

# MICRA

*Enhanced Indefinite Chill  
(Åkers National Roll – ICON)*

## Chemical composition

	C	Si	Mn	Mo	Cr	Ni	W, V, Nb
<b>MICRA</b>	<b>3.0</b> <b>4.0</b>	<b>0.5</b> <b>1.5</b>	<b>0.5</b> <b>1.6</b>	<b>0.2</b> <b>0.8</b>	<b>1.0</b> <b>2.0</b>	<b>3.0</b> <b>4.0</b>	<b>1-4</b>
ICRA	3.0 4.0	0.5 1.5	0.5 1.6	0.2 0.8	1.0 2.0	3.0 4.0	<0.5
CRONA	2.3 3.0	0.6 1.0	0.8 1.2	1.0 1.5	15.0 20.0	1.0 1.5	0.2 0.6
CICRA	2.2 2.9	0.7 0.8	1.0 1.2	1.0 1.5	15.0 20.0	1.0 1.5	1-2
URMA	1.0 2.0	0.7 0.8	0.5 1.5	0.2 0.8	10.0 14.0	0.5 1.5	0.2 0.6

## Properties

Hardness	Ld (ShC)	710-765 (65-75)
Tensile strength	(MPa)	375
Thermal conductivity	(W/m x K)	20
Thermal exp. coeff. (20-100C)	(1/Kx10 <sup>-6</sup> )	12
Young's modulus	(GPa)	185
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	Toughness	Product surface
<b>MICRA</b>	—	—	—	—
ICRA	-	—	—	—
CRONA	—	—	—	—
CICRA	—	—	—	—
URMA	—	—	—	—

## Description

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

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

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

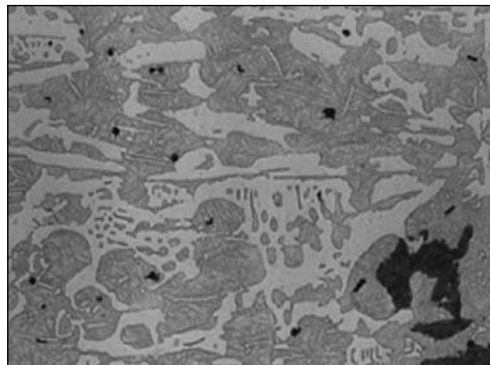
### CORE MATERIAL

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

(Properties displayed in a separate product data sheet.)

## Applications

Work roll for single or double stand plate mills.



Microstructure MICRA.

## Features & Benefits

- Very good wear resistance.
- 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.