

## Chemical composition

	C	Si	Mn	Mo	Cr	Ni	W, V, Nb
<b>ICRA</b>	3.0 4.0	0.5 1.5	0.5 1.6	0.2 0.8	1.5 2.5	4.0 5.0	<0.5
MICRA	3.0 4.0	0.5 1.5	0.5 1.6	0.2 0.8	1.5 2.5	4.0 5.0	1-4
CRONA	2.0 3.0	0.6 1.0	0.8 1.2	1.0 1.5	15.0 20.0	1.0 1.5	<0.5
CICRA	2.0 3.0	0.7 0.8	1.0 1.2	1.0 1.5	15.0 20.0	1.0 1.5	1-2
SPECRA F	1.0 2.0	0.5 1.0	0.5 1.5	2.0 5.0	3.0 7.0	0.5 1.5	2-8

## Properties

Hardness Range	Le	720-755 740-770
Tensile strength	(MPa)	350
Thermal conductivity	(W/m x K)	21
Thermal exp. coeff. (20-100C)	(1/Kx10 <sup>-6</sup> )	12
Young's modulus	(GPa)	180
Poisson's ratio	-	0,31
Density	(kg/m <sup>3</sup> )	7500
Specific heat	(J/kg x K)	500

## Comparative properties

	Wear resistance	Fire crack resistance	Oxidation behaviour	Product surface
<b>ICRA</b>	—	—	—	—
MICRA	—	—	—	—
CRONA	—	—	—	—
CICRA	—	—	—	—
SPECRA F	—	—	—	—

## Description

Double poured indefinite chill iron produced by the vertical spin casting process.

The microstructure consists of a bainitic/martensitic matrix with Fe<sub>3</sub>C-carbides and free graphite flakes.

The roll is heat treated at low temperatures to obtain favourable stress levels and the required hardness range.

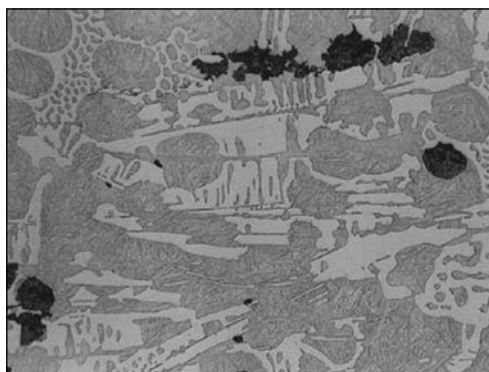
### CORE MATERIAL

Standard flake iron (FG), high strength flake iron (HS) or nodular iron (SG).

(Properties displayed in a separate product data sheet.)

## Applications

Work rolls for the late finishing stands F4-6(7) of conventional HSM or Steckel mill finishing stands.



Microstructure ICRA

## Features & Benefits

- The material properties provide a good resistance against thermal and mechanical impacts due to rolling incidents.
- The characteristic hardness drop of Indefinite Chill rolls is minimized by the manufacturing process.