Centrifugal Casting Definite Chilled Cast Iron Roll

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The rolls exhibit improved mechanical properties due to presence of chilled surface structure and the change of pine-tree-like structure . The hardness and type of matrix of roll depend on conditions of application. The roll produced with centrifugal method basically eliminates the presence of graphite in its work layer while the core is made of nodular cast iron, increasing as a result, both the wear-resistant and breaking strength.

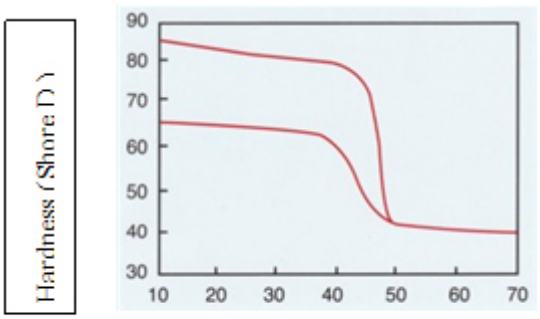

Figure1. Hardness in Depth Profile

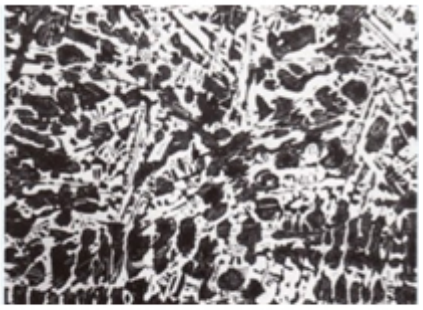

Figure 2. Microstructure Mag.×100

Mechanical properties

Hardness of shell	HSD65-85
Hardness of core	HSD35-48
Tensile Strength of core	≥450MPa

Chemical properties

Material	Hardness (HSD)	C	Si	Mn	Ni	Cr	Mo
Chilled I	65-75	3.0/3.5	0.25/0.5	0.3/0.8	0.8/2.0	0.4/1.0	0.2/0.6
Chilled II	65-80	3.0/3.5	0.25/0.5	0.3/0.8	2.0/3.0	0.5/1.2	0.2/0.6
Chilled III	70-85	3.0/3.5	0.25/0.5	0.3/0.8	3.0/4.5	0.6/1.5	0.2/0.6

Application

For wire, bar and small section or light-duty material rod mills.