



STEEL WIRE
STEEL WIRE ROPS



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 **KAVIR STEEL
COMPLEX**

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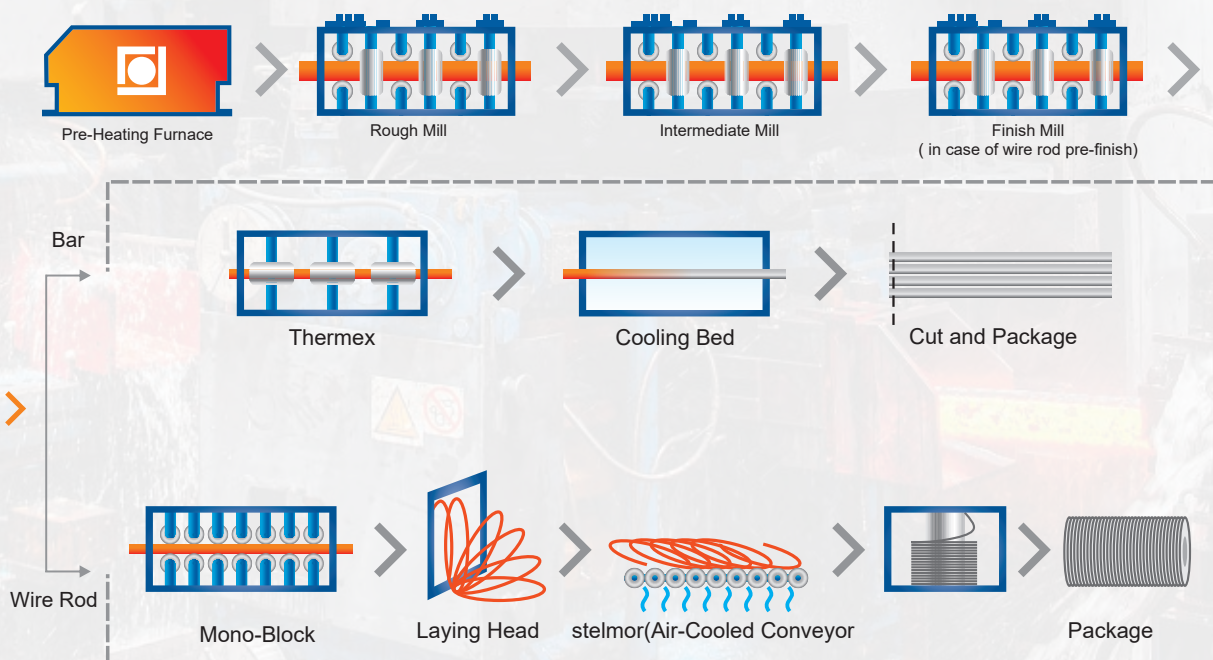
The present product portfolio comprises of a range of quality steel grades and sizes (5.5- 40 mm) in the form of plain and ribbed wire rod and bar used in complex industrial applications such as automotive, energy, mechanical engineering as well as construction.

KSC currently holds the sixty-second place in the hundred-largest Iranian companies, and ranked and awarded as one of the Iranian top exporters with around 55 percent of the total products exported to more than 18 countries in Asia, GCC, Europa and Africa.





Manufacturing Processes





> Laboratory

Here at Kavir steel, we test our products continuously and thoroughly. The quality department is focused and dedicated to achieving the rigorous international standards and/or customer specific requirements.

Kavir steel possesses unrivalled reputation for quality in the domestic market, while being accepted and admired internationally. As core values of the KSC code of conduct, the ever-growing process standardization and quality assurance are manifested in the implementations of a number of international standards including CE, IATF, ISO 9001, ISO 14001, ISO 45001, ISO 21001, ISO 17025, and also DIN 10080 for constructional products.

Kavir steel metallurgy Lab is fully equipped to test chemical, microstructural, mechanical and electrical properties of our products.





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PRODUCTS

REBAR

reinforcement steel





Rebar (reinforcing bar) or reinforcement steel is a steel bar or mesh of steel wires used as a tension device in reinforced concrete structures to strengthen and aid the concrete under tension. Concrete is a material that is very strong in compression, but relatively weak in tension. To compensate for this imbalance in concrete's behavior, rebar is cast into it to carry the tensile loads. It is an essential part of roads, buildings and infrastructures around the world. Kavir Steel rebar products are key component and part of the fabric of life, from sports venues, to bridges, offshore oil platforms and residential/non-residential construction. Our rebars meet our clients' stringent standards for physical properties and testing.

Our products are in the form of plain and ribbed bar and wire rod and produced according to the national and international standards, namely, INSO3132, ASTM A615, ASTM A706, BS4449.

Our rebar portfolio consists of AJ340, AJ420, AJ520, B500B and A500C.

Further grades or custom-made properties can be processed at Kavir Steel.

please contact the sales engineering department or consult Kavir steel product catalog.





> Wire rod for cold drawing

> Medium and high carbon steel wire rod

The high-carbon rod can be drawn and heat-treated to obtain desired mechanical properties. Hot rolling of high-carbon steel requires stringent process control to yield fine pearlite structure in order to maintain high strength and good drawability. We supply wire rod with medium or high carbon content, which serves as preliminary material in drawing plants, cable plants and cold rolling plants. Typical applications for the products made from our steel include technical springs, cable armouring wire, upholstery spring wire. Medium and high carbon steels with excellent surface and the required mechanical properties can also be used for wire rope, PC wire and PC strand applications.

Our cold drawn wire rods are delivered according to the following standards
EN 10016-2, EN 10016-4, ASTM-A510M and ISO 16120-1 to 16120-4.

Some of our drawing quality wire rod include:
C6D to C88D, C40D2 to C88D2, SAE 1006 to SAE 1088, SWRH42B to SWRH 82B.



> Low carbon steel wire rod

Industrial quality wire rod is a quality designation, referring to rod suitable for cold drawn-parts with non-critical applications such as nails, mesh, fencing, chains, paper clips, staples, baling wire, dishwasher and freezer racks, supermarket carriers, animal cages, small shaped products, barbed wires. The wire rod is also suitable for metal coating thanks to the adhesion of the metal coating (galvanizing or chrome plating) to the wire rod surface.

Moreover, low carbon and trace elements, with possible additions of alloys of B, Al and Ti allow wire rod with low tensile strengths and very good drawing and cold rolling properties as well as high cross-sectional reduction.

Some of our low carbon drawing quality wire rod include C6D to C22D and SAE1006 to SAE 1022.





FREE MACHINING OR FREE CUTTING STEEL PRODUCTS



The steels for high-speed machining, commonly called free-cutting steels, also known as free machining steels, have been specially designed to be machined by high removal rate and desired chip shape and size.

From metallurgical point of view, the chemical composition of these steels is normally defined as carbon content ranging from 0.07% to 0.60%, sulphur ranging from 0.15% to 0.40%, and phosphorus from 0.07% to 0.10%. The sulfur element, in particular, ensures the fragmentation of the chip generated during cutting, extending the life of the cutting tools.

Our free cutting steels are used to manufacture a huge variety of precision components in various sectors. These grades are designed to behave reliably in high-speed manufacturing processes.

Kavir Steel supplies a wide range of composi-

tions to meet national and international materials specifications and/or performance expectations. We may also tailor our products to meet your specific requirements.

Our Free cutting grade are produced according to the following standards

EN ISO 683-4: 2018 (Hot-rolled products) | EN 10277: 2018 (Bright products), EN 10087, ASTM A29 / 29M and, some of the grades we offer include:

11SMN30, 35S20

Other alloys with good machinability in our current portfolio are CK10, CK12, CK35, CK45.

> STEEL WIRE ROD FOR WELD METAL



Stable and precise welding results are reliant on both the tight and accurate control of the chemical composition and the limiting of residual elements. Compliant with a variety of national and international specifications (ISO 14171, ISO 14341 and AWS A5.18), our wide range of welding wire rods are suitable for processing into welding electrodes, MIG / MAG (gas-shielded metal arc) electrodes and submerged arc welding wires.

The rod has carefully controlled chemistry and mechanical properties so that it can be drawn into wire for producing stick electrodes, and spools of wire for continuous wire feed applications of either solid welding wire or flux-cored welding wire.

Some of our welding wire grades are:

SG2 (11MnSi6), SG3(10MnSi7) (MIG/MAG), S2,

S2Si (11Mn4Si), S3Si, S2Mo (11MnMo4-5)
(Submerged arc welding), EH14, SWRY11





> SPRING STEELS

Compared to other steels, spring steels show higher strength and ductility (i.e., they can be effectively deformed up to their respective elastic limit "Rp"). In terms of the processing, they respond properly to hard drawing, rolling and/or heat treatment and can be cold or hot formed.

We supply the preliminary material for the manufacture of spring elements (suspensions, compression, tension and torsion springs) that are used for cars, machine tools, forming

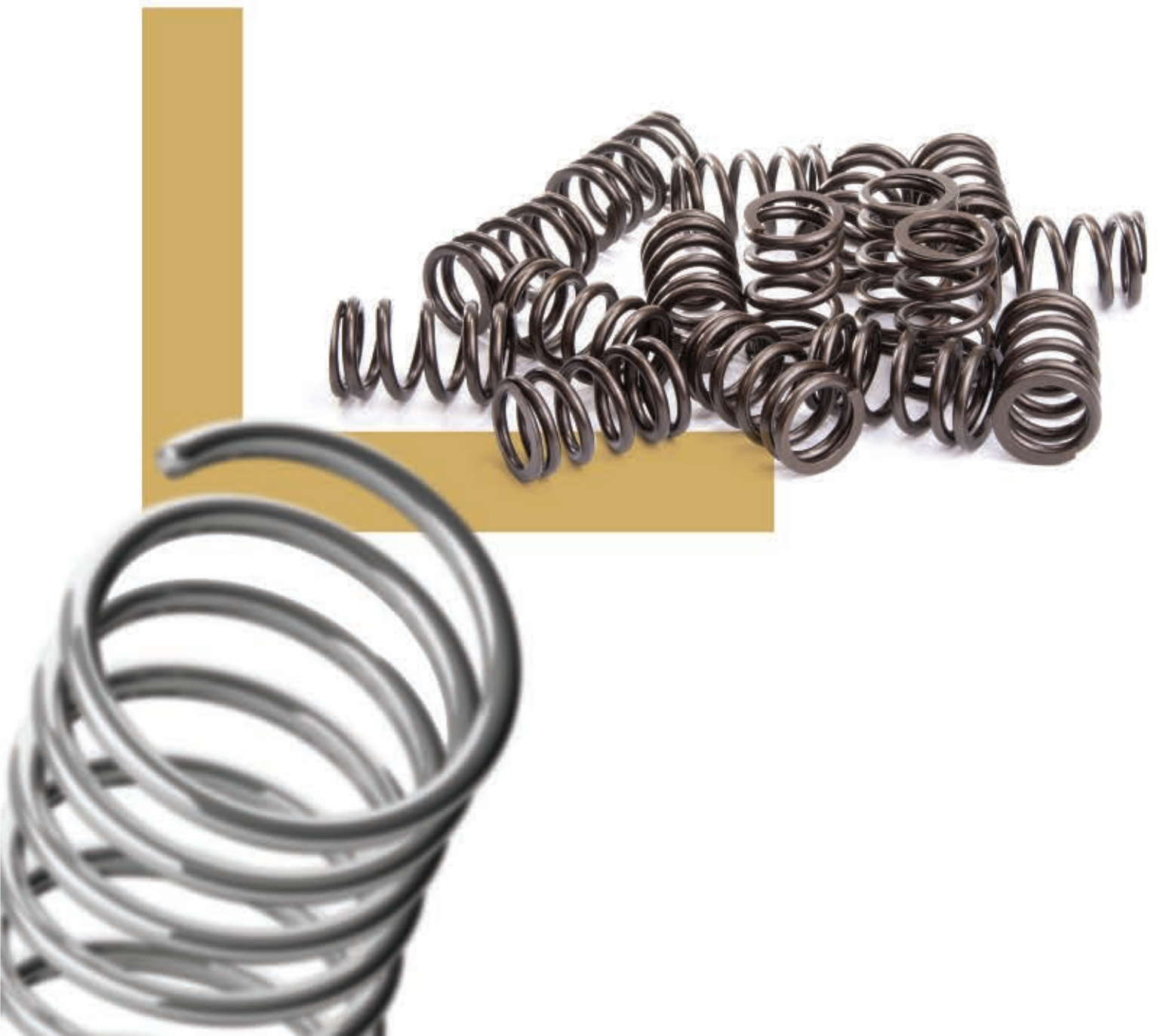
machines, hydraulic aggregates, home appliances, beds and many more. The wire rod for springs meets the requirements for high dynamic loading with long service life, for high static loading.

Some of the spring grades our company supplies:

for mission critical applications

38Si7, 54SiC6, 55CR3, 50CRV4 according to EN 10089: 2002, and AISI SUP9-SUP6-SUP12 as JIS Standards

for non-critical applications: SWRH 47A, SWRH 47B, SWRH 52B, SWRH 62A, SWRH 67B, SWRH 72B, SWRH 82B under ASTM A227 and EN 10270-2 standards.



> BEARING STEEL

Bearing Steel products

Ever-growing demand for increasing engine efficiency calls for materials to withstand higher amount of load and wear.

As mission critical part of power transition system, bearings are used under severe conditions where high compression and a large impact load are repeatedly applied over a long period. Today's industry goals call for Design for Life engine bearings. Therefore, bearing steels

trapped gas species.

Processed into balls, rollers, needles and axles, our bearing steels grade, 100Cr6 (material number 1.3505, SAE 52100) is delivered according to DIN EN ISO 683-17 and ASTM A295.



require superior fatigue strength, in addition to high hardness and strength together with strict cleanliness level in order to tolerate a severe load.

Our bearing quality wire rod is designed for the production of components to various kinds of rolling bearings. It meets the strict quality requirements regarding surface defects, inner purity, carbide segregations and amount of





PC STRAND

Incorporating high tensile strength and consistent qualities, our wire rod for prestressed wire and prestressed concrete (PC) strand are designed to withstand the highest mechanical stresses.

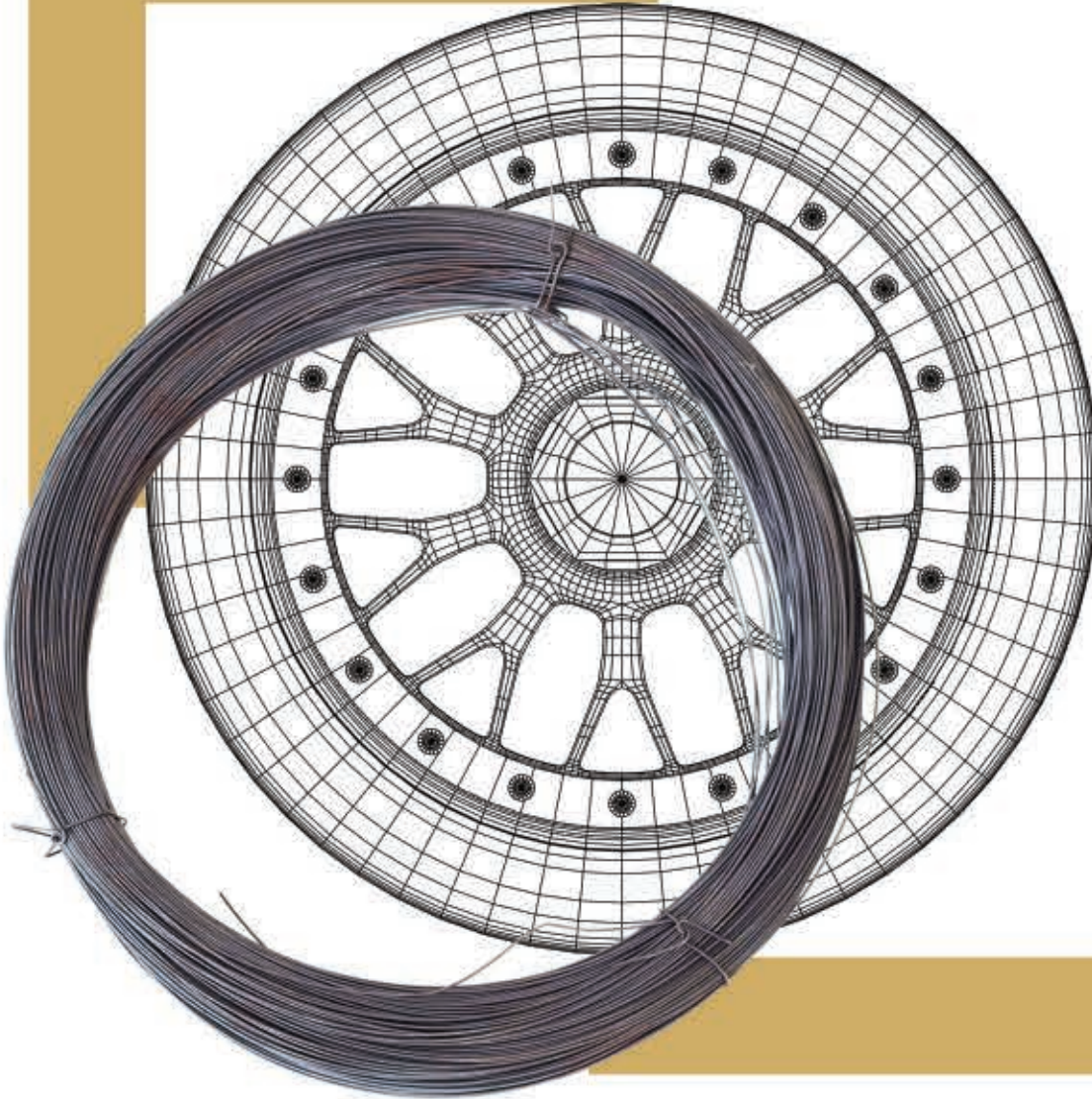
We supply high carbon wire rod for PC strand used as reinforcement of concrete structures. Depending on the needs and demands of customers, as well as the mechanical, physical and chemical properties of the product, different elements such as chromium and vanadium are added to this category of products. The main applications for prestressing steel include:

- bridge building
- industrial and residential construction
- railway construction
- wind power stations

For more information or technical consultancy, please contact the sales engineering department.

Some of our grade for this application are C88D2 - SWRH82B, SWRH77B.





TIRE CORD

Bead wire is the steel wire made of high-carbon steel typically plated with red copper or bronze. It has a high strength, a good flexibility, a supreme fatigue property and an excellent linearity. It can be adhered to the rubber easily, and is mainly used in the tire bead as the framework material for reinforcement. You can find it widely applied in car tires, light truck tires, cargo truck tires, heavy equipment tires and plane tires.

The steel cord is a combination of several thin wires that help tires absorb shock while

improving comfortability for passengers. If the steel cord is made of highest-grade steel, the tire can withstand high level of stresses, thereby improving the stability and safety during driving.

Our current grades for these applications include SWRH 67B, SWRH 72B, SWRH 82B.





> BOLT AND NUT

Steel wire rod for fasteners:

The wire rod for screws and connecting components is cold shaped, hot shaped or machined. This includes various bolts, nuts, trunnions, and machine parts used in various industrial sectors. The material for this application meets the requirements of high surface and internal quality.

Cold heading steel CHQ (heat treatable and non-heat treatable)

Cold heading (or cold forming) is a method of forming metal in progressive steps into net shaped or near net shaped parts like screws, bolts, nuts, rivets.

The cold heading process for manufacturing fasteners and fixings demands wire rod that possesses structural homogeneity and excellent deformability, required strength/hardness as an end product, and no surface defect or inclusion which may result in processing crack.

Our typical materials used for cold heading products are:

Boron (low and medium carbon and low alloy)

steels Our boron steels offer enhanced formability, as-rolled strength, lower processing time and cost, and fairly low susceptibility to head bursts. This enables them to be processed into more complex fastener shapes. These steels offer excellent hardenability and consistent performance during cold forming and subsequent heat treatments.

Low carbon aluminum-killed steels

Our low-carbon aluminum-killed steels are suitable for the full range of cold heading applications. They offer enhanced ductility, formability and strength.

Alloy steels

We offer low-alloy (with and without boron) heat-treatable wire rod products with controlled hardenability. These products meet national and international specifications. We can also supply them to meet your specific requirements.

Some of the CHQ grades supplied by Kavir Steel according to EN 10263-2, 10263-3, 10263-4 and ASTM F2282-15 are as follow:

10B21, 10B38, 20MnB4, 23MnB4, 30MnB4, 36CrB4, SCM435 (35CrMo4), C10C, C20C, SAE1022-34Cr4-41Cr4-SCM415.



Bundling Method	Bundle Weight(kg)	Length	Size(mm)
4 Point with steel wire staple	2000kg	9-12	8 to 40

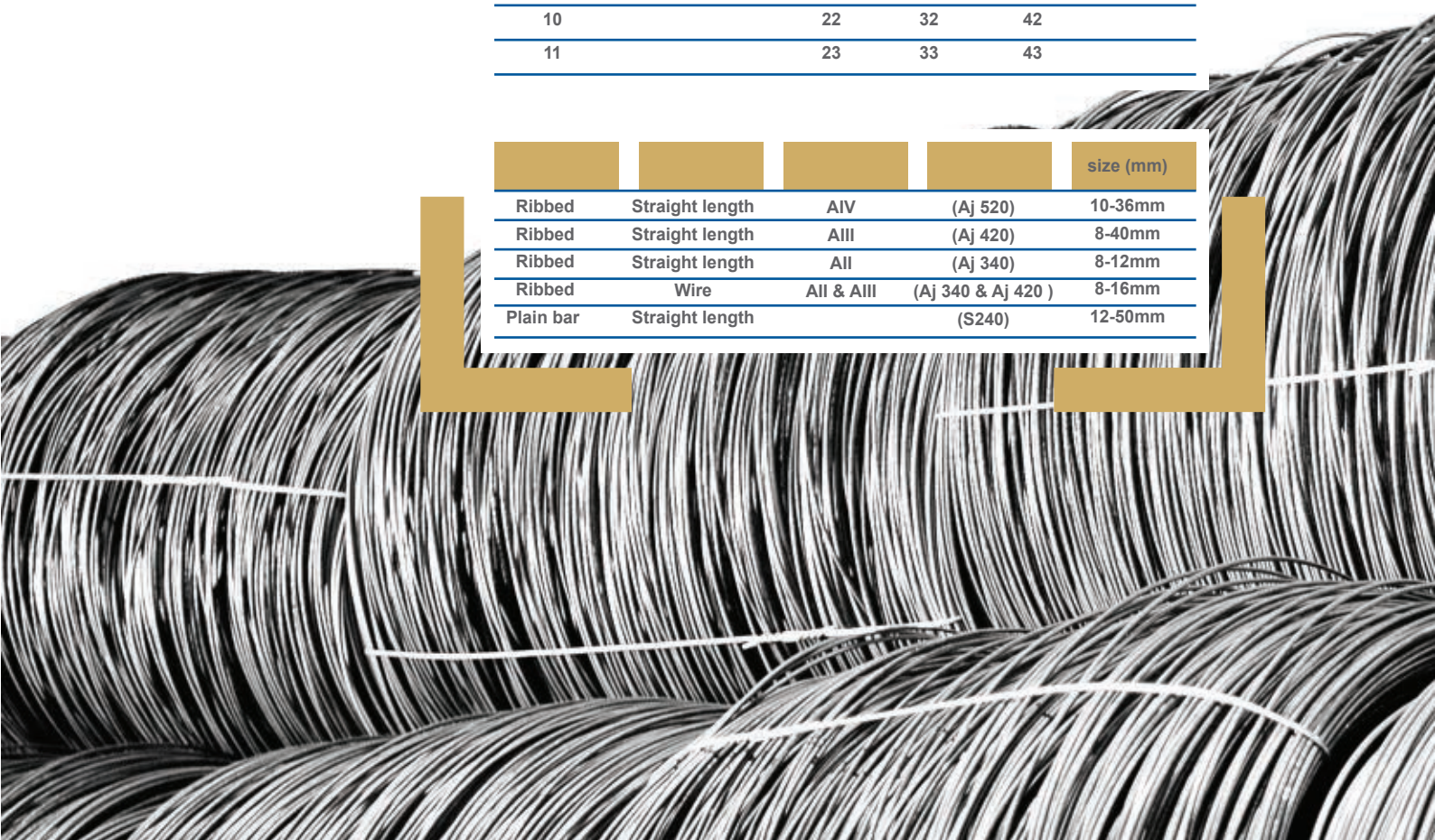
Bundling Method	Bundle Weight(kg)	Length	Size(mm)
4 Point with steel wire staple	2700kg	6-12	8 to 40

For cooling	Wire rod dimensions (mm)	Coil weight (kg)	Size range (mm)
Counter clockwise	I.D=850mm O.S=1250mm	2000 kg	5.5-17

Packaging method	Number of packed wire	Wire standard weight
4 point with wire staple	Single	2000kg

Wire Rod		Plain Bar			
5/5	12	12	24	34	44
6	12/5	14	25	35	45
6.5	13	16	26	36	46
7	14	17	27	37	47
8	15	18	28	38	48
8/5	16/5	19	29	39	49
9	17	20	30	40	50
9/5		21	31	41	
10		22	32	42	
11		23	33	43	

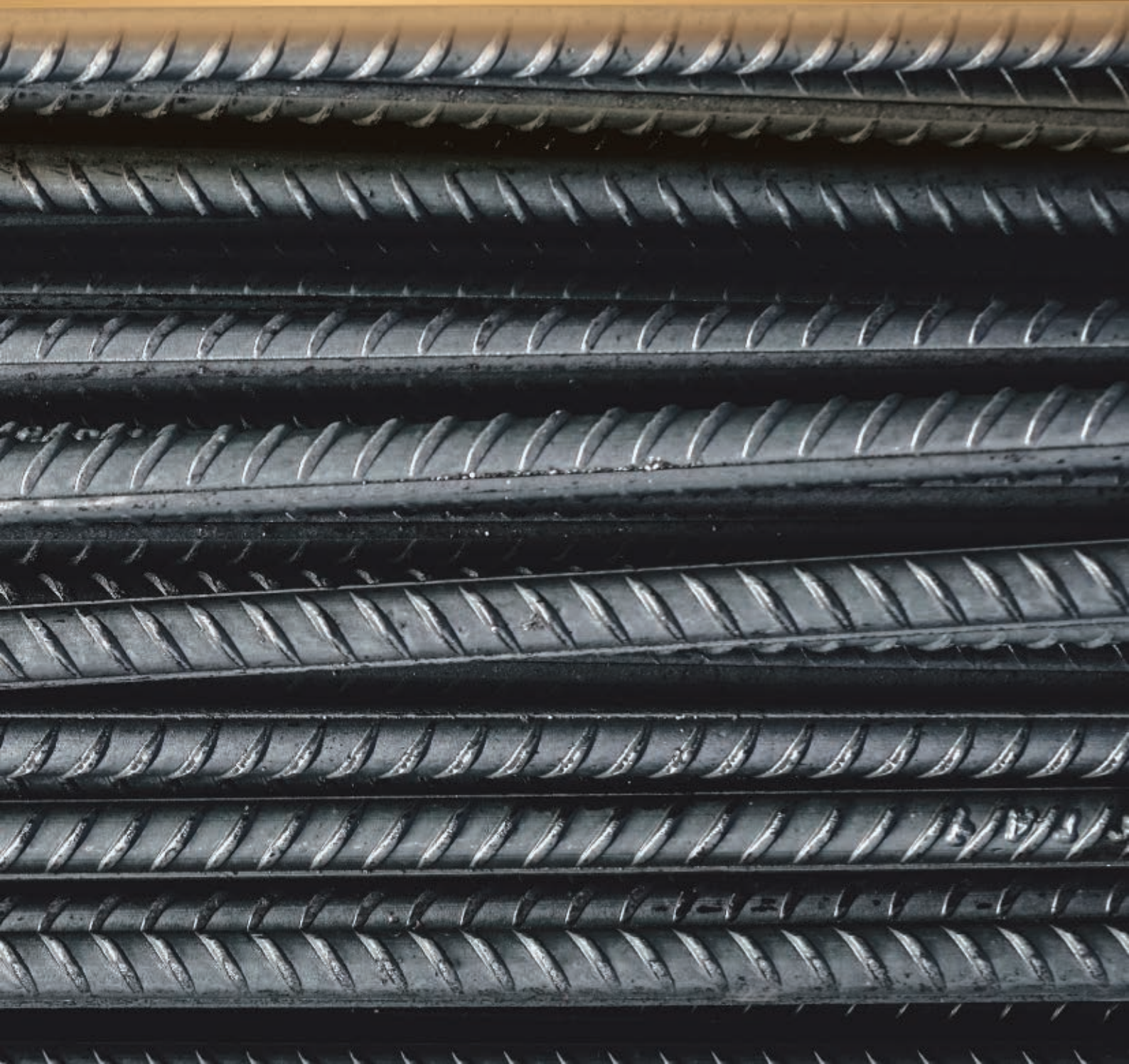
				size (mm)
Ribbed	Straight length	AIV	(Aj 520)	10-36mm
Ribbed	Straight length	AIII	(Aj 420)	8-40mm
Ribbed	Straight length	All	(Aj 340)	8-12mm
Ribbed	Wire	All & AIII	(Aj 340 & Aj 420)	8-16mm
Plain bar	Straight length		(S240)	12-50mm





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