



46S20
High machinability steel for direct hardening

(W. NR. 1.0727)

CHEMICAL COMPOSITION: (heat analysis according to the EN ISO 683-4:2018 standard)

	C %	Si %	Mn %	P %	S %
FROM	0,42	-	0,70	-	0,15
TO	0,50	0,40	1,10	0,06	0,25

***MECHANICAL FEATURES:** (according to the EN 10277:2018 standard)

Thickness mm	rolled + peeled rolled (+SH)		Cold drawn (+C)		
	HB hardness max.	Rm (MPa)	Rp _{0,2} minimum values (MPa)	Rm (MPa)	A ₅ % minimum values
≥5≤10			570	740 - 980	5
>10≤16			470	690 - 930	6
>16≤40	222	590 - 760	400	640 - 880	7
>40≤63	213	580 - 730	380	610 - 850	8
>63≤100	207	560 - 710	340	580 - 820	8

* Delivery condition: as rolled

PROPERTIES :

Machinability

This steel grade generally shows a quite good machinability on machine tools; machinability decreases with the increase of carbon, silicon and manganese content.

Weldability

Due to the high sulphur and phosphorus content free-cutting steels for direct hardening are not recommended for welding.

Notes:

CORRESPONDENCE WITH OTHER STANDARDS (purely as an indication) :

EN 10277-3:2008 46S20	DIN 1651 45S20	EN 10087 45S20
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