

# SIMURGH INDUSTRIAL AND MINING COMPLEX

[www.simurghsteelco.com](http://www.simurghsteelco.com)





## ABOUT US:

### Simorgh Industrial and Mining Complex

Holding of (ASIMC) Azarbaijan Simorgh Industrial and Mining Complex with the brand name of Simorgh Steel Co under the supervision of (Founder) Leila Nematzadeh, consisting of six sub-units, including:

- Minerals and ores
- Pelletizing
- Direct Reduction unit
- Melting and casting
- Rolling unit
- Waste unit

It has started its activity in the steel chain since 1397 (March 2019) through shareholding and investment in the mentioned sectors of this industry. The current annual supply capacity of the products (from the beginning of 2023, the capacities will be increased and updated) The six mentioned sub-units of this complex are as follows:





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Unit	Product		Capacity (Milliontonnes)
Pelletizing	Iron ore pellets		-
Direct reduction unit	Direct reduction iron		5.2
	Hot Briquetted Iron		1.2
Melting and casting	Steel Billets		3.6
	Steel Slabs		3.6
	Steel Blooms		3.6
	Cast Iron Ingot		1.2
Rolling unit	Steel Rebars		1.9
	Steel rolled coil	Hot Rolls	1.2
		Pickled	-
		Wide cold coil	1.2
		Cold narrow strip coil	-
		Tin plated coils	0.1
		Color coated coil	-
		Galvanized Coil	0.2
	Steel rolled sheet	Hot rolls	-
		Cold rolls	-
Tin Plated		-	

The central branch of this complex is located in Iran, East Azerbaijan province and branches are located in several provinces such as Hormozgan, Khuzestan, Tehran, Isfahan and Qom. There are also international branches of this complex in several countries.





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## درباره ما:

### مجتمع صنعتی معدنی سیمرغ

هلدینگ مجتمع صنعتی و معدنی سیمرغ آذربایجان با نام تجاری فولاد سیمرغ آذربایجان به سرپرستی (موسس) لیلا نعمت زاده متشکل از شش زیر واحد شامل:

- معدنی و کانه آرایی
- گندله سازی
- واحد احیاء
- ذوب و ریخته گری
- نورد
- واحد ضایعات

فعالیت خود را در زنجیره فولاد از سال ۱۳۹۷ (مارس ۲۰۱۹) از طریق سهامداری و سرمایه گذاری در بخش های مذکور این صنعت آغاز نموده است.

ظرفیت تامین سالانه محصولات در حال حاضر (از ابتدای سال ۲۰۲۳، ظرفیت ها افزایش و به روز رسانی خواهد شد) شش زیر واحد مذکور این مجتمع به قرار زیر است:





واحد	محصول	ظرفیت (میلیون تن/سال)
گندله سازی	گندله سنگ آهن	-
واحد احیاء مستقیم	آهن اسفنجی	5.2
	بریکت گرم آهن اسفنجی	1.2
ذوب و ریخته گری	بیلت فولادی	3.6
	اسلب فولادی	3.6
	بلوم فولادی	3.6
	شمش چدن	1.2
	میلگرد	1.9
نورد	ورق گرم نورد دیده	1.2
	ورق سرد نورد دیده	1.2
	ورق گالوانیزه	1.0

شعبه مرکزی این مجتمع واقع در کشور ایران استان آذربایجان شرقی بوده و شعب در چند استان از قبیل هرمزگان، خوزستان، تهران، اصفهان و قم دایر می باشد. همچنین شعب بین المللی این مجتمع در چندین کشور در حال توسعه است.



# R & D Unit & Quality Control

## R & D Unit

The development and research department to design the vision of each complex and determine the path to achieve the goals using new tools, is the brain of the complex. Familiarity with new technologies and their entry into the complex work system, so changing the route and constantly updating the vision of the complex based on new assets, is the most important task of this department. This department is managed by the founder of the collection, Leila Nematzadeh, with the management of twelve capable managers based in different parts of the world.

## Quality control unit and laboratory

The requirement of measuring equipment and expert personnel to check the chemical, physical, mechanical characteristics of products is obvious. In order to control the quality of the products offered to the consumer, this integrated monitoring and control complex in every part of the production line and quality testing with the most up-to-date devices such as XRD, XRF, UTM tensile testing machine, bending testing machine, fatigue testing, Hardness test, wet chemistry test, etc. according to the latest available standards and according to ISO / IEC17.25 standard.



## واحد R & D

بخش توسعه و تحقیق برای طراحی چشم انداز هر مجتمع و تعیین مسیر جهت تحقق بخشیدن به اهداف با استفاده از ابزارهای نوین، مغز متفکر مجموعه می باشد. آشنایی با فن آوری های نوین و ورودشان به سیستم کاری مجتمع، لذا تغییر مسیر و به روز کردن چشم انداز مجتمع به طور مداوم بر اساس دارایی های جدید، مهمترین وظیفه این بخش می باشد. این بخش به سرپرستی موسس مجموعه لیلا نعمت زاده با مدیریت دوازده مدیر توانمند مستقر در نقاط مختلف جهان، اداره می گردد.

## واحد کنترل کیفیت

الزام داشتن تجهیزات اندازه گیری و پرسنل خبره برای بررسی مشخصات شیمیایی، فیزیکی، مکانیکی فرآورده ها بدیهی است. جهت کنترل کیفیت محصولات مورد عرضه به مصرف کننده، این مجتمع نظارت و کنترل دقیق در هر بخش از خط تولید و تست کیفیت با به روز ترین دستگاه ها از قبیل XRD, XRF, دستگاه تست کشش، دستگاه تست خمش، دستگاه سختی سنجی، تست شیمی تر و ... طبق آخرین استانداردهای موجود و بر اساس استاندارد ISO/IEC17.25 را، دارد.



## Commercial unit

Effective communication with customers and identifying their needs based on the type of consumption, so offering the best quality is the most important task of the staff of this part of the complex. Proper arrangement of contracts based on the conditions set for the delivery of goods is another set task of the commercial sector. This department works under the supervision of the legal unit.

## Accounting and financial unit

Facilitating the payment method according to the country of origin and reducing costs, ensuring the correct transfer process is the most important task of this department. This section is integrated under the supervision of the legal unit.

## Transportation procurement and delivery supervision unit

Transportation procurement and delivery supervision unit:  
Supervision of proper transportation of goods, procurement of vehicles and continued supervision until the delivery of goods to the buyer is done by this department. This unit works under the supervision of the integrated legal unit.

## IT unit

Supervision of all electronic equipment and implementation of up-to-date programs on them is the main task of this unit.

# Commercial & Office Unit



## واحد بازرگانی

ارتباط موثر با مشتریان و شناسایی نیاز آنها بر اساس نوع مصرف لذا پیشنهاد بهترین کیفیت، مهمترین وظیفه پرسنل این بخش از مجتمع است. تنظیم صحیح قراردادها بر اساس شرایط تعیین شده برای تحویل کالا، از وظایف تعیین شده دیگر بخش بازرگانی است. این بخش زیر نظر واحد حقوقی کار می کند.

## واحد حسابداری و مالی

تسهیل شیوه پرداخت با توجه به کشور مبدا و کاهش هزینه ها، اطمینان از انجام صحیح فرآیند انتقال مهمترین وظیفه این بخش می باشد. این بخش زیر نظر واحد حقوقی مجتمع می کند.

## واحد تدارک حمل و نظارت بر تحویل کالا

نظارت بر حمل صحیح کالا، تدارک وسایل نقلیه و ادامه نظارت تا تحویل کالا به خریدار توسط این بخش انجام می شود. این واحد زیر نظر واحد حقوقی مجتمع کار می کند.

## واحد IT

نظارت بر کلیه تجهیزات الکترونیکی و اجرای برنامه های به روز بر روی آنها، وظیفه اصلی این واحد می باشد.





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## Iron Ore Pellets

Iron Ore Pellets	
Element	Result
T.Fe	65% Min
FeO	1% Max
Al <sub>2</sub> O <sub>3</sub> +SiO <sub>2</sub>	5% Max
P	0.01% Max
S	0.01% Ave
Moisture	1% Max
CCS	270kg/pellet Min
T index	96% Min
A Index	2% Max
Prosity	20-24%
Size 6.3 – 16 mm	90% Min
Size +16 mm	8% Max
Size<6.3 mm	2% Max
The by-product of this line, "Iron Ore Pellet fines", is also offered.	





## DRI Sponge Iron

DRI Sponge iron	
Result	Element
Fe Total (%)	Min88<total< 92 Max
Fe Metal (%)	82< Metal< 84
MD (%)	Min 91< MD< 93 Max
C(%)	1.5 Min
SiO <sub>2</sub> (%)	4 Max
Al <sub>2</sub> O <sub>3</sub> (%)	0.5 Max
S (%)	0.008 Max
P (%)	0.05 Max
Sizing	9-18 mm, 90% 6.3-9 mm, 5%

The by-product of this line, "DRI Sponge Iron fines & sludge", is also offered.

## Hot briquetted iron (HBI)

Hot briquetted iron		
Result	Element	
Total Fe	88-89%	
Metallic Fe	81-82%	
Metallization	91-92%	
Carbon	0.95% (+0.1%)	
Sulphur	0.007% (+0.001%)	
Physical specification	Weight	850 gr
	Size	145*55*35

The by-product of this line, "Dampened sponge iron", is also offered.



## Steel billet and blooms

Steel billet and blooms	
Standard	<ul style="list-style-type: none"> <li>• Our ordinary grades are:</li> <li>• ASTM A615 Gr60</li> <li>• ASTM A572GR50</li> <li>• BS 4449 B500B CK 45</li> <li>• RSt 37-2</li> <li>• St 3sp St 3sp St 44-2</li> <li>• St 5sp 2</li> <li>• ISIRI 3132 Aj 400</li> </ul> <p>Analysis of grades are according to customer needs and negotiable. Other Grades are negotiable.</p>
Dimension & Tolerances	
Length (mm)	Cross section (mm)
6000-8000-12000 (+/- 100mm)	130×130 (+/-4mm), 150×150 (+/- 5mm) , 125×125 (+/- 5mm) , 100*100 (+/5mm), 200*200 (+/-5mm), 260*260 (+/-5mm)
Other size and Tolerances are negotiable.	

## Steel Slabs

Steel Slabs		
Standard	<ul style="list-style-type: none"><li>• Our ordinary grades are:</li><li>• G3101 SS 400</li><li>• G3106 SM 400A SAE 1008</li><li>• St 37-2</li><li>• St 44-3</li><li>• St 52-3</li><li>• GI Structural Steel For Hull Construction</li></ul> <p>Analysis of grades are according to customer needs and negotiable. Other Grades are negotiable.</p>	
Dimension & Tolerances		
Length (mm)	Width (mm)	Thickness (mm)
3800-10500 ± 100	600-2,000mm ± 10	195 ± 5
		245 ± 5
Other size and tolerances are negotiable.		



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# steel rolled coil & sheet

## Steel rolled coil

Product Type	Internal Diameter MM2	Thickness (M.M.)	Width (M.M.)	Weight (Tones)
Hot Rolls	760	1.5-16	600-1,850	3-29
Pickled	760	1.5-5.3	600-1,650	3-28
Wide Cold Coils	610	0.30-3	600-1,620	3-25
Cold Narrow Strip Coils	610	0.35-2	60-599	1-6
Tin Plated Coils	420	0.18-0.4	600-1,050	2-8
Galvanized Coils	508 or 610	0.25-2	750-1,500	3-24
Color Coated Coils	508 or 610	0.25-1.5	750-1,500	2-12



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## Steel sheet

Product Type	Internal Diameter MM2	Thickness (M.M.)	Width (M.M.)	Package Weight (Tones)
Hot Rolls	1,000-12,000	600-1,850	1.5-16	2-7.5
Pickled	760	600-1,620	0.30-3	1-5
Wide Cold Coils	610	600-1,000	0.18-0.4	1-2

## STANDARDS

Used standard are national and international standards such as ISIRI (the institute of standards and industrial Research of Iran), JIS, DIN, UNA ASTM, AFNOR, BS, SAE/AISI, API, EN and EURONORM.

## APPLICATIONS

Automobile manufacturing, home appliances, pipe building, pressurized tanks, food packaging, chemicals, pharmaceuticals, construction, metals, transportation, maritime, light and heavy metal equipment, etc.





# Grades Of Steel Sheets

## Steel sheets for shipbuilding

<b>Standard</b>	KR
<b>Grades</b>	A to E, AH 32 to 40, DH 32 to 40, EH 32 to 40, FH 32 to 40, FH 32 to 40, RSP 42 to 49, RPV 24 to 50, RL 235 to 360, AH 43 to 70, DH 43 TO 70, eh 43 to 70, FH 43 TO 70.
<b>Application:</b>	<ul style="list-style-type: none"> <li>• Ships</li> <li>• Marine structures</li> <li>• Tankers</li> <li>• Barges</li> </ul>
<b>Feature:</b>	<ul style="list-style-type: none"> <li>• Clean steel with low amounts of carbon and sulfur</li> <li>• Addition of copper and nickel</li> <li>• Resistant to environmental corrosion</li> <li>• Microalloy steels such as V, Ti, Nb</li> <li>• High strength and toughness</li> <li>• Normalized in heat treatment furnace</li> </ul>
<b>Mechanical properties:</b>	<ul style="list-style-type: none"> <li>• High strength</li> <li>• Suitable toughness at low temperatures</li> <li>• Corrosion resistant</li> <li>• Fatigue resistant</li> <li>• Suitable weldability</li> </ul>
<b>Delivery Conditions:</b>	<ul style="list-style-type: none"> <li>• Rolled (As Rolled)</li> <li>• Thermo mechanically rolled</li> <li>• Normalizing rolling</li> <li>• Normalized in heat treatment furnace</li> </ul>





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## Steel sheets of oil and gas transmission lines

Standard	API 5L
Grades	X42M, X46M, X52M, X56M, X60M, X65M, X70M, X80M
Application:	<ul style="list-style-type: none"><li>• Oil, gas, water transmission lines</li><li>• Casing pipes</li></ul>
Attributes:	<ul style="list-style-type: none"><li>• Low amounts of carbon, sulfur and phosphorus</li><li>• Suitable strength and toughness</li><li>• Clean steel</li><li>• Micro-alloy steels such as Nb, Ti, V</li><li>• Corrosion resistance and HIC tests, SSCC</li><li>• Suitable resistance test DWTT</li><li>• Thermo mechanical rolling</li></ul>
Features:	<ul style="list-style-type: none"><li>• High strength</li><li>• Suitable toughness at low temperatures</li><li>• Proper weldability</li><li>• Corrosion resistant and HIC and SSCC tests</li></ul>
Delivery Conditions:	<ul style="list-style-type: none"><li>• Rolled (As ROLLED)</li><li>• Thermo mechanical controlled</li></ul>



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## Construction steel sheets

Standards	Grades
DIN17100, EN10025-2, ASTM A283, KR	St37-3, At44-3, St52-3, St50-2, At60-2, St70-2, S235, S355, S450J0, S283, KR A-E
EN10025-3	S275N, S275NL, S355N, S355NL, S420N, S420NL, S460N, S460NL
EN10025-4	S235J0W, S235J2W, S355J0WP, S355J2WP, S355J0W, S355J2W, S355K2W, A588
EN 10025-5, ASTM A588	
Application:	<ul style="list-style-type: none"> <li>• Construction structures</li> <li>• Bridges</li> <li>• Dams</li> <li>• Power plants</li> <li>• Towers</li> </ul>
Attributes:	<ul style="list-style-type: none"> <li>• Clean Steel with low phosphorus and sulfur steel</li> <li>• Micro alloy steels such as V, Ti, Nb</li> <li>• High strength and toughness</li> <li>• Thermo mechanical rolling</li> <li>• Normalized in heat treatment furnace</li> </ul>
Features:	<ul style="list-style-type: none"> <li>• High strength</li> <li>• Corrosion resistant</li> <li>• Proper weldability</li> </ul>
Delivery Conditions:	Rolled (As Rolled) Rolled thermo mechanically Rolling Normalizing Normalized in heat treatment furnace

## Abrasion resistant or high yield strength steel sheets (quenched and tempered)

Standard	EN10025-6, ASTM A517, EN10083-3
Grades	S460Q, S500Q, A550Q, A620Q, A690Q, A890Q, S960Q, A517, 34CrMo4
Application:	<ul style="list-style-type: none"> <li>• Mines</li> <li>• Machinery</li> <li>• Cement industry</li> <li>• Front Loaders</li> </ul>
Attributes:	<ul style="list-style-type: none"> <li>• Clean steel with low amounts of phosphorus and sulfur</li> <li>• Alloy steels such as Cr, Mo, Ni</li> <li>• Proper abrasion resistance</li> <li>• Proper strength and toughness</li> <li>• Quench and tempered steel</li> </ul>
Features:	<ul style="list-style-type: none"> <li>• High strength</li> <li>• High hardness</li> <li>• Wear resistant</li> <li>• Good weldability</li> </ul>
Delivery Conditions:	<ul style="list-style-type: none"> <li>• Thermo mechanically rolled</li> <li>• Normalized in heat treatment furnace</li> <li>• Quenched and tempered</li> </ul>



# SIMURGH INDUSTRIAL AND MINING COMPLEX

## Construction steel sheets

Standards	Grades
DIN17100, EN10025-2, ASTM A283, KR	St37-3, At44-3, St52-3, St50-2, At60-2, St70-2, S235, S355, S450J0, S283, KR A-E
EN10025-3	S275N, S275NL, S355N, S355NL, S420N, S420NL, S460N, S460NL
EN10025-4	S235J0W, S235J2W, S355J0WP, S355J2WP, S355J0W, S355J2W, S355K2W, A588
EN 10025-5, ASTM A588	
Application:	<ul style="list-style-type: none"> <li>• Construction structures</li> <li>• Bridges</li> <li>• Dams</li> <li>• Power plants</li> <li>• Towers</li> </ul>
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Features:	<ul style="list-style-type: none"> <li>• High strength</li> <li>• High hardness</li> <li>• Wear resistant</li> <li>• Good weldability</li> </ul>
Delivery Conditions:	<ul style="list-style-type: none"> <li>• Thermo mechanically rolled</li> <li>• Normalized in heat treatment furnace</li> <li>• Quenched and tempered</li> </ul>





# Steel Rebars

Thermic products production in  
accordance BS 4449:2005+A3:2016.



B500A



B500B



B500C

Thermic products production in accordance BS 4449:2005+A3:2016.

Mechanical properties, dimensions, mass per unit length, nominal cross-sectional area and chemical analysis are in accordance (BS 4449:2005+A3:2016) and it is changeable based on customer requirements and orders.

خصوصیات مکانیکی، فیزیکی و آنالیز شیمیایی مطابق استاندارد (BS4449:2005+A3:2016) می باشد. در صورت درخواست متفاوت از طرف مشتری بر اساس سفارش قابل اصلاح خواهد بود.



Nominal diameter (mm)	Nominal cross-sectional area (mm <sup>2</sup> )	Mass per unit length (kg/m)	Min mass per unit length (kg/m)	Max mass per unit length (kg/m)	Max height longitudinal rib (mm)	Height Transvers rib (mm)	
						Min	Max
8	50.3	0.395	0.371	0.419	0.8	0.24	1.2
10	78.5	0.617	0.589	0.645	1	0.3	1.5
12	113	0.888	0.848	0.928	1.2	0.36	1.8
16	201	1.580	1.509	1.651	1.6	0.48	2.4
20	314	2.470	2.359	2.581	2	0.6	3
25	491	3.850	3.677	4.023	2.5	0.75	3.75
32	804	6.310	6.026	6.594	3.2	0.96	4.8
40	1257	9.860	9.416	10.304	4	1.2	6
50	1963	15.40	14.707	16.093	5	1.5	7.5

Chemical composition of steel ribbed bars: (A4-AJ500)-According to INSO 3132

Grade	DIN	%C		%Si		%Mn		%P	%S	%Cr	%Ni	%Cu
GOST 380 (2005) St 5sp	1.0050	Min	Max	Min	Max	Min	Max	Max	Max	Max	Max	Max
		0.28	0.33	0.15	0.3	0.7	0.85	0.04	0.04	0.2	0.2	0.2
Conformity standard		Mechanical properties (A4-AJ500): Ribbed bars 12-32mm										
DIN488-1, ISO6935-1, BS4449, ASTM A615/A615M		Minimum yield strength (N/mm²)		Minimum Tensile Strength (N/mm²)		Minimum elongation %		Minimum Tensile Strength/Upper Yield Strength				
		500		650		8		1.25				





# Steel Rebars

Producing all types of Rebar in accordance ISO 6935-2:2015 standard.



B400  
B500

Producing all types of Rebar in accordance ISO 6935-2:2015 standard.

Dimensions, mass per unit length, nominal cross-sectional area of ribbed bars according to ISO 6935-2:2015



Nominal diameter (mm)	Nominal cross-sectional area (mm <sup>2</sup> )	Mass per unit length (kg/m)	Min mass per unit length (kg/m)	Max mass per unit length (kg/m)	Max height longitudinal rib (mm)	Transvers rib (mm)	
						Min Height	
						In the middle	At the quarter
8	50.3	0.395	0.363	0.427	1.2	0.52	0.36
10	78.5	0.617	0.580	0.654	1.5	0.65	0.45
12	113	0.888	0.835	0.941	1.8	0.78	0.54
14	154	1.21	1.150	1.271	2.1	0.91	0.63
16	201	1.580	1.501	1.659	2.4	1.04	0.72
20	314	2.470	2.347	2.594	3	1.30	0.90
25	491	3.850	3.696	4.004	3.75	1.63	1.13
28	616	4.84	4.646	5.034	4.2	1.82	1.26
32	804	6.310	6.058	6.562	4.8	2.08	1.44
40	1257	9.860	9.466	10.254	6	2.60	1.80
50	1963	15.40	14.803	16.037	7.5	3.25	2.25





# Steel Rebars

3) Producing Rebar in all sizes in accordance TS 708/Nisan 2010.

**Producing Rebar in all sizes in accordance TS 708/Nisan 2010.**

Dimensions, mass per unit length, nominal cross-sectional area of ribbed bars according to TS 708/NISAN 2010



S420  
B420B  
B420C

Nominal diameter (mm)	Nominal cross-sectional area (mm <sup>2</sup> )	Mass per unit length (kg/m)	Min mass per unit length (kg/m)	Max mass per unit length (kg/m)	Max height longitudinal rib (mm)	Transvers rib (mm)	
						Min Height In the middle	At the quarter
8	50.3	0.395	0.371	0.419	1.2	0.24	1.2
10	78.5	0.617	0.589	0.645	1.5	0.3	1.5
12	113	0.888	0.848	0.928	1.8	0.36	1.8
14	154	1.21	1.156	1.265	2.1	0.42	2.1
16	201	1.580	1.509	1.651	2.4	0.48	2.4
18	254.4	2	1.910	2.090	2.7	0.54	2.7
20	314	2.470	2.359	2.581	3	0.6	3
22	380	2.985	2.851	3.119	3.3	0.66	3.3
25	491	3.850	3.677	4.023	3.75	0.75	3.75
28	616	4.84	4.613	5.047	4.2	0.84	4.2
32	804	6.310	6.026	6.594	4.8	0.96	4.8
40	1257	9.860	9.416	10.304	6	1.2	6
50	1963	15.40	14.707	16.093	7.5	1.5	7.5



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## 4) Producing grade 60rebar in accordance ASTM-A615 Standard.

Conformity standards	Mechanical properties (A3-AJ400): Nominal diameter steel 8-10mm			
1-DIN 488:2009 Reinforcing steels-part 1: Grades. Properties. Marking	Min Yield stress (N/mm <sup>2</sup> )	Min Tensile strength (N/mm <sup>2</sup> )	Minimum elongation %	Tensile /yield Rm/Reh
2-DIN488-2: 2009 Reinforcement of concrete-part2 ribbed bars				
3- ISO 6935-2:2007 Steel for the reinforcement of concrete-part2 ribbed bars				
4.GOST 5781-82: 1993 Hot-rolled steel bars for the reinforcement of concrete				
5. ASTM A615/A615M:2005 Standard specification for deformed and plain Carbon-Steel Bars for concrete reinforcement				
	400	600	12	1.25

Technical Specification of Hot-Rolled Steel Bars for Reinforcement of Concrete.

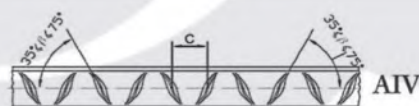
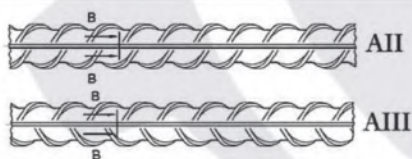


# Steel Rebars

## Technical specifications of common and routine products

### Technical specification of steel bars.

Type		Min Yield stress $R_{eh}$ (N/mm <sup>2</sup> )	Min Tensile strength (N/mm <sup>2</sup> )	Tensile /yield $R_m/R_{eh}$	Minimum elongation
STD ISIRS 3132	STD GOST 5781				
A I	S240	240	360	1.25	18
A II	AJ340	340	500		15
	AJ350	350	500		-
A III	AJ400	400	600		12
	AJ420	420	600		-
A IV	AJ500	500	650		8
	AJ520	520	690		-



### Chemical composition of steel ribbed bars:

Min	Max	Min	Max	Min	Max	Max	Max	Max	Max	Max
0.28	0.42	0.15	0.30	0.50	0.80	0.04	0.05	0.3	0.3	0.3





## Dimensions and mass:

Nominal diameter (mm)	Nominal cross-sectional area (mm <sup>2</sup> )	Mass per unit length (kg/m)			Transvers height rib (mm)
		Standard	Min	Max	
8	50.3	0.395	0.363	0.426	0.52
10	78.5	0.616	0.566	0.665	0.65
12	113	0.888	0.839	0.936	0.78
14	154	1.21	1.143	1.27	0.91
16	201	1.58	1.509	1.651	1.04
18	254	2.00	1.91	2.09	0.17
20	314	2.47	2.358	2.581	0.30
22	380	2.98	2.845	3.114	1.43
25	491	3.85	3.675	4.023	1.63
28	616	4.83	4.612	5.047	1.82
32	804	6.31	6.026	6.593	2.09
36	1018	7.99	7.63	8.349	2.34
40	1257	9.780	9.339	10.22	2.59

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# Steel Wire Rod Coil





### Standard ASTM A510 GR SAE1008

SIZE(mm)			Chemical Analysis l(%)					Mechanical Properties				
			C	Si	Mn	P	S	Reh (Mpa)	Rm (Mpa)	El%	Mass / Meter	Bend Test
5.5	Standard	Min	-	0.15	0.30	-	-	-	-	-	0.367	Accepted
6.5		Max	0.12	0.30	0.50	0.040	0.050	285	340	20	0.423	
8		Product	0.09-0.1	0.09	0.37	0.011	0.016	-	385	25.5	0.406	

### Standard ASTM A510 GR SAE1006

SIZE(mm)			Chemical Analysis l(%)					Mechanical Properties				
			C	Si	Mn	P	S	Reh (Mpa)	Rm (Mpa)	El%	Mass / Meter	Bend Test
5.5	Standard	Min	-	-	0.25	-	-	-	-	-	-	Accepted
6.5		Max	0.08	0.30	0.40	0.040	0.050	285	330	20	-	
8		Product	0.09-0.1	0.09	0.37	0.011	0.016	-	385	25.5	0.406	

Other SAE grades are manufactured to order from 1006 to 1023.

### SWRH82B Standard JIS G 3506

SIZE(mm)			Chemical Analysis l(%)					Mechanical Properties	
			C	Si	Mn	P	S	Tensile property	El%
1.9	Standard	Min	0.79	0.15	0.6	-	-	-	-
5.5		Max	0.86	0.35	0.9	0.03	0.03	-	-
6.5		Product	0.82	0.23	0.8	0.013	0.002	1226	-

### SWRH72B Standard JIS G 3506

SIZE(mm)			Chemical Analysis l(%)					Mechanical Properties	
			C	Si	Mn	P	S	Tensile property	El%
1.9	Standard	Min	0.69	0.15	0.3	-	-	-	-
5.5		Max	0.76	0.35	0.6	0.03	0.03	-	-
6.5		Product	0.72	0.23	0.8	0.013	0.002	995-1020	-

Other SWRH-B grades are manufactured to order.



# Steel Wire Rod Coil

Product	Application	Material used
Wire	<ul style="list-style-type: none"> <li>•Reinforcement</li> <li>•Manufacture of welded and facing materials</li> <li>•Packing</li> <li>•Metalware production</li> </ul>	Low-carbon, medium-carbon, high-carbon, low alloy
Cold-worked reinforcement	<ul style="list-style-type: none"> <li>•Reinforcement of reinforced concrete products</li> </ul>	Low-carbon and high-carbon
Mesh	<ul style="list-style-type: none"> <li>•Guardings</li> <li>•Reinforcement</li> <li>•Screening, classification, filtering</li> </ul>	Low-carbon, medium-carbon and alloy steel
Electrodes	<ul style="list-style-type: none"> <li>•Welding</li> <li>•Facing</li> </ul>	Low-carbon and alloy steel
Fibre	<ul style="list-style-type: none"> <li>•Reinforcement of concrete products</li> </ul>	Low-carbon, medium-carbon and high-carbon steel
Nails	<ul style="list-style-type: none"> <li>•Construction</li> <li>•Woodworking and furniture production</li> </ul>	Low-carbon
Ropes	<ul style="list-style-type: none"> <li>•Lifting machinery and equipment</li> <li>•Oil and gas production</li> <li>•Road and bridge structures</li> <li>•Reinforcement of reinforced concrete</li> <li>•Road construction and aircraft construction</li> </ul>	Wire rod made of medium-carbon, high-carbon and stainless steel
Fastening (bolts, nuts, screws, self-tapping screws, etc)	<ul style="list-style-type: none"> <li>•Machine building</li> <li>•Construction</li> <li>•Furniture production and woodworking</li> </ul>	Low-carbon, medium-carbon, high-carbon and alloy steel
Tyre cord	<ul style="list-style-type: none"> <li>•Reinforcement of tyres</li> <li>•Reinforcement of rubber goods</li> </ul>	High-carbon



## Pig iron & cast iron

### Cast Iron

No.	Type	Code	Si	S			P	Mn	C
				Grade 1	Grade 2	Grade 3			
1	White cast iron	L10	-	=<0.03	0.05-0.03	>0.05	=<0.07	=<0.25	=>3.5_4.2
2	Casting cast iron	Z14	=>1.25_1.60	=<0.03	0.05-0.03	>0.05	=<0.07	=<0.25	=>3.5_4.5
3		Z18	=>1.61_2.00	=<0.03	0.05-0.03	>0.05	=<0.07	=<0.25	=>3.5_4.6
4		Z22	=>2.01_2.40	=<0.03	0.05-0.03	>0.05	=<0.07	=<0.25	=>3.5_4.7
5		Z26	=>2.41_2.80	-			=<0.07	=<0.25	=>3.5_4.8
6		Z30	=>2.81_3.20	-			=<0.07	=<0.25	=>3.5_4.9

### By-products:

- Iron skull
- Iron slag
- Iron mill scale
- DRI sludge
- Pellets fines
- Head and bottom rebar
- Steel sheet scrap
- Head and bottom billets and slabs
- Furnace dust with high iron content
- Furnace dust with high percentage of zinc



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