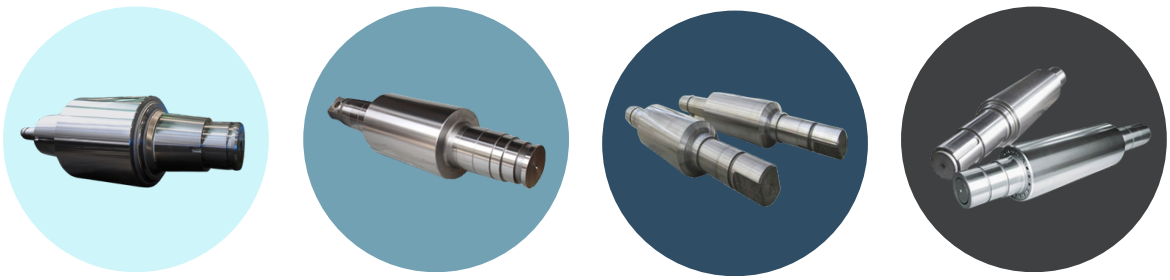
MetalFlow

EMPOWERING INDUSTRIES

Table of Contents



Pearlitic Nodular Cast Iron Roll

Standard Specifications

Pearlitic nodular rolls are obtained by adding alloy elements into the nodular cast iron and going through special heat treatment thereafter. Pearlitic nodular rolls have high strength, good thermal properties and resistance to emergencies as well as small hardness gradient of working layer.

Grade	Element Composition					
	C	Si	Mn	Cr	Ni	Mo
SGP I	3.30 - 3.50	1.70 - 1.90	0.40 - 0.60	0.30 - 0.50	0.30 - 0.50	0.10 - 0.20
SGP II	3.30 - 3.50	1.60 - 1.80	0.50 - 0.70	0.30 - 0.50	0.40 - 0.60	0.10 - 0.20
SGP III	3.30 - 3.50	1.50 - 1.70	0.50 - 0.70	0.40 - 0.60	0.60 - 0.80	0.20 - 0.40
SGP IV	3.30 - 3.50	1.40 - 1.60	0.50 - 0.70	0.50 - 0.70	1.00 - 1.20	0.20 - 0.40
SGP V	3.30 - 3.50	1.30 - 1.50	0.50 - 0.70	0.60 - 0.80	1.20 - 1.40	0.20 - 0.40

Grade	Barrel Hardness (HSC)	Tensile Strength (MPA)	Bending Strength (MPA)
SGP I	45 - 50	> 400	> 800
SGP II	50 - 55	> 400	> 800
SGP III	55 - 60	> 400	> 800
SGP IV	60 - 65	> 400	> 800
SGP V	65 - 70	> 400	> 800

Applications:

- Roughing stands of bar, wire rod, and medium section mills
- Intermediate stands of bar mills
- Sleeves of universal stands

Acicular Nodular Cast Iron Roll

Standard Specifications

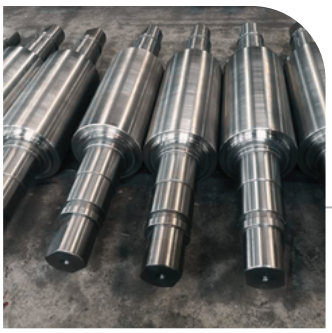
Acicular nodular rolls have become a benchmark in the rolling of long product and in suitable for a wide range of applications due to its hardness penetration good wear assistance and tough necks. These rolls can be produced by static casting or by using the centrifugal cast double-pour method.

Grade	Element Composition					
	C	Si	Mn	Cr	Ni	Mo
SGA I	3.30 - 3.50	1.40 - 1.60	0.50 - 0.70	0.40 - 0.60	2.50 - 2.70	0.40 - 0.60
SGA II	3.30 - 3.50	1.30 - 1.50	0.50 - 0.70	0.50 - 0.70	2.50 - 2.70	0.40 - 0.60

Grade	Barrel Hardness (HSC)	Tensile Strength (MPA)	Bending Strength (MPA)
SGA I	60 - 65	> 400	> 800
SGA II	65 - 70	> 400	> 800

Applications:

- Intermediate and finishing stands of medium section mills, bar mills, and wire mills
- Forming, sizing, reducing, and straightening stands for pipe and tube mills
- Sleeves of universal stands



High-Speed Steel
Standard Specifications

High-speed steel offers excellent wear resistance and are composed of high alloy shell with nodular iron core. The high alloy shell imparts excellent wear resistance and minimal hardness drop from barrel surface to inner the working layer.

Grade	Element Composition						
	C	Si	Mn	Cr	Ni	V	W
HSS	1.5 - 2.0	0.3 - 1.0	0.4 - 1.2	3.0 - 8.0	0.4 - 1.1	1.0 - 3.0	0.1 - 1.0

Grade	Barrel Hardness (HSC)	Tensile Strength (MPA)	Bending Strength (MPA)
HSS	70 - 90	> 450	> 800

Applications:

- Pre-slit and slit rolling stands of bar and wire rod mills
- Finishing stands of bar and wire rod mills
- Roughing stands and early finishing stands of hot strip mills

Adamite
Standard Specifications

Adamite offers both desirable properties of iron and steel. With appropriate alloy addition and heat treatment, adamite offers a good balance of wear resistance, toughness, and fire-crack resistance. Moreover, adamite does not display a significant hardness gradient in the working layer.

Grade	Element Composition					
	C	Si	Mn	Cr	Ni	Mo
Adamite	1.5 - 2.0	0.3 - 0.8	0.6 - 1.0	0.7 - 1.5	0.5 - 1.6	0.2 - 0.5

Grade	Barrel Hardness (HSC)	Tensile Strength (MPA)	Bending Strength (MPA)
Adamite	40 - 50	> 500	> 700

Applications:

- Roughing stands of bar and wire rod mills
- Roll rings and roll sleeves for universal mills

Ferritic SGP
Standard Specifications

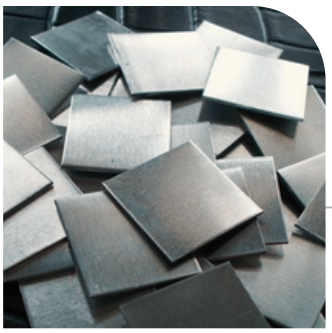
The microstructure of ferritic SGP consists of a ferrite, ferrite-pearlite matrix together with free carbides. This microstructure imparts Ferritic SGP with excellent resistance to fire cracks and thermal shocks.

Grade	Element Composition					
	C	Si	Mn	Cr	Ni	Mo
Ferritic SGP	3.0 - 3.5	0.3 - 0.8	0.5 - 1.0	0.8 - 1.5	3.0 - 5.0	0.6 - 1.3

Grade	Barrel Hardness (HSC)	Tensile Strength (MPA)	Bending Strength (MPA)
Ferritic SGP	40 - 50	> 600	> 900

Applications:

- First stands of bar & wire rod mills



Electrolytic Nickel
Standard Specifications

The standard specifications used for production of different types of electrolytic nickel in this region are listed below.

Electrolytic Nickel (Cut Cathodes):
- High purity nickel that produces minimal metallic residues upon dissolution.

Electrolytic Nickel (Rounds):
- High purity electrolytic nickel designed for electroplating with titanium anode basket. Unique shape ensures good solution flow, ensuring uniform current density and high quality deposits.

Electrolytic Nickel (Powder):
- High purity nickel powder with fine, 3D filamentary structure. Uniform size distribution and density offers controlled porosity in sintered electrodes and other porous structures.

Grade	Dimensions	Governing Standard	Applications
Electrolytic Nickel (Cut Cathodes)	880mm x 860mm x 10mm/ 100mm x 100mm x 10mm	GB/T6516-2010	Stainless steel manufacturing, nickel alloying, nickel plating, high alloy steel, casting
Electrolytic Nickel (Rounds)	Diameter: 18mm Thickness: 5mm	GB/T 6516-2010	Nickel plating, batteries, alloying
Electrolytic Nickel (Powder)	Particle Size: 0.9-4.0μm Density: 0.5-1.3g/cm3	GB/T5247-2012	Catalyst, cemented carbides, batteries, polymers for electronic applications

Contact Us

Address: 3 Anson Road, Singapore 079909

Contact Number: +65 6537 3180

Email Address: sales@metalflow.com.sg

MetalFlow

EMPOWERING INDUSTRIES