



WIRE ROD

Brochure



Pioneering Excellence in Steel Manufacturing

At Horizon Steel, we are proud to be Pakistan's first and only modern bar and rod mill, harnessing cutting-edge rolling technologies to deliver precision, consistency, and quality. Our state-of-the-art No-Twist 6-Stand High-Speed Block System, paired with advanced automation and control, ensures our products meet the highest international benchmarks.

Founded as Pakistan's premier High-Speed Wire Rod Mill, we have built a strong reputation producing Alloy and Non-Alloy Low Carbon, Medium Carbon, and Cold Heading Quality Steel Wire Rods — trusted by industries nationwide.



Wire Rod Grades Manufactured:

Alloy and Non-Alloy Low Carbon Grades

Our low carbon steel products are ideal for a variety of applications, including cold heading, fastener manufacturing, barbed wire, nails, refrigerator condensers and shelves, coated wires for fences, steel wool, galvanized drawn wire, and components for electrical industry. This versatility underscores our products' adaptability to different manufacturing needs.

Alloy and Non-Alloy Medium Carbon Grades

For applications requiring medium content, our products excel in applications such as the manufacturing of nails, bolts, springs for mattresses, sling wire rope, electric cable reinforcements, and more. The robustness and durability of our wire rods make them suitable for products that demand high tensile strength and resilience.

Physical Conditions and Metallurgical Properties of Wire rod coils

- Coil free from harmful surface defect. Max depth of surface defects is 1.0% max of wire rod diameter.
- Micro structure: Predominantly fine-grained Ferrite.
- Micro Inclusions: Max level 2.0 (both thin and thick series) as per ASTM E45.
- Grain size 9-12 as per ASTM E 112

Dimensional tolerances:

Size range (Diameter in mm)	Tolerance on Diameter (mm)	Ovality (out of roundness) tolerance (mm) max
5.5~7.0	+/- 0.25	0.4
>7.00	+/- 0.30	0.5

Strapping, packaging and delivery:

Each coil has 6 straps tied with 7 mm diameter wire.

Labeling

One label is attached to each coil and marked with name of manufacturer, size, grade, and coil weight.

Test Certificate

Inspection certificate provided with detailed chemical composition and mechanical properties.



WIRE ROD GRADES

AISI/SAE STANDARDS

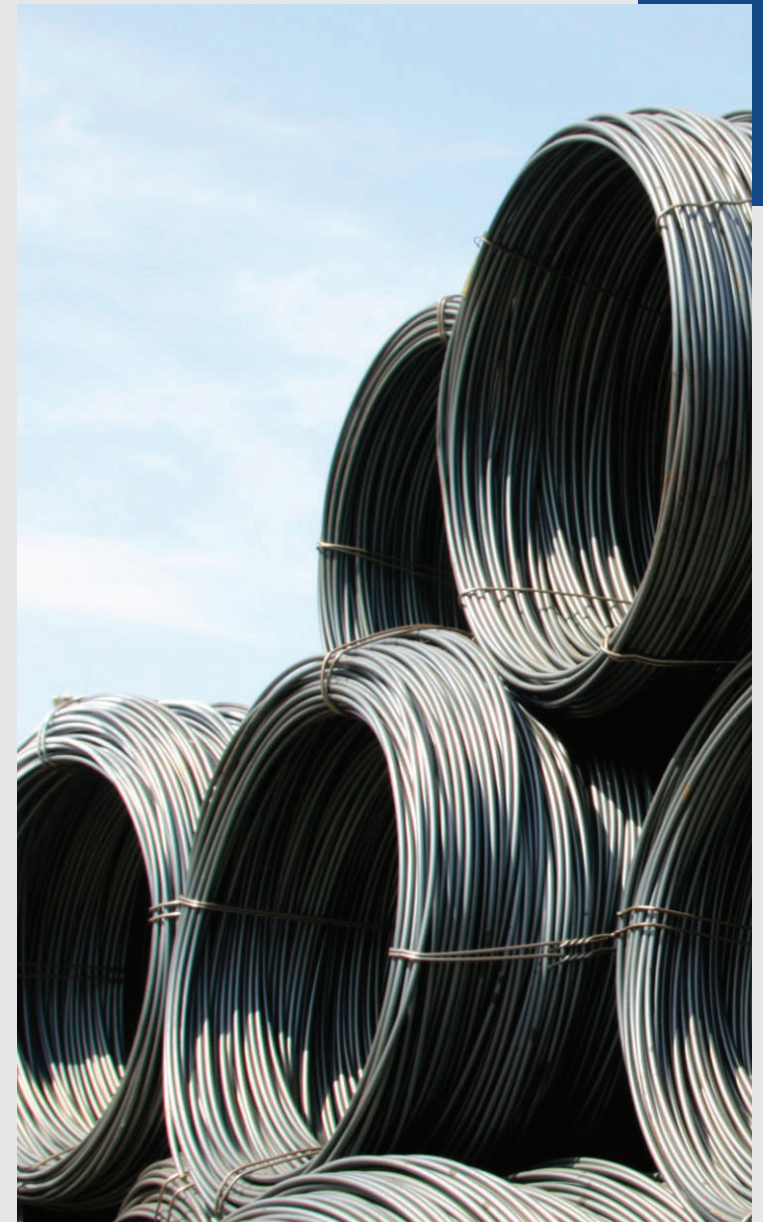
Alloy and Non-Alloy – Low Carbon / Mild Steel Wire Rods

SPECIFICATION	CHEMICAL COMPOSITION					TYPICAL MECHANICAL PROPERTIES			
	C%	SI%	Mn%	P%	S%	*Cr% (>0.3)	*B% (>0.0008)	Tensile Strength (N/mm ²)	Elongation %
AISI / SAE 1006	0.08 max	0.02 – 0.15	0.25 – 0.4	0.030 max	0.030 max	-	-	430 max	28 min
AISI / SAE 1008	0.06 – 0.08	0.02 – 0.20	0.25 – 0.4	0.030 max	0.030 max	-	-	450 max	28 min
AISI / SAE 1010	0.08 – 0.13	0.05 – 0.20	0.30 – 0.60	0.030 max	0.030 max	-	-	460 max	26 min
AISI / SAE 1012	0.10 – 0.15	0.10 – 0.20	0.30 – 0.60	0.030 max	0.030 max	-	-	490 max	24 min
AISI / SAE 1015	0.13 – 0.18	0.10 – 0.20	0.30 – 0.60	0.030 max	0.030 max	-	-	540 max	22 min
AISI / SAE 1018	0.15 – 0.20	0.10 – 0.30	0.60 – 0.90	0.030 max	0.030 max	-	-	550 max	22 min
AISI / SAE 1020	0.18 – 0.23	0.10 – 0.30	0.30 – 0.60	0.030 max	0.030 max	-	-	570 max	20 min
AISI / SAE 1022	0.18 – 0.23	0.10 – 0.30	0.7 – 1.00	0.030 max	0.030 max	-	-	580 max	20 min
AISI / SAE 1025	0.23 – 0.28	0.10 – 0.30	0.70 – 1.00	0.030 max	0.030 max	-	-	600 max	20 min

Alloy and Non-Alloy – Medium Carbon Steel Wire Rods

SPECIFICATION	CHEMICAL COMPOSITION					TYPICAL MECHANICAL PROPERTIES			
	C%	SI%	Mn%	P%	S%	*Cr% (>0.3)	*B% (>0.0008)	Tensile Strength (N/mm ²)	Elongation %
AISI / SAE 1030	0.28 – 0.34	0.10 – 0.30	0.60 – 0.90	0.030 max	0.030 max	-	-	580 – 630	16 min
AISI / SAE 1035	0.35 – 0.42	0.10 – 0.20	0.60 – 0.90	0.030 max	0.025 max	-	-	600 – 730	14 min
AISI / SAE 1040	0.40 – 0.43	0.15 – 0.30	0.70 – 0.80	0.025 max	0.025 max	-	-	720 – 820	12 min
AISI / SAE 1045	0.45 – 0.50	0.15 – 0.30	0.60 – 0.90	0.030 max	0.025 max	-	-	750 – 850	12 min

*Alloy grades with Chromium (Cr) / Boron (B) on made to order basis.



WIRE ROD GRADES

JIS STANDARD

Low Carbon/Mild Steel Wire Rods

SPECIFICATION JIS G 3505	CHEMICAL COMPOSITION				TYPICAL MECHANICAL PROPERTIES	
	C%	Mn%	P%	S%	Tensile Strength (N/mm ²)	Elongation %
SWRM 6	0.06 – 0.08	0.25 – 0.4	0.040 max	0.040 max	450 max	30 min
SWRM 8	0.06 – 0.10	0.25 – 0.4	0.040 max	0.040 max	480 max	28 min
SWRM 10	0.08 – 0.13	0.25 – 0.60	0.040 max	0.040 max	500 max	28 min
SWRM12	0.10 – 0.15	0.30 – 0.60	0.040 max	0.040 max	530 max	28 min
SWRM 15	0.13 – 0.18	0.30 – 0.60	0.040 max	0.040 max	450 max	30 min
SWRM 18	0.15 – 0.20	0.30 – 0.60	0.040 max	0.040 max	480 max	28 min
SWRM 20	0.18 – 0.23	0.30 – 0.60	0.040 max	0.040 max	500 max	28 min
SWRM 22	0.20 – 0.25	0.30 – 0.60	0.040 max	0.040 max	530 max	28 min

Welding Electrode Grade Wire Rods

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS					MECHANICAL PROPERTIES	
	C%	SI%	Mn%	P%	S%	Tensile Strength (N/mm ²)	Elongation %
SWRY11	0.05 – 0.09	0.035 max	0.35 – 0.65	0.025 max	0.025 max	420 max	30 min
SAE 1006	0.06 – 0.08	0.15 max	0.25 – 0.35	0.025 max	0.025 max	420 max	28 min
EWNR	0.05 – 0.09	0.035 max	0.35 – 0.65	0.025 max	0.025 max	420 max	30 min



WIRE ROD GRADES

JIS STANDARD

Alloy and Non-Alloy Medium Carbon Steel Wire Rods

SPECIFICATION JIS G 3506	CHEMICAL COMPOSITION					TYPICAL MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	*B% (>0.0008)	Tensile Strength (N/mm ²)	Elongation %
SWRH 27	0.24 – 0.31	0.15 – 0.35	0.30 – 0.60	0.030 max	0.030 max	-	-	-
SWRH 32	0.29 – 0.36	0.15 – 0.35	0.30 – 0.60	0.030 max	0.030 max	-	-	-
SWRH 37	0.34 – 0.41	0.15 – 0.35	0.30 – 0.60	0.030 max	0.030 max	-	-	-
SWRH 42A	0.39 – 0.46	0.15 – 0.35	0.30 – 0.60	0.030 max	0.030 max	-	750 – 870	15 min
SWRH 42B	0.39 – 0.51	0.15 – 0.35	0.60 – 0.90	0.030 max	0.030 max	-	770 – 890	15 min

*Alloy grades with Boron (B) on made to order basis.

Aluminium Killed Grade (Cold Heading Application)

SPECIFICATION JIS G 3507-1	CHEMICAL COMPOSITION					TYPICAL MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	Al%	Tensile Strength (N/mm ²)	Elongation %
SWRCH 6A	0.06 – 0.08	0.10 max	0.25 – 0.40	0.025 max	0.025 max	> 0.02	450 max	28 min
SWRCH 8A	0.07 – 0.10	0.10 max	0.25 – 0.40	0.025 max	0.025 max	> 0.02	480 max	28 min
SWRCH 10A	0.08 – 0.13	0.10 max	0.25 – 0.60	0.025 max	0.025 max	> 0.02	500 max	24 min
SWRCH 12A	0.10 – 0.15	0.10 max	0.25 – 0.60	0.025 max	0.025 max	> 0.02	530 max	24 min



Key Mill Features

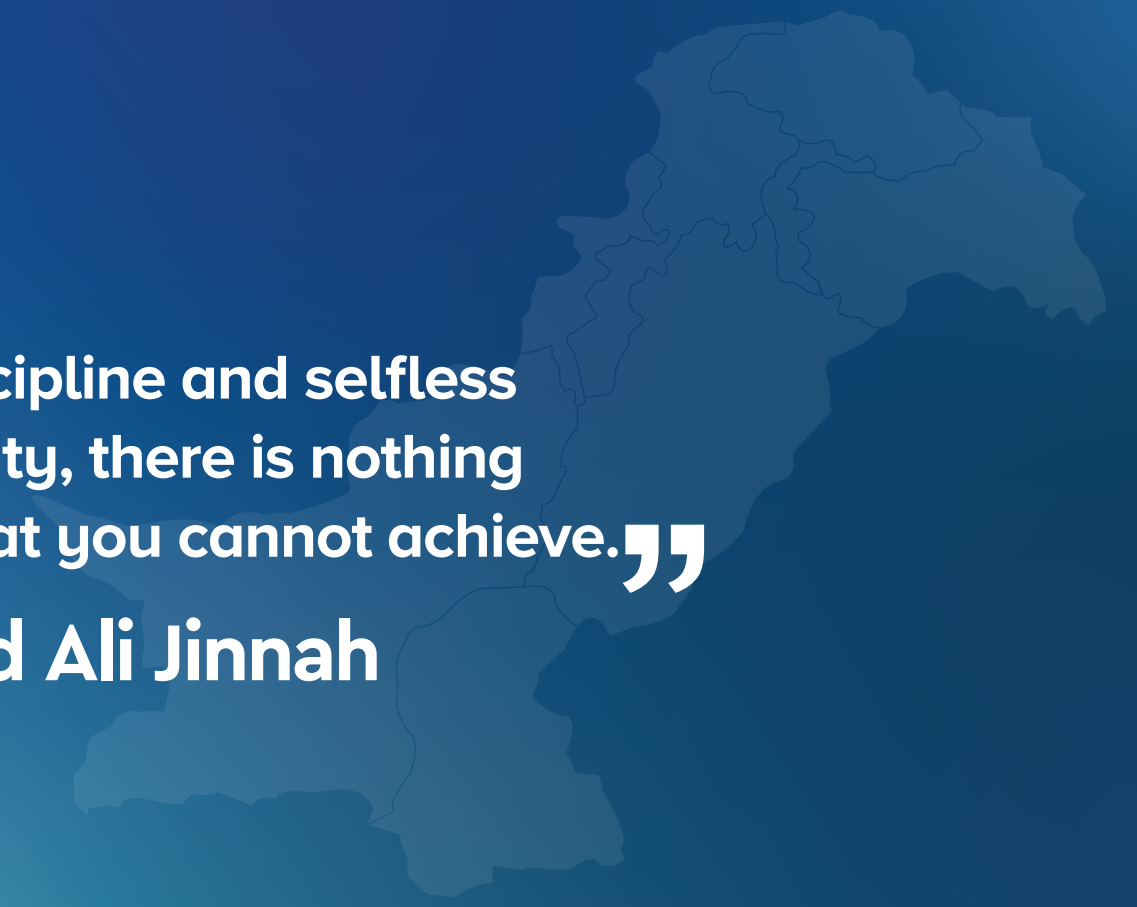
▪ Annual Production Capacity	113,000 M.Tons/Annum
▪ Size Range	5.5 mm – 22 mm in diameter
▪ Coil Weight	170 kg – 220 kg (2-ton single coil available on request)
▪ Bundle Weight	2,000 Kg
▪ Coil Outside Diameter	1250 mm
▪ Coil Inside Diameter	850 mm
▪ Rolling Mill Strand	Strand 23
▪ Type	Continuous and No Twist High Speed Block
▪ Pass	Tungsten Carbide Rings Std: 18 to 23
▪ Line Speed	29 M/Sec.
▪ Quality Assurance Standards	ISO 9001:2015, ISO 14001:2015 & ISO 45001: 2018

Special Features

- Very low content of tramp elements
- Very good surface quality
- Suitable for both pickling as well as mechanical descaling practices
- Low N₂ content
- Wire rod surface free from harmful defects
- Low content of Sulphur and phosphorus
- Control of chemical composition within a very close band

Benefits To Customer

- Smooth drawing at high drawing speed
- Consistent property of the drawn wire
- Ease of scale removal by mechanical descaling
- Customized grades suited to varied end application needs



“With faith, discipline and selfless devotion to duty, there is nothing worthwhile that you cannot achieve.”

Muhammad Ali Jinnah

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