

Nodular cast iron rolls

Chemical Analysis

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

Physical 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

Microstructure

Designation of rolls	Microstructure
CrMo semi-chilled SG cast iron rolls	Pearlite + cementite + SG + small percentage ferrite
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 ferrite
Pearlitic nodular cast iron rolls (II)	pearlite + cementite + small percentage ferrite
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



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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