

## Material specification sheet

### Saarstahl - C60R (Cm60)

Material No.:	Former brand name:	International steel grades:
1.1223	R6	BS: AFNOR: SAE:

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

Chemical composition: (Typical analysis in %)	C	Si	Mn	S	other
	0,65	0,25	0,75	0,020 0,035	(Pb)

**Application:** Plain carbon steel for mechanical engineering and automotive components.

<b>Hot forming and heat treatment:</b>	Forging or hot rolling:	1100 - 800°C
	Normalising:	820 - 860°C/air
	Soft annealing:	680 - 710°C/furnace
	Hardening:	800 - 840°C/oil, water
	Tempering:	550 - 660°C/air

<b>Mechanical Properties:</b>	Treated for cold shearability +S:	max. 255 HB
	Soft annealed +A:	max. 241 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. 580	min. 520	min. 450	-	-
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	850 - 1000	800 - 950	750 - 900	-	-
<b>Fracture elongation A<sub>5</sub> [%]</b>	min. 11	min. 13	min. 14	-	-
<b>Reduction of area Z [%]</b>	min. 25	min. 30	min. 35	-	-
<b>Notch impact energy ISO-V [J]</b>	-	-	-	-	-

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. 380	min. 340	min. 310		
<b>Tensile strength R<sub>m</sub> [N/mm<sup>2</sup>]</b>	min. 710	min. 670	min. 650		
<b>Fracture elongation A<sub>5</sub> [%]</b>	min. 10	min. 11	min. 11		