

## Material specification sheet

### Saarstahl - 20Mn5

Material No.:	Former brand name:	International steel grades:
1.1133	<b>Atrix 101</b>	<b>BS:</b> 120M19 <b>AFNOR:</b> 20M5 <b>SAE:</b> 1022, 1518

**Material group:** High temperature constructional steel according to DIN EN 10269

Chemical composition: (Typical analysis in %)	C	Si	Mn	Cr	other
	0,20	0,50	1,15	-	-

**Application:** High temperature constructional weldable steel for forgings and pipes of boiler plants and for constructions of apparatus, pressure vessels and pipelines.

<b>Hot forming and heat treatment:</b>	Hardening:	870 - 900°C
	Tempering:	580 - 680°C

#### Mechanical Properties:

**Condition of delivery:** Quenched and tempered

<b>Effective wall thickness [mm]</b>	<=250	250 - 500
<b>0,2% proof stress R<sub>p0,2</sub> [N/mm<sup>2</sup>]</b>	min. 295	min. 275
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	490 - 640	490 - 640
<b>Fracture elongation longitudinal A<sub>5</sub> [%]</b>	min. 22	min. 21
<b>Fracture elongation tangential A<sub>5</sub> [%]</b>	min. 19	min. 18
<b>Fracture elongation transverse A<sub>5</sub> [%]</b>	min. 15	min. 14
<b>Notch impact energy longitudinal DVM [J]</b>	min. 48	min. 48
<b>Notch impact energy tangential DVM [J]</b>	min. 34	min. 34
<b>Notch impact energy transverse DVM [J]</b>	min. 24	min. 24