Hardness HRB HRC HB	Rm N/mm²	Fe	Ni	Cr	Co	Mo	W	Si	Mn	C	Al	Ti	Li	P	S	Mg	Zn	Cu	Others
Stainless Steels																			
HRB86	560	58.9/65.3	14/15.5	17/18.5		2		3.7/4.3	2	0.018				0.02	0.02			0.5	
HRB91	620	58/60	17/18	17/18.5		0.2		5.0/5.6	0.5/0.8	0.015				0.03	0.013			0.35	
			9.00	19.00															
			3.00	12.00		2.00													
217-241HB	840	67.7	5.5	18				1	7.5	0.15				0.06	0.03				
	460-680		10.00	19.00				0.50	1.00	0.02				0.02	0.02				
	550-760		10.00	18.00				1.00	2.00	0.03				0.05	0.03				
	490-690		12.00	17.00		2.50		0.50	1.00	0.02				0.02	0.02				
	490-600		12.00	17.00		2.50		0.50	1.00	0.02				0.02	0.02				Nitrogene 0.14
	580-800		13.00	17.50		2.75		1.00	2.00	0.03				0.05	0.03				
	500-730		12.00	17.50		2.25		1.00	2.00	0.08		5.00		0.05	0.03				
	600-980																		
	600-980																		
HB217	900	63	11.0/15.0	18.0/20.0		3.0/4.0		0.75	2.00	0.03				0.04	0.03				
			9.0/12.0	17.0/19.0		-		1	2	0.04/0.10		5C/0.80		0.04	0.03				
	800-950		0.50	12.00				0.35	0.50	0.14									Nb 0.18
	930-1080		0.55	11.10		0.60		0.35	0.70	0.17									V 0.3 Nb 0.28
84-97HRB	700	86	0.25	12.3		0.04		0.35	0.35	0.15	0.1	0.005		0.025	0.005				Nb 0.45
71HRB	430																		
75HRB	450	87	0.60	12.00				1.00	1.00	0.08				0.04	0.03				
300-500HB	1050-1300			12/14		0.60		1.00	1.25	0.15				0.06	0.15				
	640-840		1.00	17.00		0.50		1.00	1.25	0.12				0.06	0.15				
45/56HRc	1270-1650																		
			-	16.0/18.0		0.75/1.25		1	1	0.12				0.04	0.03				
	568-818	81	0.23	17.0/19.0				0.55	0.45	0.012		0.4		0.02	0.001				
31-54HRC	1000-1800	81	0.5	16.0/18.0		0.75		1	1	0.07				0.04	0.03				
		82		16.5						1									
HRB82	520	79	0.3	18				0.34	0.35	0.009	0.05	0.29		0.023	0.002				Nb 0.71
	620		24.50	20.50		4.50		0.50	1.60	0.02				0.04					Cu 1.5
	620		25.00	14.50		1.25		0.20	0.20	0.04		2.10		0.02	0.00				
90HRB	610	65	0.3	29		4		0.35	0.5	0.02				0.03	0.01				Nb 0.6
183HB	600	48	24	20.5		6.3		0.4	0.4	0.02								0.2	N 0.22
183HB	600	45	25.3	21.8		6.7		0.3	0.3	0.02				0.02				0.2	N 0.24
	1175		4.30	16.50		2.80		0.30	0.80	0.09				0.02					
350-575HV	1130-1860	82.4	< 0.8	13		1.2		0.6	1.6	0.22				0.03	0.18				
	440-640																		
	440-640																		
	1300-1700		10.8/11.3	11/12		0.8/1.2						1.5/1.8							
300-350HB	1100		2.30	15.30		2.10		0.30	15.10	0.03									N 0.4
31HRC	1000	73.8	3.5	21		1.7													
246HB	800		1.5	22		0.55		0.75	2.5	0.03				0.04	0.02			0.4	

Material Guide – Key to Recommended Inserts

Material Designation

P Unalloyed Steels | P Alloyed Steels | M Stainless Steels | M PH Stainless | K Cast Irons | N Aluminum & Alloys | S High Temp. Alloys | H Hard Materials