



PT. Machining Mandiri Pratama

STEEL GRADE	International Standard	Chemical Composition %									Delivery Condition (HB)	Austenitizing Temperature (°C)	Quenching Media	Surface hardness (HRC) After tempering at (°C)						APPLICATION
		C	Si	Mn	Co	Cr	Mo	Ni	V	W				200	300	400	500	550	600	

COLDWORKTOOL STEELS

2510	SKS3	0,95	0,25	1,10		0,60			0,10	0,60	200	780-830	Oil	60	56	51	44	40	37	Cutting blades, backing plate of punch and die die stamping tool for medium run, bending die
2379	SKD11	1,55	0,25	0,30		11,5	0,70		1,00		215	1020-1040	Oil / Air	60	58	58	59	56	50	High performance stamping tool, wood working, mould for abrasive plastic, plastic granulator blade, guide roll
TGX6	SKD11 Mod	0,93	0,95	0,40		7,80	1,90		0,25		215	1020-1050	Oil / Air				63	60	50	Heavy duty blanking and forming die for thick material, critical design high tensile strip steel with high demand of toughness

HOT WORK TOOL STEELS

2714	SKT4	0,55	0,25	0,75		1,10	0,45	1,70	0,10		400	830-870	Oil / Air	55	52	49	45	42	39	Hammer hot forging die, plastic mould, mandrel Embossing tool, hot press tool
2344	SKD61	0,40	1,05	0,40		5,15	1,35		1,00		200	1020-1040	Oil / Air					53	50	Aluminium extrusion die, Hot forging die, Die sleeve Plunger sleeve, plunger tip
TGE23	SKD61 Mod	0,37	0,30	0,40		5,00	2,20		0,45		200	1020-1040	Oil / Air					53	50	Aluminium Die casting with high toughness and high ductility good heat checking and gross cracking resistance

PLASTIC MOULD STEELS

2311	2311	0,40	0,30	1,50		1,90	0,20				290-330	830-880	Oil / Air	50	48	46	42	39	36	For wide range of injection mould, forge drop hammer dies intermediate boxes
2738	2738	0,40	0,30	1,50		1,90	0,20	1,00			290-330	840-880	Oil / Air	51	49	46	42	39	36	Large injection mould, synthetic plastic mould, good hardenability for Big mould with good polishability
2316 ESR	2316	0,38	0,90	0,90		16,0	1,15				290-330	1000-1040	Oil	47	46	46	47	38	32	Dies for pressing chemical aggressive compound Mould base, core and cavity insert, big cavities
TGP80		Special ESR mould steel grade									40 HRc									High mirror polishability for cavity, good texturing properties good hardness distribution for big mould
TGS136	2083	0,42	1,05	0,55		13,5	0,30	0,22	0,30		220	1000-1040	Oil / Air	54	52	51	52	48	42	Cavity and core insert with mirror finish Dies for artificial resins, corrosive acting synthetic plastic

ALUMINIUM TOOLING

6061											95									General structure parts, mould with good polishability
7075											150									Aircraft fitting, gears, shift regulating valve parts, Blow mould

MACHINERY STEELS

STEEL GRADE	International Standard	Chemical Composition %									Delivery Condition (HB)	Austenitizing Temperature (°C)	Quenching Media	Surface hardness (HRC) After tempering at (°C)						APPLICATION
		C	Si	Mn	Co	Cr	Mo	Ni	V	W				200	300	400	500	550	600	
S50C	1730 7225	0,50	0,40	0,70							190	820-850	Water/Oil	600-800		400				Mould base, backing plate, Jigs and fixture, simple gear
SCM440		0,41	0,20	0,75		1,05	0,25				270-330	820-850	Oil	800-1000		600				For machinery parts and components, crank shafts, shaft
SCNM439	6582	0,35	0,30	0,65		1,50	0,25	1,60			270-330	820-850	Oil	900-1100		700				Aircraft landing gear power transmission, heavy duty shaft gun barrels, good hardness distribution
SCM415		0,15	0,30	0,75		1,20	0,20	0,20			180	930-960	Oil							Case hardening steel for gear for heavy duty load, good wear resistance combine with good toughness