

Mechanical Properties 기계적 성질

2) Rolled Steel for Welded Structure 용접구조용 강재

규격 Standard	종류의 기호 Symbol of Grade	인장시험 Tensile Test					
		항복점 또는 내력 (Min.) Yield Point or Yield Strength (N/mm²)				인장강도 Tensile Strength (N/mm²)	연신율 Elongation
		두께 Thickness (mm)				두께 Thickness (mm)	두께 Thickness (mm)
		t ≤ 16	16 < t ≤ 40	40 < t ≤ 75	75 < t	t ≤ 100	
KS D 3515	SM 275A SM 275B SM 275C SM 275D	275	265	255	245	400~510	t ≤ 5 5 < t ≤ 16 16 < t ≤ 40 40 < t
	SM 355A SM 355B SM 355C SM 355D	355	345	335	325	490~610	t ≤ 5 5 < t ≤ 16 16 < t ≤ 40 40 < t
	SM 420A SM 420B SM 420C SM 420D	420	410	400	390	490~610	t ≤ 5 5 < t ≤ 16 16 < t ≤ 40 40 < t
	SM 460B SM 460C	460	450	430	420	520~720	t ≤ 16 16 < t ≤ 40 40 < t

3) Hot Rolled Steel Sections for Building Structure 건축구조용 열간 압연 형강

규격 Standard	종류의 기호 Symbol of Grade	인장시험 Tensile Test		
		항복점 또는 내력 Yield Point or Yield Strength (N/mm²)	인장강도 Tensile Strength (N/mm²)	항복비 Yield Ratio Max. (%)
KS D 3866	SHN 275	275~395	410~520	85
	SHN 355	355~475	490~610	85
	SHN 420	420~540	520~640	85
	SHN 460	460	570~720	85

연신율 Elongation		충격시험 Impact Test			종류의 기호 Symbol of Grade
시험편 Test Piece	Min. (%)	시험온도 Test Temp. (℃)	샤르피 흡수에너지 Charpy Absorbed Energy (Joule)	시험편 Test Piece	
No. 5 No. 1A No. 1A No. 4	23 18 22 24	20 0 −20 −40	27 min 27 min 27 min 27 min	V-notch in rolled direction	SM 275A SM 275B SM 275C SM 275D
No. 5 No. 1A No. 1A No. 4	22 17 19 23	20 0 −20 −40	27 min 27 min 27 min 27 min	V-notch in rolled direction	SM 355A SM 355B SM 355C SM 355D
No. 5 No. 1A No. 1A No. 4	19 15 19 21	20 0 −20 −40	27 min 27 min 27 min 27 min	V-notch in rolled direction	SM 420A SM 420B SM 420C SM 420D
No. 5 No. 1A No. 4	19 17 20	0 −20	47 min 27 min	V-notch in rolled direction	SM 460B SM 460C

연신율 Elongation			충격시험 Impact Test		종류의 기호 Symbol of Grade
두께 Thickness (mm)	시험편 Test Piece	Min. (%)	시험온도 Test Temp. (℃)	샤르피 흡수에너지 Charpy Absorbed Energy (Joule)	
t ≤ 40 40 < t	No. 1A No. 4	21 24	0	27 min	SHN 275
t ≤ 40 40 < t	No. 1A No. 4	21 23	0	27 min	SHN 355
t ≤ 40 40 < t	No. 1A No. 4	19 22	−5	47 min	SHN 420
t ≤ 40 40 < t	No. 1A No. 4	17 20	−5	47 min	SHN 460

Mechanical Properties 기계적 성질

4) Rolled Steel for Building Structure 건축구조용 압연강재

규격 Standard	종류의 기호 Grade	인장시험 Tensile Test					
		항복점 또는 내력 (Min.) Yield Point or Yield Strength (N/mm²)				인장강도 Tensile Strength (N/mm²)	항복비 Yield Ratio Max. (%)
		두께 Thickness (mm)				두께 Thickness (mm)	
		6 ≤ t < 12	12 ≤ t < 16	16	16 < t ≤ 40	t ≤ 100	
JIS G 3136	SN400A	235	235	235	235	400~510	–
	SN400B	235	235~355	235~355	235~355	400~510	80
	SN400C	–	–	235~355	235~355	400~510	80
	SN490B	325	325~445	325~445	325~445	490~610	80
	SN490C	–	–	325~445	325~445	490~610	80

연신율 Elongation Min. (%)			충격시험 Impact Test			종류의 기호 Grade
			시험온도 Test Temp. (℃)	샤르피 흡수에너지 Charpy Absorbed Energy (Joule)	시험편 Test Piece	
시험편 Test Piece	두께 Thickness (mm)					
	6 ≤ t ≤ 16	16 < t ≤ 50				
No. 1A	17	21	-	-	V-notch in rolled direction	SN400A
No. 1A	18	22	0	27 min.	V-notch in rolled direction	SN400B
No. 1A	18	22	0	27 min.	V-notch in rolled direction	SN400C
No. 1A	17	21	0	27 min.	V-notch in rolled direction	SN490B
No. 1A	17	21	0	27 min.	V-notch in rolled direction	SN490C

Mechanical Properties 기계적 성질

5) EN10025-2 강재

규격 Standard	종류의 기호 Grade	인장시험 Tensile Test		
		두께 Thickness (mm)	인장강도 Tensile Strength (N/mm²)	항복점 또는 내력 Yield Point or Yield Strength (N/mm²)
EN10025-2	S235JR	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	360~510	235 225 215
	S235J0	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	360~510	235 225 215
	S235J2	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	360~510	235 225 215
	S275JR	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	410~560	275 265 255
	S275J0	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	410~560	275 265 255
	S275J2	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	410~560	275 265 255
	S355JR	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	470~630	355 345 335
	S355J0	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	470~630	355 345 335
	S355J2	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	470~630	355 345 335
	S355K2	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	470~630	355 345 335
	S460JR	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	550~720	460 440 420
	S460J0	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	550~720	460 440 420
	S460J2	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	550~720	460 440 420
	S460K0	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	550~720	460 440 420
	S500J0	t ≤ 16 16 < t ≤ 40 40 < t ≤ 63	580~760	500 480 460

연신율 Elongation Min. (%)	충격시험 Impact Test 시험온도 Test Temp. (℃)	 샤르피 흡수에너지 Charpy Absorbed Energy (Joule)	종류의 기호 Grade
26 26 25	20	27 min.	S235JR
26 26 25	0	27 min.	S235J0
26 26 25	−20	27 min.	S235J2
23 23 22	20	27 min.	S275JR
23 23 22	0	27 min.	S275J0
23 23 22	−20	27 min.	S275J2
22 22 21	20	27 min.	S355JR
22 22 21	0	27 min.	S355J0
22 22 21	−20	27 min.	S355J2
22 22 21	−20 (−30)	40 min. (27 min.)	S355K2
17 17 17	20	27 min.	S460JR
17 17 17	0	27 min.	S460J0
17 17 17	−20	27 min.	S460J2
17 17 17	−20	40 min.	S460K0
15 15 15	0	27 min.	S500J0

Mechanical Properties 기계적 성질

6) EN10225 강재

규격 Standard	종류의 기호 Grade	인장시험 Tensile Test			
		두께 Thickness (mm)	인장강도 Tensile Strength (N/mm²)	항복점 또는 내력 Yield Point or Yield Strength (N/mm²)	항복비 Yield to Tensile Strength Ratios Max. (%)
EN10225	S355MO[1]	t ≤ 16 16 < t ≤ 40	450~610	355 345[1]	0.87
	S355NLO[1] S355ML1O	t ≤ 25 25 < t ≤ 40	460~630	355 345	0.87
	S355NL1O[1] S355ML1O	t ≤ 25 25 < t ≤ 40	460~630	355 345	0.87

(1) As-rolled 생산범위: Flange 두께 25mm 이하
(2) Flange 두께 25mm 이하 규격은 -20℃에서 테스트 실시
(3) EN10225 Option 26 참조

연신율 Elongation Min. (%)	충격시험 Impact Test 방향 Direction	시험온도 Test Temp. (℃)	샤르피 흡수에너지 Charpy Absorbed Energy (Joule)	종류의 기호 Grade
22	Longitudinal	−20℃	50J min	S355MO[1]
22	Longitudinal	−40℃[2]	50J min	S355NLO[1] S355ML1O
22	Transverse	−40℃[2]	50J min[3]	S355NL1O[1] S355ML1O

Mechanical Properties 기계적 성질

7) ASTM 강재

종류의 기호 Grade	인장시험 Tensile Test		
	항복점 또는 내력 Yield Point or Yield Strength (N/mm²)	인장강도 Tensile Strength (N/mm²)	연신율 Elongation Min. (%)
ASTM A36	250 Min.	400~550	20
ASTM A572 G50 ASTM A572 G60	345 Min. 415 Min.	450 Min. 520 Min.	18 16
ASTM A992	345~450	450 Min.	19
ASTM A572 G50/A992 /CSA345WM (TRIPLE)	345~450	450~650	19

8) AS/NZS 3679.1 강재

종류의 기호 Grade	인장시험 Tensile Test			
	두께 Thickness (mm)	항복점 또는 내력 Yield Point or Yield Strength (N/mm²)	인장강도 Tensile Strength (N/mm²)	연신율 Elongation Min. (%)
300	t < 11 11 ≤ t ≤ 17 17 < t < 40	320 Min. 300 Min. 280 Min.	440 Min.	22
300 S0	t < 11 11 ≤ t ≤ 17 17 < t < 40	320~426(상항복점) 300~399(상항복점) 280~372(상항복점)	440 Min.	25

9) Sheet Pile 강널말뚝

규격 Standard	종류의 기호 Grade	인장강도 Tensile Strength Min. (N/mm²)	항복점 Yield Point Min. (N/mm²)	연신율 Elongation Min. (%)
KS F 4604	SY300	500	300	17
	SY400	550	400	15
	SY300W	500	300	17
	SY400W	550	400	15
JIS A 5528	SY295	450	295	18
	SY390	490	390	16
JIS A 5523	SYW295	450	295	18
	SYW390	490	390	16
	SYW430	510	430	14
EN 10248-1	S270GP	410	270	24

10) The Others 기타 강재

명칭 Designation	종류의 기호 Grade	인장강도 Tensile Strength Min. (N/mm²)	항복점 Yield Point Min. (N/mm²)	연신율 Elongation Min. (%)		경도 Hardness
철도레일 Railway Rail	30A, 37A	690	–	9		–
	50PS	710	–	8		–
	40N, 50N, 60	800	–	10		HB 235 Min.
	UIC 60	880	–	10		HB 260~300
열처리레일 Head Hardened Rail	HH 340	1,080	–	8		표면경도 HSC: 47~53 심부경도 HB311 Min.
	HH 370	1,130	–	8		표면경도 HSC: 49~56 심부경도 HB331 Min.
광산지보용 I형강 I Beam for Mine Support	SG-1	490	–	20		–
H형강 말뚝 Steel H Pile	SHP 275	410~550	275	17	t ≤ 16	–
			265	21	16 < t	–
	SHP 275W	410~550	275	18	t ≤ 16	–
			265	22	16 < t	–
	SHP 355W	490~630	355	17	t ≤ 16	–
			345	21	16 < t	–
	SHP 450W	550~700	450	17	t ≤ 16	–
			440	17	16 < t	–

Mechanical Properties 기계적 성질

11) Steel Bars for Concrete Reinforcement 철근

규격 Standard	종류의 기호 Grade	인장시험 Tensile Test		
		항복점 또는 0.2% 항복강도 Yield Point or 0.2% Yield Strength (N/mm²)	인장강도 Tensile Strength (N/mm²)	연신율 Elongation 시험편 Test Piece
KS D 3504	SD300	300 ~ 420	YP X 1.15 min.	2호에 준한 것
				3호에 준한 것
	SD400	400 ~ 520	YP X 1.15 min.	2호에 준한 것
				3호에 준한 것
	SD500	500 ~ 650	YP X 1.08 min.	2호에 준한 것
				3호에 준한 것
	SD600	600 ~ 780	YP X 1.08 min.	2호에 준한 것
				3호에 준한 것
	SD700	700 ~ 910	YP X 1.08 min.	2호에 준한 것
				3호에 준한 것
	SD400W	400 ~ 520	YP X 1.15 min.	2호에 준한 것
				3호에 준한 것
	SD500W	500 ~ 650	YP X 1.15 min.	2호에 준한 것
				3호에 준한 것
	SD400S	400 ~ 520	YP X 1.25 min.	2호에 준한 것
				3호에 준한 것
	SD500S	500 ~ 620	YP X 1.25 min.	2호에 준한 것
				3호에 준한 것
	SD600S	600 ~ 720	YP X 1.25 min.	2호에 준한 것
				3호에 준한 것
	SD700S	700 ~ 820	YP X 1.25 min.	2호에 준한 것
				3호에 준한 것
※ 이형 봉강에서 치수가 D 32를 초과하는 것에 대해서는 호칭명 3을 증가할 때마다 표 3의 연신율의 값에서 각각 2를 감한다. 다만, 감하는 한도는 4로 한다.				
JIS G3112	SD295A	295 min.	440~600	No. 2 or equivalent No. 14A or equivalent
	SD345	345~440	490 min.	No. 2 or equivalent No. 14A or equivalent
	SD390	390~510	560 min.	No. 2 or equivalent No. 14A or equivalent

d=nominal diameter of specimen.

	굽힘시험 Bend Test		종류의 기호 Grade
Min. (%)	굽힘각도 Bending Angle	안쪽반지름 Inside Radius of Bending	
16	180°	D16 미만 : 2d D16~19 : 2.5d D22~29 : 3d D29~35 : 4d D38 이상 : 5d (d : 공칭지름)	SD300
18	180°		
16	180°		SD400
18	180°		
12	135°		SD500
14	135°		
10	90°		SD600
10	90°		
10	90°		SD700
10	90°		
16	180°		SD400W
18	180°		
12	180°		SD500W
14	180°		
16	180°		SD400S
18	180°		
12	180°		SD500S
14	180°		
10	90°		SD600S
10	90°		
10	90°		SD700S
10	90°		

16 이상 17이상	180°	D ≤ 16 16 < D	1.5d 2.0d	SD295A
18 이상 19이상	180°	D ≤ 16 16 < D ≤ 41 D51	1.5d 2.0d 2.5d	SD345
16 이상 17이상	180°	–	2.5d	SD390

Mechanical Properties 기계적 성질

11) Steel Bars for Concrete Reinforcement 철근

규격 Standard	종류의 기호 Grade	인장시험 Tensile Test		
		항복점 또는 0.2% 항복강도 Yield Point or 0.2% Yield Strength (N/mm²)	인장강도 Tensile Strength (N/mm²)	연신율 Elongation 시험편 Test Piece
ASTM A615	G40	280 min.	420 min.	–
	G60	420 min.	620 min.	–
	G80	550 min.	690 min.	–
ASTM A706	G60	420~540	550 min.	–
	G80	550~675	690 min.	–
BS 4449	B500A	500~650	YP × 1.05	–
	B500B	500~650	YP × 1.08	–
	B500C	500~650	1.15 ≤YP < 1.35	–

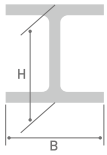
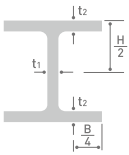
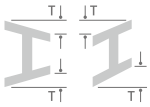
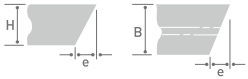
d=nominal diameter of specimen.

	굽힘시험 Bend Test			종류의 기호 Grade
Min. (%)	굽힘각도 Bending Angle	안쪽지름 Pin Diameter		
#3 : 11 #4~#6 : 12	180°	#3~#5 #6~	3.5d 5d	G40
#3~6 : 9 #7~8 : 8 #9~#20 : 7	180° 180° 180° 90°	#3~#5 #6~#8 #9~#11 #14, #18	3.5d 5d 7d 9d	G60
#3~6 : 7 #7~8 : 7 #9~#20 : 6	180° 180° 180° 90°	#3~#5 #6~#8 #9~#11 #14, #18	5d 5d 7d 9d	G80
#3~6 : 14 #7~11 : 12 #14, #18 : 10	180° 180° 180° 180°	#3~#5 #6~#8 #9~#11 #14, #18	3d 4d 6d 8d	G60
#3~6 : 12 #7~11 : 12 #14, #18: 10	180° 180° 180° 180°	#3~#5 #6~#8 #9~#11 #14, #18	3.5d 5d 7d 9d	G80
Agt(%): 2.5	90°→20° (BACK)	R/Bend: D16 이하 D16 초과	 4d 7d"	B500A
Agt(%): 5.0	90°→20° (BACK)	R/Bend: D16 이하 D16 초과	 4d 7d"	B500B
Agt(%): 7.5	90°→20° (BACK)	R/Bend: D16 이하 D16 초과	 4d 7d"	B500C

Dimensional Tolerance 치수 허용차

1) H Section H형강

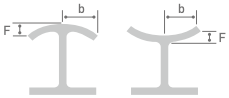
항목 Item		KS D 3502		JIS G 3192 (1994)	
		구분 Dimension	단위(Unit): mm	구분 Dimension	단위(Unit): mm
폭 Width (B)		B < 100 100 ≤ B < 200 200 ≤ B	±2.0 ±2.5 ±3.0	Nominal B < 100 100 ≤ Nominal B < 200 200 ≤ Nominal B	±2.0 ±2.5 ±3.0
높이 Depth (H)		H < 200 200 ≤ H < 400 400 ≤ H < 600 600 ≤ H	±2.0 ±2.5 ±3.0 ±4.0	Nominal H < 400 400 ≤ Nominal H < 600 600 ≤ Nominal H	±2.0 ±3.0 ±4.0
두께 Thickness	t_1	t_1 < 16 16 ≤ t_1 < 25 25 ≤ t_1 < 40 40 ≤ t_1	±0.7 ±1.0 ±1.5 ±2.0	t_1 < 16 16 ≤ t_1 < 25 25 ≤ t_1 < 40 40 ≤ t_1	±0.7 ±1.0 ±1.5 ±2.0
	t_2	t_1 < 16 16 ≤ t_1 < 25 25 ≤ t_1 < 40 40 ≤ t_1	±1.0 ±1.5 ±1.7 ±2.0	t_2 < 16 16 ≤ t_2 < 25 25 ≤ t_2 < 40 40 ≤ t_1	±1.0 ±1.5 ±1.7 ±2.0
직각도 Out-of-Square (T)		H ≤ 300 300 < H	B x 1.0 % 이하 (최소값 1.5mm) B x 1.2 % 이하 (최소값 1.5mm)	Nominal H ≤ 300 Nominal H > 300	T or T' = (B) x 1.0% 이하 (최소치 1.5mm) T or T' = (B) x 1.2% 이하 (최소치 1.5mm)
편심 Web off Center (S)		B ≤ 200 200 < B	±2.5 ±3.5	Nominal H ≤ 300 Nominal H > 300	2.5 Max. 3.5 Max.
굴곡 Bend		H ≤ 300 300 < H	L x 0.20% 이하 L x 0.10% 이하	Nominal H ≤ 300 Nominal H > 300	L x 0.15% 이하 L x 0.10% 이하
절단면 직각도 Sectional Squareness		–	(B, H) x 1.6% 이하 (최소치 3.0mm)	–	(B, H) x 1.6% 이하 (최소치 3.0mm)

JIS G 3192 (2021)		비고 Remarks
구분 Dimension	단위(Unit): mm	
B ≤ 400 B > 400	±2.0 ±3.0	
H < 800 & B ≤ 400 H ≥ 800	±2.0 ±3.0	
t_1 < 16 16 ≤ t_1 < 25 25 ≤ t_1 < 40 40 ≤ t_1	±0.7 ±1.0 ±1.5 ±2.0	
t_1 < 16 16 ≤ t_1 < 25 25 ≤ t_1 < 40 40 ≤ t_1	±1.0 ±1.5 ±1.7 ±2.0	
H ≤ 300 H > 300	T or T' = (B) x 1.0% 이하 (최소치 1.5mm) T or T' = (B) x 1.2% 이하 (최소치 1.5mm)	
B ≤ 400 B > 400	2.0 max. 3.5 max.	
H ≤ 300 H > 300	L x 0.15% 이하 L x 0.10% 이하	
-	(B, H) x 1.6% 이하 (최소치 3.0mm)	

Dimensional Tolerance 치수 허용차

1) H Section H형강

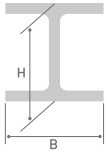
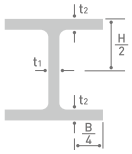
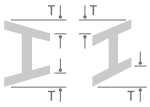
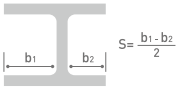
항목 Item	KS D 3502		JIS G 3192 (1994)	
	구분 Dimension	단위(Unit): mm	구분 Dimension	단위(Unit): mm
중량 Tolerance on Weight	t < 10 t ≥ 10	±5.0% ±4.0%	t < 10 t ≥ 10	±5.0% ±4.0% (주문 시 무게 허용차 적용 요구 시에만)
길이 Length	'L ≤ 7m L > 7m	+40, −0 7.0m 이상 40 + (L − 7m) x 5mm	L ≤ 7m L > 7m	+40, −0 Add 5mm to the plus side tolerance given in the above column for every 1m increase in length or its fraction, −0
웨브의 굽음 Concavity of Web (W)	H < 350 350 ≤ H < 550 550 ≤ H	2.0 Max. 2.5 Max. 3.0 Max.	Nominal H < 400 400 ≤ Nominal H < 600 600 ≤ Nominal H	2.0 Max. 2.5 Max. 3.0 Max.
프랜지의 굽음 Flange Fold (F)	B < 300 300 ≤ B	b x 1.5 % 이하 (최소값 1.5mm) b x 1.5 % 이하 (최소값 3.0mm)	–	–
곡률 반지름 Radius (r)	r ≤ 10 10 < r ≤ 20 20 < r	±1.0 ±2.0 ±3.0	–	–

JIS G 3192 (2021)		비고 Remarks
구분 Dimension	단위(Unit): mm	
t < 10 t ≥ 10	±5.0% ±4.0% (주문 시 무게 허용차 적용 요구 시에만)	-
L ≤ 7m L > 7m	+40, −0 Add 5mm to the plus side tolerance given in the above column for every 1m increase in length or its fraction, −0	-
H ≤ 350 350 < H < 550 550 ≤ H	2.0 Max. 2.5 Max. 3.0 Max.	
B ≤ 400	b x 1.5% 이하 (최대치 1.5mm)	
-	-	

Dimensional Tolerance 치수 허용차

1) H Section H형강

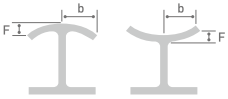
항목 Item		ASTM A6	
		구분 Dimension	단위(Unit): inch
폭 Width (B)		전 규격	+1/4", −3/16" (+6.35 −4.76mm)
높이 Depth (H)		전 규격	±1/8" (±3.17mm)
두께 Thickness	t_1	–	–
	t_2	–	–
직각도 Out-of-Square (T)		H ≤ 12" (H ≤ 310mm) H > 12" (H > 310mm)	1/4" (6.35mm) 이하 5/16" (7.93mm) 이하
직각도에 따른 최대 높이 Max. Depth (C)		전 규격	+1/4" (+6.35mm)
편심 Web off Center (S)		전 규격 (B/2±E)	3/16" (4.76mm) 이하
굴곡 Bend		전 규격 1/8"×(Feet수/10) – CAMBER & SWEEP 다만 FLANGE 6"미만의 경우 SWEEP=1/8"×(Feet/5) ※ FLANGE폭과 DEPTH가 동일 또는 유사한 경우 ·길이 45Ft 이하 : 1/8"×(Ft수/10) [MAX 3/8"] ·길이 45Ft 초과 : 3/8"+{1/8"×[(Ft수−45)/11]}	
절단면 직각도 Sectional Squareness		전 규격	1/64" X H 또는 B(INCH) (0.016 X H 또는 B(mm))

EN10034		비고 Remarks
구분 Dimension	단위(Unit): mm	
B ≤ 110 110 < B ≤ 210 210 < B ≤ 325 325 < B	+4.0, −1.0 +4.0, −2.0 ±4.0 +6.0, −5.0	
H ≤ 180 180 < H ≤ 400 400 < H ≤ 700 700 < H	+3.0, −2.0 +4.0, −2.0 +5.0, −3.0 ±5.0	
t_1 < 7 7 ≤ t_1 < 10 10 ≤ t_1 < 20 20 ≤ t_1 < 40 40 ≤ t_1 < 60 60 < t_1	±0.7 ±1.0 ±1.5 ±2.0 ±2.5 ±3.0	
t_2 < 6.5 6.5 ≤ t_2 < 10 10 ≤ t_2 < 20 20 ≤ t_2 < 30 30 ≤ t_2 < 40 40 ≤ t_2 < 60 60 ≤ t_2	+1.5, −0.5 +2.0, −1.0 +2.5, −1.5 +2.5, −2.0 ±2.5 ±3.0 ±4.0	
B ≤ 110 B > 110	T+T′=1.5mm T+T′=2% x (B) (최대 6.5mm)	
–	–	
B ≤ 110 110 < B ≤ 325 325 < B (t < 40) 325 < B (t ≥ 40)	2.5 max. 3.5 max. 5.0 max. 8.0 max.	
Nominal H ≤ 180 180 < H ≤ 360 360 < H	L x 0.30% 이하 L x 0.15% 이하 L x 0.10% 이하	
–	–	

Dimensional Tolerance 치수 허용차

1) H Section H형강

항목 Item	ASTM A6		
	구분 Dimension		단위(Unit): inch
중량 Tolerance on Weight	전 규격		±2.5%
길이 Length	길이 / 높이	30ft 이하 (9m 이하)	30ft 초과 (9m 초과)
	24' 이하 (610mm 이하)	±3/8' (10mm)	±3/8'(10m) +5ft(1m) 증가 시마다 플러스 치수에서 1/16'(1mm) 가산
	24' 초과 (610mm 초과)	±1/2' (13mm)	±1/2'(13m) +5ft(1m) 증가 시마다 플러스 치수에서 1/16'(1mm) 가산
웨브의 휨 Concavity of Web (W)		-	-
프랜지의 휨 Flange Fold (F)		-	-

EN10034		비고 Remarks
구분 Dimension	단위(Unit): mm	
전 규격	±4.0%	-
전 규격	±50 or +100, −0 (min. lengths are required)	-
-	-	
-	-	

Dimensional Tolerance 치수 허용차

1) H Section H형강

규격 Nominal Size	단중 Nominal Mass (Kg/m)	치수 허용차 Dimensional Tolerance (mm)			
		높이 Pemissible Variation of Depth (H)	변 Pemissible Variation of Flange Width (B)	두께 Thickness	
				(t_{web})	(t_{Flange})
150UB	14.0	+2.5 −1.5	±3.0	±0.7	±1.0
	18.0	+2.5 −1.5	±3.0	±0.7	±1.0
180UB	16.1	+2.5 −1.5	±3.0	±0.7	±1.0
	18.1	+2.5 −1.5	±3.0	±0.7	±1.0
	22.2	+2.5 −1.5	±3.0	±0.7	±1.0
200UB	18.2	±3.0	+6.0 −5.0	±0.7	±1.0
	22.3	±3.0	+6.0 −5.0	±0.7	±1.0
	25.4	±3.0	+6.0 −5.0	±0.7	±1.0
	29.8	±3.0	+6.0 −5.0	±0.7	±1.0
250UB	25.7	±3.0	+6.0 −5.0	±0.7	±1.0
	31.4	±3.0	+6.0 −5.0	±0.7	±1.0
	37.3	±3.0	+6.0 −5.0	±0.7	±1.0
310UB	32.0	±3.0	+6.0 −5.0	±0.7	±1.0
	40.4	±3.0	+6.0 −5.0	±0.7	±1.0
	46.2	±3.0	+6.0 −5.0	±0.7	±1.0
360UB	44.7	±3.0	+6.0 −5.0	±0.7	±1.0
	50.7	±3.0	+6.0 −5.0	±0.7	±1.0
	56.7	±3.0	+6.0 −5.0	±0.7	±1.0
410UB	53.7	±3.0	+6.0 −5.0	±0.7	±1.0
	59.7	±3.0	+6.0 −5.0	±0.7	±1.0

AS/NZS 3679.1

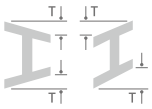
치수 허용차 Dimensional Tolerance (mm)					비고 Remarks
FLANGE 차 Max. Difference of Flange Over Four Flanges (4개변의 차)	직각도 Pemissible Out-of-Square		편심 Pemissible Web Off-Center (e)	최대높이 Pemissible Overall Depth Over Specified Depth (C)	
	T 또는 T'	T+T'			
1.0	1.5	2.5	2.5	4.0	※ 중량(Weight) % : ±2.5% ※ 길이(length) 7m 이하(under) : +50, -0 7~12m : +75, -0 12m 초과(over) : +100,-0 ※ 직선도(straight) - 변 150mm 미만 ·Camper: L x 0.1% 이하 ·Sweep: L x 0.2% 이하 - 기타 좌우, 상하 : 0.1% * UC 의 경우 14m 이하 : L x 0.10% 이하 (최대 10mm) 14m 초과 : 10+(L-14000) x 0.10% 이하
1.0	1.5	2.5	2.5	4.0	
1.0	2.0	2.5	2.5	4.0	
1.0	2.0	2.5	2.5	4.0	
1.0	2.0	2.5	2.5	4.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	

Dimensional Tolerance 치수 허용차

1) H Section H형강

규격 Nominal Size	단중 Nominal Mass (Kg/m)	치수 허용차 Dimensional Tolerance (mm)			
		높이 Pemissible Variation of Depth (H)	변 Pemissible Variation of Flange Width (B)	두께 Thickness	
				(t_{web})	(t_{Flange})
460UB	67.1	±3.0	+6.0 −5.0	±0.7	±1.0
	74.6	±3.0	+6.0 −5.0	±0.7	±1.0
	82.1	±3.0	+6.0 −5.0	±0.7	±1.5
530UB	82.0	±3.0	+6.0 −5.0	±0.7	±1.0
	92.4	±3.0	+6.0 −5.0	±0.7	±1.5
610UB	101.0	±3.0	+6.0 −5.0	±0.7	±1.0
	113.0	±3.0	+6.0 −5.0	±0.7	±1.5
	125.0	±3.0	+6.0 −5.0	±0.7	±1.5
100UC	14.8	±3.0	+6.0 −5.0	±0.7	±1.0
150UC	23.4	±3.0	+6.0 −5.0	±0.7	±1.0
	30.0	±3.0	+6.0 −5.0	±0.7	±1.0
	37.2	±3.0	+6.0 −5.0	±0.7	±1.0
200UC	46.2	±3.0	+6.0 −5.0	±0.7	±1.0
	52.2	±3.0	+6.0 −5.0	±0.7	±1.0
	59.5	±3.0	+6.0 −5.0	±0.7	±1.0
250UC	72.9	±3.0	+6.0 −5.0	±0.7	±1.0
	89.5	±3.0	+6.0 −5.0	±0.7	±1.5
310UC	96.8	±3.0	+6.0 −5.0	±0.7	±1.5
	118.0	±3.0	+6.0 −5.0	±0.7	±1.5
	137.0	±3.0	+6.0 −5.0	±0.7	±1.5
	158.0	±3.0	+6.0 −5.0	±1.0	±1.5

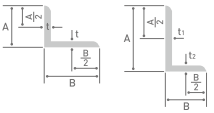
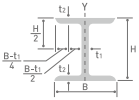
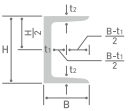
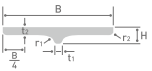
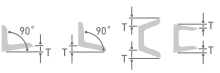
AS/NZS 3679.1

치수 허용차 Dimensional Tolerance (mm)					비고 Remarks
FLANGE 차 Max. Difference of Flange Over Four Flanges (4개변의 차)	직각도 Pemissible Out-of-Square		편심 Pemissible Web Off-Center (e)	최대높이 Pemissible Overall Depth Over Specified Depth (C)	
	T 또는 T'	T+T'			
1.0	5.0	8.0	5.0	6.0	※ 직각도
1.0	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	
1.0	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	* 한쪽만 적용
1.0	4.0	6.0	5.0	6.0	T 또는 T'
1.0	4.0	6.0	5.0	6.0	* 양쪽 합 적용
1.0	4.0	6.0	5.0	6.0	T+T'
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.0	4.0	6.0	5.0	6.0	
1.5	4.0	6.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	
1.5	5.0	8.0	5.0	6.0	

Dimensional Tolerance 치수 허용차

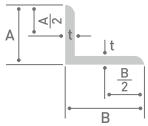
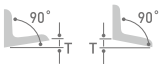
2) Angle, Channel, I-Beam ㄱ형강, ㄷ형강, I 형강

KS D 3502, JIS G 3192 치수단위(Unit) : mm

항목 Item			허용차 Tolerance	비고 Remarks
변 Leg (A or B)	< 50 50 ≤ B < 100 100 ≤ B < 200 200 ≤ B		±1.5 ±2.0 ±3.0 ±4.0	
높이 Height (H)	< 100 100 ≤ H < 200 200 ≤ H < 400 400 ≤ H		±1.5 ±2.0 ±3.0 ±4.0	
두께 Thickness (t1, t2)	Flange A (B for T-Shape) or Height Under 130	< 6.3 6.3~10 10~16 16 ≤	±0.6 ±0.7 ±0.8 ±1.0	
	Flange A (B for T-Shape) or Height 130 & Over	< 6.3 6.3~10 10~16 16~25 25 ≤	±0.7 ±0.8 ±1.0 ±1.2 ±1.5	
길이 Length	≤ 7m		+40 0	
	7m <		Add 5mm to the above plus size Over 7m tolerance for each additional 1m or fraction thereof.	
직각도 Out-of Square (T)	I -Beam & T-Shape		Not more than 1.5% of Flange B	
	Shapes Excluding I -Beam & T-Shapes		Not more than 2.0% of Flange B	
중량 Tolerance on Weight	t < 10 10 ≤ t		±5.0% ±4.0% (주문 시 무게 허용차 적용 요구 시에만)	-
굴곡 Camber and Sweep	I -Beam & T-Shapes		Not more than 0.2% of length	To be applied to warp upward and downward, right and left.
	Shapes excluding I -Beam & T-Shapes		Not more than 0.3% of length	

3) Other Angle 기타 ㄱ형강

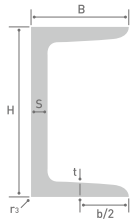
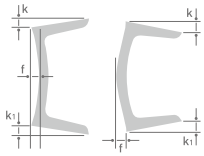
EN10056-2 치수단위(Unit) : mm

항목 Item			허용차 Tolerance	비고 Remarks
변 Leg (A or B)	< 50 50~100 100~150 150~200 200 <		±1.0 ±2.0 ±3.0 ±4.0 +6, -4	
두께 Thickness (t1, t2)	≤ 5 5~10 10~15 15 <		±0.5 ±0.75 ±1.0 ±1.2	
길이 Length	-		±50 or +100, -0 (min. lengths are required)	
직각도 Out-of Square (T)	Leg A ≤ 100 100~150 150~200 200 <		1.0 max. 1.5 max. 2.0 max. 3.0 max.	
중량 Tolerance on Weight	t ≤ 4 4 < t		±6.0% ±4.0%	-
굴곡 Straightness	제품전장 (Over Full Length)	Leg A ≤ 150 150~200 200 <	Not more than 0.4% of length Not more than 0.2% of length Not more than 0.1% of length	To be applied to warp upward and downward, right and left.
	국분적 (Over Any Length)	Leg A ≤ 150 150~200 200 <	6mm for 1.5m 3mm for 2m 3mm for 3m	

Dimensional Tolerance 치수 허용차

4) Other Channel 기타 ㄷ형강

항목 Item		ASTM A6			EN 10279 (UPN)		
		구분 Dimension		단위(Unit): mm	구분 Dimension		단위(Unit): mm
폭 Width (B)		H ≤ 38.1 38.1 < H < 76.2 76.2 ≤ H ≤ 177.8 177.8 < H ≤ 355.6 355.6 < H		±0.79 ±1.59 ±3.18 +3.18, −3.97 +3.18, −4.76	B ≤ 50 50 < B ≤ 100 100 < B ≤ 125 125 < B		±1.5 ±2.0 ±2.5 ±3.0
높이 Depth (H)		H ≤ 38.1 38.1 < H < 76.2 76.2 ≤ H ≤ 177.8 177.8 < H ≤ 355.6 355.6 < H		±0.79 ±1.59 +2.38, −1.59 +3.18, −2.38 +4.76, −3.18	H ≤ 65 65 < H ≤ 200 200 < H ≤ 400 400 < H		±1.5 ±2.0 ±3.0 ±4.0
두께 Thickness	S	S ≤ 5 mm	H ≤ 38.1 38.1 < H < 76.2 76.2 ≤ H ≤ 177.8 177.8 < H ≤ 355.6 355.6 < H	−0.25 −0.38 – – –	S ≤ 10 10 < S ≤ 15 15 < S		±0.5 ±0.7 ±1.0
		5 mm < S	H ≤ 38.1 38.1 < H < 76.2 76.2 ≤ H ≤ 177.8 177.8 < H ≤ 355.6 355.6 < H	−0.38 −0.51 – – –	S ≤ 10 10 < S ≤ 15 15 < S		±0.5 ±0.7 ±1.0
	t	–		–	t ≤ 10 10 < t ≤ 15 15 < t		−0.5 −1.0 −1.5
직각도 Out-of-Square (k+k1)		All Sizes		0.03 x B	B ≤ 100 100 < B		2.0 2.5% of B
Web평탄도 Web Flatness (f)		–		–	H ≤ 100 100 < H ≤ 200 200 < H ≤ 400 400 < H		±0.5 ±1.0 ±1.5 ±1.5
굴곡 Straightness		(A or B 중 장변)	Camber	Sweep		Camber	Sweep
					h ≤ 150	±0.3% of L	±0.5% of L
		< 76.2mm	1/4" x (ft수/5)	by agreement	150 < h ≤ 300	±0.2% of L	±0.3% of L
		76.2mm ≤	1/8" x (ft수/5)	by agreement	300 < h	±0.15% of L	±0.2% of L

AS/NZS 3679.1 (PFC, TFC) 구분 Dimension		단위(Unit): mm	비고 Remarks
35 < B ≤ 55 55 < B ≤ 80 80 < B ≤ 105		±3.0 ±3.0 +3.0, −4.0	
75 < H ≤ 120 120 < H ≤ 360 360 < H ≤ 390		+3.0, −1.5 +3.0, −1.5 +5.0, −3.0	
35 < B ≤ 55 55 < B ≤ 80 80 < B ≤105		±0.7 ±1.0 ±1.0	
35 < B ≤ 55 55 < B ≤ 80 80 < B ≤ 105		±0.7 ±1.0 ±1.0	
75 ≤ H ≤ 120 120 < H ≤ 360 360 < H ≤ 390		±0.7 ±1.0 ±1.0	
Size	t or t'	t + t'	
75 ≤ d ≤ 120	1.0	B1 x 0.03	
120 < d ≤ 360	1.5	B1 x 0.03	
360 < d ≤ 390	2.0	B1 x 0.03	
–		–	
All Sizes		L/500 (Camber)	

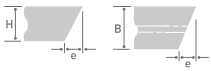
Dimensional Tolerance 치수 허용차

4) Other Channel 기타 ㄷ형강

항목 Item	ASTM A6			EN 10279 (UPN)	
	구분 Dimension		단위(Unit): mm	구분 Dimension	단위(Unit): mm
절단면 직각도 Sectional Squareness	–		–	–	–
중량 Tolerance on Weight	All Sizes		±2.5%	H ≤125 100 < H	±6.0% ±4.0%
길이 Length	(A or B 중 장변)	L ≤ 40 ft	40 ft < L	All Sizes	+100, −0 (All) ±50 mm (by agreement)
	< 76.2mm	+50.8, −0	+63.5, −0		
	76.2mm ≤	+57.2, −0	+69.9, −0		
곡률 반지름 Radius (r)	–		–	All Sizes	r3 ≤ 0.3t

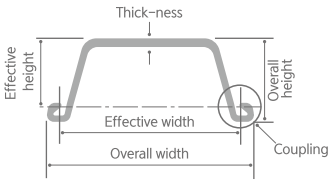
5) Sheet Pile 강널말뚝

항목 Item		허용차 Tolerance
폭 Width (B)		+10, −5
높이 Height (H)		±4.0% of Overall height (전 높이)
두께 Thickness (t)	t < 10mm	±1.0
	10mm ≤ t < 16mm	±1.2
	16mm ≤ t	±1.5
길이 Length		+ : Not specified, − : 0
굽힘 Deflection	≤ 10mm	Overall length (m) X 0.12% max.
	10mm <	[(Overall length (m) − 10 m) X 0.10% + 12 mm] max.
휨 Camber	≤ 10mm	Overall length (m) X 0.25% max.
	10mm <	[(Overall length (m) − 10 m) X 0.20% + 25 mm] max.
단면의 절단 직각차 Difference in Vertically Cut Section		4% of width max. (너비의 4% 이하)

AS/NZS 3679.1 (PFC, TFC)		비고 Remarks
구분 Dimension	단위(Unit): mm	
All Sizes	H x 0.03	
All Sizes	±2.5%	-
L ≤ 7m 7 < L ≤ 12m 12 < L	+50, −0 +75, −0 +100, −0	-
-	-	-

KS F 4604, JIS A 5528 치수단위(Unit) : mm

비고 Remarks



※JIS A 5523 결합각도 ±6° 이상

Dimensional Tolerance 치수 허용차

6) Steel Bars for Concrete Reinforcement 철근

KS D 3504

항목 Item		허용차 Tolerance		비고 Remarks
		Min.	Max.	
마디높이 Height of Knot	≤ D13 D13~D19 D19 ≤	4.0% of Nominal Dia. 4.5% of Nominal Dia. 5.0% of Nominal Dia.	Min. Value x 2 Min. Value x 2 Min. Value x 2	Refer to “Steel Bar for Concrete Reinforcement” “Dimensions and Weight”
길이 Length	≤ 7m	+40mm 0		-
	7m <	Add 5mm to the above plus size tolerance for each additional 1m or fraction thereof. However, the max. value shall be limited to 120mm		-

Note : The following standards are also applicable JIS G3112, ASTM A615, BS4449, SSA 2.

Tolerance On Weight 중량 허용차

Steel Bars for Concrete Reinforcement 철근

KS D 3504

표준규격 Standards	항목 Item	허용차 Tolerance	
		Single Piece wt.	One Lot wt.
KS D 3504 JIS G 3112	D10 ≤, < D16 D16 ≤, < D29 D29 ≤	±6% ±5% ±4%	±5% ±4% ±3.5%

d=nominal diameter

17. Special Steel 특수강

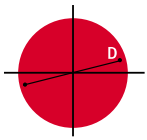
1) Dimensions and Weight 치수 및 중량

○봉강 (Round Bar)

직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)
16	2.0	1.6
17	2.3	1.8
19	2.8	2.2
20	3.1	2.5
21	3.5	2.7
22	3.8	3.0
23	4.2	3.3
24	4.5	3.6
25	4.9	3.9
26	5.3	4.2
27	5.7	4.5
28	6.2	4.8
29	6.6	5.2
30	7.1	5.5
31	7.5	5.9
32	8.0	6.3
33	8.6	6.7
34	9.1	7.1
35	9.6	7.6
36	10.2	8.0
37	10.8	8.4
38	11.3	8.9
40	12.6	9.9
41	13.2	10.4
42	13.9	10.9
43	14.5	11.4
44	15.2	11.9
45	15.9	12.5
46	16.6	13.0
47	17.3	13.6
48	18.1	14.2
49	18.9	14.8
50	19.6	15.4
51	20.4	16.0

직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)
52	21.2	16.7
53	22.1	17.3
54	22.9	18.0
55	23.8	18.7
56	24.6	19.3
57	25.5	20.0
58	26.4	20.7
59	27.3	21.5
60	28.3	22.2
62	30.2	23.7
63	31.2	24.5
65	33.2	26.0
66	34.2	26.9
67	35.3	27.7
68	36.3	28.5
70	38.5	30.2
71	39.6	31.1
72	40.7	32.0
75	44.2	34.7
78	47.8	37.5
80	50.3	39.5
83	54.1	42.5
85	56.7	44.5
87	59.4	46.7
90	63.6	49.9
93	67.9	53.3
95	70.9	55.6
97	73.9	58.0
98	75.4	59.2
100	78.5	61.7
103	83.3	65.4
105	86.6	68.0
107	89.9	70.6
110	95.0	74.6

직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)
113	100.3	78.7
114.3	102.6	80.5
115	103.9	81.5
117	107.5	84.4
120	113.1	88.8
125	122.7	96.3
130	132.7	104.2
135	143.1	112.4
140	153.9	120.8
150	176.7	138.7
160	201.1	157.8
170	227.0	178.2
178	248.8	195.3
180	254.5	199.8
185	268.8	211.0
190	283.5	222.6
200	314.2	246.6
210	346.4	271.9
215	363.1	285.0
220	380.1	298.4
230	415.5	326.1
240	452.4	355.1
250	490.9	385.3
260	530.9	416.8
270	572.6	449.5
280	615.8	483.4
290	660.5	518.5
300	706.9	554.9
310	754.8	592.5
320	804.2	631.3
330	855.3	671.4
340	907.9	712.7
350	962.1	755.3



○선재 (Wire Rod)

직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)	직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)	직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)
5.5	0.2	0.2	15	1.8	1.4	33	8.6	6.7
6	0.3	0.2	15.5	1.9	1.5	34	9.1	7.1
6.5	0.3	0.3	16	2.0	1.6	35	9.6	7.6
7	0.4	0.3	17	2.3	1.8	36	10.2	8.0
7.5	0.4	0.3	18	2.5	2.0	37	10.8	8.4
8	0.5	0.4	19	2.8	2.2	38	11.3	8.9
8.5	0.6	0.4	20	3.1	2.5	39	11.9	9.4
9	0.6	0.5	21	3.5	2.7	40	12.6	9.9
9.5	0.7	0.6	22	3.8	3.0	42	13.9	10.9
10	0.8	0.6	23	4.2	3.3	44	15.2	11.9
10	0.8	0.6	24	4.5	3.6	45	15.9	12.5
11	1.0	0.7	25	4.9	3.9	48	18.1	14.2
11.5	1.0	0.8	26	5.3	4.2	49	18.9	14.8
12	1.1	0.9	27	5.7	4.5	50	19.6	15.4
12.5	1.2	1.0	28	6.2	4.8	53	22.1	17.3
13	1.3	1.0	29	6.6	5.2	55	23.8	18.7
13.5	1.4	1.1	30	7.1	5.5	56	24.6	19.3
14	1.5	1.2	31	7.5	5.9	58	26.4	20.7
14.5	1.7	1.3	31	7.5	5.9	60	28.3	22.2

○각강 (Square Bar)

직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)	직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)	직경 Dia.(mm)	단면적 Sectional Area (cm²)	단위중량 Unit Weight (kg/m)
83	68.9	54.1	105	110.3	86.5	130	169.0	132.7
85	72.3	56.7	110	121.0	95.0	131	171.6	134.7
87	75.7	59.4	113	127.7	100.2	139	193.2	151.7
90	81.0	63.6	115	132.3	103.8	150	225.0	176.6
100	100.0	78.5	120	144.0	113.0	160	256.0	201.0
103	106.1	83.3	125	156.3	122.7	180	324.0	254.3

17. Special Steel 특수강

2) Special Steel Group 특수강 강종별 분류

○봉강 (Round Bar)

강종 Steel Group	종류의 기호 Grade
탄소강 Carbon Steel	S10C, S10CH, S15C, S20C, S20CA, S20CB, S25C, S25CA, S30C, S35C, S38C, S40C, S43C, S45C, S45C-M2, S45C-M3, S45CS, S45CA, S45CH, S45CB, S48C, S48CM, S48CM1, S50C, S50CS, S53C, S53CM, S55C, S48CCF, S53CHF, S53CCF, 1050MJ, 1524HM, A105, A350LF2, SAE1050M, S355JO-N, SAE1552MOD, TB630W, G60
합금강 Low Alloy Steel	SCR420H, SCR420H0, SCR420HD, SCR420H1, SCR420H1V, SCR420HB, SCR440H, SCM415H, SCM420H, SCM420H1, SCM420HD, SCM420HB, SCM440HM1, SCM440S, SCM820PRH, SCM822H, SCM822HST, SCM822HD1, SCM920HVSI, SCM440, SCM440H, SCMH1, SCMH1MD, SCMH1ST, SCMH2D SNCM220, SNCM439, 16MnCr5, 20MnCr5, 25CrMo4, 30CrMoV9, 42CrMo4, 50CrV4, AISI4130, AISI4140, SAE8620, 18CrNiMo7-6
보론강 Boron Steel	SAE10B38M2, 15B36CR, SAE51B35, 15B35CRM, 15B36M1, 15B37M, 15B37MJ, S43BCH-A, S43BCH-B, S43BCH-AJ, S43BCH-BJ, 30MnB4, SCR435BJ, SCR440B, SCR440BJ
비조질강 Micro Alloy Steel	S30CVT, S36CVS2, S40CVS-HB, S40MS1V, 44MNSIVS6, S70CVS1, S36CVSTIS2, 15V24, S25CVMNS1, 38MNSIVS5, 38MNSIVS5MOD2, 38MNVS5, 38MNVS6, S43CNBS1, S45CVMN, S40CV
베어링강 Bearing Steel	S55CR, SUJ2, SUJ2Z, SUJ2R
쾌삭강	SUM43
체인강 Chain Steel	SBC70

○선재 (Wire Rod)

강종 Steel Group	종류의 기호 Grade
탄소강 Carbon Steel	SWRCH10A, SWRCH18A, SWRCH25K, SWRCH35K, SWRCH45K, SWRCH45KS, SWRCH45CR, SWRCH45FCR, S20C, S25C, S35C, S45C
합금강 Low Alloy Steel	SCR420H1V, SCR420HB, SCM415H, SCM420H, SCM435, SCM435H, SCM440, SCM440H, SAE4140
보론강 Boron Steel	S1021B, S5120BH, SAE10B38M1
비조질강 Micro Alloy Steel	SWRCH45VS2
베어링강 Bearing Steel	SUJ2, SUJ2Z, SUJ2R
스프링강 Spring Steel	SUPM12C, SUPM125, SAE9254, SUP9D

○각강 (Square Bar)

강종 Steel Group	종류의 기호 Grade
탄소강 Carbon Steel	S45C
합금강 Low Alloy Steel	SCM440H
비조질강 Micro Alloy Steel	S40MS1V, 44MNSIVS6
스프링강 Spring Steel	SAE9254, SUP9D, SUP9A, SUP11A

17. Special Steel 특수강

3) Table for Chemical Composition 특수강 강종별 화학성분표

강종 Steel Group	종류의 기호 Grade	규격 Standard	C	Si	Mn	P	S	Ni	Cr
			×100			×1000		×100	
탄소강 Carbon Steel	S10C	JIS G 4051	08/13	15/35	30/60	30↓	35↓	20↓	20↓
	S10CH	USER	08/13	15/35	30/60	30↓	35↓	20↓	20↓
	S15C	JIS G 4051	13/18	15/35	30/60	30↓	35↓	20↓	20↓
	A350LF2	ASTM A 350	20↓	20/30	105/120	30↓	35↓	30↓	20↓
	S20C	JIS G 4051	18/23	15/35	30/60	30↓	35↓	20↓	20↓
	S20CA	USER	18/21	15/35	30/60	30↓	35↓	20↓	20↓
	S20CB	USER	18/23	15/35	30/60	30↓	35↓	20↓	20↓
	S25C	JIS G 4051	22/28	15/35	30/60	30↓	35↓	20↓	20↓
	S25CA	USER	22/28	15/35	30/60	30↓	35↓	20↓	20↓
	A105	ASTM A 105	35↓	10/35	60/105	35↓	40↓	40↓	30↓
	TB630W	USER	19/22	20/35	90/100	25↓	10↓	20↓	20↓
	S30C	JIS G 4051	27/33	15/35	60/90	30↓	35↓	20↓	20↓
	S35C	JIS G 4051	32/38	15/35	60/90	30↓	35↓	20↓	20↓
	S38C	JIS G 4051	35/41	15/35	60/90	30↓	35↓	20↓	20↓
	S40C	JIS G 4051	37/43	15/35	60/90	30↓	35↓	20↓	20↓
	S43C	JIS G 4051	40/46	15/35	60/90	30↓	35↓	20↓	20↓
	S45C	JIS G 4051	42/48	15/35	60/90	30↓	35↓	20↓	20↓
	S45C-M2	USER	42/48	15/35	60/90	30↓	35↓	20↓	20↓
	S45C-M3	USER	42/48	15/35	60/90	30↓	35↓	20↓	20↓
	S45CH	USER	42/48	15/35	60/90	30↓	35↓	20↓	20↓
	S45CA	USER	45/48	15/35	60/90	30↓	35↓	12↓	12↓
	S45CB	USER	42/48	15/35	60/90	30↓	35↓	20↓	20↓
	S45Cr	USER	42/48	15/35	60/90	30↓	35↓	20↓	15/30
	S45CS	USER	43/47	20/35	65/90	30↓	15/35	20↓	20↓
	S48C	JIS G 4051	45/51	15/35	60/90	30↓	35↓	20↓	20↓
	S48CM	USER	45/51	15/35	60/90	30↓	20/40	–	–
	S48CM1	USER	49/51	15/35	75/85	20↓	15↓	20↓	20↓
	S50C	JIS G 4051	47/53	15/35	60/90	30↓	35↓	20↓	20↓
	S50CS	USER	47/53	15/35	60/90	30↓	5/20	20↓	20↓
	S53C	JIS G 4051	50/56	15/35	60/90	30↓	35↓	20↓	20↓

기본 규격임 사전 주문에 한함

Mo ×100	Cu	Al ×1000	Sn	V	Nb	Ti	B ×PPM	종류의 기호 Grade	강종 Steel Group
–	30↓	–	–	–	–	–	–	S10C	탄소강 Carbon Steel
–	30↓	–	–	–	–	–	–	S10CH	
–	30↓	–	–	–	–	–	–	S15C	
10↓	30↓	10/30	–	25↓	18↓	–	–	A350LF2	
–	30↓	–	–	–	–	–	–	S20C	
–	30↓	–	–	–	–	–	–	S20CA	
–	30↓		–	–	–	–	–	S20CB	
–	30↓	–	–	–	–	–	–	S25C	
–	30↓	–	–	–	–	–	–	S25CA	
12↓	40↓	–	–	80↓	–	–	–	A105	
–	25↓	–	–	25/35	–	–	–	TB630W	
	30↓	–	–	–	–	–	–	S30C	
–	30↓	–	–	–	–	–	–	S35C	
–	30↓	–	–	–	–	–	–	S38C	
–	30↓	–	–	–	–	–	–	S40C	
–	30↓	–	–	–	–	–	–	S43C	
–	30↓	–	–	–	–	–	–	S45C	
–	30↓	10/40	–	–	–	–	–	S45C-M2	
–	30↓	10/40	–	–	–	–	–	S45C-M3	
–	30↓	–	–	–	–	–	–	S45CH	
–	30↓	–	–	–	–	–	–	S45CA	
–	30↓	–	–	–	–	–	–	S45CB	
–	20↓	–	–	–	–	–	–	S45Cr	
5↓	20↓	25↓	–	–	–	–	–	S45CS	
–	30↓	–	–	–	–	–	–	S48C	
–	–	–	–	–	–	–	–	S48CM	
5↓	30↓	10/45	–	80↓	–	–	–	S48CM1	
–	30↓	–	–	–	–	–	–	S50C	
–	30↓	–	–	–	–	–	–	S50CS	
–	30↓	–	–	–	–	–	–	S53C	

17. Special Steel 특수강

3) Table for Chemical Composition 특수강 강종별 화학성분표

강종 Steel Group	종류의 기호 Grade	규격 Standard	C ×100	Si	Mn	P ×1000	S	Ni ×100	Cr
탄소강 Carbon Steel	S55C	JIS G 4051	52/58	15/35	60/90	30↓	35↓	20↓	20↓
	1524HM	USER	20/25	15/30	140/170	40↓	50↓	–	15/30
	SAE1050M	USER	48/55	15/30	90/110	40↓	15↓	20↓	20↓
	SAE1050MJ	USER	50/55	15/35	60/90	40↓	50↓	–	–
	S355JO-N	EN 10025	16/19	17/37	90/130	35↓	35↓	–	25↓
	SAE1552MOD	USER	50/55	15/30	135/165	30↓	50↓	25↓	20↓
	G60	ASTM A 615	–	–	–	60↓	–	–	–
	SWRCH10A	JIS G 3507	8/13	10↓	30/60	30↓	35↓	20↓	20↓
	SWRCH18A	JIS G 3507	15/20	10↓	60/90	30↓	35↓	20↓	20↓
	SWRCH25K	JIS G 3507	22/28	10/35	30/60	30↓	35↓	20↓	20↓
	SWRCH35K	JIS G 3507	32/38	10/35	60/90	30↓	35↓	20↓	20↓
	SWRCH45K	JIS G 3507	42/48	10/35	60/90	30↓	35↓	20↓	20↓
	SWRCH45KS	USER	42/48	10/35	60/90	30↓	15/35	20↓	20↓
	SWRCH45CR	USER	43/48	15/35	60/90	30↓	35↓	20↓	20↓
	SWRCH45FCR	USER	42/48	15/35	60/90	30↓	35↓	20↓	20↓
	S48CCF	USER	45/49	15/25	75/85	30↓	15↓	20↓	22/28
	S53CHF	USER	52/56	15/35	70/90	30↓	35↓	20↓	12/20
	S53CCF	USER	53/55	15/35	84/90	30↓	35↓	20↓	12/20
	S53CM	USER	50/56	15/35	60/90	30↓	25/45	20↓	20↓
합금강 (H-Band) Low Alloy Steel	SCR420H	JIS G 4052	17/23	15/35	55/90	30↓	30↓	25↓	85/125
	SCR420H0	USER	17/23	15/35	55/90	25↓	25↓	25↓	85/125
	SCR420HD	USER	17/23	15/35	55/90	30↓	30↓	25↓	85/125
	SCR420H1	USER	17/23	15/35	55/90	25↓	25↓	25↓	85/125
	SCR420H1V	USER	17/23	15/35	55/90	20↓	20↓	25↓	85/125
	SCR420HB	USER	17/23	15/35	55/90	20↓	20↓	25↓	85/125
	SCR440H	JIS G 4052	37/44	15/35	55/90	30↓	30↓	25↓	85/125
	SCM415H	JIS G 4052	12/18	15/35	55/90	30↓	30↓	25↓	85/125
	SCM420H	JIS G 4052	17/23	15/35	55/90	30↓	30↓	25↓	85/125
	SCM420H1	USER	17/23	15/35	55/90	25↓	25↓	25↓	85/125
	SCM420HD	USER	17/23	15/35	55/90	30↓	30↓	25↓	85/125

기본 규격임 ☐ 사전 주문에 한함

Mo ×100	Cu	Al ×1000	Sn	V	Nb	Ti	B ×PPM	종류의 기호 Grade	강종 Steel Group
–	30↓	–	–	–	–	–	–	S55C	탄소강 Carbon Steel
–	25↓	–	–	–	–	–	–	1524HM	
6↓	30↓	–	–	–	–	–	–	SAE1050M	
–	–	18↑	–	–	–	–	–	SAE1050MJ	
–	–	–	–	–	–	–	–	S355JO-N	
6↓	–	–	–	–	–	–	–	SAE1552MOD	
–	–	–	–	–	–	–	–	G60	
	30↓	20↑						SWRCH10A	
	30↓	20↑						SWRCH18A	
	30↓							SWRCH25K	
	30↓							SWRCH35K	
	30↓							SWRCH45K	
	30↓							SWRCH45KS	
	20↓	10/70						SWRCH45CR	
	20↓	10/70						SWRCH45FCR	
	30↓							S48CCF	
	30↓							S53CHF	
	30↓							S53CCF	
–	30↓	–	–	–	–	–	–	S53CM	
–	30↓	–	–	–	–	–	–	SCR420H	합금강 (H-Band) Low Alloy Steel
–	25↓	–	–	–	–	–	–	SCR420H0	
–	30↓	–	–	–	–	–	–	SCR420HD	
–	25↓	–	–	–	–	–	–	SCR420H1	
–	30↓	–	–	–	–	–	–	SCR420H1V	
–	30↓	–	–	–	15/35	–	10/30	SCR420HB	
–	30↓	–	–	–	–	–	–	SCR440H	
15/35	30↓	–	–	–	–	–	–	SCM415H	
15/35	25↓	–	–	–	–	–	–	SCM420H	
15/35	25↓	–	–	–	–	–	–	SCM420H1	
15/35	30↓	–	–	–	–	–	–	SCM420HD	

17. Special Steel 특수강

3) Table for Chemical Composition 특수강 강종별 화학성분표

강종 Steel Group	종류의 기호 Grade	규격 Standard	C	Si	Mn	P	S	Ni	Cr
			×100			×1000		×100	
합금강 (H-Band) Low Alloy Steel	SCM420HB	USER	18/25	15/35	70/110	20↓	30↓	25↓	95/135
	SCMH1	USER	20/25	15/35	60/100	30↓	30↓	20↓	90/130
	SCMH1ST	USER	20/25	20/35	60/100	30↓	30↓	20↓	90/130
	SCMH1MD	USER	20/25	15/35	70/110	30↓	30↓	25↓	95/135
	SCM920HVSI	USER	17/21	15↓	60/85	20↓	30↓	25↓	125/145
	SCM820PRH	USER	17/23	50/70	45/75	20↓	30↓	25↓	195/225
	SCMH2D	USER	17/23	15/35	75/110	30↓	30↓	40/80	85/125
	SCM822H	USER	19/25	15/35	55/90	30↓	30↓	25↓	85/125
	SCM822HST	USER	20/24	20/35	75/85	20↓	20↓	20↓	105/115
	SCM822HD1	USER	19/25	15/35	55/90	30↓	30↓	25↓	85/125
	SCM435	JIS G 4053	33/38	15/35	60/85	30↓	30↓	25↓	90/120
	SCM435H	JIS G 4052	32/39	15/35	55/90	30↓	30↓	25↓	85/125
	SCM440	JIS G 4053	38/43	15/35	60/90	30↓	30↓	25↓	90/120
	SCM440H	JIS G 4052	37/44	15/35	55/90	30↓	30↓	25↓	85/125
	SCM440HM1	USER	37/44	15/35	55/90	30↓	30↓	25↓	85/125
	SCM440S	USER	37/44	15/35	55/90	30↓	30↓	25↓	85/125
	SNCM220	JIS G 4053	17/23	15/35	60/90	30↓	30↓	40/70	40/60
	SAE8620	USER	18/23	15/35	70/90	35↓	40↓	40/70	40/60
	SNCM439	JIS G 4053	36/43	15/35	60/90	30↓	30↓	160/200	60/100
	16MnCr5	EN 10084	14/19	0/40	100/130	25↓	35↓	-	80/110
	20MnCr5	EN 10084	17/22	0/40	100/140	25↓	35↓	-	100/130
	25CrMo4	USER	19/23	15/40	75/90	25↓	20/35	25↓	70/95
	AISI4130	USER	28/33	15/35	40/60	35↓	40↓	-	80/110
	AISI4140	USER	38/43	15/35	75/100	35↓	40↓	-	80/110
	42CrMo4	USER	38/45	0/40	60/90	25↓	35↓	-	9/120
	30CrMoV9	USER	30/34	15/30	50/70	25↓	20/30	-	230/270
	50CrV4	USER	46/54	17/37	50/80	30↓	30↓	35↓	80/110
	18CrNiMo7-6	EN 10084	15/21	0/40	50/90	25↓	35↓	140/170	150/180
	SAE4140	SAE J 404	38/43	15/35	75/100	30↓	40↓	25↓	80/110

기본 규격임 사전 주문에 한함

Mo ×100	Cu	Al ×1000	Sn	V	Nb	Ti	B ×PPM	종류의 기호 Grade	강종 Steel Group
7/15	30↓				15/45		10/35	SCM420HB	합금강 (H-Band) Low Alloy Steel
20/40	30↓	15/50	–	–	–	–	–	SCMH1	
20/40	30↓	15/50	–	–	20/40	–	–	SCMH1ST	
8/15	30↓	–	–	–	–	–	–	SCMH1MD	
55/65	30↓				15/35			SCM920HVSI	
33/43	30↓				15/35			SCM820PRH	
25/45	30↓	–	–	–	–	–	–	SCMH2D	
35/45	30↓	–	–	–	–	–	–	SCM822H	
36/45	20↓	25/50	20↓	–	30/35	–	–	SCM822HST	
35/45	30↓	–	–	–	–	–	–	SCM822HD1	
15/35	30↓	–	–	–	–	–	–	SCM435	
15/35	30↓	–	–	–	–	–	–	SCM435H	
15/35	30↓	–	–	–	–	–	–	SCM440	
15/35	30↓	–	–	–	–	–	–	SCM440H	
15/35	30↓	–	–	–	–	–	–	SCM440HM1	
15/35	30↓	–	–	–	–	–	–	SCM440S	
15/25	30↓	–	–	–	–	–	–	SNCM220	
15/25	–	–	–	–	–	–	–	SAE8620	
15/30	30↓	–	–	–	–	–	–	SNCM439	
–	–	–	–	–	–	–	–	16MnCr5	
–	–	–	–	–	–	–	–	20MnCr5	
40/45	25↓	–	–	–	–	–	–	25CrMo4	
15/25	–	–	–	–	–	–	–	AISI4130	
15/25	–	–	–	–	–	–	–	AISI4140	
15/30	–	–	–	–	–	–	–	42CrMo4	
15/25	25↓	–	–	100/200	–	–	–	30CrMoV9	
–	25↓	–	–	100/200	–	–	–	50CrV4	
25/35	–	–	–	–	–	–	–	18CrNiMo7-6	
15/25	35↓	–	–	–	–	–	–	SAE4140	

17. Special Steel 특수강

3) Table for Chemical Composition 특수강 강종별 화학성분표

강종 Steel Group	종류의 기호 Grade	규격 Standard	C	Si	Mn	P	S	Ni	Cr
			×100			×1000		×100	
보론강 (H-Band) Boron Steel	S43BCH-A	USER	42/48	15/35	60/80	30↓	15↓		20↓
	S43BCH-B	USER	45/48	15/35	70/90	30↓	15↓		20↓
	S43BCH-AJ	USER	43/48	15/35	50/90	35↓	35↓		
	S43BCH-BJ	USER	45/48	15/35	70/90	30↓	15↓		20↓
	15B37MJ	USER	32/36	15/35	100/140	30↓	25↓	20↓	20↓
	15B37M	USER	32/36	15/35	100/140	30↓	25↓		20↓
	15B36Cr	USER	30/37	15/35	120/150	40↓	50↓		20/40
	15B35CRM	USER	32/36	20/35	120/150	25↓	25↓	20↓	20/35
	15B36M1	USER	32/36	20/30	120/150	25↓	25↓	20↓	10/20
	30MnB4	USER	32/36	15/35	120/150	30↓	25↓	20↓	20/40
	SAE10B38M1	USER	35/42	10/35	80/120	30↓	30↓	-	35↓
	SAE10B38M2	USER	36/39	10/40	70/110	35↓	10/30	-	-
	SAE51B35	USER	38/41	15/30	70/90	20↓	20↓	-	80/105
	S1021B	USER	18/23	30/50	50/80	30↓	20↓	-	10/30
	S5120BH	USER	17/22	15/35	70/90	30↓	20↓	-	70/90
	SCR435BJ	USER	35/39	15/35	85/105	25↓	30↓	25↓	90/100
	SCR440B	USER	39/43	15/35	67/85	30↓	25↓	-	97/120
	SCR440BJ	USER	39/43	15/35	67/85	30↓	25↓	-	97/120
비조질강 Micro Alloy Steel	15V24	USER	19/25	15/35	135/165	40↓	50↓	20↓	15↓
	S30CVT	USER	28/34	20/35	125/150	30↓	30↓	20↓	20↓
	S36CVS2	USER	34/38	60/75	95/105	45↓	65/85	20↓	25↓
	S36CVTiS2	USER	34/38	90/120	95/115	45↓	65/95	20↓	25↓
	S70CVS1	USER	67/73	15/35	45/55	45↓	55/70	4/12	10/20
	S40CVSHB	USER	38/42	15/35	75/90	30↓	20/40	25↓	10/20
	S40CV	USER	38/42	15/35	75/90	30↓	35↓	25↓	10/20
	S43CNbS1	USER	40/50	30/50	135/155	30↓	50/70	20↓	10/20
	S45CVMn	USER	43/47	15/35	110/130	30↓	40/70	20↓	10/20
	S25CVMnS1	USER	22/28	15/35	140/170	30↓	40/70	-	20/40
	S40MS1V	USER	40/46	55/70	140/160	30↓	40/70	20↓	10/20
	38MnSiVS5	USER	35/40	50/70	130/150	30↓	45/65	20↓	10/20

기본 규격임 사전 주문에 한함

Mo ×100	Cu	Al ×1000	Sn	V	Nb	Ti	B ×PPM	종류의 기호 Grade	강종 Steel Group
		20/50	–		–	15/50	15/40	S43BCH-A	보론강 (H-Band) Boron Steel
		20/50	–		–	15/50	15/40	S43BCH-B	
			–		–	–	5/40	S43BCH-AJ	
		20/50	–		–	15/50	15/40	S43BCH-BJ	
5↓	20↓	20/50	–	15/50	–	–	15/40	15B37MJ	
			–	15/50	–	–	15/40	15B37M	
		–	–		–	–	5/30	15B36Cr	
5↓	30↓	15/35				10/40	5/30	15B35CRM	
	30↓	15/35				10/40	5/30	15B36M1	
5↓	20↓	–	–	20/40	–	–	15/40	30MnB4	
–	15↓	–	–	–	–	–	5/30	SAE10B38M1	
–	25↓	20/60	–	–	–	30/60	8/50	SAE10B38M2	
–	–	–	–	–	–	–	5/30	SAE51B35	
–	–	–	–	–	–	20/50	10/40	S1021B	
–	–	–	–	–	–	20/50	10/40	S5120BH	
5↓	30↓	65/70	–	–	–	15/40	5/30	SCR435BJ	
–	–	20/50	–	–	–	15/40	15/40	SCR440B	
–	–	20/50	–	–	–	15/50	15/40	SCR440BJ	
–	25↓	20↑	–	20/200	–	–	–	15V24	비조질강 Micro Alloy Steel
–	30↓		–	40/100	–	5↑	–	S30CVT	
6↓	25↓	30↓		250/300				S36CVS2	
6↓	25↓	30↓		250/300		30/60		S36CVTiS2	
5↓		10↓		25/45				S70CVS1	
–	30↓		–	80/140	–	–	–	S40CVSHB	
–	30↓	80/140	–	–	–	35↓	–	S40CV	
6↓	25↓	30↓						S43CNbS1	
5↓	30↓	80/150	–	–	–	–	–	S45CVMn	
–	25↓	–	–	100/200	–	–	–	S25CVMnS1	
5↓		20↓		200/300				S40MS1V	
6↓	25↓	10/30	–	80/130	–		–	38MnSiVS5	

17. Special Steel 특수강

3) Table for Chemical Composition 특수강 강종별 화학성분표

강종 Steel Group	종류의 기호 Grade	규격 Standard	C	Si	Mn	P	S	Ni	Cr
			×100			×1000		×100	
비조질강 Micro Alloy Steel	38MnSiVS5Mod2	USER	35/40	50/75	130/150	35↓	20/40	15↓	10/20
	38MnVS5	USER	35/40	50/70	130/150	30↓	45/65	15↓	10/20
	38MnVS6	USER	36/40	60/75	130/150	25↓	20/40	15↓	10/20
	44MnSiVS6	USER	41/45	60/80	140/150	25↓	20/35	15↓	20/30
	SWRCH45VS2	USER	42/47	15/35	110/140	30↓	30/70	20↓	10/25
스프링강 Spring Steel	SUPM12C	USER	51/55	130/160	55/75	17↓	10↓	10/30	60/80
	SUPM125	USER	51/57	140/170	55/80	17↓	10↓	25/35	60/80
	SAE9254	SAE J 404	51/59	120/160	60/80	20↓	20↓		60/80
	SUP9D	USER	56/60	15/35	75/95	35↓	35↓		80/90
	SUP9A	JIS G 4801	56/64	15/35	70/100	35↓	35↓		70/100
	SUP11A	JIS G 4801	56/64	15/35	70/100	35↓	35↓		70/100
베어링강 Bearing Steel	S55CR	USER	55/59	15/30	75/90	25↓	8↓		10/20
	SUJ2	JIS G 4805	95/105	15/30	25/45	25↓	8↓		135/160
	SUJ2Z	USER	95/105	15/30	25/45	25↓	8↓		135/160
	SUJ2R	USER	95/105	15/30	25/45	25↓	8↓	20↓	140/160
쾌삭강	SUM43	JIS G 4804	40/48	15/35	135/165	40↓	240/330	20↓	20↓
체인강 Chain Steel	SBC70	JIS G 3105	29/33	15/35	100/190	40↓	40↓	40↓	25↓

기본 규격임 사전 주문에 한함

Mo ×100	Cu	Al ×1000	Sn	V	Nb	Ti	B ×PPM	종류의 기호 Grade	강종 Steel Group
6↓	25↓	10/30		80/130		10/30		38MnSiVS5Mod2	비조질강 Micro Alloy Steel
6↓	25↓	10/30		80/120		10↓		38MnVS5	
5↓	20↓	10/25		80/130		10/30		38MnVS6	
5↓	20↓	10/30	–	120/170	–	10/20	–	44MnSiVS6	
	30↓	10/70		40/70		40↓		SWRCH45VS2	
	10/30	20/60		50/100		10/40	50↓	SUPM12C	스프링강 Spring Steel
	25/35	1/40		50/150	15/45	10/40	5/25	SUPM125	
		–						SAE9254	
								SUP9D	
								SUP9A	
							5/25	SUP11A	
8↓	20↓	10/50				3↓		S55CR	베어링강 Bearing Steel
8↓	25↓	50↓				3↓		SUJ2	
8↓	25↓	50↓				3↓		SUJ2Z	
6↓	20↓	50↓				3↓		SUJ2R	
	30↓							SUM43	쾌삭강
8↓	35↓	65↓	–	100↓	50↓	–	–	SBC70	체인강 Chain Steel

17. Special Steel 특수강

4) Heat Treatment & Mechanical Properties 열처리 및 기계적 성질

강종 Steel Group	KS 기호 (괄호안: 구기호)	JIS 기호	단조 (℃)	열처리 (℃)			
				N	A	Q	T
탄소강 Carbon Steel	SM10C	S10C	1,100~900	900~950 (공냉)	약 900 (로냉)	-	-
	SM12C	S12C	1,100~900	880~930 (공냉)	약 880 (로냉)	-	-
	SM15C	S15C	1,100~900	880~930 (공냉)	약 880 (로냉)	-	-
	SM20C	S20C	1,100~900	870~920 (공냉)	약 860 (로냉)	-	-
	SM25C	S25C	1,100~900	860~910 (공냉)	약 850 (로냉)	-	-
	SM30C	S30C	1,100~850	850~900 (공냉)	약 840 (로냉)	850~900 (수냉)	550~650 (급냉)
	SM35C	S35C	1,100~850	840~890 (공냉)	약 830 (로냉)	840~890 (수냉)	550~650 (급냉)
	SM38C	S38C	1,100~850	830~880 (공냉)	약 820 (로냉)	830~880 (수냉)	550~650 (급냉)
	SM40C	S40C	1,100~850	830~880 (공냉)	약 820 (로냉)	830~880 (수냉)	550~650 (급냉)
	SM43C	S43C	1,100~850	820~870 (공냉)	약 810 (로냉)	820~870 (수냉)	550~650 (급냉)
	SM45C	S45C	1,100~850	820~870 (공냉)	약 810 (로냉)	820~870 (수냉)	550~650 (급냉)
	SM48C	S48C	1,050~850	810~860 (공냉)	약 800 (로냉)	810~860 (수냉)	550~650 (급냉)
	SM50C	S50C	1,050~850	810~860 (공냉)	약 800 (로냉)	810~860 (수냉)	550~650 (급냉)
	SM53C	S53C	1,050~850	800~850 (공냉)	약 790 (로냉)	800~850 (수냉)	550~650 (급냉)
	SM55C	S55C	1,050~850	800~850 (공냉)	약 790 (로냉)	800~850 (수냉)	550~650 (급냉)
	SM58C	S58C	1,050~850	800~850 (공냉)	약 790 (로냉)	800~850 (수냉)	550~650 (급냉)
기계구조용 Mn강 (SMn XXX)	SMn420	SMN420	1,100~900	870~930	850~900	1차 850~900 2차 780~830 (유냉)	150~200 (공냉)
	SMn433	SMN433	1,100~850	870~930	840~900	830~880 (수냉)	550~650 (급냉)
	SMn438	SMN438	1,100~850	870~930	840~900	830~880 (유냉)	550~650 (급냉)
	SMn443	SMN443	1,100~850	870~930	840~900	830~880 (유냉)	550~650 (급냉)

※ 단, 상기 항목은 참고치로만 활용 가능함.

기계적 성질						용도
항복점 kgf/mm² (N/mm²)	인장강도 kgf/mm² (N/mm²)	연신율 (%)	감면율 (%)	샤르피 충격치 kgfm/cm² (J/cm²)	브리넬 경도 (HB)	
≥ 21 ; 불림 (≥ 206)	≥ 32 ; 불림 (≥ 314)	≥ 33 ; 불림	–	–	109~156 ; 불림	냉간가공 및 부품
≥ 24 ; 불림 (≥ 235)	≥ 38 ; 불림 (≥ 373)	≥ 30 ; 불림	–	–	109~149 ; 불림	냉간 Header, Bolt, Pin류로서 열처리하지 않고 사용하는 부품, 단조품으로서 불림하여 사용하는 부품
≥ 24 ; 불림 (≥ 235)	≥ 38 ; 불림 (≥ 373)	≥ 30 ; 불림	–	–	109~149 ; 불림	
≥ 25 ; 불림 (≥ 245)	≥ 41 ; 불림 (≥ 402)	≥ 28 ; 불림	–	–	116~174 ; 불림	
≥ 27 ; 불림 (≥ 265)	≥ 45 ; 불림 (≥ 441)	≥ 27 ; 불림	–	–	123~183 ; 불림	
≥ 34 ; QT (≥ 333)	≥ 55 ; QT (≥ 539)	≥ 23 ; QT	≥ 57 ; QT	≥ 11 ; QT (≥ 108)	152~212	스프라인샤프트, 소형 기어 등의 고주파 담금질 부품. 전동기축, 차축 등으로서 불림하고 또 일부 고주파 담금질 등으로 사용하는 부품
≥ 40 ; QT (≥ 392)	≥ 58 ; QT (≥ 569)	≥ 22 ; QT	≥ 55 ; QT	≥ 10 ; QT (≥ 98.1)	167~235	
≥ 45 ; QT (≥ 441)	≥ 62 ; QT (≥ 608)	≥ 20 ; QT	≥ 50 ; QT	≥ 9 ; QT (≥ 88)	179~255	
≥ 45 ; QT (≥ 441)	≥ 62 ; QT (≥ 608)	≥ 20 ; QT	≥ 50 ; QT	≥ 9 ; QT (≥ 88)	179~255	
≥ 50 ; QT (≥ 490)	≥ 70 ; QT (≥ 686)	≥ 17 ; QT	≥ 45 ; QT	≥ 8 ; QT (≥ 78)	201~269	일반 작은 부품으로서 완전히 담금질을 하는 부품, 크랭크축, 리어액슬샤프트 등 완전 담금질하는 부품
≥ 50 ; QT (≥ 490)	≥ 70 ; QT (≥ 686)	≥ 17 ; QT	≥ 45 ; QT	≥ 8 ; QT (≥ 78)	201~269	
≥ 55 ; QT (≥ 539)	≥ 75 ; QT (≥ 735)	≥ 15 ; QT	≥ 40 ; QT	≥ 7 ; QT (≥ 69)	212~277	
≥ 55 ; QT (≥ 539)	≥ 75 ; QT (≥ 735)	≥ 15 ; QT	≥ 40 ; QT	≥ 7 ; QT (≥ 69)	212~277	
≥ 60 ; QT (≥ 588)	≥ 80 ; QT (≥ 785)	≥ 14 ; QT	≥ 35 ; QT	≥ 6 ; QT (≥ 59)	229~285	Connecting Rod, Pin, Gear 등 완전 담금질하여 고강도 요구부품, 트럭 차축 등 질량 효과가 큰 완전 담금질 부품
≥ 60 ; QT (≥ 588)	≥ 80 ; QT (≥ 785)	≥ 14 ; QT	≥ 35 ; QT	≥ 6 ; QT (≥ 59)	229~285	
≥ 60 ; QT (≥ 588)	≥ 80 ; QT (≥ 785)	≥ 14 ; QT	≥ 35 ; QT	≥ 6 ; QT (≥ 59)	229~285	
–	≥ 70 (≥ 686)	≥ 14	≥ 30	≥ 5 (≥ 49)	201~311	표면 경화용
≥ 55 (≥ 539)	≥ 70 (≥ 686)	≥ 20	≥ 55	≥ 10 (≥ 98.1)	201~277	
≥ 60 (≥ 588)	≥ 75 (≥ 736)	≥ 18	≥ 50	≥ 8 (≥ 78)	212~285	
≥ 65 (≥ 637)	≥ 80 (≥ 785)	≥ 17 ; QT	≥ 45	≥ 8 (≥ 78)	299~302	

17. Special Steel 특수강

4) Heat Treatment & Mechanical Properties 열처리 및 기계적 성질

강종 Steel Group	KS 기호 (괄호안: 구기호)	JIS 기호	단조 (℃)	열처리(℃)			
				N	A	Q	T
기계구조용 Mn-Cr강 (SMnC XXX)	SMnC420	SMN420	1,100~900	870~930	850~900	1차 850~900 2차 780~830 (유냉)	150~200 (공냉)
	SMnC433	SMN433	1,100~850	870~930	840~900	830~880 (수냉)	550~650 (급냉)
Cr강 (SCr XXX)	SCr415	SCR415	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SCr420	SCR420	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SCr430	SCR430	1,100~850	880	약 830 (로냉)	830~880 (유냉)	520~620 (급냉)
	SCr435	SCR435	1,100~850	850~900 (공냉)	약 830 (로냉)	830~880 (유냉)	520~620 (급냉)
	SCr440	SCR440	1,100~850	880	약 830 (로냉)	830~880 (유냉)	520~620 (급냉)
	SCr445	SCR445	1,100~850	880	약 830 (로냉)	830~880 (유냉)	520~620 (급냉)
Cr-Mo강 (SCM XXX)	SCM415	SCM415	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SCM418	SCM418	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SCM420	SCM420	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SCM421	SCM421	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SCM430	SCM430	1,100~900	830~880 (공냉)	약 830 (로냉)	830~880 (유냉)	530~630 (급냉)
	SCM432	SCM432	1,050~850	830~880 (공냉)	약 830 (로냉)	830~880 (유냉)	530~630 (급냉)
	SCM435	SCM435	1,050~850	830~880 (공냉)	약 830 (로냉)	830~880 (유냉)	530~630 (급냉)
	SCM440	SCM440	1,050~850	830~880 (공냉)	약 830 (로냉)	830~880 (유냉)	530~630 (급냉)

※ 단, 상기 항목은 참고치로만 활용 가능함.

기계적 성질						용도
항복점 kgf/mm² (N/mm²)	인장강도 kgf/mm² (N/mm²)	연신율 (%)	감면율 (%)	샤르피 충격치 kgfm/cm² (J/cm²)	브리넬 경도 (HB)	
–	≥ 85 (≥ 834)	≥ 13	≥ 30	≥ 5 (≥ 49)	235~321	표면 경화용
≥ 80 (≥ 785)	≥ 95 (≥ 932)	≥ 13	≥ 40	≥ 5 (≥ 49)	269~321	
–	≥ 80 (≥ 785)	≥ 15	≥ 40	≥ 6 (≥ 59)	217~302	표면 경화용 캠축, 핀
–	≥ 85 (≥ 834)	≥ 14	≥ 35	≥ 5 (≥ 49)	235~321	표준형 크롬도금 표면 경화강 치차류 스프라인축
≥ 65 (≥ 637)	≥ 80 (≥ 785)	≥ 18	≥ 55	≥ 9 (≥ 88)	229~293	볼트, 너트
≥ 75 (≥ 836)	≥ 90 (≥ 883)	≥ 15	≥ 50	≥ 7 (≥ 69)	255~321	Arm류, 고주파 담금질 부품
≥ 80 (≥ 785)	≥ 95 (≥ 932)	≥ 13	≥ 45	≥ 6 (≥ 59)	269~331	강력볼트, Arm축류
≥ 85 (≥ 834)	≥ 100 (≥ 980.7)	≥ 12	≥ 40	≥ 5 (≥ 49)	285~352	축류, Key, 너클, 핀
–	≥ 85 (≥ 834)	≥ 16	≥ 40	≥ 7 (≥ 69)	235~321	표면 경화용 일반용, 기어, 핀, 축류
–	≥ 90 (≥ 883)	≥ 15	≥ 40	≥ 7 (≥ 69)	278~331	표면 경화용 일반용, 기어, 축류
–	≥ 95 (≥ 932)	≥ 14	≥ 40	≥ 6 (≥ 59)	262~352	
–	≥ 100 (≥ 980.7)	≥ 14	≥ 35	≥ 6 (≥ 59)	285~375	기어, 축류, 체인, 핀 강도를 중시하는 부품
≥ 70 (≥ 686)	≥ 85 (≥ 834)	≥ 18	≥ 55	≥ 11 (≥ 108)	241~302	작은 축류, 고주파 담금질 부품
≥ 75 (≥ 736)	≥ 90 (≥ 883)	≥ 16	≥ 50	≥ 9 (≥ 88)	255~321	볼트, 프로펠러, 축류
≥ 80 (≥ 785)	≥ 95 (≥ 932)	≥ 15	≥ 50	≥ 8 (≥ 78)	269~331	일반용, 축류, Arm류 기어, 볼트, 냉간단조품
≥ 85 (≥ 834)	≥ 100 (≥ 980.7)	≥ 12	≥ 45	≥ 6 (≥ 59)	285~352	크랭크축, 너클, 암

17. Special Steel 특수강

4) Heat Treatment & Mechanical Properties 열처리 및 기계적 성질

강종 Steel Group	KS 기호 (괄호안: 구기호)	JIS 기호	단조 (℃)	열처리(℃)			
				N	A	Q	T
Cr-Mo강 (SCM XXX)	SCM445	SCM445	1,050~850	830~880 (공냉)	약 850 (로냉)	830~880 (유냉)	530~630 (급냉)
	SCM822	SCM822	1,100~900	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
Ni-Cr강 (SNC XXX)	SNC236	SNC236	1,050~850	820~880 (공냉)	약 820 (로냉)	820~880 (유냉)	550~650 (급냉)
	SNC415	SNC415	1,100~900	820~900 (공냉)	약 850 (로냉)	1차 850~900 2차 740~790 (유냉)	150~200 (공냉)
	SNC631	SNC631	1,050~850	820~880 (공냉)	약 820 (로냉)	820~880 (유냉)	550~650 (급냉)
	SNC815	SNC815	1,100~900	830~880 (공냉)	약 830 (로냉)	1차 830~880 2차 750~800 (유냉)	150~200 (공냉)
	SNC836	SNC836	1,050~850	820~880 (공냉)	약 820 (로냉)	820~880 (유냉)	550~650 (급냉)
Ni-Cr-Mo강 (SNCM XXX)	SNCM220 (SNCM21)	SNCM220	1,100~850	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 800~850 (유냉)	150~200 (공냉)
	SNCM240 (SNCM6)	SNCM240	1,050~850	820~870 (공냉)	약 820 (로냉)	820~870 (유냉)	580~680 (공냉)
	SNCM415 (SNCM22)	SNCM415	1,100~850	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 780~830 (유냉)	150~200 (공냉)
	SNCM420 (SNCM213)	SNCM420	1,100~850	850~900 (공냉)	약 850 (로냉)	1차 850~900 2차 770~820 (유냉)	150~200 (공냉)
	SNCM431 (SNCM1)	SNCM431	1,050~850	820~870 (공냉)	약 820 (로냉)	820~870 (유냉)	570~670 (공냉)
	SNCM439 (SNCM8)	SNCM439	1,050~850	820~870 (공냉)	약 820 (로냉)	820~870 (유냉)	580~680 (공냉)
	SNCM447 (SNCM9)	SNCM447	1,050~850	820~870 (공냉)	약 820 (로냉)	820~870 (유냉)	580~680 (공냉)
	SNCM616 (SNCM26)	SNCM616	1,100~850	850~900 (공냉)	약 670 (로냉)	1차 850~900 2차 770~830 (유냉)	100~200 (공냉)

※ 단, 상기 항목은 참고치로만 활용 가능함.

기계적 성질						용도
항복점 kgf/mm² (N/mm²)	인장강도 kgf/mm² (N/mm²)	연신율 (%)	감면율 (%)	샤르피 충격치 kgfm/cm² (J/cm²)	브리넬 경도 (HB)	
≥ 90 (≥ 883)	≥ 105 (≥ 1,030)	≥ 12	≥ 40	≥ 4 (≥ 39)	302~363	대형 강력 축류
–	≥ 105 (≥ 1,030)	≥ 12	≥ 30	≥ 6 (≥ 59)	302~415	표면 경화용 피니언, 기어
≥ 60 (≥ 588)	≥ 75 (≥ 736)	≥ 22	≥ 50	≥ 12 (≥ 118)	217~277	샤프트, 볼트
–	≥ 80 (≥ 785)	≥ 17	≥ 45	≥ 9 (≥ 88)	235~341	표면 경화용 피스톤 핀
≥ 70 (≥ 686)	≥ 85 (≥ 834)	≥ 18	≥ 50	≥ 12 (≥ 118)	248~302	크랭크샤프트, 기어
–	≥ 100 (≥ 980.7)	≥ 12	≥ 45	≥ 8 (≥ 78)	285~388	표면 경화용 질량효과가 큰 샤프트
≥ 80 (≥ 785)	≥ 95 (≥ 932)	≥ 15	≥ 50	≥ 8 (≥ 78)	269~321	샤프트류, 기어
–	≥ 85 (≥ 834)	≥ 17	≥ 40	≥ 6 (≥ 59)	248~341	표면 경화 침탄강, 치차, 축류
≥ 80 (≥ 785)	≥ 90 (≥ 883)	≥ 17	≥ 50	≥ 7 (≥ 69)	255~311	축류
–	≥ 90 (≥ 883)	≥ 16	≥ 45	≥ 7 (≥ 69)	255~341	표면 경화용 치차, 축류
–	≥ 100 (≥ 980.7)	≥ 15	≥ 40	≥ 7 (≥ 69)	293~375	표면 경화용 롤러, 베어링 대형치차축류
≥ 70 (≥ 686)	≥ 85 (≥ 834)	≥ 20	≥ 55	≥ 10 (≥ 98.1)	248~302	크랭크샤프트, 터빈
≥ 90 (≥ 883)	≥ 100 (≥ 980.7)	≥ 16	≥ 45	≥ 7 (≥ 69)	293~352	치차류
≥ 95 (≥ 932)	≥ 105 (≥ 1,030)	≥ 14	≥ 40	≥ 6 (≥ 59)	302~363	치차류
–	≥ 120 (≥ 1,177)	≥ 14	≥ 40	≥ 8 (≥ 78)	341~415	표면 경화용 침탄 없는 초강인강으로도 유효

17. Special Steel 특수강

4) Heat Treatment & Mechanical Properties 열처리 및 기계적 성질

강종 Steel Group	KS 기호 (괄호안: 구기호)	JIS 기호	단조 (℃)	열처리(℃)			
				N	A	Q	T
Ni-Cr-Mo강 (SNCM XXX)	SNCM625 (SNCM2	SNCM625	1,050~850	820~870 (공냉)	약 670 (로냉)	820~870 (유냉)	570~670 (공냉)
	SNCM630 (SNCM5)	SNCM630	1,050~850	850~900 (공냉)	약 670 (로냉)	850~950 (유냉)	550~650 (공냉)
	SNCM815 (SNCM25)	SNCM815	1,100~850	830~900 (공냉)	약 650 (로냉)	1차 830~880 2차 750~800 (유냉)	150~200 (공냉)

※ 단, 상기 항목은 참고치로만 활용 가능함.

5) Dimensional Tolerance 치수 허용차

KS D 3501 치수단위(Unit) : mm

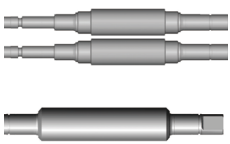
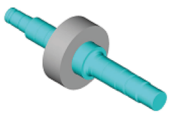
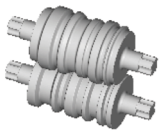
구분 Classification		허용차 Tolerance	비고 Remarks 편경차 Diametrical Variation
직경 Diameter	Under 16 16 to 28, excl. 28 & over	±0.4 ±0.5 ±1.5%	Not more than 70% of total tolerance range of diameter

Note: The following standards are also applicable JIS G 3192, ASTM A6/6M, DIN 1013

기계적 성질						용도
항복점 kgf/mm² (N/mm²)	인장강도 kgf/mm² (N/mm²)	연신율 (%)	감면율 (%)	샤르피 충격치 kgfm/cm² (J/cm²)	브리넬 경도 (HB)	
≥ 85 (≥ 834)	≥ 95 (≥ 932)	≥ 18	≥ 50	≥ 8 (≥ 78)	269~321	크랭크축, 치차, 축류
≥ 90 (≥ 882)	≥ 110 (≥ 1,079)	≥ 15	≥ 45	≥ 8 (≥ 78)	302~352	가장 담금질성이 큰 강종, 대형치차축류
–	≥ 110 (≥ 1,079)	≥ 12	≥ 40	≥ 7 (≥ 69)	311~375	표면 경화용 가장 강인한 표면 경화강

18. Roll 롤

1) Production Range 생산 가능 범위

Item		Centrifugal Casting Roll (Vertical & Horizontal)		Static Casting Roll
Typical Shape			 ※ Sleeve Type	
Product		(~ 5M) Plate, Hot Strip Mill	Section Mill	Bar, Sections, etc.
Materials		· Indefinite Chilled Cast Iron · Ultra Wear Resistant Indefinite Chilled Cast Iron · High Chromium Steel · High Chromium Iron · High Speed Steel · Semi-High Speed Steel	· High Alloy Cast Steel · Graphitic Cast Steel	· Low Carbon Cast Steel · High Alloy Cast Steel · Graphitic Cast Steel · Ductile Cast Iron
Size ※ (Max. / mm)	Body Diameter	1,400	1,500	1,500
	Body Length	5,500	As Required	5,000
	Total Length	11,000	As Required	11,000
Weight (Max. kg)		70,000	20,000	70,000

※ 사전 협의 필요 ; Prior Discussion is Necessary

2) Chemical Compositions (wt%) 화학성분

Materials	Symbol	C	Si	Mn	Ni	Cr	Mo
Low Carbon Cast Steel	SP	0.30 / 1.00	0.30 / 1.00	0.60 / 1.10	RES.	0.80 / 1.20	0.20 / 0.50
	SQ	0.40 / 1.00	0.30 / 1.00	0.60 / 1.10	0.70 / 1.30	0.80 / 1.20	0.20 / 0.50
High Alloy Cast Steel (Adamite)	AG	1.50 / 2.50	1.00 / 2.00	0.50 / 1.50	1.00 / 2.50	0.50 / 1.50	0.50 / 2.00
	AS	1.50 / 2.50	0.50 / 1.50	0.50 / 1.50	1.00 / 2.00	1.00 / 2.50	0.40 / 1.00
	AP	1.10 / 2.40	0.30 / 1.00	0.60 / 1.20	RES.	0.80 / 1.20	0.20 / 0.50
	AQ	1.10 / 2.40	0.30 / 1.00	0.60 / 1.20	0.80 / 1.70	0.80 / 1.20	0.20 / 0.50
	GS	1.20 / 2.20	0.80 / 1.70	0.50 / 1.20	0.50 / 1.80	0.50 / 1.50	0.20 / 0.50
High Chromium Steel	HSVN	1.00 / 2.40	0.50 / 1.50	0.70 / 1.30	Max. 1.00	10.00 / 14.00	2.00 / 5.00
High Chromium Iron	HCV	2.00 / 3.20	0.50 / 1.50	0.70 / 1.30	Max. 2.00	14.00 / 20.00	1.00 / 4.00
	HCMV (Skin Pass)	2.00 / 3.20	0.50 / 1.50	0.70 / 1.30	Max. 2.00	14.00 / 20.00	1.00 / 4.00
High Speed Steel	TVN	0.60 / 3.00	V + Ti + Nb = Max. 15.00			4.00 / 8.00	2.50 / 6.00
Indefinite Chilled Cast Iron	ISH	2.90 / 3.40	0.70 / 1.00	0.40 / 1.10	4.00 / 5.30	1.30 / 2.00	0.10 / 0.60
Ultra Wear Resistant Indefinite Chilled Cast Iron	UWIC	2.90 / 3.40	1.00 / 2.00	0.40 / 1.10	4.00 / 5.30	Mo+Cr+V+Ti+Nb=Max. 5.00	
Ductile Cast Iron	DA	3.00 / 3.50	1.60 / 2.30	0.30 / 1.20	2.00 / 3.00	Max. 0.30	0.30 / 1.00
	DD, DE DF, DG	3.00 / 3.50	1.50 / 2.20	0.30 / 1.20	1.20 / 3.80	0.20 / 1.00	0.30 / 1.00
	DDH, DEH DFH, DGH	3.00 / 3.50	1.50 / 2.20	0.30 / 1.20	1.20 / 3.80	0.20 / 1.00	0.30 / 1.00
	*SHD	3.00 / 3.50	1.50 / 2.20	0.30 / 1.20	1.20 / 3.80	0.20 / 1.00	0.30 / 1.00

*SHD: Specially Heat treated high strength Ductile cast iron
※ 사전 협의 필요 ; Prior Discussion is Necessary

18. Roll 롤

3) Mechanical Properties 기계적 특성

Materials	Symbol	Tensile Strength (kgf/mm²)	Bending Strength (kgf/mm²)
Low Carbon Cast Steel	SP	70 / 95	140 / 190
	SQ	70 / 100	140 / 190
High Carbon Cast Steel (Adamite)	AG	50 / 70	70 / 120
	AS	50 / 70	70 / 120
	AP	40 / 65	60 / 160
	AQ	40 / 65	60 / 180
	GS	50 / 75	100 / 160
High Chromium Steel	HSVN	75 / 90	100 / 120
High Chromium Iron	HCV	65 / 80	80 / 110
	HCMV (Skin Pass)	60 / 75	80 / 110
High Speed Steel	TVN	70 / 90	100 / 130
Indefinite Chilled Cast Iron	ISH	35 / 55	60 / 80
Ultra Wear Resistant Indefinite Chilled Cast Iron	UWIC	35 / 55	60 / 80
Ductile Cast Iron	DA	60 / 80	80 / 140
	DD, DE DF, DG	40 / 55	60 / 80
	DDH, DEH DFH, DGH	40 / 55	60 / 80
	SHD	70 / 90	90 / 160

※ 사전 협의 필요 ; Prior Discussion is Necessary

Elongation (%)	Impact Value (kgm/cm²)	Compressive Strength (kgf/mm²)	Symbol
2.00 / 10.00	2.00 / 5.00	-	SP
1.00 / 7.00	1.00 / 4.00	-	SQ
0.10 / 1.00	0.10 / 1.00	-	AG
0.10 / 1.00	0.10 / 1.00	-	AS
0.10 / 3.00	0.10 / 1.50	-	AP
0.10 / 2.00	1.10 / 1.50	-	AQ
0.30 / 1.50	0.30 / 1.50	-	GS
0.10 / 2.00	0.10 / 2.00	260 / 320	HSVN
0.10 / 1.00	0.10 / 1.00	200 / 280	HCV
0.10 / 1.00	0.10 / 1.00	200 / 280	HCMV (Skin Pass)
0.10 / 2.00	0.10 / 2.00	300 / 320	TVN
0.10 / 1.00	0.10 / 1.00	230 / 250	ISH
0.10 / 1.00	0.10 / 1.00	230 / 250	UWIC
0.50 / 1.00	0.10 / 0.60	-	DA
0.10 / 1.00	0.10 / 0.30	-	DD, DE DF, DG
0.10 / 1.00	0.10 / 0.30	-	DDH, DEH DFH, DGH
0.50 / 2.00	0.10 / 0.50	-	SHD

18. Roll 롤

4) Application 적용

Product	Type of Stand		Type of Roll	Low Cabon Cast Steel	High Alloy Cast steel (Adamite)		
				SP SQ	AS AG	AP AQ	GAD GS
Slabs	2 Hi		–	35/45	–	–	35/45
Blooms	2 Hi		–	35/45	–	–	40/50
Plate 후판	4 Hi		Roughing Work Roll	–	–	–	–
			Finishing Work Roll	–	–	–	–
Plate (5M) 광폭후판	4 Hi		Roughing Work Roll	–	–	–	–
			Finishing Work Roll	–	–	–	–
Hot Strip Mill 열연	Continuous		Scale Breakers	–	–	40/50	40/50
			Roughing Work Roll	–	–	45/55	–
			Front Stands Finishing Work Roll	–	–	–	–
			Rear Stands Finishing Work Roll	–	–	–	–
			Edger	–	–	45/55	–
	Reversing	2 Hi	Roughing	–	–	45/55	–
		4 Hi	Roughing	–	–	–	–
Skin Pass & Temper	2 Hi, 4 Hi		Work Roll	–	–	–	–
	4 Hi		Back-Up Roll	–	–	–	–

※ 사전 협의 필요 ; Prior Discussion is Necessary

Unit : Shore Hardness 경도 (Hs)

High Chromium		High Speed Steel	Indefinite Chilled Cast Iron	Ultra Wear Resistant Indefinite Chilled Cast Iron	Ductile		
HSVN	HCV HCMV	TVN	ISH	UWIC	DA	SHD	DD, DE DF, DG
–	–	–	–	–	–	40/55	–
–	–	–	–	–	–	40/55	–
70/80	–	–	65/80	70/80	–	–	–
–	70/80	–	65/80	75/85	–	–	–
–	–	–	70/80	70/80	–	–	–
–	–	–	70/80	75/85	–	–	–
–	–	–	–	–	–	–	–
70/80	–	75/85	–	–	–	–	–
	70/80	75/90	–	–	–	–	–
–	–	75/90	75/85	75/85	–	–	–
–	–	75/85	–	–	–	–	50/60
70/80	–	75/85	–	–	–	–	–
70/80	–	75/85	–	–	–	–	–
–	85/95	–	–	–	–	–	–
–	–	–	70/80	–	–	–	–

18. Roll 롤

4) Application 적용

Product	Type of Stand	Type of Roll	Low Cabon Cast Steel	High Alloy Cast steel (Adamite)		
			SP SQ	AS AG	AP AQ	GAD GS
Billets / Bar 평철	2Hi Continuous	Roughing	35/45	–	40/50	40/50
		Intermediate	–	–	–	–
		Finishing	–	–	–	–
Beams	Universal	Horizontal Roughing	–	50/75	–	–
		Horizontal Finishing	–	50/75	–	–
		Horizontal Edger	–	–	50/60	–
		Vertical	–	50/75	–	–
Heavy Sections 대형강	2 and 3 Hi (Tandem)	Roughing	35/45	–	45/55	–
		Intermediate	–	–	45/55	45/55
		Finishing	–	–	50/60	45/60
Medium Sections 중형강	2 and 3 Hi (Tandem)	Roughing	–	–	35/45	45/55
		Intermediate	–	–	45/55	45/55
		Finishing	–	–	45/55	45/60
Light Section 소형강	2 and 3 Hi	Roughing	–	–	45/55	45/55
		Intermediate	–	–	–	–
		Finishing	–	–	–	–
Rod 선재	2 and 3 Hi	Roughing	–	–	45/55	–
		Intermediate	–	–	–	–
		Finishing	–	–	–	–

※ 사전 협의 필요 ; Prior Discussion is Necessary

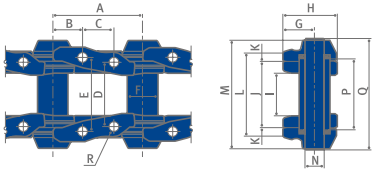
Unit : Shore Hardness 경도 (Hs)

High Chromium		High Speed Steel	Indefinite Chilled Cast Iron	Ultra Wear Resistant Indefinite Chilled Cast Iron	Ductile		
HSVN	HCV HCMV	TVN	ISH	UWIC	DA	SHD	DD, DE DF, DG
–	–	–	–	–	45/55	45/55	–
–	–	–	–	–	–	–	50/70
–	–	75/90	75/85	–	–	–	65/75
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	50/60
–	–	70/80	–	–	–	–	50/65
–	–	–	–	–	–	45/55	–
–	–	–	–	–	–	50/60	50/60
–	–	–	–	–	–	–	55/65
–	–	–	–	–	–	45/55	–
–	–	–	–	–	–	50/60	50/60
–	–	–	–	–	–	–	55/65
–	–	–	–	–	45/55	50/55	50/55
–	–	–	–	–	–	55/65	55/65
–	–	–	–	–	–	–	60/70
–	–	–	–	–	45/55	50/60	50/60
–	–	–	–	–	–	55/65	55/65
–	–	75/85	70/80	75/85	–	–	60/70

19. Heavy Machinery 중기

1) Track Link Assembly 링크조립품

홀간 거리 Pitch (A)	제품명 Model Name	표준단면치수 Dimensions					
		B	C	D	E	F(Ø)	G
90.0	KU90B	Welding Type	Welding Type	Welding Type	Welding Type	22.2	23.0
101.6	KU102A	Welding Type	Welding Type	Welding Type	Welding Type	32.2	30.0
	KU102D	Welding Type	Welding Type	Welding Type	Welding Type	32.2	30.0
135.0	KU135B	42.4	43.4	72.0	99.0	39.0	36.0
	KU135C	40.0	46.0	80.0	104.0	35.0	36.0
	KU135E	42.4	43.4	65.0	92.0	39.0	36.0
	KU135F	41.0	46.0	64.0	94.0	35.1	35.5
	KU135G	42.4	43.4	72.0	99.0	39.0	36.0
	KU135H	42.4	43.4	72.0	99.0	41.2	45.2
	KU135K	40.0	46.0	80.0	104.0	35.0	36.0
140.0	KU140A	44.0	52.0	86.0	86.0	37.0	38.0
154.0	KU154B	44.0	57.0	73.0	89.0	41.3	40.5
	KU154E	48.0	55.0	90.0	90.0	46.15	42.0
160.0	KU160A	52.0	56.0	99.0	99.0	45.3	46.0
171.45	KU171A	55.2	60.3	107.9	107.9	53.8	53.5
	KU171B	56.4	58.7	125.4	144.5	54.0	58.8
	KU171H	55.6	60.3	107.9	107.9	50.7	49.5
	KU171J	53.7	60.3	108.0	108.0	53.8	53.5
	KU171K	55.2	60.3	108.0	108.0	53.8	55.0
	KU171L	55.6	60.3	108.0	108.0	53.8	53.0
	KU171M	55.6	60.3	107.9	107.9	50.6	50.0
	KU171N	55.6	60.3	107.9	107.9	50.7	49.5
	KU171P	55.6	60.3	108.0	108.0	53.8	53.0
175.0	KU175E	54.0	57.0	86.4	102.4	46.0	47.0
	KU175F	54.0	57.0	86.4	102.4	50.2	49.0
	KU175H	54.0	57.0	86.4	102.4	48.3	47.0
175.41	KU175A	57.3	58.7	125.4	144.5	58.8	60.2
	KU190C	58.0	69.0	119.6	155.6	58.7	60.0
	KU190E	58.0	62.0	124.4	160.4	59.0	58.0
	KU190L	58.0	62.0	124.4	160.4	59.0	58.0
	KU190M	58.0	62.0	124.4	160.4	59.0	58.0
	KU190N	58.0	62.0	124.4	160.4	59.0	58.0
	KU190R	58.0	69.0	119.6	155.6	59.0	60.0
	KU190S	58.0	62.0	124.4	160.4	59.0	57.0
	KU190T	58.0	62.0	124.4	160.4	59.0	58.0
	KU190U	58.0	62.0	124.4	160.4	59.0	58.0
202.8	KU203D	62.0	72.0	129.0	179.0	64.0	64.0
203.2	KU203A	58.0	72.2	138.4	178.4	66.7	64.0
	KU203C	58.0	72.2	138.4	178.4	66.7	64.0
	KU203G	58.0	72.2	138.4	178.4	66.9	64.0
	KU203H	58.0	72.2	138.4	178.4	66.9	64.0
215.9	KU216B	64.3	76.2	146.0	184.0	71.0	70.0
	KU216D	69.0	76.0	140.0	190.0	68.0	68.4



치수단위(Unit) : mm

표준단면치수 Dimensions								제품명 Model Name
H	I	K	L	M	N(Ø)	Q	R(Ø)	
46.0	27.0	0.5	59.0	74.0	14.2	77.0	-	KU90B
60.0	32.0	0.9	73.8	87.8	19.2	92.5	-	KU102A
60.0	32.0	0.9	73.8	87.8	19.2	92.5	-	KU102D
70.0	48.0	0.4	102.0	134.4	22.3	140.0	13.2	KU135B
67.0	53.4	0.5	103.9	136.0	22.3	140.0	13.2	KU135C
70.0	40.0	0.9	95.0	127.4	23.0	133.0	12.3	KU135E
65.0	40.0	0.6	85.0	120.2	22.1	123.0	13.5	KU135F
70.0	48.0	0.4	102.0	134.4	22.3	140.0	13.2	KU135G
82.0	45.3	0.8	101.0	135.9	24.0	141.0	12.3	KU135H
67.0	52.0	0.6	105.5	140.0	22.3	144.0	13.5	KU135K
70.0	57.8	0.6	109.9	133.0	25.2	137.0	12.3	KU140A
74.0	45.0	1.2	101.2	125.0	24.1	131.0	14.2	KU154B
80.0	62.0	0.8	117.4	150.6	30.25	155.0	14.3	KU154E
83.0	66.0	1.0	130.5	152.0	30.0	157.0	14.8	KU160A
94.5	72.2	1.2	135.1	178.6	36.6	183.0	16.2	KU171A
101.6	90.5	0.6	168.3	203.3	36.7	206.4	16.1	KU171B
89.0	72.9	1.0	139.2	168.9	33.5	175.0	16.2	KU171H
94.5	71.2	1.2	137.2	178.6	36.6	183.0	16.3	KU171J
96.0	72.2	1.2	139.0	178.6	33.4	183.0	16.2	KU171K
96.0	74.6	1.1	138.5	178.6	33.4	184.0	16.2	KU171L
90.0	72.9	0.6	137.5	171.9	34.1	178.0	16.4	KU171M
89.0	72.9	1.0	139.2	168.9	33.6	175.0	16.2	KU171N
96.0	74.6	1.1	138.4	176.0	33.4	178.0	16.2	KU171P
86.0	52.4	1.2	117.8	162.0	30.0	168.0	16.3	KU175E
90.0	52.4	1.2	117.6	162.0	32.0	173.0	16.3	KU175F
88.0	52.4	1.0	122.4	162.0	32.0	168.0	16.3	KU175H
103.2	82.0	0.6	165.6	209.2	36.6	212.0	18.2	KU175A
106.0	82.6	1.5	166.8	201.6	36.6	207.0	20.8	KU190C
105.0	83.0	1.4	170.2	215.8	38.0	220.0	20.2	KU190E
105.0	82.8	1.2	163.6	207.0	38.0	212.0	20.3	KU190L
105.0	82.8	1.2	170.4	205.2	38.0	212.0	20.3	KU190M
105.0	84.8	1.2	169.8	207.0	38.0	212.0	20.3	KU190N
110.0	82.5	1.5	166.7	201.5	38.0	207.0	20.8	KU190R
104.0	82.8	0.6	163.6	207.0	38.0	212.0	20.3	KU190S
105.0	84.0	1.4	168.0	208.8	38.0	213.0	20.2	KU190T
105.0	84.0	1.4	170.0	211.79	38.0	216.0	20.2	KU190U
115.0	92.0	1.5	185.3	226.0	42.0	230.0	20.2	KU203D
116.4	100.8	0.8	189.3	237.4	44.5	245.0	20.2	KU203A
116.4	100.8	0.8	193.8	237.4	44.5	245.0	22.3	KU203C
116.0	102.0	1.4	191.1	233.6	44.7	242.0	20.2	KU203G
116.0	101.0	1.4	194.2	235.6	44.8	242.0	20.2	KU203H
129.0	108.5	1.5	200.6	245.1	47.0	252.0	24.3	KU216B
124.0	100.7	1.5	200.8	241.7	46.1	246.5	23.0	KU216D

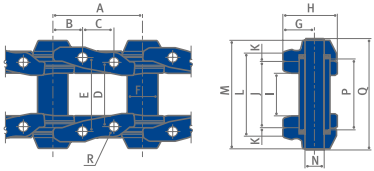
19. Heavy Machinery 중기

1) Track Link Assembly 링크조립품

홀간 거리 Pitch (A)	제품명 Model Name	표준단면치수 Dimensions					
		B	C	D	E	F(Ø)	G
216.0	KU216E	63.0	76.2	140.4	178.4	66.9	64.0
	KU216M	63.0	76.2	140.4	178.4	66.9	64.0
	KU216N	64.3	76.2	146.0	184.0	71.4	70.0
	KU216P	63.0	76.2	140.4	178.4	66.9	64.0
	KU216Q	63.0	76.2	140.4	178.4	66.5	64.0
	KU216R	64.3	76.2	146.1	184.2	73.4	70.0
	KU216S	64.3	76.2	146.1	184.2	71.4	70.0
	KU216T	66.4	76.0	140.0	190.0	71.4	70.0
228.6	KU228B	71.4	76.2	149.2	200.0	73.3	70.0
	KU228C	71.4	76.2	144.0	184.0	71.0	70.0
	KU228D	71.4	76.2	144.0	184.0	71.0	70.0
	KU228E	71.5	76.2	149.2	200.0	76.0	72.5
	KU228H	71.5	76.2	169.0	219.8	80.0	70.0
260.35	KU260A	88.0	76.2	184.2	235.0	85.4	79.0
	KU260B	88.0	76.2	184.2	235.0	88.0	86.0
	KU260C	88.0	76.2	184.2	235.0	85.4	81.0
	KU260D	87.3	76.2	184.2	235.0	88.5	82.5

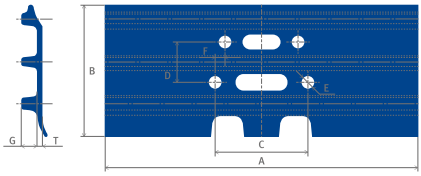
2) Track Shoe 트랙슈 (Triple Grouser)

두께 Thickness	폭 Width (A)	품목코드 Description Code	표준단면치수 Dimensions		
			B	C	D
6.0	350~500	13TA060	154.0	86.0	52.0
			154.0	90.0	46.0
			154.0	92.0	43.4
			154.0	94.0	46.0
			154.0	99.0	43.4
			154.0	104.0	46.0
	450~600	15TA060	165.0	73.0	55.0
			165.0	89.0	57.0
			165.0	90.0	55.0
8.0	450~600	15TA080	165.0	89.0	57.0
			165.0	90.0	55.0
	500~900	17TA080	198.9	102.4	57.0
			198.9	108.0	60.3
	500~800	17TB080	190.0	107.94	60.3



치수단위(Unit) : mm

표준단면치수 Dimensions								제품명 Model Name
H	I	K	L	M	N(Ø)	Q	R(Ø)	
116.0	102.0	1.4	191.6	233.6	44.7	242.0	22.3	KU216E
116.0	102.0	1.4	191.6	233.6	44.7	242.0	22.3	KU216M
129.0	103.1	1.2	203.2	246.3	47.2	252.0	24.3	KU216N
116.0	102.0	1.4	191.7	233.6	44.6	242.0	22.3	KU216P
120.0	102.0	1.4	191.7	233.6	44.6	242.0	22.3	KU216Q
129.0	102.4	1.5	205.7	250.6	48.1	258.0	24.3	KU216R
125.0	105.1	1.5	204.2	245.9	46.4	253.0	24.2	KU216S
129.0	102.35	1.5	205.7	250.55	48.2	256.0	24.3	KU216T
129.0	104.0	1.5	213.5	257.0	48.8	264.0	24.3	KU228B
129.0	106.0	1.4	203.4	243.2	47.0	252.0	24.3	KU228C
129.0	106.0	1.4	202.2	243.2	47.0	252.0	24.3	KU228D
135.0	108.6	1.5	216.2	262.8	49.2	270.0	24.3	KU228E
133.0	120.0	1.5	237.5	283.0	51.0	290.0	27.3	KU228H
152.0	133.4	1.5	266.2	311.4	57.2	319.0	27.3	KU260A
159.0	133.4	1.5	266.2	311.4	57.2	319.0	30.3	KU260B
154.0	131.2	1.5	269.7	312.2	57.2	318.0	27.3	KU260C
155.5	131.1	1.2	265.7	306.5	57.2	312.5	30.3	KU260D



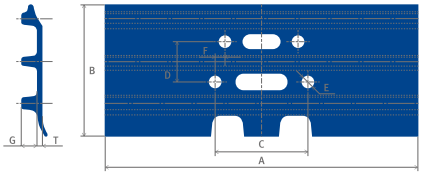
치수단위(Unit) : mm

표준단면치수 Dimensions		적용 링크 피치 Applied Link Pitch	단면적 Section Area (mm²)	품목코드 Description Code
F	G			
0.0	14.0	135.0	1,378.1	13TA060
12.0	14.0	135.0	1,378.1	
13.5	14.0	135.0	1,378.1	
15.0	14.0	135.0	1,378.1	
13.5	14.0	135.0	1,378.1	
12.0	14.0	135.0	1,378.1	
0.0	20.0	154.0	1,792.9	15TA060
8.0	20.0	154.0	1,792.9	
0.0	20.0	154.0	1,792.9	
8.0	20.0	154.0	2,121.4	15TA080
0.0	20.0	154.0	2,121.4	
8.0	25.0	171.45	2,898.7	17TA080
0.0	25.0	171.45	2,898.7	
0.0	20.0	171.45	2,353.8	17TB080

19. Heavy Machinery 중기

2) Track Shoe 트랙슈 (Triple Grouser)

두께 Thickness	폭 Width (A)	품목코드 Description Code	표준단면치수 Dimensions		
			B	C	D
8.5	500~900	19TB085	219.0	155.57	69.0
			219.0	160.4	62.0
	400~600	16TA085	185.0	99.0	56.0
9.0	500~900	17TA090	198.9	108.0	60.3
			198.9	144.51	58.7
9.5	500~700	17TC095	190.0	102.4	57.0
			190.0	108.0	60.3
10.0	500~900	19TA100	217.5	160.4	62.0
		19TB100	219.0	155.57	69.0
			219.0	160.4	62.0
10.5	500~900	17TA105	198.9	108.0	60.3
			198.9	144.51	58.7
11.0	500~900	20TA110	232.5	170.4	72.2
			232.5	178.4	72.2
	500~900	20TB110	232.5	178.4	72.2
			232.5	179.0	72.0
	500~900	21TB110	247.0	178.4	76.2
			247.0	184.15	76.2
			247.0	190.0	76.0
	500~900	21TC110	250.0	178.4	76.2
	500~900	21TC115	250.0	178.4	76.2
12.5	500~900	19TA125	217.5	160.4	62.0
13.0	500~900	21TA130	247.0	178.4	76.2
			247.0	184.0	76.2
			247.0	190.0	76.0
16.0	500~900	21TD160	247.0	178.4	76.2
			247.0	184.0	76.2
			247.0	184.15	76.2
			247.0	190.0	76.0
			247.0	200.0	76.2
	600~900	22TA160	255.0	200.0	76.2
			255.0	219.8	76.2
18.0	500~900	21TD180	247.0	184.0	76.2
	600~900	22TA180	255.0	200.0	76.2
			255.0	219.8	76.2



치수단위(Unit) : mm

표준단면치수 Dimensions		적용 링크 피치 Applied Link Pitch	단면적 Section Area (mm²)	품목코드 Description Code
F	G			
18.0	26.0	190.0	3,299.2	19TB085
18.0	26.0	190.0	3,299.2	
0.0	22.0	160.0	2,687.6	16TA085
0.0	25.0	171.45	3,102.2	17TA090
9.55	25.0	171.45	3,102.2	
8.0	20.0	175.0	2,676.8	17TC095
0.0	20.0	171.45	2,676.8	
18.0	26.0	190.0	3,683.2	19TA100
18.0	26.0	190.0	3,626.3	19TB100
18.0	26.0	190.0	3,626.3	
0.0	25.0	171.45	3,400.5	17TA105
9.55	25.0	171.45	3,400.5	
20.0	26.0	203.2	4,290.7	20TA110
20.0	26.0	203.2	4,290.7	
20.0	31.0	203.2	4,699.0	20TB110
25.0	31.0	203.2	4,699.0	
19.0	36.0	216.0	5,137.4	21TB110
19.05	36.0	216.0	5,137.4	
25.0	36.0	216.0	5,137.4	
19.0	30.0	216.0	4,542.8	21TC110
19.0	30.0	216.0	4,704.6	21TC115
18.0	26.0	190.0	4,219.7	19TA125
19.0	36.0	216.0	5,623.5	21TA130
19.0	36.0	215.9	5,623.5	
25.0	36.0	215.9	5,623.5	
19.0	36.0	216.0	6,148.5	21TD160
19.0	36.0	215.9	6,148.5	
19.05	36.0	215.9	6,148.5	
25.0	36.0	215.9	6,148.5	
25.4	36.0	228.6	6,148.5	
25.4	37.0	228.6	6,671.3	22TA160
25.4	37.0	228.6	6,671.3	
19.0	36.0	215.9	6,642.5	21TD180
25.4	37.0	228.6	7,181.3	22TA180
25.4	37.0	228.6	7,181.3	

19. Heavy Machinery 중기

3) Track Shoe 트랙슈 (Double Grouser)

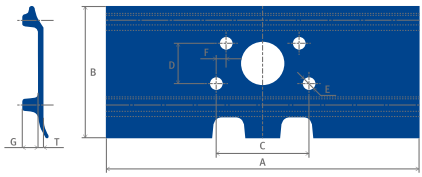
두께 Thickness	폭 Width (A)	품목코드 Description Code	표준단면치수 Dimensions		
			B	C	D
5.5	230~250	09TA055	90.0	-	-
6.0	250~300	10TA060	109.0	-	-
13.0	600~900	P190DG	217.0	160.4	62.0
15.0	600~900	P216DG	250.0	184.0	76.2
			250.0	178.4	76.2
			250.0	184.2	76.2
			250.0	219.8	76.2
17.0	600~900	P216DG-17t	250.0	184.0	76.2
			250.0	184.2	76.2
			250.0	200.0	76.2
19.0	650~900	P260DG	302.0	235.0	76.2
21.0	650~900	P260DG	302.0	234.95	76.2
23.5	650~900	P260DG	302.0	235.0	76.2

4) Track Shoe 트랙슈 (Single Grouser)

두께 Thickness	폭 Width (A)	품목코드 Description Code	표준단면치수 Dimensions		
			B	C	D
13.5	600~960	19SG135	222.0	155.6	69.0
			222.0	160.4	62.0
16.7	600~900	21SG167	247.7	184.2	76.2

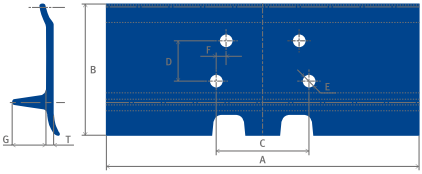
5) Chemical Composition (Ladle Analysis) 강재 성분표

명칭 Designation	종류의 기호 Symbol	화학성분 Chemical Composition (%)				
		C	Si	Mn	P. Max.	S. Max.
중기용 For Heavy Construction Equipment	S43BC	0.43~0.48	0.15~0.35	0.50~0.90	0.030	0.015
	15B23M	0.20~0.26	0.15~0.30	0.80~1.10	0.030	0.030
	15B26Cr-Z	0.23~0.27	0.15~0.35	0.90~1.20	0.030	0.030
	15B26Cr-D	0.20~0.26	0.15~0.30	1.10~1.40	0.030	0.015



치수단위(Unit) : mm

표준단면치수 Dimensions		적용 링크 피치 Applied Link Pitch	단면적 Section Area (mm²)	품목코드 Description Code
F	G			
–	16.5	90.0	851.3	09TA055
–	16.5	102.0	1,105.5	10TA060
18.0	35.0	190.0	4,192.4	P190DG
19.0	49.5	216.0	6,238.4	P216DG
19.0	49.5	216.0	6,238.4	
19.1	49.5	216.0	6,238.4	
25.4	49.5	228.0	6,238.4	
19.0	49.5	216.0	6,738.4	P216DG-17t
19.1	49.5	216.0	6,738.4	
25.4	49.5	228.0	6,738.4	
25.4	50.0	260.4	8,731.0	P260DG
25.4	50.0	260.35	9,335.0	P260DG
25.4	50.0	260.4	10,090.0	P260DG



치수단위(Unit) : mm

표준단면치수 Dimensions		적용 링크 피치 Applied Link Pitch	단면적 Section Area (mm²)	품목코드 Description Code
F	G			
18.0	57.5	190.0	3,855.9	19SG135
18.0	57.5	190.0	3,855.9	
19.1	71.4	216.0	6,106.2	21SG167

명칭 Designation	종류의 기호 Symbol	화학성분 Chemical Composition (%)				
		C	Si	Mn	P. Max.	S. Max.
중기용 For Heavy Construction Equipment	15B37M	0.32~0.36	0.15~0.35	1.00~1.40	0.030	0.025
	15B35CrM	0.32~0.36	0.20~0.30	1.20~1.50	0.025	0.025
	10B35M	0.32~0.36	0.15~0.30	1.00~1.30	0.030	0.025
	SCR440B	0.39~0.43	0.15~0.35	0.67~0.85	0.030	0.025

Quality Certification 품질인증 현황

Certificate Product of KS KS 표시 허가품목

KS 기호	허가번호 Certi. No.	허가일자 Approval Date	등급 및 품명 Grade & Name of Product	비고 Remarks
KS D 3504	43	2023. 03. 27 (최초인증 1964. 12. 18)	Steel Bar for Concrete Reinforcement 철근콘크리트용 봉강 이형봉강,일반용 SD500 : D10~D25	Incheon 인천공장
	871	2024. 05. 22 (최초인증 1973. 12. 24)	이형봉강,일반용 SD300, SD400 : D10~D32 이형봉강,용접용 SD400W, SD500W : D10~D25 이형봉강,일반용 SD600 : D10~D22	Pohang 포항공장
	95-06-001	1995. 08. 16	이형봉강,특수내진용 SD400S, SD500S, SD600S : D10~D22	Dangjin 당진제철소
KS D 3503	42	2023. 03. 27 (최초인증 1964. 12. 08)	Rolled Steel for General Structure 일반구조용 압연강재 Equal Angle & Unequal Angle: (구)SS400, SS490, SS540 /	Incheon 인천공장
	1459	2024. 05. 22 (최초인증 1977. 05.16)	(신)SS275, SS315, SS410 등변 ㄱ형강, 부등변 ㄱ형강 Inverted Angle: (구)SS400, SS490, SS540 /	Pohang 포항공장
	05-0388	2005. 08. 17	(신)SS275, SS315, SS410 부등변 부등후 ㄱ형강 Channels, I-Beams: (구)SS400 / (신)SS275 ㄷ형강, I형강 H-Beams: (구)SS400, SS490, SS540 / (신)SS275, SS315, SS410 H형강 Steel Strip: SS275 강대 Steel Plate: SS275, SS315, SS410 강판	Dangjin 당진제철소
KS E 4002	2451	2023. 03. 27 (최초인증 1982. 05. 25)	I Section Steel for Mine Support: Type 1:100, Type 1:130 광산지보용 I형강: 1종:100, 1종: 130	Incheon 인천공장
KS D 3515	5321	2023. 03. 27 (최초인증 1987. 06. 11)	Rolled Steel for Welded Structure 용접구조용 압연강재 H-Beams, Channel, Equal Angle: (구)SM400A, SM400B,	Incheon 인천공장
	10987	2024. 05. 22 (최초인증 1994. 05. 11)	SM490A, SM490B, SM520B, SM570B / (신)SM275A, SM275B, SM355A, SM355B, SM420B, SM460B H형강, ㄷ형강, 등변 ㄱ형강 : (구)SM400B, SM490A, SM490B,	Pohang 포항공장
	06-0372	2006. 09. 27	SM490YB,SM520B, SM520C / (신)SM275B, SM275C, SM355A, SM355B,SM420B, SM420C Steel Strip: SM275B, SM355A, SM355B, SM420B, SM420C 강대 Steel Plate: SM275A, SM275B, SM275C, SM355A, SM355B, SM355C, SM420A, SM420B, SM420C, SM460B 강판	Dangjin 당진제철소
KS D 3868	10-0605	2010. 10. 27	Rolled Steel for Bridge Structure 교량구조용압연강재 Steel Plate: HSB380, HSB380L, HSB380W, HSB460, HSB460L 강판	Dangjin 당진제철소
KS D 3866	09-0237	2023. 03. 27 (최초인증 2009. 07. 01)	Hot Rolled Steel Sections for Building Structure : (구)SHN400,SHN490, SHN520, SHN570 / (신)SHN275, SHN355, SHN420, SHN460	Incheon 인천공장
	09-0330	2024. 05. 22 (최초인증 2009. 08. 26)	건축구조용 열간압연 형강	Pohang 포항공장

KS 기호	허가번호 Certi. No.	허가일자 Approval Date	등급 및 품명 Grade & Name of Product	비고 Remarks
KS F 4604	05-0420 3318	2023. 03. 27 (최초인증 2005. 09. 14) 2024. 05. 22 (최초인증 1983. 12. 17)	Hot Rolled Steel Sheet Pile: SY300, SY400 열간압연 강널말뚝	Incheon 인천공장 Pohang 포항공장
KS R 9106	97-09-067	2024. 05. 22 (최초인증 1997. 12. 18)	Rail 보통 레일	Pohang 포항공장
KS F 4603	00-1257 18-0272	2023. 03. 27 (최초인증 2000. 03. 23) 2024. 05. 22 (최초인증 2018. 10. 31)	Steel H Pile : SHP275, SHP275W, SHP355W, SHP450W H형강 말뚝	Incheon 인천공장 Pohang 포항공장
KS D 3501	05-0387	2005. 08. 17	Hot Rolled Mild Steel Sheet 열간 압연 연강판 및 강대 Steel Strip: SPHC (1.6mm ~ 14.0mm)	Dangjin 당진제철소
KS D 3555	05-0389	2005. 08. 17	Hot Rolled Carbon Steel Strip for Pipe & Tube 강관용 열간 압연 탄소 강대 Steel Strip: HRS, HRS 200 (1.6mm ~ 13.0mm)	Dangjin 당진제철소
KS D 5994	13-5215	2013. 10. 16	High performance Rolled Steel for Building structure 건축구조용 고성능 압연강재 Steel Plate: HSA650	Dangjin 당진제철소
KS D 3512	07-0409 99-0535	2007. 10. 31 1999. 04. 03	Cold-reduced carbon steel sheets and strip 냉간 압연 강판 및 강대 Dangjn : SPCC, SPCD, SPCE Suncheon : SPCC, SPCD, SPCE	Dangjin 당진제철소 Suncheon 순천공장
KS D 3506	07-0408 99-0536	2007. 10. 31 1999. 04. 03	Hot-dip zinc-coated steel sheets and coils 용융 아연 도금 강판 및 강대 Dangjin : SGC245Y, SGC295Y, SGC335Y, SGC560Y, SGCC, SGCD1, SGCD2, SGCD3, SGH295Y, SGH335Y, SGH365Y, SGHC Suncheon : SGCC, SGC245Y, SGC295Y, SGCD1, SGCD2, SGCD3	Dangjin 당진제철소 Suncheon 순천공장
KS D 3528	99-0537	1999. 04. 03	Electrolytic zinc-coated steel sheet and strip 전기 아연 도금 강판 및 강대 SECC, SECD, SECE (아연부착량 / EB, E8, E16, E24, E32, E40)	Suncheon 순천공장
KS D 3752	16-0265 15-0503	2016. 03. 30 2024. 05. 22 (최초인증 2015. 08. 19)	Carbon steels for machine structural use 기계 구조용 탄소 강재 원형강 영문 : SM10C, SM20C, SM25C, SM35C, SM38C, SM43C, SM45C, SM48C, SM50C, SM53C, SM55C 원형강	Dangjin 당진제철소 Pohang 포항공장
KS D 3867	16-0266 15-1504	2016. 03. 30 2024. 05. 22 (최초인증 2015. 08. 19)	Low-alloyed steels for machine structural use 기계구조용 합금강 강재 원형강 영문 : SCM415, SCM420, SCM435, SCM440, SCM822, SCr420, SCr440 원형강	Dangjin 당진제철소 Pohang 포항공장

* 당진제철소는 SD700 인증에서 제외

Quality Certification 품질인증 현황

ISO Certification ISO 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
품질경영시스템 Quality Management System ISO 9001:2015 KS Q ISO 9001:2015	QMS-1261 (KSA) FM701483 (BSI)	2023. 10. 14 (최초인증 1994. 04. 29) 2023. 11. 20 (최초인증 1994. 04. 29)
품질경영시스템 Quality Management System ISO 9001:2015	ISO 9001-0067024-501 (LRQA)	2005. 11. 02
품질경영시스템 Quality Management System ISO 9001:2015	ISO 9001-0067024-502 (LRQA)	1999. 02. 12
환경경영시스템 Environmental Management System ISO 14001:2015 KS I ISO 14001:2015 ISO 14001:2015	EMS-0163 (KSA) EMS 701482 (BSI)	2023. 11. 20 (최초인증 2003. 10. 29) 2023. 11. 20 (최초인증 2003. 10. 29)

품명 Product	비고 Remarks	구분 Section
형강 Steel Shape 철근 Steel Bar 열연강판, 강대 Hot Rolled Plate & Coil 스테인리스 Stainless Steel Plate & Coil 원형강 Round Bar 레일 및 경레일 Rail & Light Rail 빌렛, 부룸, 빔블랑크 Steel Billets, Blooms & Beam-Blanks 선철 Pig Iron 단강/단조 Production of Ingot and Forging Products for Ships and Industrial Machinery 주조롤 Cast Rolls 중기 및 기계 Heavy Machinery & Machinery 슬라브 SLAB	Incheon 인천공장 Pohang 포항공장 Suncheon Forging Factory 순천단조공장	품질경영시스템 Quality Management System ISO 9001:2015 KS Q ISO 9001:2015
열간 압연 강판, 열간 압연 강대, 냉간 압연 강대, 용융아연 도금 강대, 도장 알루미늄 강대, 원형강, 각강, 선재, 철근콘크리트용 봉강, 빌렛, 블룸, 슬라브, 선철의 제조 Manufacturing of hot rolled steel plate (Plate), hot rolled steel strip (HR, PO), cold rolled steel strip (CR, F/H), hot-dip zinc-coated steel strip (GA, GI, HGA, HGI), hot-dip aluminium-coated steel strip (AL-SI), steel round bars, steel square bars, steel wire rods, steel bars for concrete reinforcement, billet, bloom, slab, pig iron	Dangjin 당진제철소	품질경영시스템 Quality Management System ISO 9001:2015
열간 압연 강대, 냉간 압연 강대, 용융아연 도금 강대, 전기아연 도금 강대의 제조 Manufacturing of hot rolled steel strip (PO), cold rolled steel strip (CR, F/H), hot-dip zinc-coated steel strip (GA, GI), electrolytic zinc-coated steel strip (EGI, EN)	Suncheon 순천공장	품질경영시스템 Quality Management System ISO 9001:2015
형강 Steel Shape 철근 Steel Bar 열연강판, 강대 Hot Rolled Plate & Coil 원형강 Round Bar 레일 및 경레일 Rail & Light rail 빌렛, 부룸, 빔블랑크 Steel Billets, Blooms & Beam-Blanks 선철 Pig Iron 단강/단조 Production of Ingot and Forging Products for Ships and Industrial Machinery 주조롤 Cast Roll 중기 및 기계 Heavy Machinery & Machinery	Incheon 인천공장 Pohang 포항공장 Dangjin 당진제철소 Suncheon Forging Factory 순천단조공장	환경경영시스템 Environmental Management System ISO 14001:2015 KS I ISO 14001:2015 ISO 14001:2015

Quality Certification 품질인증 현황

ISO Certification ISO 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
환경경영시스템 Environmental Management System ISO 14001:2015 KS I ISO 14001:2015 ISO 14001:2015	ISO 14001-0065640 (LRQA)	2023.03.01 (최초승인 1999. 02. 12)
안전보건경영시스템 Health & Safety Management System KS Q ISO 45001:2018	HSS-0020 (KSA) OHS 701484 (BSI)	2023.11.20 (최초인증 2005. 12. 21) 2023.11.20 (최초인증 2009. 03. 11)
	ISO 45001 - 0071606	2023.11.08 (최초승인 2020. 11. 08)
품질경영시스템 Quality Management System IATF 16949:2016	IATF 16949-0067024-001 (LRQA)	2005. 11. 02
품질경영시스템 Quality Management System IATF 16949:2016	IATF 16949-0067024-002 (LRQA)	2003. 11. 10

품명 Product	비고 Remarks	구분 Section
냉연강판, 용융아연도금강판, 전기아연도금강판, 산세강판, 전기아연-니켈도금강판의 제조 Manufacture of cold-rolled steel sheet and coil, hot-dip galvanized steel and coil, electrolytic galvanized steel sheet and coil, pickled and oiled steel sheet and coil, electrolytic zinc-nickel coated steel sheet and coil.	Suncheon 순천공장	환경경영시스템 Environmental Management System ISO 14001:2015 KS I ISO 14001:2015 ISO 14001:2015
형강 Steel Shape 철근 Steel Bar 열연강판, 강대 Hot Rolled Plate & Coil 스테인리스 Stainless Steel Plate & Coil 원형강 Round Bar 레일 및 경레일 rail & Light rail 빌렛, 부룸, 빔블랑크 Steel Billets, Blooms & Beam-Blanks 선철 Pig Iron 단강/단조 Production of Ingot and Forging Products for Ships and Industrial Machinery 주조롤 Cast Roll 중기 및 기계 Heavy Machinery & Machinery	Incheon 인천공장 Pohang 포항공장 Dangjin 당진제철소 Pangyo 판교	안전보건경영시스템 Health & Safety Management System KS Q ISO 45001:2018
냉연강판 및 코일 제조, 용융 아연 도금 강판 및 코일, 전해 아연 도금 강판 및 코일, 산세강판, 전해 아연-니켈 코팅 강판 및 코일 Manufacture of cold-rolled steel sheet and coil, hot-dip galvanized steel sheet and coil, electrolytic galvanized steel sheet and coil, pickled and oiled steel sheet and coil, electrolytic zinc-nickel coated steel sheet and coil	Suncheon 순천공장	
열간 압연 강대, 냉간 압연 강대, 용융아연 도금 강대, 도장 알루미늄 강대, 원형강, 각강, 선재의 제조 Manufacturing of hot rolled steel strip (HR, PO), cold rolled steel strip (CR, F/H), hot-dip zinc-coated steel strip (GA, GI, HGA, HGI), hot-dip aluminium-coated steel strip (AL-SI), steel round bars, steel square bars, steel wire rods	Dangjin 당진제철소	품질경영시스템 Quality Management System IATF 16949:2016
열간 압연 강대, 냉간 압연 강대, 용융아연 도금 강대, 전기아연 도금 강대의 제조 Manufacturing of hot rolled steel strip (PO), cold rolled steel strip (CR, F/H), hot-dip zinc-coated steel strip (GA, GI), electrolytic zinc-coated steel strip (EGI, EN)	Suncheon 순천공장	품질경영시스템 Quality Management System IATF 16949:2016

Quality Certification 품질인증 현황

Certificate Product of JIS JIS 표시 허가품목

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
JIS G 3101	KSKR07020	2022. 12. 26 (최초인증 2007. 12. 26)
	KSKR07031	2023.02.13 (최초인증 2008. 02. 13)
	KSKR07006	2022. 05. 30 (최초인증 2007. 05. 30)
JIS G 3106	KSKR07021	2022. 12. 26 (최초인증 2007. 12. 26)
	KSKR07032	2023. 02. 13 (최초인증 2008. 02. 13)
	KSKR07017	2022. 12. 12 (최초인증 2007. 12. 12)
JIS A 5528	KSKR08041	2023. 08. 04 (최초인증 2008. 07. 16)
	KSKR08042	2023. 07. 16 (최초인증 2008. 07. 16)
JIS A 5523	KSKR10008	2022. 06. 17 (최초인증 2010. 06. 17)
	KSKR10001	2022. 04. 22 (최초인증 2010. 04. 22)
JIS G 4051	KSKR07034	2023. 02. 13 (최초인증 2008. 02. 13)
	KSKR12019	2024. 08. 02 (최초인증 2012. 08. 02)
JIS G 3136	KSKR07023	2022. 12. 26 (최초인증 2007. 12. 26)
	KSKR11009	2023. 06. 30 (최초인증 2011. 06. 30)
	KSKR11023	2014. 10. 27 (최초인증 2011. 10. 27)
JIS G 3131	KSKR07007	2007. 05. 30

품명 Product	비고 Remarks	구분 Section
Rolled Steel for General Structure: Shape, Hot Rolled Steel 일반구조용 압연강재 Steel Strip: SS330, SS400, SS490, SS540 강대 Steel Plate: SS330, SS400, SS490, SS540 강판	Incheon 인천공장 Pohang 포항공장 Dangjin 당진제철소	JIS G 3101
Rolled Steel for Welded Structure: Shape, Hot Rolled Steel 용접구조용 압연강재 SM400A, SM400B, SM400C, SM490A, SM490B, SM490C, SM490YA, SM490YB, SM520B, SM520C, SM570	Incheon 인천공장 Pohang 포항공장 Dangjin 당진제철소	JIS G 3106
Hot Rolled Steel Sheet Pile 열간압연 강널말뚝 SY295, SY390	Incheon 인천공장 Pohang 포항공장	JIS A 5528
Weldable Hot Rolled Steel Sheet Pile 용접용 열간압연 강널말뚝 SYW29, SYW390	Incheon 인천공장 Pohang 포항공장	JIS A 5523
Carbon Steel for Machine Structural Use 기계구조용 탄소강 강재 열간압연 봉강(환강,각강) 및 선재, 열간압연 강판 및 강대 S10C, S12C, S15C, S17C, S20C, S22C, S25C, S28C, S30C, S33C, S35C, S38C, S40C, S43C, S45C, S48C, S50C, S53C, S55C, S58C, S09CK, S15CK, S20CK.	Pohang 포항공장 Dangjin 당진제철소	JIS G 4051
Rolled Steel for Building Structure 건축구조용 압연강재 SN400A, SN400B, SN400C, SN490B, SN490C	Incheon 인천공장 Pohang 포항공장 Dangjin 당진제철소	JIS G 3136
Hot Rolled Mild Steel Plate, Sheet & Strip: Hot Rolled Steel 열간압연연강판 및 강대 SPHC, SPHD, SPHE, SPHF	Dangjin 당진제철소	JIS G 3131

Quality Certification 품질인증 현황

Certificate Product of JIS JIS 표시 허가품목

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
JIS G 3114	KSKR10027	2011. 01. 06
JIS G 3113	KSKR12017	2012. 08. 02
JIS G 3132	KSKR12018	2012. 08. 02
JIS G 3302	KSKR07013 KSKR08104	2007. 11. 28 2008. 10. 01
JIS G 3141	KSKR07012 KSKR08103	2007. 11. 28 2008. 10. 01
JIS G 3313	KSKR17004	2017. 09. 01
JIS E 1101	KSKR10038	2023. 03. 30 (최초인증 2011. 03. 30)
JIS G 4052	KSKR14020	2023. 11. 06 (최초인증 2014. 11. 06)
JIS G 4053	KSKR14015	2023. 11. 06 (최초인증 2014. 11. 06)

품명 Product	비고 Remarks	구분 Section
Hot Rolled Atmospheric Corrosion Resisting Steel for Welded Structure 용접구조용 내후성 열간압연강재 SMA400AW, SMA400BW, SMA400CW, SMA400AP, SMA400BP, SMA400CP, SMA490AW, SMA490BW, SMA490CW, SMA490AP, SMA490BP, SMA490CP, SMA570W, SMA570P	Dangjin 당진제철소	JIS G 3114
Hot Rolled Steel Plate, Sheet and Strip for Automobile Structural Uses 자동차 구조용 열간압연 강판 및 강대 SAPH310, SAPH370, SAPH400, SAPH440	Dangjin 당진제철소	JIS G 3113
Hot Rolled Carbon Steel Strip for Pipes and Tubes 강관용 열간압연 탄소강 강대 SPHT1, SPHT2, SPHT3	Dangjin 당진제철소	JIS G 3132
Hot-dip zinc-coated steel sheet and strip 용융 아연 도금 강판 및 강대	Dangjin 당진제철소 Suncheon 순천공장	JIS G 3302
Cold-reduced carbon steel sheet and strip 냉간 압연 강판 및 강대	Dangjin 당진제철소 Suncheon 순천공장	JIS G 3141
Electrolytic zinc-coated steel sheet and strip 전기 아연 도금 강판 및 강대	Suncheon 순천공장	JIS G 3313
Flat Bottom Railway Rails and Special Rails for Switches and Crossings of Non-Treated Steel 보통 레일 및 분기기류용 특수 레일 30A, 37A, 40N, 50N, 60, 50S, 70S, 80S	Pohang 포항공장	JIS E 1101
Structural Steel with Hardenability (H-Beam) 소입성을 보증한 구조용강 강재(H강) SCr420H, SCr440H, SCM415H, SCM418H, SCM420H, SCM435H, SCM440H, SCM445H, SCM822H	Pohang 포항공장	JIS G 4052
Alloy Steel for Machine Structural Use 기계구조용 합금강 강재 SMn420, SMn433, SCr420, SCr440, SCM415, SCM418, SCM420, SCM421, SCM430, SCM432, SCM435, SCM440, SCM445, SCM822	Pohang 포항공장	JIS G 4053

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The Others 기타 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
유럽연합(EU) CPR (CE-Mark)	0035-CPR-060001.00 0035-CPR-060001-2	2023. 11. 22 (최초인증 2006. 01. 19) 2022. 11. 17 (최초인증 2008. 07. 28)
유럽연합(EU) CPR (CE-Mark)	2814/CPR/0038/CPR/MUM/0710056/1	2007. 07. 17
유럽연합(EU) PED	0343/PED M/0038/PED/MUM/1410004/1	2014. 06. 06

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
Hot Rolled Products of Structural Steels for metal structures or in composite metal and concrete structures	TÜV Rheinland	Incheon 인천공장 Pohang 포항공장	유럽연합(EU) CPR (CE-Mark)
Hot Rolled Plate & Coil 열연강판 및 코일 EN 10025-2:2004 - Grades S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2 & S355K2 - 100mm Max EN 10025-3:2004 - Grades S275N, S275NL, S355N & S355NL, S420N, S420NL, S460N, S460NL - 100mm Max EN 10025-4:2004 - Grades S275M, S275ML, S355M & S355ML- 133mm Max S420M, S420ML, S460M, S460ML - 100mm Max EN 10025-6:2004 - Grades S460Q, S460QL, S500Q, S500QL, S550Q, S550QL, S620Q, S620QL - 100mm Max Grades S690Q & S690QL - 80mm Max	LRQA	Dangjin 당진제철소	유럽연합(EU) CPR (CE-Mark)
Hot Rolled Plate 열연강판 EN 10028-2 - P265GH, P295GH, P355GH EN 10028-3 - P275NH, P275NL1, P275NL2, P355N, P355NH, P355NL1, P355NL2, P460NH, P460NL1, P460NL2 ASTM A36 / ASME SA36 ASTM A283 / ASME SA283 C ASTM A285 / ASME SA285 C ASTM A387 / ASME SA387 11,12,22 ASTM A515 / ASME SA515 60, 65, 70 ASTM A516 / ASME SA516 60, 65, 70 ASTM A537 / ASME SA537 Class 1, Class 2 ASTM A572 50 Type1, 50 Type2, 50 Type3 ASTM A573 70 ASTM A588 A,B,C	LRQA	Dangjin 당진제철소	유럽연합(EU) PED

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구분 Section	허가번호 Certi. No.	허가일자 Approval Date
KEPIC (원자력분야)	DN-594 DN-725 DN-675	2022. 03. 19 2022. 06. 14 2016. 05. 03
API (미국석유협회)	2H-0043 2W-0033	2019.05.06
철도용품 품질인증	제2023-용품-011호 제2023-용품-025호	2023. 04 .05 2023. 06. 28
유자격공급자	202400126	2022. 10. 18 2023. 08. 25
	UC205A / SG00850	2023. 05. 15
GR (우수재활용제품 인증)	제 16032002호 제 16032003호 제 16032005호 제 16032006호 제 16032008호	2024. 03. 12
SIRIM (MALAYSIA)	PH040401	2024. 05. 27 (최초인증 2011. 02. 11)
	PH040402	2024. 05. 27 (최초인증 2011. 02. 11)
	PC005400	2024. 05. 27 (최초인증 2020. 12. 25)
SIRIM (MALAYSIA)	PC005436	2024. 05. 27 (최초인증 2021. 01. 15)
	PC000711	2024. 05. 27 (최초인증 2013. 08. 02)

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
Material organization manufacturing plate(Including approval and control of services suppliers) 재료업체로서 판재의 제조(역무 공급자의 승인과 관리 포함)	Korea Electric Association 대한전기협회	Incheon 인천공장 Pohang 포항공장 Dangjin 당진제철소	KEPIC (원자력분야)
API 2H Grade 42 / Grade 50 Steel Plate API 2W Grade 50 / Grade 60 Steel Plate	American Petroleum Institute 미국석유협회	Dangjin 당진제철소	API (미국석유협회)
열처리레일 (60E1-HH340, 60E1-HH370) 보통레일 품질관리 체계	한국철도공사	Pohang 포항공장	철도용품 품질인증
C205B, Reinforcing Steel Bar, #11, #14 and #18 Bar sizes C205A, Reinforcing Steel Bar, Up to #10 Bar sizes	한국수력원자력㈜	Incheon 인천공장 Pohang 포항공장	유자격공급자
Reinforcing Steel Bar, ASTM Bars	KEPCO 한국전력공사	Pohang 포항공장	
철 스크랩을 활용한 철근 콘크리트용 봉강 철 스크랩을 활용한 일반 구조용 압연 형강 철 스크랩을 활용한 H형강 말뚝 철 스크랩을 활용한 건출 구조용 열간 압연 형강 철 스크랩을 활용한 용접 구조용 열간 압연 형강	산업통상자원부	Incheon 인천공장	GR (우수재활용제품 인증)
Hot Rolled Products of Non Alloy Structural Steel H-Beam, CHANNEL, EQUAL ANGLE	SIRIM QAS	Incheon 인천공장	SIRIM (MALAYSIA)
Hot Rolled Steel Section for General Structure EQUAL ANGLE, STEEL GRADE = SS540	SIRIM QAS	Incheon 인천공장	
Hot Rolled Steel Sheet Piling Of Non Alloy Steel	SIRIM QAS	Incheon 인천공장	
Hot Rolled Steel Sheet Piling Of Non Alloy Steel	SIRIM QAS	Pohang 포항공장	SIRIM (MALAYSIA)
Hot Rolled Sections of Non-alloy Structual Steel	SIRIM QAS	Pohang 포항공장	

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The Others 기타 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
SIRIM (MALAYSIA)	PC001112	2014. 04. 04
	PC001786	2015. 06. 17
	PC001608	2015. 03. 04
	PC000866	2013. 11. 15
	PC000865	2013. 11. 15
	PC000900	2013. 11. 29
	PC000901	2013. 11. 29

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
CARBON MANGANESE STEEL PLATE FOR OFFSHORE STRUCTURES API SPECIFICATION 2H 9TH EDITION : 2006 , Plate, GRADE 50, THICKNESS (mm) = 6 – 100; MAXIMUM WIDTH (mm) = 4700	SIRIM QAS	Dangjin 당진제철소	SIRIM (MALAYSIA)
THERMO-MECHANICAL CONTROL PROCESSING STEEL PLATES FOR OFFSHORE STRUCTURES API SPECIFICATION 2W : 2006 , Plate, GRADE 50, GRADE 60, THICKNESS (mm) = 15 – 100, MAXIMUM WIDTH (mm) = 4450	SIRIM QAS	Dangjin 당진제철소	
STEEL SHEET, PLATES AND STRIP FOR GAS CYLINDERS, JIS G 3116 : 2020, Coil, GRADE SG255, SG295, THICKNESS (mm) = 2.5 – 3.0; MAXIMUM WIDTH (mm) = 1125	SIRIM QAS	Dangjin 당진제철소	
HOT ROLLED CARBON STEEL STRIP AND SHEET OF COMMERCIAL AND DRAWING QUALITIES, MS 1705 : 2003, Coil, GRADE SPHC, THICKNESS (mm) = 1.5 – 12.0; MAX. WIDTH (mm) = 2000	SIRIM QAS	Dangjin 당진제철소	
HOT ROLLED CARBON STEEL STRIP FOR PIPE AND TUBE, MS 1768 : 2004, Coil, GRADE SPHT1, SPHT2, THICKNESS (mm) : 1.5 – 12.0; MAXIMUM WIDTH (mm) : 2000	SIRIM QAS	Dangjin 당진제철소	
THERMOMECHANICAL HOT ROLLED WELDABLE FINE GRAIN STRUCTURAL STEELS, MS EN 10025-4 : 2011, Plate, GRADE S355, S460, QUALITIES = M, ML, THICKNESS (mm) = 6 – 100; MAXIMUM WIDTH (mm) = 4800	SIRIM QAS	Dangjin 당진제철소	
NORMALIZED HOT ROLLED WELDABLE FINE GRAIN STRUCTURAL STEELS, MS EN 10025-3 : 2011, Plate, GRADE S355, QUALITIES = M, ML, THICKNESS (mm) = 6 – 100, MAXIMUM WIDTH (mm) = 4800	SIRIM QAS	Dangjin 당진제철소	

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The Others 기타 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
SIRIM (MALAYSIA)	PC000902	2013. 11. 29

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
HOT ROLLED PLATES AND STRIPS OF NON-ALLOY STRUCTURAL STEELS, MS EN 10025-2 : 2011, Coil, GRADE S275, DESIGNATION = JR; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 1.4 – 22 ; MAXIMUM WIDTH (mm) = 2000 Coil, GRADE S235, DESIGNATION = JR; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 1.4 – 12.0; MAXIMUM WIDTH (mm) = 2000 Coil, GRADE S355 DESIGNATION = J0; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 1.4 – 22 ; MAXIMUM WIDTH (mm) = 2000 Coil, GRADE S355 DESIGNATION = JR; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 1.4 – 25; MAXIMUM WIDTH (mm) = 2000 Plate, GRADE S275, DESIGNATION = J0, J2; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 6 – 100; MAXIMUM WIDTH (mm) = 4800 Plate, GRADE S355, DESIGNATION = J2, K2; DELIVERY CONDITION = + N (NORMALIZING), THICKNESS (mm) = 6 – 100; MAXIMUM WIDTH (mm) = 4800 Plate, GRADE S355, DESIGNATION = J0; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 6 – 100; MAXIMUM WIDTH (mm) = 4800 Plate, GRADE S275, S355 DESIGNATION = JR; DELIVERY CONDITION = + AR (AS ROLLED), THICKNESS (mm) = 6 – 100; MAXIMUM WIDTH (mm) = 4800	SIRIM QAS	Dangjin 당진제철소	SIRIM (MALAYSIA)

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구분 Section	허가번호 Certi. No.	허가일자 Approval Date
SIRIM (MALAYSIA)	PC000867	2013. 11. 15
BC 1 (싱가포르)	BC1-TRSG-210006 BC1-TRSG-210007	2023. 08. 10 (최초인증 2020. 08. 06)
BC 1 (싱가포르)	MUM/BC1/0710056/2	2009. 08. 03

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
SAE CARBON STEEL COIL, SAE J 403 : 2014, Coil, GRADE SAE 1006, SAE 1008, THICKNESS (mm) = 1.5 – 12.0; MAXIMUM WIDTH (mm) = 2000 Coil, GRADE SAE 1012, SAE 1016, THICKNESS (mm) = 1.5 – 6.0; MAXIMUM WIDTH (mm) = 2000	SIRIM QAS	Dangjin 당진제철소	SIRIM (MALAYSIA)
Hot rolled sections (beams, chennels, angles) and sheet piles Hot rolled sections (beams, angles) and sheet piles	TÜV Rheinland	Incheon 인천공장 Pohang 포항공장	BC 1 (싱가포르)
Hot Rolled Structural Steels – Plate & Coil EN 10025-2:2019 Grades S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S355K2 – 100mm Max EN 10025-3:2019 Grades S275N, S275NL, S355N, S355NL, S420N, S420NL, S460N, S460NL – 100mm Max EN 10025-4:2019 Grades S275M, S275ML, S355M, S355ML, S420M, S420ML, S460M, S460ML – 133mm Max EN 10025-6:2019 Grades S460Q, S460QL, S500Q, S500QL, S550Q, S550QL, S620Q, S620QL – 100mm Max Grades S690Q, S690QL – 80mm Max JIS G 3106:2020 Grade SM490B, SM490C, SM490YB, SM520B, SM520C – 100mm Max JIS G 3114:2022 Grade SMA490BW, SMA490BP – 100mm Max JIS G 3136:2022 Grade SN400B, SN400C, SN490B, SN490C – 100mm Max ASTM A36:2019 Grade 36 – 100mm Max ASTM A572:2021 Grades 42, 50 – 100mm Max ASTM A1011: 2018 SS Grades 30, 33 – 6.0mm Max	LRQA	Dangjin 당진제철소	BC 1 (싱가포르)

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The Others 기타 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
CNS (대만)	CI3D8063080018 CI3D8063080029	2022. 10. 20 2022. 12. 22
SNI 07-0601-2006 (인도네시아)	163/W/RE/B/V/2017	May 08, 2017
SNI 07-3567-2006 (인도네시아)	214/15.01.05/22/LSPro/VII/2023	2014. 01. 17
SNI 07-2053-2006 (인도네시아)	221/15.01.07/22/LSPro/VII/2023	2014. 01. 17
SNI 07-3567-2006 (인도네시아)	215/15.01.05/22/LSPro/VII/2023	2014. 08. 21
BIS IS 513 : Part 1 (인도)	CM/L-4100014252 CM/L-4100014353	2023. 05. 01 2023. 05. 01
BIS IS 513 : Part 2 (인도)	CM/L-4100045869 CM/L-4100045768	2023. 02. 01 2023. 02. 01
BIS IS 1079 (인도)	CM/L-4100014656	2023. 06. 01
BIS IS 5986 (인도)	CM/L-4100046972	2023. 03. 01
BIS IS 10748 (인도)	CM/L-4100010143	2023. 03. 01
BIS IS 11513 (인도)	CM/L-4100014555	2023. 06. 01
BIS IS 2041 (인도)	CM/L-4055449	2023. 11. 01
BIS IS 2062 (인도)	CM/L-4036748 CM/L - 4050439 CM/L-4100088382	2024. 06. 01 2023. 05. 01 2023. 05. 04
BIS IS 277 (인도)	CM/L-4100166780 CM/L-4100059173	2024. 01. 16 2024. 02. 01
BIS IS 7283 (인도)	CM/L - 4100078076	2022. 11. 01

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
Hot Rolled Steel H-Beam	BSMI (Bureau of Standards, Metrology and Inspection)	Incheon 인천공장 Pohang 포항공장	CNS (대만)
Hot Rolled Steel Sheets, Plates and Coils, SNI 07-0601-2006, Coil, GRADE : BjPS, BjPC, BjPD, BjPE, Thickness : 1.8 to 15 mm	BSN (Badan Standardisasi Nasional)	Dangjin 당진제철소	SNI 07-0601-2006 (인도네시아)
Cold Rolled Steel Sheet and Coil Zinc coated Steel Sheet and Coil Cold Rolled Steel Sheet and Coil	BSN (Badan Standardisasi Nasional)	Dangjin 당진제철소 Dangjin 당진제철소 Suncheon 순천공장	SNI 07-3567-2006 (인도네시아) SNI 07-2053-2006 (인도네시아) SNI 07-3567-2006 (인도네시아)
Cold Reduced Carbon Steel Strip for Cold Forming & Drawing Purpose	Bureau of Indian Standards	Dangjin 당진제철소 Suncheon 순천공장	BIS IS 513 : Part 1 (인도)
Cold Reduced Carbon Steel Strip-High Tensile & Multi Phase Steel	Bureau of Indian Standards	Dangjin 당진제철소 Suncheon 순천공장	BIS IS 513 : Part 2 (인도)
Hot Rolled Carbon Steel Sheets and Strips	Bureau of Indian Standards	Dangjin 당진제철소	BIS IS 1079 (인도)
Hot Rolled Steel Strip for Forming and Flanging Purpose	Bureau of Indian Standards	Dangjin 당진제철소	BIS IS 5986 (인도)
Hot Rolled Steel Strip for Welded Tubes and Pipe – Specification	Bureau of Indian Standards	Dangjin 당진제철소	BIS IS 10748 (인도)
Hot Rolled Carbon Steel Strip for Cold Rolling Purpose	Bureau of Indian Standards	Dangjin 당진제철소	BIS IS 11513 (인도)
Steel Plates for Pressure Vessels used at Moderate and Low Temperature	Bureau of Indian Standards	Dangjin 당진제철소	BIS IS 2041 (인도)
Hot Rolled Medium and High Tensile Stuctural Steel	Bureau of Indian Standards	Dangjin 당진제철소 Incheon 인천공장 Pohang 포항공장	BIS IS 2062 (인도)
Galvanized Steel Strips (Plain)	Bureau of Indian Standards	Dangjin 당진제철소 Suncheon 순천공장	BIS IS 277 (인도)
Hot Rolled Bars and rods for the production of Bright Bars and Mechined Parts for Engineering Applications	Bureau of Indian Standards	Pohang 포항공장	BIS IS 7283 (인도)

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구분 Section	허가번호 Certi. No.	허가일자 Approval Date
BIS IS 17404 (인도)	CM/L-4100099791	2023. 08. 05
TIS 1479-2558 (태국)	R1479-52	2022. 06. 30
TIS 1499-2563 (태국)	R1499-1	2022. 06. 30
TIS 1501-2564 (태국)	R1501-2564-00270	2023. 11. 29
TIS 1735-2563 (태국)	R1735-2563-00018	2022. 09. 29
TIS 1884-2564 (태국)	R1884-2564-00271	2023. 11. 29
TIS 1999-2560 (태국)	R1999-2560-00020	2022. 09. 29
TIS 2011-2563 (태국)	R2011-2563-00021	2022. 09. 29
TIS 2012-2558 (태국)	R2012-49 R2012-48	2022. 06. 30 2022. 06. 28
TIS 2060-2560 (태국)	R2060-2560-00022	2022. 09. 29
TIS 2140-2560 (태국)	R2140-2560-00023 R2140-2560-00015	2022. 09. 29 2022. 09. 27
TIS 2223-2558 (태국)	R2223-2558-00016	2022. 09. 27
TIS 3243-2564 (태국)	R3243-2564-00272	2023. 11. 29
TIS 50-2561 (태국)	R50-1 R50-2561-00014	2022. 06. 30 2022. 09. 27
TIS 528-2560 (태국)	R528-1	2022. 06. 30

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
Electrogalvanized Hot Rolled and Cold Reduced Carbon Steel Sheets and Strips	Bureau of Indian Standards	Suncheon 순천공장	BIS IS 17404 (인도)
Hot rolled flat steel for general structure	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 1479-2558 (태국)
Hot-rolled flat steel for welded structure	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 1499-2563 (태국)
Hot-rolled flat steel for machine structure use	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 1501-2564 (태국)
Hot-rolled steel strip for pipes and tubes	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 1735-2563 (태국)
Hot-rolled high strength steel coil strip plate and sheet with improved formability for automobile structural uses	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 1884-2564 (태국)
Hot-Rolled Flat Steel For Automobile Structural Uses	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 1999-2560 (태국)
Hot-rolled flat steel with improved atmospheric corrosion resistance	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 2011-2563 (태국)
Cold reduced flat steel of commercial and drawing qualities	Thai Industrial Standards Institute	Dangjin 당진제철소 Suncheon 순천공장	TIS 2012-2558 (태국)
Hot-Rolled Flat Steel For Gas Cylinders	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 2060-2560 (태국)
Cold Reduced Flat Steel For Auto Mobile Uses	Thai Industrial Standards Institute	Dangjin 당진제철소 Suncheon 순천공장	TIS 2140-2560 (태국)
Electrolytic zinc-coated cold reduced flat carbon steel of commercial and drawing qualities	Thai Industrial Standards Institute	Suncheon 순천공장	TIS 2223-2558 (태국)
Hot-dip Zinc-Coated hot rolled flat steel	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 3243-2564 (태국)
Hot-dip zinc-coated cold reduced flat steel strips, sheets and corrugated sheets	Thai Industrial Standards Institute	Dangjin 당진제철소 Suncheon 순천공장	TIS 50-2561 (태국)
Hot-rolled flat steel of commercial and drawing qualities	Thai Industrial Standards Institute	Dangjin 당진제철소	TIS 528-2560 (태국)

Quality Certification 품질인증 현황

The Others 기타 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
AD 2000 W0 (독일)	50238-W0-1	2014. 08. 28
UKCA (영국)	0038/CPR/SEO02214200 0038/CPR/SEO02214201	2022. 08. 04 2022. 08. 08
국제공인시험기관인정 KOLAS	KT505	2024. 04. 09
국제공인시험기관인정 KOLAS	KT508	2024. 01. 15
국제공인시험기관인정 KOLAS	No.483 No.533	2011. 06. 29 2012. 11. 06
국제공인교정기관인정 KOLAS	KC09-233호	2009. 06. 18
국제공인검사기관인정 KOLAS	KI127	2017. 01. 04
주물용 선철	2016-0040호	2016. 03. 17
UL (미국)	20190503-MH61349	2019. 05. 03

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
Carbon steel plate for presure purpose Hot-Rolled Steel Plate, EN 10025-2, S235JR, S235JR+N, S235J2+N, S275JR, S275JR+N, S275J2+N, S355K2+N, S355J2+N Thickness: Up to 100 mm, Width: Up to 4800mm Hot-Rolled Steel Plate, EN 10028-3, P275N, P275NH, P275NL1, P275NL2, P355N, P355NH, P355NL1, P355NL2 Thickness: Up to 100 mm, Width: Up to 4800mm	LRQA	Dangjin 당진제철소	AD 2000 W0 (독일)
Hot Rolled Products of Structural Steels	LRQA	Incheon 인천공장 Pohang 포항공장	UKCA (영국)
KS Q ISO/IEC 17025:2017 역학시험 Mechanical Test 화학시험 Chemical Test	한국인증기구 Korea Laboratory Accreditation Scheme	Incheon 인천공장	국제공인시험기관인정 KOLAS
KS Q ISO/IEC 17025:2017 역학시험 Mechanical Test 화학시험 Chemical Test	한국인증기구 Korea Laboratory Accreditation Scheme	Pohang 포항공장	국제공인시험기관인정 KOLAS
KS Q ISO/IEC 17025:2006 역학시험 Mechanical Test 화학시험 Chemical Test	한국인증기구 Korea Laboratory Accreditation Scheme	Dangjin 당진제철소	국제공인시험기관인정 KOLAS
KS Q ISO/IEC 17025:2006 선형치수/형상/기타관련량/질량/압력/ 직류/인피던스/교류 및 교류전력/ 기타 직류 및 저주파 측정/온도	한국인증기구 Korea Laboratory Accreditation Scheme	Dangjin 당진제철소	국제공인교정기관인정 KOLAS
KS Q ISO/IEC 17020:2014 금속재료검사 (형강,레일,특수강,철근)	한국인정기구 Korea Laboratory Accreditation Scheme	Pohang 포항공장	국제공인검사기관인정 KOLAS
Foundry Pig Iron 주물용선철 종류 : F계열, D계열	한국주물공업협동조합 Korea Foundry Cooperative Association	Dangjin 당진제철소	주물용 선철
COMPONENT - COATINGS, METALLIC Zinc-Coatings, G90-U Zinc-Coatings, G60-U	Underwriters Laboratory	Dangjin 당진제철소	UL (미국)

Quality Certification 품질인증 현황

The Others 기타 인증

구분 Section	허가번호 Certi. No.	허가일자 Approval Date
ACRS (호주)	161103	2016. 11. 30
	150501 150502	2024. 01. 01 (최초인증 2015. 05. 29)
	190704	2019. 07. 19
	T1015	2019. 07. 19

품명 Product	인증기관 Accredited Unit	비고 Remarks	구분 Section
Structural steel hot-rolled plates, floorplate and slabs, AS/NZS 3678:2016, GRADE 250,300,350 – Thickness 6 to 100 mm GRADE 250, 300, 350: L0 / L15 – Thickness 6 to 100 mm GRADE 250, 300, 350: Z15 / Z25 / Z35 – Thickness 16 to 80 mm	ACRS	Dangjin 당진제철소	ACRS (호주)
Hot-rolled Sections to AS/NZS 3679.1	Australasian Certification Authority for Reinforcing and Structural Steels Ltd	Incheon 인천공장 Pohang 포항공장	
Hot-rolled steel flat products, AS/NZS 1594:2002, GRADE HA250, HA300 Thickness 1.2 to 16 mm GRADE HA350 Thickness 2.3 to 16 mm	ACRS	Dangjin 당진제철소	
Hot-rolled steel flat products, AS/NZS 1594:2002, GRADE HA250, HA300, HA350 Thickness 16 to 25 mm	ACRS	Dangjin 당진제철소	

Quality Certification 품질인증 현황

Certified Product of Register Shipping (Steel Shapes)
선급협회 제조승인 품목(형강)

구분 Section	공장 Site	허가번호 Certi. No.	허가일자 Approval Date
한국 선급협회 (KR)	Incheon	INC00396-SP001	2022. 04. 15 (최초인증 1979. 05. 30)
		INC00396-QA001	2024. 05. 28 (최초인증 2009. 06. 03)
	Pohang	POH00337-SP003	2022. 08. 16 (최초인증 1988. 09. 16)
		POH00337-QA001	2022. 12. 05 (최초인증 2010. 12. 15)
영국 선급협회 (LR)	Incheon	LR22522211WA	2023. 01. 01
	Pohang	LR22250161WA LR22250054WA	2022. 06. 03 2022. 06. 03
노르웨이 선급협회 (DNV)	Incheon	AMMM00001EM	2023. 07. 05
	Pohang	AMMM00000JF	2023. 07. 05
미국 선급협회 (ABS)	Incheon	STML-T2254692	2022. 05. 03
	Pohang	STML-T1945712	2020. 01. 03

등급 Grade	품명 Product	구분 Section
A, B, AH32, AH36	Rolled Steel Section for Hull Structure	한국 선급협회 (KR)
-	Approval Certificate for Quality Assurance System	
Round bars, RSBC70, A, AH32, AH36, DH32, DH36, FH32, FH36, RL235A, RL235B, RL325A, RL325B, RL360	Semi-Finished Products Round Bars for Chains Rolled Steel Sections for Hull Structure Rolled Steel Sections for Low Temperature Service	
	Approval Certificate for Quality Assurance System	
A, B, AH27S, AH32, AH36	Steelmaking, Semi-Finished Products, Sections	영국 선급협회 (LR)
Sections : A, B, D, E, AH27S, AH32, AH36, DH32, DH36, AH40, DH27S, DH40, EH27S, EH32, EH36, EH40, FH27S, FH32, FH36, FH40, LTAH27S, LTAH32, LTDH27S, LTDH32, LTEH27S, LTEH32, LTFH27S, LTFH32, LTFH36, LTFH40 Bars : R3S, R4, U3, R3, U2	Steelmaking, Semi-Finished Products, Sections and Bars	
NV A, NV B, NV A32, NV A36, NV D32, NV D36	DNV-CP-0243 Rolled steel products - non stainless steel	노르웨이 선급협회 (DNV)
Sections: NV- A, B, D, E, A32, A36, D32, D36, F32, F40, NV4-4, NV2-4L, NV4-4L, NV4-4LS/, NV4-4M32C S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S275M, S275ML, S355M, S355ML Round Bars: NV-K1, K2, K3, R3, R3S, R4	DNV-CP-0242 Semi-finished steel products DNV-CP-0243 Rolled steel products - non stainless steel DNV-CP-0237 Manufacture of offshore mooring chain and accessories	
A, B, AH32, AH36	Shapes	미국 선급협회 (ABS)
H-Meams : A, AH32, AH36, DH32, DH36 Angles : A, B, D, E, AH32, AH36, DH32, DH36	Sections	

Quality Certification 품질인증 현황

Certified Product of Register Shipping (Steel Shapes)
선급협회 제조승인 품목(형강)

구분 Section	공장 Site	허가번호 Certi. No.	허가일자 Approval Date
일본 선급협회 (NK)	Incheon	TA23659E	2023. 07. 01
	Pohang	TA23113E	2023. 01. 25
프랑스 선급협회 (BV)	Incheon	SMS.W. II ./1175/G.0	2023. 01. 02
		08450/E0 BV	2020. 07. 15
		08449/E0 BV	2020. 07. 15
	Pohang	SMS.W. I ./1172/B.0	2023. 04. 20
		10279/E0 BV	2019. 12. 02
		10280/E0 BV	2019. 12. 02
러시아 선급협회 (RS)	Pohang	7.1.4.1	2012. 06. 20
이태리 선급협회 (RINA)	Pohang	FAB185819PU	2020 .01. 08
		ATS150621PU	2021. 12. 15

등급 Grade	품명 Product	구분 Section
Steel Shapes : KA, KB, KA32, KA36 Flat Bar : KA, KA32, KA36	Rolled Steels for Hull	일본 선급협회 (NK)
KA, KE, KA32, KD32, KA36, KD36, KF32, KF36, KF40, KL33, KL37	Rolled Steels for Hull Rolled Steels for Low Temperature Service	
공장승인	Hot Rolled Flat Bar and Sections	프랑스 선급협회 (BV)
Flat Bars : A Sections : A, B	Normal Strength Hull Steel Rolled Products	
Flat Bars : AH32, AH36 Sections : AH32, AH36, DH36, S355J0+M	Higher Strength Hull Steel Rolled Products	
공장승인	Profiles and sections	
A, B, D, E,	Normal Strength Hull Steel Rolled Products	
AH32, AH36, DH32, DH36, EH36, FH32, FH36, FH40	Higher Strength Hull Steel Rolled Products	
PC-A, E, AH32, AH36, DH32, DH36, EH32, EH36	Rolled sections of hull structural steel of normal and higher strength	러시아 선급협회 (RS)
A, AH32, AH36, DH32, DH36	Normal Strength and Higher Strength Hull Steel Rolled Products	이태리 선급협회 (RINA)
	Statement of Admission to Alternative Testing Scheme	

Quality Certification 품질인증 현황

Certified Product of Register Shipping (Low Temperature Steel Plate)
선급협회 제조승인 품목(Low Temperature Steel Plate)

구분 Section	허가일자 Approval Date	등급 Grade	두께 Thickness
한국 선급협회 (KR)	2012. 03. 23	RL235A, RL235B	40
	2024. 05. 30	RL325A, RL325B RL355	50
영국 선급협회 (LR)	2012. 07. 09	LTDH27S, LTDH32, LTDH36 LTFH27S	40
	2024. 04. 12	LTFH32, LTFH36	50
노르웨이-독일 선급협회 (DNVGL)	2012. 04. 16	2-3, 2-4, 2-4L EN 10028-5 P355/ML1/ML2	40
	2024. 05. 06	4-2, 4-3, 4-4, 4-4L 32-2, 32-3, 32-4, 32-4L 36-2, 36-3, 36-4, 36-4L	50
미국 선급협회 (ABS)	2012. 05. 11	V-O55, V-O60, VH32-O50, VH-O55, VH-O60, VH36-O55	40
	2024. 07. 09	VH32-O60, VH36-O60	50
일본 선급협회 (NK)	2012. 05. 11	KL27	40
	2024. 04. 22	KL33 KL37	50
프랑스 선급협회 (BV)	2012. 06. 05	410LE/410LF 460LE/460LF/490LT32S 510LFM	40
	2024. 07. 09	510LF	50
이태리 선급협회 (RINA)	2012. 05. 03	410LE/410LF 460LE/460LF	40
	2024. 06. 17	510LFS	50

Certified Product of Register Shipping (HR PLATE, PLATE)
선급협회 제조승인 품목(HR PLATE, PLATE)

구분 Section	HR PLATE		PLATE	
	허가일자	등급	허가일자	등급
한국 선급협회 (KR)	2008. 03. 14 (A,B열연) 2011. 06. 15 (C열연)	A, B, AH32, AH36	2010. 10. 25	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH47-H, DH47-H, EH47-H-BCA, AH36/40,DH36/40,EH36/40-BCA AH43/47/51, DH43/47/51, EH43/47/51, FH43/47/51
영국 선급협회 (LR)	2008. 11. 24 (A,B열연) 2012. 01. 27 (C열연)	A, B, AH32, AH36	2010. 11. 17	A, B, D, E, AH27S/32/36/40, DH27S/32/36/40, EH27S/32/36/40, FH27S/32/36/40, EH47, AH42/46/50, DH42/46/50, EH42/46/50, FH42/46/50
노르웨이-독일 선급협회 (DNVGL)	2008. 02. 05 (A,B열연) 2011. 06. 20 (C열연)	A, B A32, A36	2010. 11. 13	A, B, D, E, A32/36/40, D32/36/40, E32/36/40, F32/36/40, A47, D47, E47, A,D,E36/40 BCACOD A420/460/500, D420/460/500, E420/460/500, F420/460/500
미국 선급협회 (ABS)	2008. 03. 11 (A,B열연) 2011. 07. 21 (C열연)	A, B, AH32, AH36	2010. 12. 16	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH40/47BCA, DH40/47BCA, EH40/47BCA AQ43/47/51, DQ43/47/51, EQ43/47/51, FQ43/47/51
일본 선급협회 (NK)	2008. 01. 18 (A,B열연) 2011. 06. 20 (C열연)	KA, KB, KA32, KA36	2010. 11. 08	KA, KB, KD, KE, KA32/36/40, KD32/36/40, KE32/36/40, KF32/36/40 KE47, KA420/500, KD420/500, KE420/500, KF420/500
프랑스 선급협회 (BV)	2008. 09. 30 (A,B열연) 2011. 07. 28 (C열연)	A, B, AH32, AH36	2010. 11. 19	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH47, DH47, EH47, EH40CAS, EH47CAS, A420/460/500, D420/460/500, E420/460/500, F420/460/500
이태리 선급협회 (RINA)	2008. 04. 17 (A,B열연) 2011. 07. 18 (C열연)	A, B, AH32, AH36	2010. 12. 07	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH47, DH47, EH47, A420/460/500, D420/460/500, E420/460/500, F420/460/500
중국 선급협회 (CCS)	2011. 06. 20 (C열연)	A, B A32, A36	2010. 11. 10	A, B, D, E, A32/36, DH32/36/40, EH32/36/40, FH32/36/40, AH36/40/47-CA, DH36/40/47- CA, EH36/40/47-CA, A420/460/500, D420/460/500, E420/460/500, F420/460/500
러시아 선급협회 (RS)	2011. 05. 16 (C열연)	A, B, AH32, AH36	2010. 10. 26	A, B, D, E, AH32/36, DH32/36/40, EH32/36/40, FH32/36/40 AH47, DH47, EH47, A420/460/500, D420/460/500, E420/460/500, F420/460/500

Quality Certification 품질인증 현황

Certificated Product of Register Shipping (SLAB)

선급협회 제조승인 품목(슬라브)

구분 Section	250mm		300mm	
	허가일자	등급	허가일자	등급
한국 선급협회 (KR)	2010. 10. 25	RL235A, RL235B RL325A, RL325B, RL355	2011. 09. 20	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH47-H, DH47-H, EH47-H-BCA, AH36/40,DH36/40,EH36/40-BCA AH43/47/51, DH43/47/51, EH43/47/51, FH43/47/51
영국 선급협회 (LR)	2010. 11. 17	LTDH27S, LTDH32, LTDH36 LTFH27S, LTFH32, LTFH36	2012. 01. 27	A, B, D, E, AH27S/32/36/40, DH27S/32/36/40, EH27S/32/36/40, FH27S/32/36/40, EH47, AH42/46/50, DH42/46/50, EH42/46/50, FH42/46/50
노르웨이-독일 선급협회 (DNVGL)	2010. 11. 13	2-3, 2-4, 2-4L 4-3, 4-4, 4-4L	2011. 09. 09	A, B, D, E, A32/36/40, D32/36/40, E32/36/40, F32/36/40, A47, D47, E47, A,D,E36/40 BCACOD A420/460/500, D420/460/500, E420/460/500, F420/460/500
	2024. 05. 06	32-2, 32-3, 32-4, 32-4L 36-2, 36-3, 36-4, 36-4L		
미국 선급협회 (ABS)	2010. 12. 16	V-O55, V-O60, VH32-O55, VH32-O60 VH-O55, VH-O60, VH36-O55, VH36-O60	2011. 10. 20	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH40/47BCA, DH40/47BCA, EH40/47BCA AQ43/47/51, DQ43/47/51, EQ43/47/51, FQ43/47/51
일본 선급협회 (NK)	2010. 11. 08	KL27 KL33 KL37	2011. 09. 20	KA, KB, KD, KE, KA32/36/40, KD32/36/40, KE32/36/40, KF32/36/40 KE47, KA420/500, KD420/500, KE420/500, KF420/500

Certificated Product of Register Shipping (SLAB)
선급협회 제조승인 품목(슬라브)

구분 Section	250mm		300mm	
	허가일자	등급	허가일자	등급
프랑스 선급협회 (BV)	2010. 11. 19	410LE/410LF 460LE/460LF/460LFM32/490LT S32S 510LF, 510LFM	2011. 10. 26	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH47, DH47, EH47, EH40CAS, EH47CAS, A420/460/500, D420/460/500, E420/460/500, F420/460/500
이태리 선급협회 (RINA)	2010. 12. 07	410LE/410LF 460LE/460LF 510LFS	2011. 09. 26	A, B, D, E, AH32/36/40, DH32/36/40, EH32/36/40, FH32/36/40, AH47, DH47, EH47, A420/460/500, D420/460/500, E420/460/500, F420/460/500
중국 선급협회 (CCS)	2010. 11. 10		2012. 01. 02	A, B, D, E, A32/36, DH32/36/40, EH32/36/40, FH32/36/40, AH36/40/47-CA, DH36/40/47-CA, EH36/40/47-CA, A420/460/500, D420/460/500, E420/460/500, F420/460/500
러시아 선급협회 (RS)	2010. 10. 26		2011. 09. 21	A, B, D, E, AH32/36, DH32/36/40, EH32/36/40, FH32/36/40 AH47, DH47, EH47, A420/460/500, D420/460/500, E420/460/500, F420/460/500

Conversion Table 도량형 환산표

Linear Measure 길이

	Millimeter (mm)	Centimeter (cm)	Meter (m)	Inch (in)	Foot (ft)	Yard (yd)	Mile (mi)
Millimeter (mm)	1	0.1	0.001	0.03937	0.0032808	0.0010936	$0.0_{(6)}6214$
Centimeter (cm)	10	1	0.01	0.3937	0.032808	0.010936	$0.0_{(5)}6214$
Meter (m)	1,000	10	1	39.37	3.28083	1.0936	$0.0_{(3)}6214$
Inch (in)	25.40	2.540	0.0254	1	0.0833	0.02778	$0.0_{(4)}1578$
Foot (ft)	304.8	30.48	0.3048	12	1	0.333	$0.0_{(3)}1894$
Yard (yd)	914.4	91.44	0.9144	36	3	1	$0.0_{(3)}5682$
Mile (mi)	1,609,347.0	160,934.70	1,609.35	63,360	5,280	1,760	1

Square Measure 면적

	Square Millimeter (mm^2)	Square Centimeter (cm^2)	Square Meter (m^2)	Square Inch (in^2)	Square Foot (ft^2)	Square Yard (yd^2)
Square Millimeter (mm^2)	1	0.01	0.0(5)1	0.00155	$0.0_{(4)}10764$	$0.0_{(5)}119599$
Square Centimeter (cm^2)	100	1	0.0001	0.154999	0.0010764	$0.0_{(3)}119599$
Square Meter (m^2)	1,000,000	10,000	1	1,549.99	10.7639	1.19599
Square Inch (in^2)	654.2	6.452	$0.0_{(3)}6452$	1	0.006944	$0.0_{(3)}7616$
Square Foot (ft^2)	92,900	929	0.0929	144	1	0.11111
Square Yard (yd^2)	836,100	8,361	0.8361	1,296	9	1

Cube Measure 부피

	Cubic Centimeter (cm^3)	Cubic Meter (m^3)	Cubic Inch (in^3)	Cubic Foot (ft^3)	Cubic Yard (yd^3)
Cubic Centimeter (cm^3)	1	0.0(5)1	0.06102	$0.0_{(4)}3531$	$0.0_{(5)}1308$
Cubic Meter (m^3)	1,000,000	1	61,023	35.31	1.308
Cubic Inch (in^3)	16.39	$0.0_{(4)}1639$	1	$0.0_{(3)}5787$	$0.0_{(4)}2143$
Cubic Foot (ft^3)	28,317	0.028317	1,728	1	0.03704
Cubic Yard (yd^3)	764,500	0.7645	46,660	27	1

Note: The small subnumeral following a zero indicates that the zero is to be repeated that number of times.
thus $0.0_{(3)}4$=0.0004

Weight 중량

	Kilogram (kg)	Ounce (oz)	Pound (lb)	Net Ton (2,000lbs) (nt)	Gross Ton (2,240 lbs) (gt)	Metric Ton (1,000kg) (t)
Kilogram (kg)	1	35.274	2.20462	0.001102	$0.0_{(3)}9842$	0.001
Ounce (oz)	0.02835	1	0.0625	$0.0_{(4)}3125$	$0.0_{(4)}279$	$0.0_{(4)}2835$
Pound (lb)	0.45359	16	1	0.0005	$0.0_{(3)}4464$	$0.0_{(3)}4536$
Net Ton (nt)	907.187	32,000	2,000	1	0.89286	0.90719
Gross Ton (gt)	1,106.05	35,840	2,240	1.12	1	1.01605
Metric Ton (t)	1,000	35,274	2,204.62	1.10231	0.98421	1

Conversion Table 도량형 환산표

Weight per Linear Unit 중량

	Gram per Centimeter (g/cm)	Kilogram per Meter (kg/m)	Pound per Inch (lb/in)	Pound per Foot (lb/ft)	Pound per Yard (lb/yb)
Gram per Centimeter (g/cm)	1	0.1	0.50560	0.06720	0.20159
Kilogram per Meter (kg/m)	10	1	0.05600	0.67197	2.0159
Pound per Inch (lb/in)	178.5	17.8579	1	12	36
Pound per Foot (lb/ft)	148.816	1.48816	0.08333	1	3
Pound per Yard (lb/yb)	4.96054	0.49605	0.02778	0.3333	1

Weight per Unit Area 단위면적당 중량

	Kilogram per Square Centimeter (kg/cm^2)	Kilogram per Square Meter (kg/m^2)	Metric Tonper Square Meter (t/m^2)
Kilogram per Square Centimeter (kg/cm^2)	1	10,000	10
Kilogram per Square Meter (kg/m^2)	0.0001	1	0.001
Metric Tonper Square Meter (t/m^2)	0.01	1,000	1
Pound per Square Inch (lb/in^2)	0.0703067	703.06686	0.7031
Pound per Square Foot (lb/ft^2)	0.0004882	4.8824087	0.004882

Weight per Unit Volume 단위체적당 중량

	Kilogram per Cubic Centimeter (kg/cm³)	Kilogram per Cubic Meter (kg/m³)	Metric Ton per Cubic Meter (t/m³)
Kilogram per Cubic Centimeter (kg/cm³)	1	1,000,000	1,000
Kilogram per Cubic Meter (kg/m³)	0.000001	1	0.001
Metric Ton per Cubic Meter (t/m³)	0.001	1,000	1
Pound per Cubic Inch (lb/in³)	0.02768	27,680.4	27.6804
Pound per Cubic Foot (lb/ft³)	0.000016	16.0196	0.01602

Energy 에너지

	B.T.U	Calories	Ft-lb	kg-m	Hp-hr	Kw-hr	Joules
B.T.U (mean)	1	0.252	778	107.563	0.0(3)2939	0.0(3)2931	1,054.80
Calories (mean)	3.968	1	3,091.36	426.84	0.001559	0.001163	4,185
Ft-lb	0.001285	0.0(3)3239	1	0.1383	0.0(6)505	0.0(6)3767	1.355
Ft-ton	2.571	0.6478	2,000	276.511	0.00101	0.0(3)7535	2,712.59
kg-m	0.009297	0.002343	7.23301	1	0.053653	0.0(5)2725	9.806
Hp-hr	2,544.99	641.327	1,980.000	273.747	1	0.746	2,685,600
Kw-hr	3,411.57	859.702	2,654.200	366.959	1.34041	1	3,600,000
Joules (absolute)	0.0(3)9477	0.0(3)2389	0.73735	0.101937	0.0(6)3725	0.0(6)2778	1
Lb C	14.544	3.665	11,315.000	1,564.396	5.714	4.263	153,470,000
Lb H_2O	970.4	244.537	745.971	104.379	0.38127	0.284424	1,023,966

Note: The small subnumeral following a zero indicates that the zero is to be repeated that number of times.
thus $0.0_{(3)}4$=0.0004

Conversion Table 도량형 환산표

Pressure 압력

	Bar	Long ton per Sq. Foot (long ton w/ft²)	Barometric Pressure (atm)
Bar	1	0.93239	0.98692
Long ton per Sq. Foot (long ton w/ft²)	1.0725	1	1.0585
Barometric Pressure (atm)	1.0133	0.94074	1
Mercury Column in Meter (m Hg)	1.3332	1.2431	1.3158
Mercury Column in inch (in Hg)	0.03386	0.031574	0.033421
Water Column in Meter (m H_2O)	0.098064	0.091436	0.096781
Water Column in Foot (ft H_2O)	0.02987	0.02787	0.029499

Mercury Column in Meter (m Hg)	Mercury Column in inch (in Hg)	Water Column in Meter (m H_2O)	Water Column in Foot (ft H_2O)	
0.75006	29.53	10.197	33.456	Bar
0.80445	31.671	10.937	35.881	Long ton per Sq. Foot (long ton w/ft^2)
0.76	29.921	10.333	33.9	Barometric Pressure (atm)
1	39.37	13.595	44.605	Mercury Column in Meter (m Hg)
0.0254	1	0.34533	1.133	Mercury Column in inch (in Hg)
0.073554	2.8958	1	3.2808	Water Column in Meter (m H_2O)
0.022419	0.088265	0.3048	1	Water Column in Foot (ft H_2O)

Conversion Table 도량형 환산표

Equivalent Degrees, Centigrade and Fahrenheit 등가온도, 섭씨온도와 화씨온도

C	F	C	F	C	F	C	F
−129	−200	−17.8	0	−8.33	17	1.11	34
−101	−150	−17.2	1	−7.78	18	1.67	35
−73.3	−100	−16.7	2	−7.22	19	2.22	36
−67.8	−90	−16.1	3	−6.67	20	2.78	37
−62.2	−80	−15.6	4	−6.11	21	3.33	38
−56.7	−70	−15.0	5	−5.56	22	3.39	39
−51.2	−60	−14.4	6	−5.00	23	4.44	40
−45.6	−50	−13.9	7	−4.44	24	5.00	41
−40.0	−40	−13.3	8	−3.89	25	5.56	42
−34.5	−30	−12.8	9	−3.83	26	6.11	43
−28.9	−20	−12.2	10	−2.78	27	6.67	44
−26.1	−15	−11.7	11	−2.22	28	7.22	45
−23.4	−10	−11.1	12	−1.67	29	7.78	46
−20.6	−5	−10.6	13	−1.11	30	8.33	47
		−10.0	14	−0.56	31	8.89	48
		−9.44	15	0	32	9.44	49
		−8.39	16	0.56	33	10.0	50

Note : 변환공식 Conversion formula : F=1.8C+32

C	F	C	F	C	F	C	F
10.6	51	20.0	68	29.4	85	43	110
11.1	52	20.6	69	30.0	86	49	120
11.7	53	21.1	70	30.6	87	54	130
12.2	54	21.7	71	31.1	88	60	140
12.8	55	22.2	72	31.7	89	66	150
13.3	56	22.8	73	32.2	90	71	160
13.9	57	23.3	74	32.8	91	77	170
14.4	58	23.9	75	33.3	92	82	180
15.0	59	24.4	76	33.9	93	88	190
15.6	60	25.0	77	34.4	94	93	200
16.1	61	25.6	78	35.0	95	99	210
16.7	62	26.1	79	35.6	96	100	212
17.2	63	26.7	80	36.1	97		
17.8	64	27.2	81	36.7	98		
18.3	65	27.8	82	37.2	99		
18.9	66	28.3	83	37.8	100		
19.4	67	28.9	84	38	101		

Caution 주의사항

형강 및 철근

| 사용 시 주의사항 |

- 설계도에 의거한 강재의 종류를 사용하시기 바랍니다. 설계도에 맞지 않는 제품 사용 시 구조물 안전에 문제가 발생합니다.
- 형강은 표준시방에 따라 가공, 용접 등의 작업을 하시기 바랍니다. 적합치 못한 작업으로 제품 손상, 용접부 균열 등의 문제가 발생할 수 있습니다.
- 강널말뚝 계수부(interlock) 형상 및 치수는 제조사 별로 차이가 있으므로 타사 제품과 혼용하여 사용하지 마십시오. 타사 제품과 혼용 사용 시 당사 관련 팀에 문의하시기 바랍니다.
- 철근은 한국공업규격(KS)에 정해진 방법대로 굽힘가공 작업을 하십시오. 무리하게 작업하거나 저온에서 굽힘가공 시 철근이 부러질 수 있으며, 그로 인해 다칠 수 있습니다.

| 취급 시 주의사항 |

- 제품 취급 시 안전 장구를 착용하십시오. 충격 및 베임 등 인체에 상해를 입을 수 있습니다.
- 제품 운송 시 제품을 움직이지 않게 결박하고 운송법규를 준수하십시오. 제품 낙하로 인하여 인적, 물적 피해가 발생할 수 있습니다.
- 제품 적치 시 제품 사이에 고임목을 놓고 적치하시기 바랍니다. 제품 사이에 손이나 발이 끼어 다칠 수 있습니다.
- 제품 상·하차 시는 규정된 장비를 사용하십시오. 부적합한 장비 사용으로 인해 안전 사고가 발생할 수 있습니다.
- 제품 결속선에 지게발 또는 와이어를 넣어 들어 올리지 마십시오. 결속선이 풀어져 제품 추락으로 인해 인명 피해를 초래할 수 있습니다.
- 크레인 작업 시 양줄로 균형을 맞추어 작업 바랍니다. 제품을 외줄로 걸어 작업 시 균형이 맞지 않아 낙하로 인해 피해를 초래할 수 있습니다.
- 강재 취급 시 작업 전 작업조건을 확인하시기 바랍니다. 낙뢰 및 고압선 접촉에 의한 위험이 발생할 수 있습니다.
- 철근의 소운반은 2인 이상이 하십시오. 1인이 운반하면 철근의 출렁거림으로 균형을 잃어 다칠 수 있습니다.

단조/단강

| 취급 시 주의사항 |

- 각 제품별 중량에 맞는 기중기를 사용하십시오. 부적합한 장비 사용 시 낙하로 인해 안전사고가 발생할 수 있습니다.
- 각 제품별 러그(LUG)용 샤클(SHACKLE) 걸고리를 사용하십시오. 부적합한 걸고리 사용 시 이탈로 인해 안전사고가 발생할 수 있습니다.
- 안전장구를 착용하고 작업하십시오. 안전장구를 미착용하고 제품에 올라가는 경우 표면이 미끄러워 추락 등의 안전사고가 발생할 수 있습니다.
- 제품 결박 시 접촉부 보호대를 사용하시기 바랍니다. 상차 및 선적 시 결박체인이 직접 제품에 접촉되면 제품 손상 및 도색 벗겨짐이 발생될 수 있습니다.
- 안전을 확인 후 주의하여 적치하십시오. 기중기로 제품을 운반 및 적치할 경우 초기 및 최종 작동 시 손이나 발이 끼어 다칠 수 있습니다.
- 용접은 시방서에 따라 용접하십시오. 규정에 벗어난 용접작업은 제품에 손상을 초래할 수 있습니다.
- 각 제품별 중량에 적합한 차량을 선정하여 운송하십시오. 제품중량에 맞지 않는 차량으로 운송 시 낙하 및 이탈로 인적, 물적 피해가 발생할 수 있습니다.
- 제품 운송 시 제품을 움직이지 않게 결박하고 운송법규를 준수하십시오. 제품 낙하로 인하여 인적, 물적 피해가 발생할 수 있습니다.

Steel Shapes & Deformed Bar

| Suggested Use |

- Follow all directions that are specified Problems may occur if products are not used according to their intended specifications.
- Work according to standard specifications. Careless and improper usage may cause cracking and damage.
- Hyundai Steel's sheet Pile Interlock is made up of different sizes and shapes. Other brands should not be used as a replacement as they differ. Please contact us immediately if you are considering using another manufacturer's Interlock steel board pile.
- Steel reinforcing Bar should follow KS guidelines when being shaped. Be careful of the potential hazards that can be caused by excessive operations or shaping.

| Instructions on Handling |

- Be sure to wear safety gear when handling products. Beware of being shocked or cut.
- Bind products tightly during transportation and be sure to follow traffic laws and regulations. I njury or loss can occur from falling products.
- Ensure that support is used when piling up products. Injuries may result from jamming your hands or feet in the products.
- Use designated equipment when loading and unloading products. Using improper equipment can cause unexpected accidents.
- Do not lift products that are on the binding line without using a lever or a wire. Dropping of products that are on the untied binding line may result in casualties.
- When performing crane work, make sure to on both ends. Using a single rope to balance can cause severe damage as products may drop.
- Check all work conditions before handling any steel products. Be careful of hazards caused by lightning or high voltage shock.
- When transporting steal products, ensure that more than two people are on the job If one person is on the job, steel products may sway and lose their balance causing injuries.

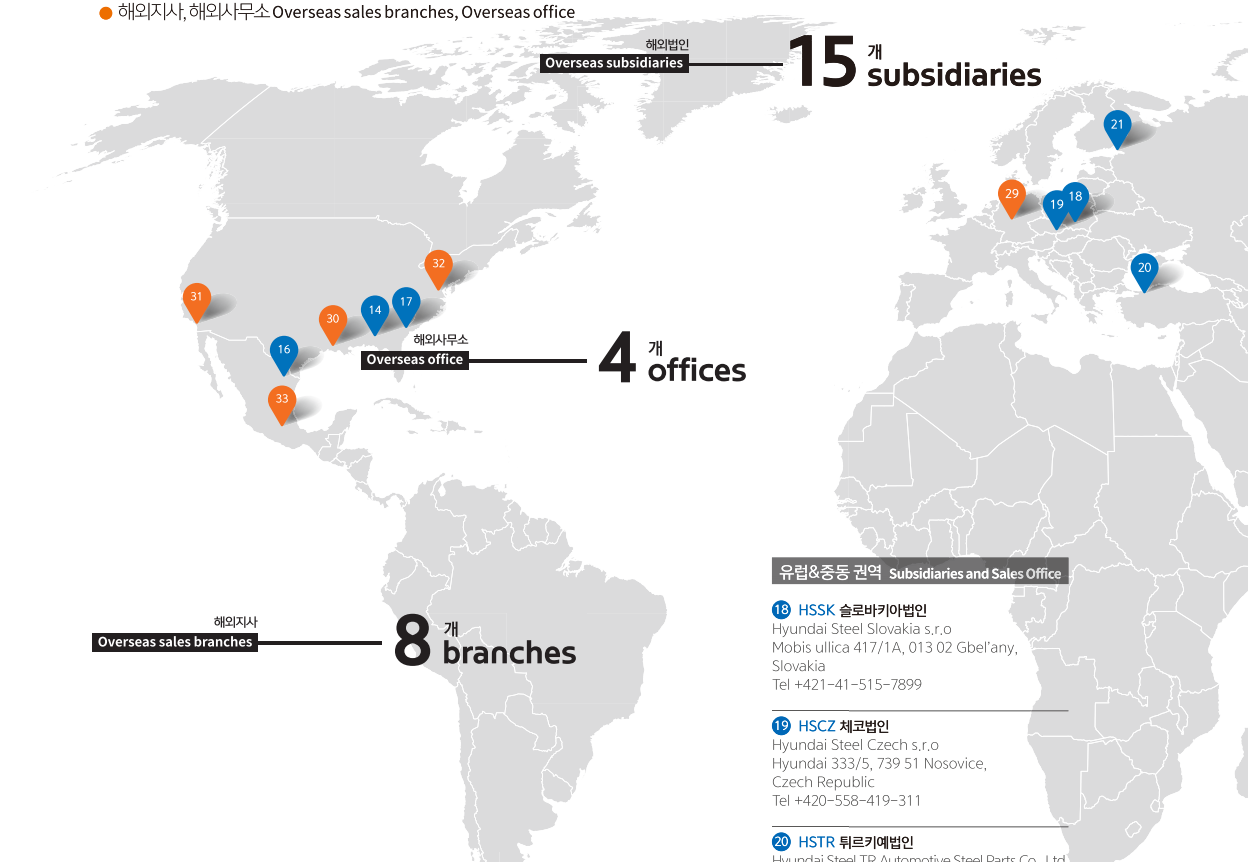
Forging / Ingot

| Instructions on Handling |

- Use the correct crane for each product as all have different weights. Using improper equipment can cause unexpected accidents.
- Use Lug and Shackle for each product. Using improper shackles may cause unexpected accidents.
- Use safety equipment during all operations. Use safety equipment during Ingot operations as unexpected accidents may occur including falling due to slippage.
- Using proper safety equipment when binding the products together. When loading and unloading products, be careful of the binding chain coming into contact with the product as this may cause damage and paint to peel off.
- Check to make sure that products are piled safely. When piling or transporting products using a crane, be careful as injuries may result from the jamming of body parts.
- Welding work should be done according to all standard specifications. Not following regulations may cause problems such as the damaging or cracking of products.
- Select the correct vehicle according to the weight of the products when transporting goods. Not using the correct vehicle when transporting goods may cause product damage or human injuries and fatalities.
- Bind products tightly during transportation and be sure to follow traffic laws and regulations. Injury or loss can occur from falling products.

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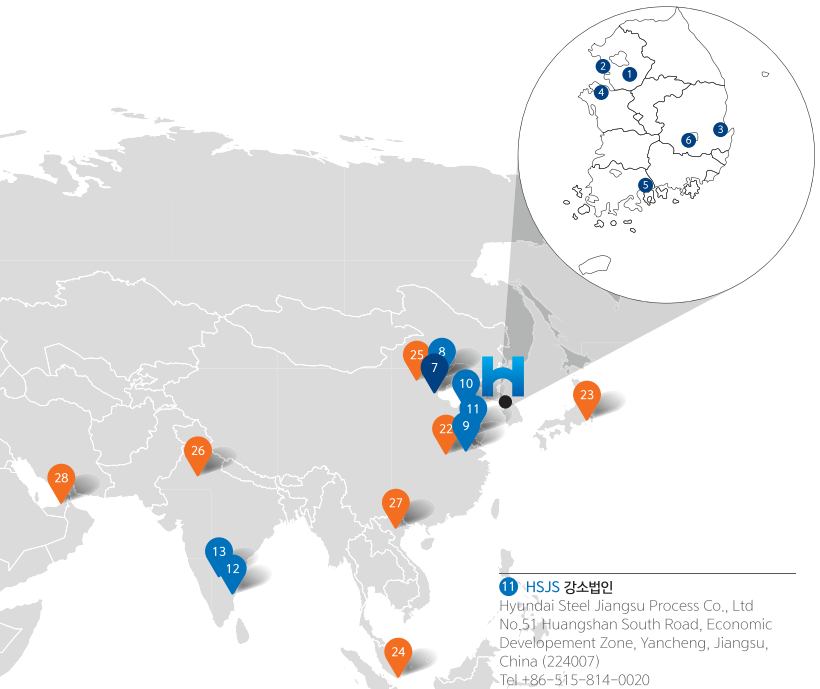
20 HSTR 튀르키예법인
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