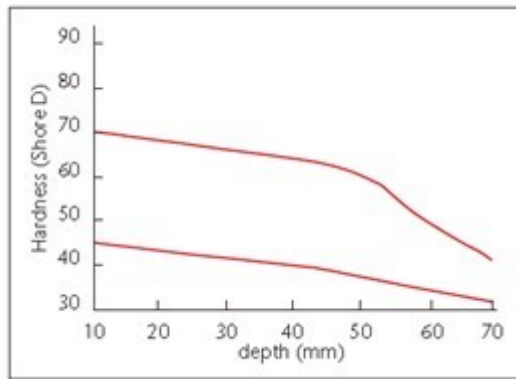
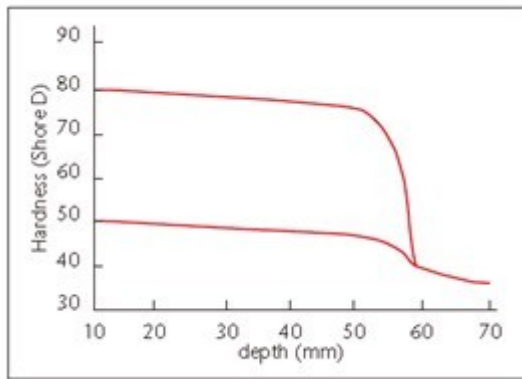


Spheroidal Graphite Cast Iron Roll

Spheroidal Graphite Cast Iron Roll



Thanks to its higher content of Ni and Mo alloys, pearlite, bainite and martensite matrixes with excellent performance are produced. The graphite is spherical form, demonstrating good heat transfer property and high tensile strength. Through changing the structure into bainite or martensite matrix, chemical composition of needle-like spherical iron of heat treatment, a dense reticular primary cementite with high wear-resistance is produced.



Figure

1. Centrifugal

Figure 2. Static

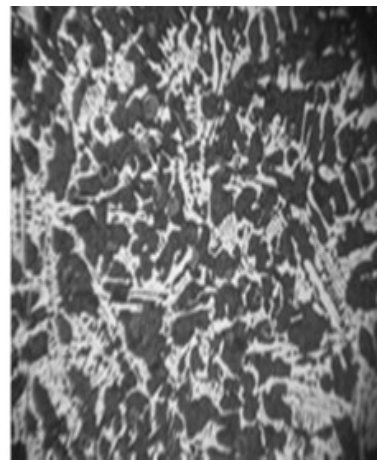
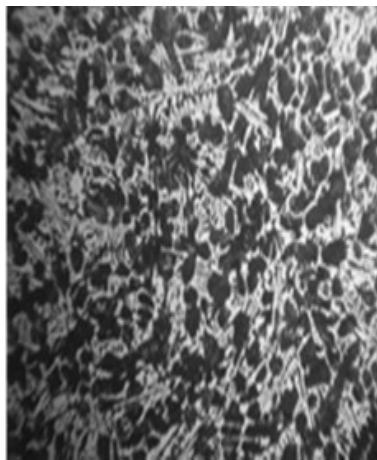


Figure 3. Pearlitic

Figure 3.

Bainitic

Mechanical properties

Designation of rolls	Barrel hardness (HSD)	Neck hardness (HSD)	Tensile strength (MPa)
CrMo semi-chilled SG cast iron rolls	40~55	32~50	□300
CrMo indefinite chilled SG cast iron rolls	55~70	35~55	□300
NiCrMo indefinite chilled SG cast iron rolls (I)	48~70	35~55	□320
NiCrMo indefinite chilled SG cast iron rolls (II)	48~70	35~55	□320
Pearlitic nodular cast iron rolls (I)	45~55	35~55	□450
Pearlitic nodular cast iron rolls (II)	55~65	35~55	□450

Pearlitic nodular cast iron rolls (III)	62~72	35~55	□450
bainitic nodular cast iron rolls (I)	55~78	32~45	□350
bainitic nodular cast iron rolls (II)	60~80	32~45	□350

Chemical Properties

Designation of rolls	C	Si	Mn	P	S	Ni	Cr	Mo	Mg
CrMo semi-chilled SG cast iron rolls	2.9/3.6	0.8/2.5	0.4/1.2	≤0.25	≤0.03		0.2/0.6	0.2/0.6	□0.04
CrMo indefinite chilled SG cast iron rolls	2.9/3.6	0.8/2.5	0.4/1.2	≤0.25	≤0.03		0.2/0.6	0.2/0.6	□0.04
NiCrMo indefinite chilled SG cast iron rolls (I)	2.9/3.6	0.8/2.5	0.4/1.2	≤0.25	≤0.03	0.5/1.0	0.2/0.6	0.2/0.6	□0.04
NiCrMo indefinite chilled SG cast iron rolls (II)	2.9/3.6	0.8/2.5	0.4/1.2	≤0.25	≤0.03	1.0/2.0	0.3/1.2	0.2/0.8	□0.04
Pearlitic nodular cast iron rolls (I)	2.9/3.6	1.4/2.2	0.4/1.0	≤0.15	≤0.03	1.5/2.0	0.1/0.6	0.2/0.8	□0.04
Pearlitic nodular cast iron rolls (II)	2.9/3.6	1.2/2.0	0.4/1.0	≤0.15	≤0.03	2.0/2.5	0.2/1.0	0.2/0.8	□0.04
Pearlitic nodular cast iron rolls (III)	2.9/3.6	1.0/2.0	0.4/1.0	≤0.15	≤0.03	2.5/3.0	0.2/1.2	0.2/0.8	□0.04
bainitic nodular cast iron rolls (I)	2.9/3.6	1.2/2.2	0.2/0.8	≤0.10	≤0.03	3.0/3.5	0.2/1.0	0.5/1.0	□0.04
bainitic nodular cast iron rolls (II)	2.9/3.6	1.2/2.0	0.2/0.8	≤0.10	≤0.03	3.5/4.5	0.3/1.5	0.5/1.0	□0.04

Micro-structure

Designation of rolls	Microstructure
CrMo semi-chilled SG cast iron rolls	Pearlite + cementite + SG + small percentage fermite
CrMo indefinite chilled SG cast iron rolls	Pearlite + cementite + SG
NiCrMo indefinite chilled SG cast iron rolls (I)	Pearlite + cementite + SG
NiCrMo indefinite chilled SG cast iron rolls (II)	Fine pearlite + cementite + SG
Pearlitic nodular cast iron rolls (I)	pearlite + cementite + small percentage fermite
Pearlitic nodular cast iron rolls (II)	pearlite + cementite + small percentage fermite

Pearlitic nodular cast iron rolls (III)	pearlite + cementite + small percentage ferrite
bainitic nodular cast iron rolls (I)	bainite + cementite + SG
bainitic nodular cast iron rolls (II)	bainite + cementite + SG

Application

Designation of rolls	Application
CrMo semi-chilled SG cast iron rolls	Section mill, bar mill, roughing stands of wire-rod mill, work roll of rail mill
CrMo indefinite chilled SG cast iron rolls	Section mill, bar mill, intermediate and finishing stands of wire-rod mill
NiCrMo indefinite chilled SG cast iron rolls (I)	Section mill, bar mill, intermediate and finishing stands of wire-rod mill
NiCrMo indefinite chilled SG cast iron rolls (II)	Section mill, bar mill, intermediate and finishing stands of wire-rod mill
Pearlitic nodular cast iron rolls (I)	roughing stands of bar mill and wire-rod mill
Pearlitic nodular cast iron rolls (II)	roughing stands of bar mill and wire-rod mill
Pearlitic nodular cast iron rolls (III)	roughing stands of bar mill and wire-rod mill
bainitic nodular cast iron rolls (I)	roughing stands of bar mill and wire-rod mill
bainitic nodular cast iron rolls (II)	roughing stands of bar mill and wire-rod mill