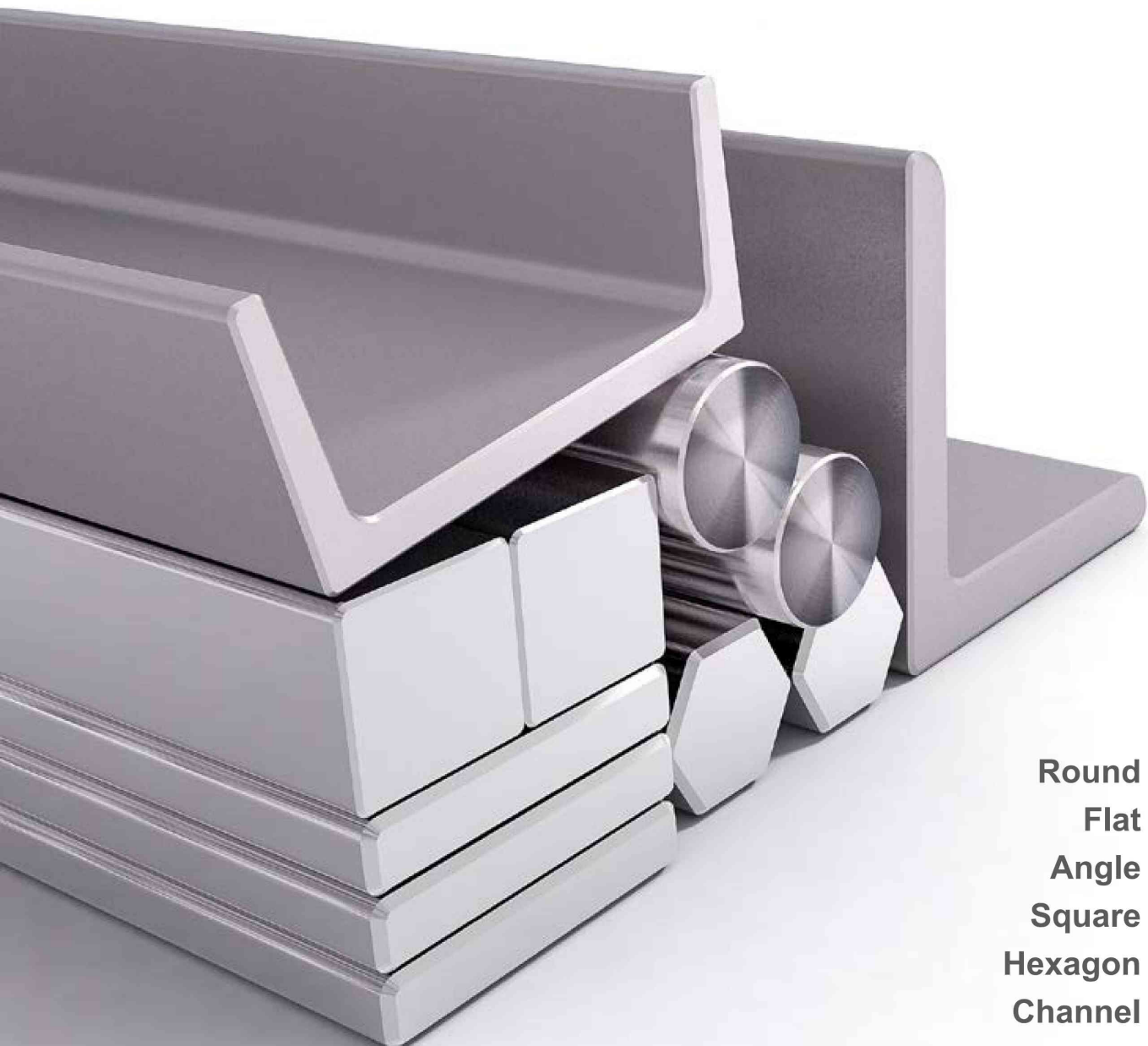


BAR & ROD

Stainless Steel Catalogue

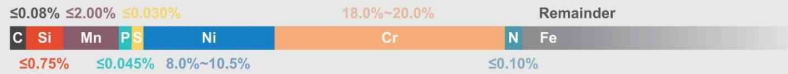


Round Bar
Flat Bar
Angle Bar
Square Bar
Hexagon Bar
Channel Bar

Main Grades of Stainless Steel Bar & Rod

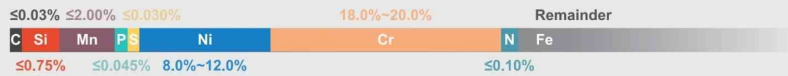
304

AISI304, SUS304, S30400, 1.4301



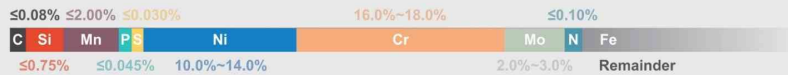
304L

AISI304L, SUS304L, S30403, 1.4306



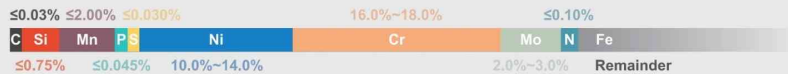
316

AISI316, SUS316, S31600, 1.4401



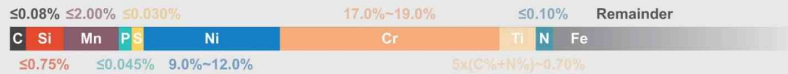
316L

AISI316L, SUS316L, S31603, 1.4404



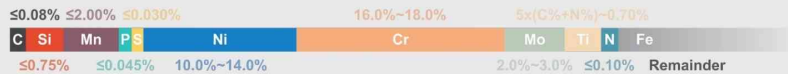
321

AISI321, SUS321, S32100, 1.4541



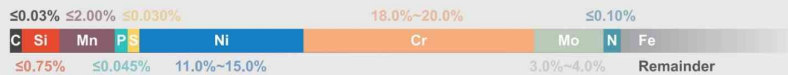
316Ti

AISI316Ti, SUS316Ti, S31635, 1.4571



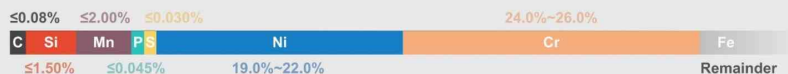
317L

AISI317L, SUS317L, S31726, 1.4438



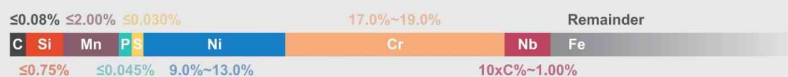
310S

AISI310S, SUS310S, S31008, 1.4845



347

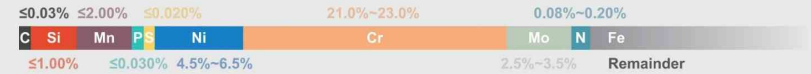
AISI347, SUS347, S34700, 1.4550



Main Grades of Stainless Steel Bar & Rod

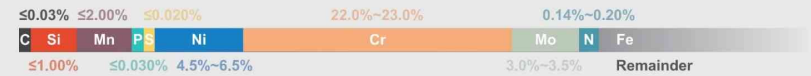
S31803

F51, SUS329J3L, 1.4462



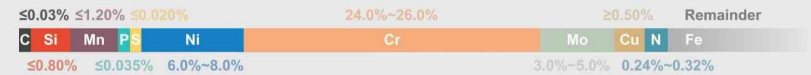
S32205

2205, SUS329J3L, F51, 1.4462



S32750

2507, NAS74N, F53, 1.4410



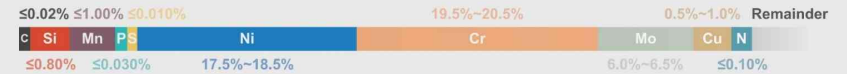
904L

AISI904L, SUS904L, N08904, 1.4539



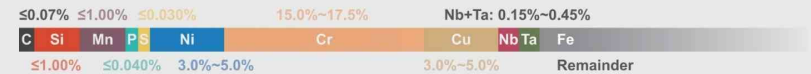
254SMo

AISI254SMo, SUS254SMo, S31254, 1.4547



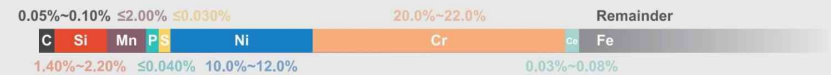
17-4PH

AISI630, SUS630, S17400, 1.4542



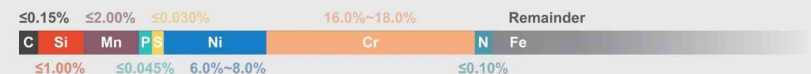
253MA

AISI253MA, SUS253MA, S30815, 1.4835



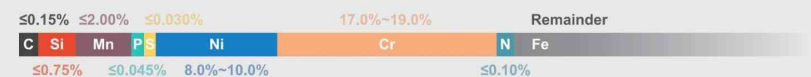
301

AISI301, SUS301, S30100, 1.4319



302

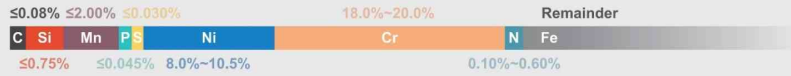
AISI302, SUS302, S30200, 1.4318



Main Grades of Stainless Steel Bar & Rod

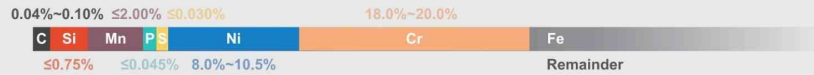
304N

AISI304N, SUS304N1, S30451, 1.4315



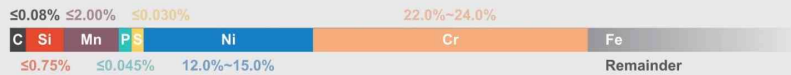
304H

AISI304H, SUS304, S30409, 1.4948



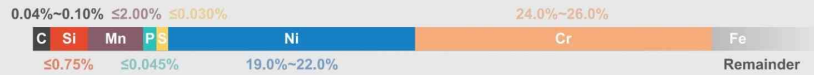
309S

AISI309S, SUS309S, S30908, 1.4833



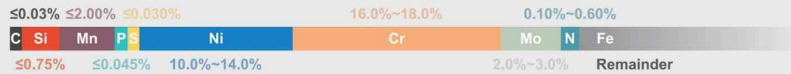
310H

AISI310H, SUS310H, S31009, 1.4845



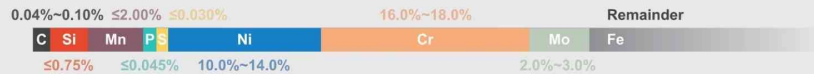
316LN

AISI316LN, SUS316LN1, S31653, 1.4429



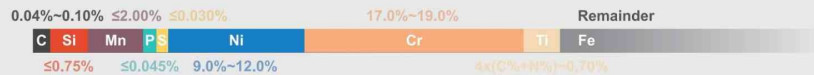
316H

AISI316H, SUS316H, S31609, 1.4436



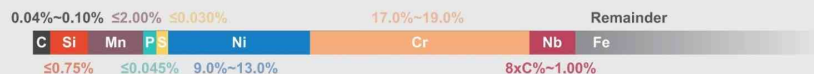
321H

AISI321H, SUS321H, S32109, 1.4541



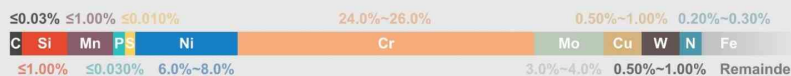
347H

AISI347H, SUS347H, S34709, 1.4912



S32760

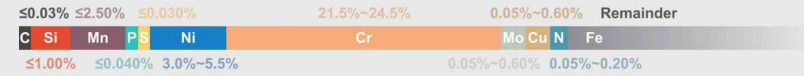
F55, 1.4501



Main Grades of Stainless Steel Bar & Rod

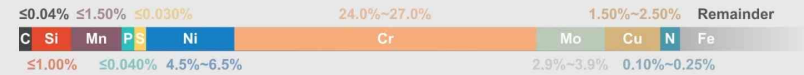
S32304

2304, DP11, 1.4362



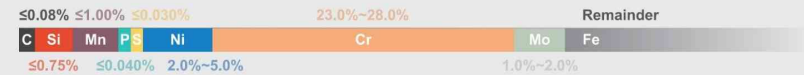
S32550

255, SUS329J4L, QSA2505, 1.4507



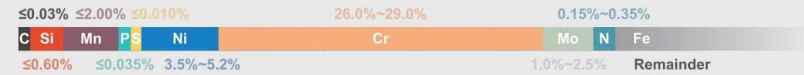
S32900

329, SUS329J1, 1.4477



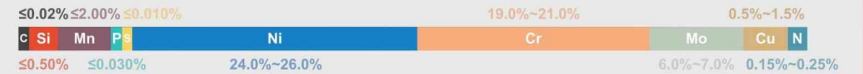
S32950

F52



926

AISI926, SUS926, N08926, 1.4529



654SMo

AISI654SMo, SUS654SMo, S32654, 1.4652



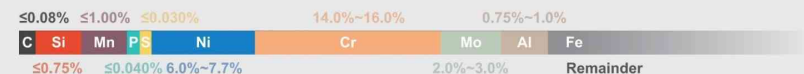
17-7PH

AISI631, SUS631, S17700, 1.4568



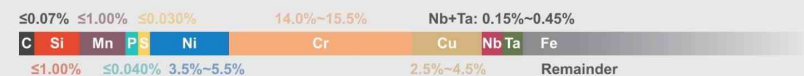
PH15-7Mo

AISI630, SUS630, S15700, 1.4542



15-5PH

S15500



Main Grades of Stainless Steel Bar & Rod

410

AISI410, SUS410, S41000, 1.4006

0.08%~0.15% ≤1.00% ≤0.030% 11.5%~13.5%

C	Si	Mn	P	S	Ni	Cr	Fe
≤1.00%	≤0.040%	≤0.75%	Remainder				

410S

AISI410S, SUS410S, S41008, 1.4000

≤0.08% ≤1.00% ≤0.030% 11.5%~13.5%

C	Si	Mn	P	S	Ni	Cr	Fe
≤1.00%	≤0.040%	≤0.6%	Remainder				

420

AISI420, SUS420J1, SUS420J2, 1.4021, 1.4028, S42000

≥0.15% ≤1.00% ≤0.030% Remainder

C	Si	Mn	P	S	Cr	Fe
≤1.00%	≤0.040%	12.0%~14.0%	Remainder			

420F

AISI420F, SUS420F, S42020, 1.4029

0.30%~0.40% ≤1.50% 0.20%~0.34% 12.5%~14.0% Remainder

C	Si	Mn	P	S	Ni	Cr	Cu	Fe
≤1.00%	≤0.060%	≤0.50%	Remainder				≤0.60%	

431

AISI431, SUS431, S43100, 1.4057

≤0.20% ≤1.00% ≤0.030% 15.0%~17.0%

C	Si	Mn	P	S	Ni	Cr	Fe
≤1.00%	≤0.040%	1.25%~2.50%	Remainder				

440A

AISI440A, SUS440A, S44002

0.60%~0.75% ≤1.00% ≤0.030% ≤0.75%

C	Si	Mn	P	S	Cr	Mo	Fe
≤1.00%	≤0.040%	16.0%~18.0%	Remainder				

440B

AISI440B, SUS440B, S44003, 1.4112

0.75%~0.95% ≤1.00% ≤0.030% ≤0.75%

C	Si	Mn	P	S	Cr	Mo	Fe
≤1.00%	≤0.040%	16.0%~18.0%	Remainder				

440C

AISI440C, SUS440C, S44004, 1.4125

0.95%~1.20% ≤1.00% ≤0.030% ≤0.75%

C	Si	Mn	P	S	Cr	Mo	Fe
≤1.00%	≤0.040%	16.0%~18.0%	Remainder				

409(L)

AISI409, AISI409L, SUH409, SUH409L, S40900, 1.4512

≤0.03% ≤1.00% ≤0.020% 10.5%~11.7% ≤0.50% Remainder

C	Si	Mn	P	S	Ni	Cr	Ti	Nb	N	Fe
≤1.00%	≤0.040%	≤0.50%	Remainder			8x(C+N)~0.50%	≤0.10%			

Main Grades of Stainless Steel Bar & Rod

430

AISI430, SUS430, S43000, 1.4016

≤0.12% ≤1.00% ≤0.030% 16.0%~18.0%

C	Si	Mn	P	S	Ni	Cr	Fe
≤1.00%	≤0.040%	≤0.75%	Remainder				

434

AISI434, SUS434, S43400, 1.4113

≤0.12% ≤1.00% ≤0.030% 0.75%~1.25%

C	Si	Mn	P	S	Cr	Mo	Fe
≤1.00%	≤0.040%	16.0%~18.0%	Remainder				

436

AISI436, SUS436, S43600, 1.4536

≤0.12% ≤1.00% ≤0.030% 0.75%~1.25% Remainder

C	Si	Mn	P	S	Cr	Mo	Nb	Fe
≤1.00%	≤0.040%	16.0%~18.0%	Remainder				5%C~0.8%	

439

AISI439, SUS430LX, S43035, 1.4510

≤0.03% ≤1.00% ≤0.030% 17.0%~19.0% Remainder

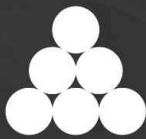
C	Si	Mn	P	S	Ni	Cr	N	Fe
≤1.00%	≤0.040%	≤0.50%	Remainder				≤0.030%	

444

AISI444, SUS444, S44400, 1.4521

≤0.25% ≤1.00% ≤0.030% 17.5%~19.5% Ti+Nb: [0.20+4x(C+N%)]~0.80% Remainder

C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Nb	N	Fe
≤1.00%	≤0.040%	≤1.00%	Remainder					1.75%~2.50%	≤0.030%		



Round
Bar





Specifications

- Diameter: 2mm-600mm
- Delivery State: Cold Drawn, Hot Rolled, Forged, Grinding, Centerless Grinding
- Finish: Bright, Polishing, Mirror, Hairline, Pickled, Peeled, Black
- Hot-selling Products:
 - a. Stainless Steel Black Bar
 - b. Stainless Steel Bright Bar
 - c. S.S. Hot Rolled Round Bar
 - d. Stainless Steel Forged Bar
- Tolerance: h9, h11

Applications

Home appliances, electric appliances, construction materials, medical equipment, auto parts, petroleum, chemical application, agricultural irrigation, edible oil refinery factories, paper plants, shipyard, nuclear power plant etc.

Introduction

Stainless steel round bars are categorized as both long products and bar materials. SS round bar is long stainless steel product with its cross section shaping round.

The customized length of stainless round bar is 5.8m, 6m, 4m and the like. Bright stainless steel round bar is cold drawn bar with its finish bright and smooth. Black bar stainless steel is hot rolled SS bar with black surface, or oxide skin produced after exposure to high temperature. Stainless steel round bars (also titled stainless steel rods) are extensively used in fields such as kitchenware, shipbuilding, petrochemicals, equipment, medicine, food, electricity, energy, aerospace, construction and decoration, equipment under seawater, chemistry, dye, papermaking, oxalate, fertilizer production equipment, photography, coastland facilities, wire ropes, CD rod, screws and nuts.

Standards

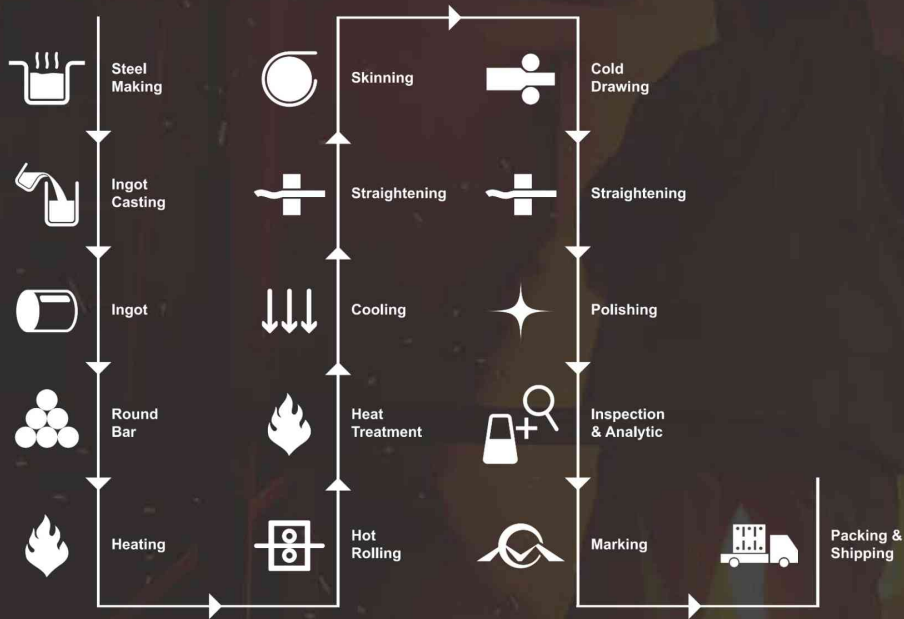
ASTM A276, ASTM A484, ASTM A484M, DIN 671, DIN 1013, EN 10060, EN 10278, GB1220

Features

Anti-corrosion (the degree is susceptible to the alloys contained), heat-resistance, good cold and hot working properties, good toughness, good comprehensive performances and wide application.



Manufacturing Process



Drawing & Formula



Formula:

$$m = OD \text{ (mm)} \times OD \text{ (mm)} \times L \text{ (m)} \times 0.00623$$

* For 400 series stainless steel, ratio=0.00609
 OD = Outer diameter, L = Length





Flat
Bar





ASTRALLOY INDIA

NICKEL ALLOYS DUPLEX & STAINLESS STEEL



Introduction

Stainless steel flat bars are of rectangle shape with root face (or round edges) and they can be semi-finished or finished products in light of applications. In terms of processing technology, there are cold drawn stainless steel flat bars and hot rolled stainless steel flat bars. In terms of surface treatment, SS flat bars have polished finish and sand blast finish. In case of order, dimension, finish, quantity and other technical requirements such as annealing, solution treatment should be clearly stated. Stainless steel flat bars are widely employed in building structures and engineering structures like house beams, bridges, power transmission tower, hoisting and conveying machinery, shipyards, industrial furnace, reaction tower, containers and warehouse shelves, fences, power transmission ships, vehicles etc.

Specifications

- Dimension:
Thickness: 0.5mm - 200mm
Width: 1.5mm - 250mm
- Delivery State: Cold Drawn, Hot Rolled, Flat Bar Cut from Strip or Plates, Grinding, Forged, Centerless Grinding
- Finish: Pickled, Bright, Polishing, Mirror, Hairline
- Hot-selling Products:
 - a. Stainless Steel Hot Rolled Flat Bar
 - b. Stainless Steel Pickled Flat Bar
 - c. Stainless Steel Cold Drawn Flat Bar
 - d. Stainless Steel Polished Flat Bar

Applications

Home appliances, electric appliances, construction materials, medical equipment, auto parts, petroleum, chemical application, agricultural irrigation, edible oil refinery factories, paper plants, shipyard, nuclear power plant etc.

Features

Anti-corrosion (the degree is susceptible to the alloys contained), heat-resistance, good cold and hot working properties, good toughness, good comprehensive performances and wide application.

Standards

ASTM A276, ASTM A484M, DIN174, EN 10278

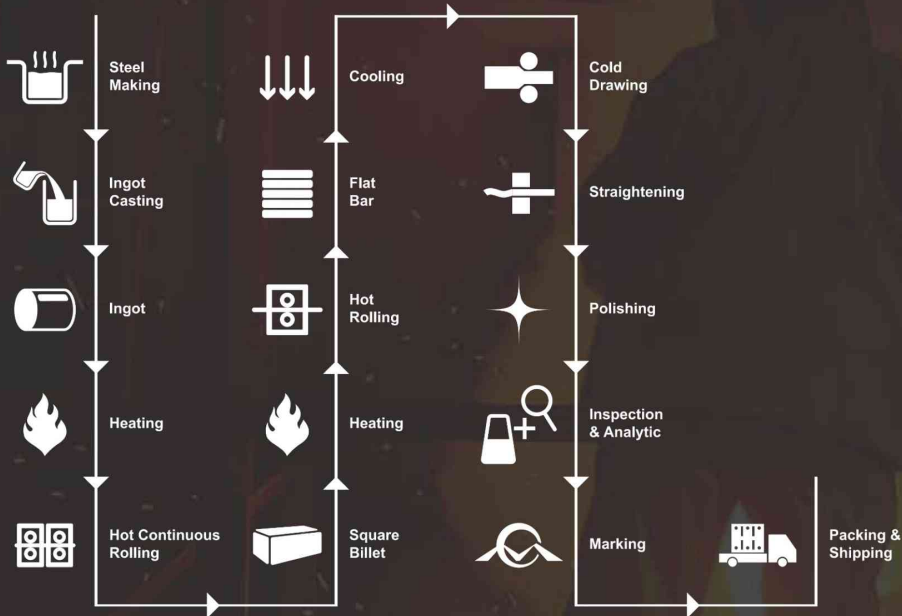


Basic Information

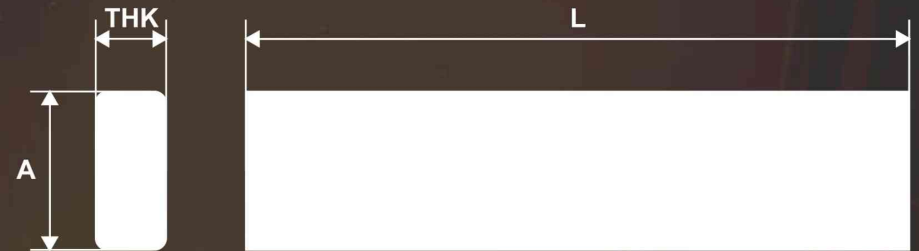
Basic Information



Manufacturing Process



Drawing & Formula



Formula:

$$m = A \text{ (mm)} \times \text{THK} \text{ (mm)} \times L \text{ (m)} \times 0.00793$$

* For 316, 316L, 310S, 309S, etc., ratio=0.00798. For 400 series stainless steel, ratio=0.00775
 A = Side width, THK = Thickness, L = Length



Angle
Bar





Specifications

- Equal Angle Bar Dimensions: (mm)
20×20×3;
25×25×3, 25×25×4;
30×30×3, 30×30×4, 30×30×5, 30×30×6;
40×40×3, 40×40×4, 40×40×5, 40×40×6;
50×50×4, 50×50×5, 50×50×6;
60×60×5, 60×60×6;
65×65×5, 65×65×6, 65×65×7, 65×65×8;
70×70×6, 70×70×7, 70×70×8;
75×75×6, 75×75×7, 75×75×8, 75×75×9;
80×80×8, 80×80×9, 80×80×10;
100×100×8, 100×100×9, 100×100×10,
100×100×12
*Size 100x100 above until 150x150 can be customized.
- Hot-selling Products:
 - a. Stainless Steel Hot Rolled Angle Bar
 - b. Stainless Steel Pickled Angle Bar

Standards

ASTM A276, ASTM A484M, DIN 1028, EN10056, GB4227

Introduction

Stainless steel angle bars are L-shape bars with two side widths perpendicular to each other. The two widths can be equal, known as SS equal angle bars; Unequal angle bars, hence, refer to SS angle bars with different side widths. Stainless steel angle bars can be used as stress components with different structures or as stainless steel adapting pieces, hence they are required to have good weldability, plastic formability and appropriate tensile strength. Stainless steel angle bars are hot rolled and pickled, widely applied in various building structures and engineering structures such as house beams, bridges, power transmission tower, shipyard etc.

Features

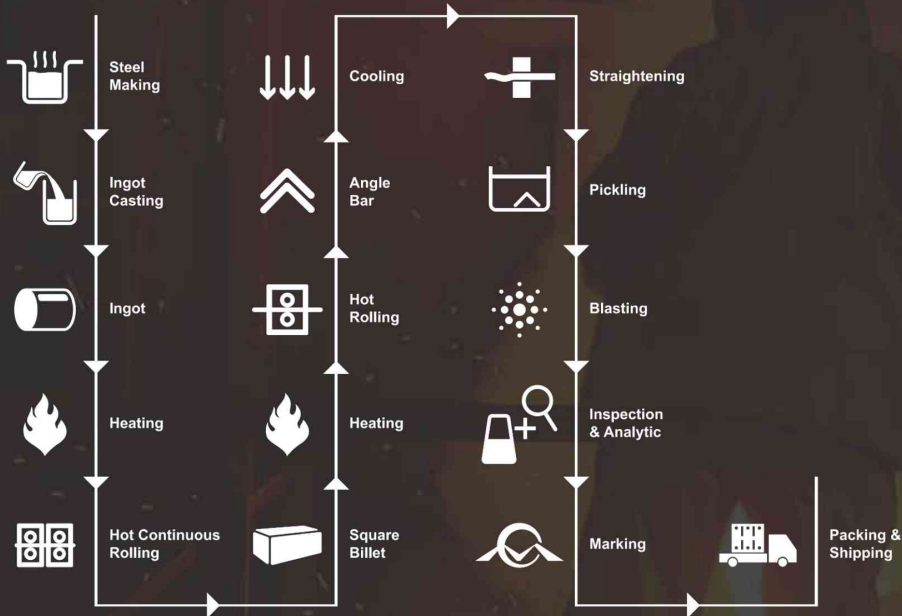
Anti-corrosion (the degree is susceptible to the alloys contained), heat-resistance, good cold and hot working properties, good toughness, good comprehensive performances and wide application.

Applications

Home appliances, electric appliances, construction materials, medical equipment, auto parts, petroleum, chemical application, agricultural irrigation, edible oil refinery factories, paper plants, shipyard, nuclear power plant etc.



Manufacturing Process



Drawing & Formula

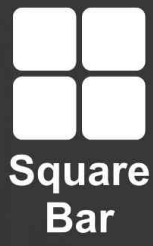


Formula:

$$m = (A \times 2 - \text{THK}) \times \text{THK} \times L \text{ (m)} \times 0.00793$$

* For 316, 316L, 310S, 309S, etc., ratio=0.00798. For 400 series stainless steel, ratio=0.00775
 A = Side width, THK = Thickness, L = Length







Introduction

Stainless steel square bars are long stainless steel products with its cross section as square.

At Astralloy, we produce SS square bars in cold drawn, hot rolled, and hot forged conditions as per your request. The main ASTM standards for stainless steel square bar production we follow are A276, A479, A182 and A484. Normally, Size 50×50mm and below are cold drawn square bars by default; from size 50×50mm to size 80×80mm we can do both cold drawn and hot rolled stainless square bar. For size 80×80mm above we will produce hot rolled/forged SS square bars by default. We can supply multiple sizes and various grades to cater for your special demand. Customization, whether in terms of size or grade, is acceptable with the minimum order quantity above 1 ton. Our stainless steel square bars are good materials for manufacturing machined components or used as connecting pieces.

Specifications

- Dimension: 3mm - 180mm
- Delivery State: Cold Drawn, Hot Rolled, Grinding, Forged, Centerless Grinding
- Finish: Polished, Bright, Hairline, Grinded, Sandblast, Pickled, Mill Finish

Standards

ASTM A276, ASTM A484M, ASTM A582, DIN 178, DIN1014, EN 10059, EN10278

Applications

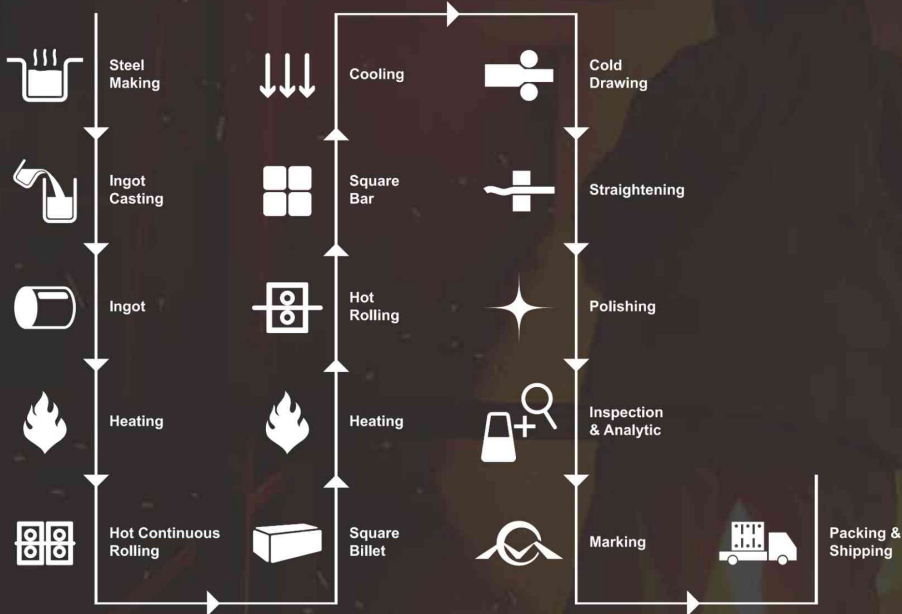
Home appliances, electric appliances, construction materials, medical equipment, auto parts, petroleum, chemical application, agricultural irrigation, edible oil refinery factories, paper plants, shipyard, nuclear power plant etc.

Features

Anti-corrosion (the degree is susceptible to the alloys contained), heat-resistance, good cold and hot working properties, good toughness, good comprehensive performances and wide application.



Manufacturing Process



Drawing & Formula



Formula:

$$m = A \text{ (mm)} \times A \text{ (mm)} \times L \text{ (m)} \times 0.00793$$

* For 316, 316L, 310S, 309S, etc., ratio=0.00798. For 400 series stainless steel, ratio=0.00775

A = Side width, L = Length





**Hexagon
Bar**





Specifications

- Dimension: 6mm-80mm
- Delivery State: Cold Drawn

Standards

ASTM A276, ASTM A484M, DIN 176, EN10278

Features

Anti-corrosion (the degree is susceptible to the alloys contained), heat-resistance, good cold and hot working properties, good toughness, good comprehensive performances and wide application.

Introduction

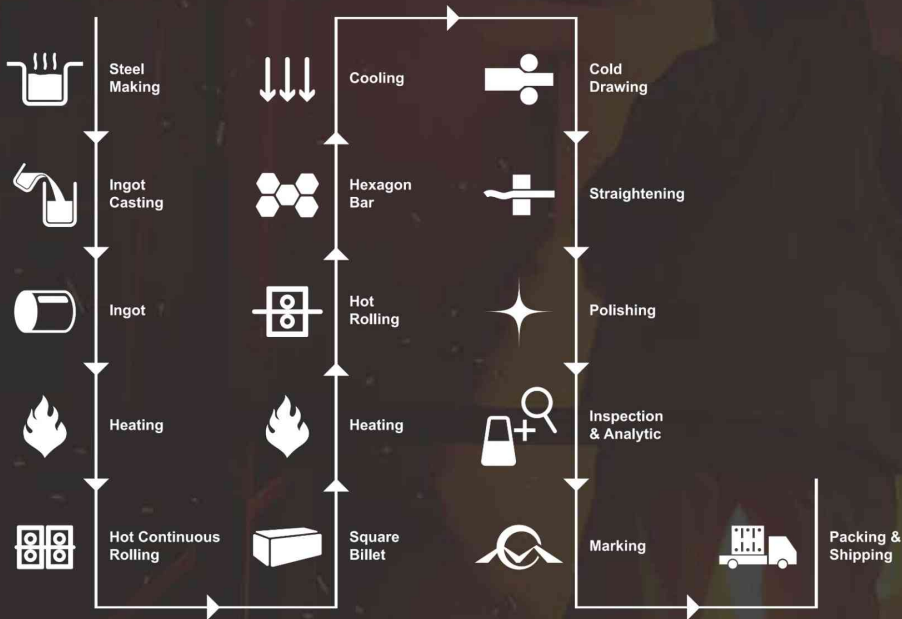
Stainless steel hex bar is solid stainless steel long product with its cross section as hexagonal. **Astralloy** produce stainless hex bars in multiple sizes and various grades. The most commonly applied specification is ASTM A276, which includes both hot-finished and cold-finished bars. Due to its good features such as 1) high precision (tolerance can be $\pm 0.01\text{mm}$ at minimum), 2) bright and smooth finish, 3) corrosion resistance, high tensile strength and anti-fatigue strength, stainless steel hex bars are widely used for producing machined components such as hex bolts, hex nuts and hex plugs. In addition, SS hex bars are used for auto parts, elevators, kitchenware, pressure vessels and other promising industries for they are environment friendly and for their long service life.

Applications

Home appliances, electric appliances, construction materials, medical equipment, auto parts, petroleum, chemical application, agricultural irrigation, edible oil refinery factories, paper plants, shipyard, nuclear power plant etc.



Manufacturing Process



Drawing & Formula



Formula:

$$m = D \text{ (mm)} \times D \text{ (mm)} \times L \text{ (m)} \times 0.00686$$

D = Diameter between two adjacent side width, L = Length





Channel
Bar





Specifications

A. Delivery State: Hot Rolled

• Dimensions: (mm)

Thickness: 4mm, 5mm, 6mm, 7mm

Height: 40mm, 50mm, 60mm

Width: 80mm, 100mm, 120mm

B. Delivery State: Welded

• Dimensions: (mm)

Thickness: 3mm, 4mm, 5mm, 6mm, 7mm, 8mm,

9mm, 10mm, 12mm

Height: 25mm, 30mm, 40mm, 50mm, 60mm,

70mm, 75mm, 80mm, 100mm

Width: 50mm -245mm

• Tags: U Channel Bar, C Channel Bar

Standards

ASTM A276, ASTM A484M, DIN 1028, EN10279, EN10225, GB4227

Features

Anti-corrosion (the degree is susceptible to the alloys contained), heat-resistance, good cold and hot working properties, good toughness, good comprehensive performances and wide application.

Introduction

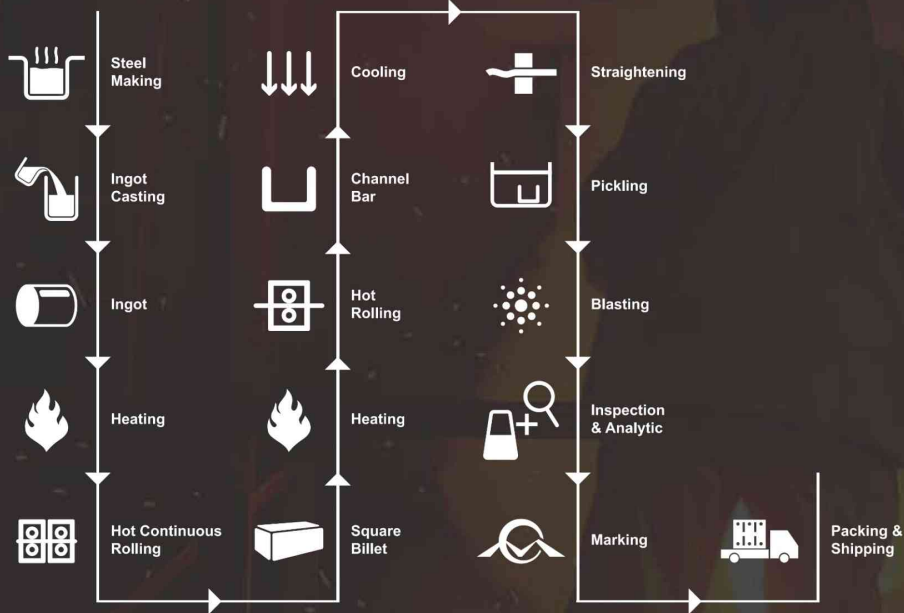
Stainless steel channel bar is stainless steel long product with its section as U shape. At **Astralloy**, apart from stainless steel U channel, there are also stainless steel C channel, stainless steel I beam (also titled as H channel) for your different choices. These channel bars all belong to structural steel, extensively used for structural support where greater tensile strength and good corrosion resistance are required. Stainless steel channel bars feature durable dull grainy mill finish, sand blast finish, brush finish or even polished finish according to your requirement. For sizes below 60 x 120 x 7 mm, they are hot rolled channel bars by default, above which they are laser fused or press bending channel bars. The supply of SS channel bars from **Astralloy** comes in multiple sizes and various grades. The main grades are 304(L), 316(L), 310S, 2205 and the main standard is ASTM A 276. Apart from ASTM standards, we can also produce as per JIS, DIN, GOST, GB standard as per your request. Length can be customized or as export standard length 5.8m or 6m.

Applications

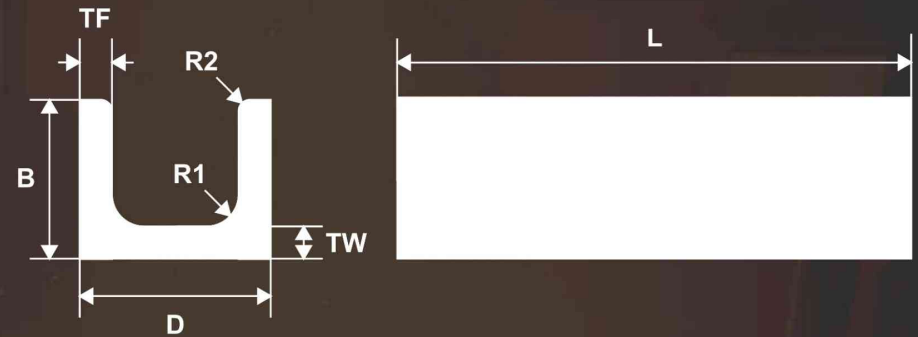
Home appliances, electric appliances, construction materials, medical equipment, auto parts, petroleum, chemical application, agricultural irrigation, edible oil refinery factories, paper plants, shipyard, nuclear power plant etc.



Manufacturing Process

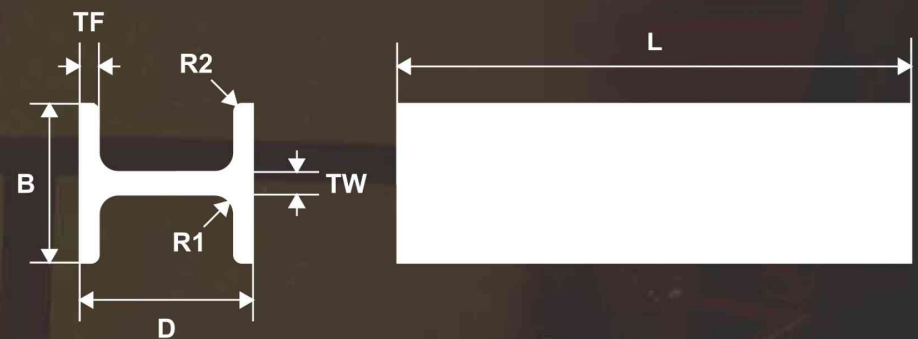


Drawing & Formula



Formula:

$$m = [D \times TW + 2 \times TF \times (B - TW) + 0.349 \times (R1 \times R1 - R2 \times R2)] \times L (m) \times 0.00793$$



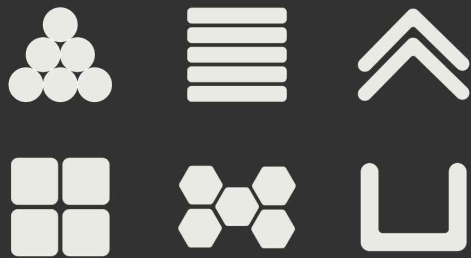
Formula:

$$m = [D \times TW + 2 \times TF \times (B - TW) + 0.615 \times (R1 \times R1 - R2 \times R2)] \times L (m) \times 0.00793$$

* For 316, 316L, 310S, 309S, etc., ratio=0.00798. For 400 series stainless steel, ratio=0.00775

D = Flange Depth, B = Flange Width, TW = Web Thickness, TF = Flange Thickness, R1 = Radius R1, R2 = Radius R2





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