

## Hardness Conversion Table

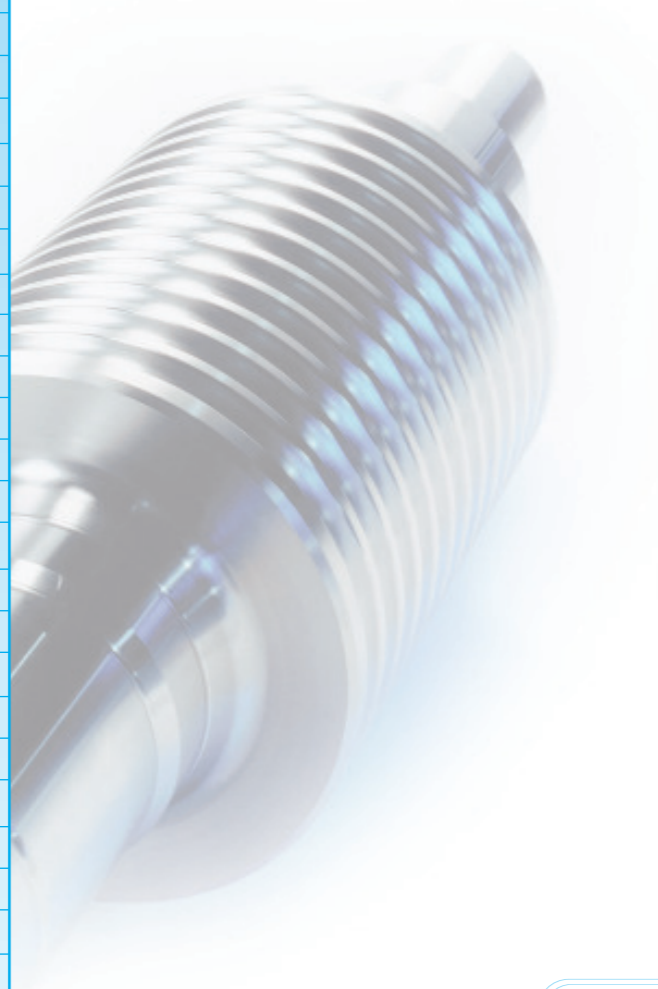
L <sub>D</sub> Leeb	HV Vickers	°SHC Shore C	HB Brinell	HRC Rockwell
656	407	58	397	41,5
662	416	59	403	42
669	425	60	410	43
675	434	61	417	43,5
682	444	62	422	44
688	453	63	430	45
694	462	64	440	45,5
699	472	65	446	46
706	482	66	456	47
712	492	67	463	48
718	502	68	472	49
724	512	69	481	49,5
730	523	70	492	50
735	533	71	503	51
740	544	72	513	51,5
746	556	73	524	52
752	568	74	534	53
758	580	75	545	53,5
764	592	76	557	54
769	602	77	569	55
774	614	78	579	55,5
779	625	79	589	56
783	636	80	599	56,5
788	646	81	611	57
792	658	82	622	58
796	670	83	632	58,5
801	682	84	643	59
804	692	85		59,5
808	704	86		60
812	716	87		60,5
816	730	88		61
821	744	89		62
826	760	90		62,5
830	770	91		63
834	784	92		63,5
839	800	93		64

Leeb L<sub>D</sub> - measurement by Equo Tip

Terms HV / HB / HRC following  
DIN 50150:  
HV (DIN 50133)  
HB (DIN 50351)  
HRC (DIN 50103)

Relation °SHC to HV respectively HRC  
according to material testing  
association MPA-Dortmund, Germany  
(DIN 50150)

DIN = German Industry Norm



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## Roll Material Recommendations for Section Mills



WB-Stahl-WE-PS-003-En-10-06-First- Pa. Gen. v5



	Blooming and Slabbing Mills	Billet and Semi-Finish Product Mills				Heavy Section Mills			Universal Mills for Heavy Beams and Sections		Medium Section Mills			Small Section Mills			Wire and Bar Mills			Seamless Tube Mills										
		Continuous Mills			Two High Reversing Stands	Two High Reversing Stands/ Three High Stands			Horizontal Rolls <sup>1)</sup>	Vertical Rolls/ Edger Rolls	Roughing Stands	Intermediate Stands	Finishing Stands <sup>2)</sup>	Roughing Stands	Intermediate Stands <sup>2)</sup>	Finishing Stands <sup>2)</sup>	Roughing Stands	Intermediate Stands <sup>2)</sup>	Finishing Stands <sup>2)</sup>	Piercer Rolls	Diescher Rings	Rings for Planetary Mills	Plug Rolls	Detaching Rolls	Continuous Mill Rolls	Sizing Rolls	Stretch Reducing Rolls	Straightening Rolls		
		Roughing Stands	Intermediate Stands	Finishing Stands		Roughing Stands	Intermediate Stands	Finishing Stands																					Roughing Stands	Intermediate Stands <sup>2)</sup>
Steel / Steelbase ST Steelbase graphitized ST	ST 0-280 STG 0-280	STG 20-360	STG 20-400	STG 30-400	STG 10-320	ST 0-280 STG 0-280	ST 0-320 ST 10-320	ST 10-320	ST 20-320	STG 20-320	ST 10-280 STG 10-280	ST 10-320 STG 10-320	STG 20-360 STG 30-360	STG 20-360	STG 30-400 STG 30-400	STG 30-360							STG 20-360							
	260-300 HV	340-380 HV	380-420 HV	380-420 HV	300-340 HV	260-300 HV	300-340 HV	300-340 HV	300-340 HV	300-340 HV	260-300 HV	300-340 HV	340-380 HV	340-380 HV	380-420 HV	380-420 HV	340-380 HV						340-380 HV							
	ST 10-320 STG 10-320				STG 10-360	ST 0-320 STG 0-320	ST 10-360 STG 10-360	STG 10-360 STG 20-360	STG 20-360	STG 20-360	ST 10-320 STG 10-320	STG 20-360																		
	300-340 HV				340-380 HV	300-340 HV	340-380 HV	340-380 HV	340-380 HV	340-380 HV	300-340 HV	340-380 HV																		
Cr-Steel /Cr-Iron Cr-Steel plus/ Cr-Iron plus				CR 15-440				CR 15-440			CR 15-480 CR 15 plus-480	CR 25-520 CR 25 plus-520		CR 15-480-C-S CR 15 plus-480-C-S	CR 25-520-C-S CR 25 plus-520-C-S										CR 15-600		CR 25-600-C-S			
				420-460 HV				420-460 HV			460-500 HV	500-540 HV		460-500 HV	500-540 HV										580-620 HV		580-620 HV			
								CR 25-480																	CR 25-560		CR 15-640-C-S CR 25-640-C-S			
								460-500 HV																	540-580 HV		620-660 HV			
Indefinite / Indefinite plus											I-440	I-440		I-360	I-440	I-480-C-S(G)		I-520-C-S	I-600-C-S(G)		I-440							I-560-C-S(G)		
											420-460 HV	420-460 HV		340-380 HV	420-460 HV	460-500 HV		500-540 HV	580-620 HV		420-460 HV						540-580 HV			
												I-480			I-480-C-S	I-520-C-S(G)		I-560-C-S	I-640-C-S(G) I plus-640-C-S(G)											
												460-500 HV			460-500 HV	500-540 HV		540-580 HV	620-660 HV											
															I plus-560-C-S(G)		I-600-C-S I plus-600-C-S													
															540-580 HV		580-620 HV													
Special Steel / Special Steel modified (High Speed Steel HSS)								SST-560							SST-560-C-S	SST-560-C-S		SST-560-C-S	SST-600-C-S									SST-720-C-S		
								540-580 HV							540-580 HV	540-580 HV		540-580 HV	580-620 HV								700-740 HV			
																SST-600-C-S		SST-600-C-S												
																580-620 HV		580-620 HV												
																SST-640-C-S		SST-640-C-S												
															620-660 HV		620-660 HV													
															SST-680-C-S		SST-680-C-S													
															660-700 HV		660-700 HV													
Modular Iron SP, SA, SP/A-H	SP/A-280 H	SP-400 SP/A-400 H	SP-400	SP-440	SP-360 SP/A-360 H	SP/A-320 H		SP-400	SP-360 SA-360	SP-400 SA-400	SP-360	SP-400	SP-400 SA-400	SP-360 SP/A-360 H	SP-400	SP-480 SA-480	SP-360 SP/A-360 H	SP-440	SA-560-C-S <sup>3)</sup>	SP-360	SP-360	SP-480	SP-440	SP-400	SP-440	SP-440 SA-440	SP-480	SP-480		
	260-300 HV	380-420 HV	380-420 HV	420-460 HV	340-380 HV	300-340 HV		380-420 HV	340-380 HV	380-420 HV	340-380 HV	380-420 HV	380-420 HV	340-380 HV	380-420 HV	460-500 HV	340-380 HV	420-460 HV	540-580 HV	340-380 HV	340-380 HV	460-500 HV	420-460 HV	380-420 HV	420-460 HV	420-460 HV	460-500 HV	460-500 HV		
	SP/A-320 H				SP-400				SP-400	SP-440 SA-440	SP-400	SP-440	SP-440 SA-440	SP-400 SP/A-400 H	SP-440	SP-520 SA-520	SP-400 SP/A-400 H	SP-480 SA-480	SA-600-C-S <sup>3)</sup>	SP-400	SP-400	SA-520			SP-480-C-S	SA-480	SP-480 SA-480	SP-520		
	300-340 HV				380-420 HV				380-420 HV	420-460 HV	380-420 HV	420-460 HV	420-460 HV	380-420 HV	420-460 HV	500-540 HV	380-420 HV	460-500 HV	580-620 HV	380-420 HV	380-420 HV	500-540 HV			460-500 HV	460-500 HV	460-500 HV	500-540 HV		
				SP-440				SP-440 SA-440					SP-480 SA-480	SP-480							SP-440						SP-560-C-S			
				420-460 HV				420-460 HV					460-500 HV	460-500 HV							420-460 HV						540-580 HV			
Chilled Cast Iron															K 30-480-C-S	K 30-560-C-S(G) K 40-560-C-S(G)		K 30-520-C-S	K 30-600-C-S(G) K 40-600-C-S(G)								K 40-520-C-S		K 30-520-C-S(G)	K 40-560-C-S(G)
															460-500 HV	540-580 HV		500-540 HV	580-620 HV								500-540 HV	500-540 HV	540-580 HV	
																K 30-600-C-S(G) K 40-600-C-S(G)			K 30-640-C-S(G) K 40-640-C-S(G)									K 40-560-C-S(G)	K 40-600-C-S(G)	
															580-620 HV			620-660 HV									540-580 HV	580-620 HV		

1) Monobloc or assembled rolls (sleeves on arbors)

2) Depending on required hardness and groove depth rolls for intermediate- and finishing stands can be manufactured as composite rolls with grey- or nodular iron core.

3) For reinforcing Bars