

STELLA

Semi High Speed Steel

Chemical composition

	C	Si	Mn	Mo	Cr	Ni	W, V, Nb
STELLA	<u>0.8</u> 1.8	<u>0.5</u> 1.5	<u>0.4</u> 1.5	<u>2.0</u> 8.0	<u>4.0</u> 9.0	<u>0.5</u> 1.5	<u>1-6</u>
URMA	<u>0.8</u> 1.8	<u>0.5</u> 1.5	<u>0.5</u> 1.5	<1	<u>10.0</u> 14.0	<u>0.5</u> 1.5	<1
SPECRA R	<u>1.1</u> 2.1	<u>0.5</u> 1.5	<u>0.5</u> 1.5	<u>2.0</u> 8.0	<u>3.0</u> 7.0	<u>0.5</u> 1.5	2-10

Properties

Hardness Range	Le	740-775
Tensile strength	(MPa)	800
Thermal conductivity	(W/m x K)	18
Thermal exp. coeff. (20-100C)	(1/Kx10-6)	13
Young's modulus	(GPa)	235
Poisson's ratio	-	0,29
Density	(kg/m ³)	7600
Specific heat	(J/kg x K)	475

Comparative properties

	Wear resistance	Fire crack resistance	Oxidation behaviour	Friction
STELLA	—	—	—	—
URMA	—	—	—	—
SPECRA R	—	—	—	—

Description

Double poured semi high speed steel produced by the vertical spin casting process.

The Shell microstructure is primary and finely precipitated secondary carbides of MC, M₂C, and some M₇C₃ carbides in a matrix of tempered martensite. There is less than 3% retained austenite.

The roll is heat treated at high temperatures to obtain optimum material properties, favourable stress levels and homogeneous hardness.

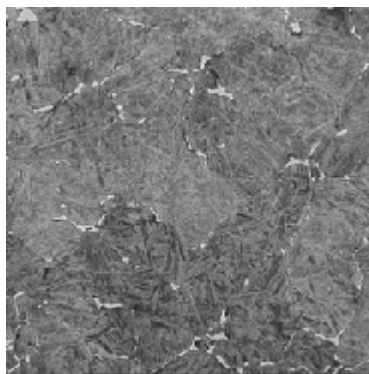
CORE MATERIAL

Nodular iron (SG).

(Properties displayed in a separate product data sheet.)

Applications

Work rolls for the roughing stands of conventional HSM and Steckel mills for all steel rolling.



Microstructure STELLA

Features & Benefits

- Constant material properties throughout the usable shell.
- Very good wear resistance in combination with good operation safety.
- Very good fire crack resistance and very good oxidation behaviour at high temperatures.