



LINGENHÖLE TECHNOLOGIE

Center for heat treatment
Mechanical Components
Hydropower plants - Turbine manufacturing

Gasnitriding – Plasmanitriding – Saltbathnitriding (1)

DIN Material number	DIN (short-) description	Surface hardness [HV0,5]	max. Nitriding depth [mm]
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Non alloyed steels

1.0540	St 60	280-500	0,6
1.0580	St 52	280-480	0,6
1.1191	Ck 45	300-500	0,7
1.1221	Ck 60	300-500	0,7
1.5122	37MnSi5	300-500	0,6

Heat treatable steels (Q & T)

	ETG 100	400-500	0,3
1.7033	34Cr4	500-600	0,5
1.7220	34CrMo4	500-600	0,5
1.7225	42CrMo4	600-700	0,5
1.8159	50CrV4	550-700	0,5
1.8161	58CrV4	550-700	0,5
1.6582	34CrNiMo6	600-800	0,5
1.2710	45NiCr6	600-750	0,4
1.2312	40CrMnMoS86	650-800	0,3

Case hardened steels

1.7131	16MnCr5	600-750	0,5
1.7147	20MnCr5	600-650	0,4
1.5752	14NiCr14	500-650	0,4

Nitriding steels

1.8504	34CrAl6	900-1200	0,4
1.8507	34CrAlMo5	900-1300	0,5
1.8519	31CrMoV9	780-900	0,5
1.8550	34CrAlNi7	900-1100	0,5

Ball bearing steels

1.3505	100Cr6	450-700	0,25
1.2510	100MnCrW4	500-700	0,25

Casting materials

	GG 25	300-450	0,3
	GGG 60	450-600	0,4

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DIN Material number	DIN (short-) description	Surface hardness [HV0,5]	Max. Nitriding depth [mm]
Stainless steels			
1.4006	X10Cr13	900-1100	0,1
1.4021	X20Cr13	900-1200	0,1
1.4034	X40Cr13	900-1200	0,1
1.4122	X35CrBo17	1000-1250	0,15
1.4571	X10CrNiMoTi1712-2	900-1150	0,1
Cold working steels			
1.2379	X155CrMoV121	900-1200	0,15
1.2080	X210Cr12	850-1150	0,15
1.2364	X100CrMoV51	1000-1200	0,2
1.2601	X165CrMoV12	900-1150	0,15
1.2436	X210CrV12	700-900	0,15
Hot working steels			
1.2343	X38CrMoV51	900-1150	0,4
1.2344	X40CrMoV51	900-1150	0,4
1.2567	X30WCrV53	850-1050	0,3
1.2365	X32CrMoV33	750-900	0,3
High speed steels			
All qualities		950-1400	0,02-0,15

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Vacuum hardening (1):

DIN material number	DIN (short-) description	Surface hardness [HRC]
Cold working steels		
1.2080	X210Cr12	58-60
1.2085	X33CrS16	48-50
1.2311	40CrMnMo7	48-50
1.2312	X36CrMnMoS86	48-50
1.2316	X36CrMo17	45-47
1.2363	X100CrMoV5	57-59
1.2379	X155CrVMo12	61-63
1.2436	X210CrW12	58-60
1.2550	60WCrV7	59-61
1.2631	X50CrMoW911	57-59
1.2721	50NiCr13	55-57
1.2762	75CrMoNiW67	60-62
1.2767	X45NiCrMo4	54-56
1.2842	90MnCrV8	63-65
1.2884	X210CrCoW12	59-61
Hot working steels		
1.2342	X35CrMoV511	48-50
1.2343	X38CrMoV51	54-56
1.2344	X40CrMoV 5 1	53-55
1.2367	X38CrMoV 5 3	52-54
1.2714	55NiCrMoV7	58-60
1.2787	X23CrNi17	43-45
High speed steels		
1.3343	HS6-5-2	64-66
Stainless steels		
1.4021	X20Cr13	46-48
1.4034	X46Cr13	54-56
1.4057	X20CrNi172	43-45
1.4104	X14CrMoS17	33-35
1.4112	X90CrMoV18	58-60
1.4122	X35CrMo17	48-50

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Vacuum hardening (2):

DIN material number	DIN (short-) description	Surface hardness [HRC]
Powder metallurgical high speed steels		
ASP2005		62-64
ASP2053		64-66
ASP23		62-64
Powder metallurgical high performance steels		
CPM 10 V		62-64
CPM 15V		62-64
CPM 3V		61-63
CPM Rex 121		68-70
CPM Rex T15		61-63

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