

## Material specification sheet

### Saarstahl - 28Mn6

Material No.:	Former brand name:	International steel grades:
1.1170		<b>BS:</b> (150M28), (150M19) <b>AFNOR:</b> 28Mn6, 20M5 <b>SAE:</b> 1330

**Material group:** Steel for quenching and tempering according to DIN EN 10083

Chemical composition: (Typical analysis in %)	C	Si	Mn	P	S	Cr	Mo	Ni	Cr+Mo+Ni
	0,25 0,32	<0,40	1,30 1,65	<0,035	<0,035	<0,40	<0,10	0,40	<0,63

**Application:** Heat treatable steel for mechanical engineering and automotive components with sufficient weldability with a typical tensile strength range of 640 -930 N/mm<sup>2</sup>.

<b>Hot forming and heat treatment:</b>	Forging or hot rolling:	1100 - 850°C
	Normalising:	850 - 890°C/air
	Soft annealing:	650 - 700°C/furnace
	Hardening:	830 - 870°C/water, oil
	Tempering:	540 - 680°C/air

<b>Mechanical Properties:</b>	Treated for cold shearability +S:	max. 255 HB
	Soft annealed +A:	max. 223 HB

Quenched and tempered, +QT:

	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
<b>Diameter d [mm]</b>	< 16	>16 – 40	>40 – 100	>100 – 160	>160 – 250
<b>Thickness t [mm]</b>	< 8	8<t<20	20<t<60	60<t<100	100<t<160
<b>0,2% proof stress R<sub>p0,2</sub> [N/mm<sup>2</sup>]</b>	min. 590	min. 490	min. 440	-	-
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	800 - 950	700 - 850	650 - 800	-	-
<b>Fracture elongation A<sub>5</sub> [%]</b>	min. 13	min. 15	min. 16	-	-
<b>Reduction of area Z [%]</b>	min. 40	min. 45	min. 50	-	-
<b>Notch impact energy ISO-V [J]</b>	min. 35	min. 40	min. 40	-	-

Normalised, +N:

<b>Diameter d [mm]</b>	< 16	>16 – 100	>100 – 250		
<b>Thickness t [mm]</b>	<16	16<t<100	100<t<250		
<b>0,2% proof stress R<sub>p0,2</sub> [N/mm<sup>2</sup>]</b>	min. 345	min. 310	min. 290		
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	min. 630	min. 600	min. 590		
<b>Fracture elongation A<sub>5</sub> [%]</b>	min. 17	min. 18	min. 18		