

Product Data HOT STRIP MILL WORK ROLLS

STELLA

Semi High Speed Steel

Chemical composition

| | С | Si | Mn | Мо | Cr | Ni | |
|----------|------------|-----------------|----|-----------------|------------|-----------------|------|
| | | | | | | | Nb |
| STELLA | - | - | - | 2.0 - 8.0 | - | 0.5 _ 1.5 | 1-6 |
| URMA | 0.8 1.8 | 0.5 _ 1.5 | - | <1 | 10.0 | | <1 |
| SPECRA R | 1.1 2.1 | - | - | - | 3.0 7.0 | 0.5 _ 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/m³) | 7600 |
| Specific heat | (J/kg x K) | 475 |
| | | |

Comparative properties

| | | Fire crack resistance | | 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, M_2C , and some M_7C_3 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.

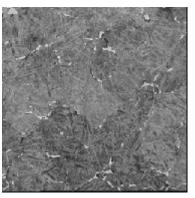
CORE MATERIAL

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.

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