

**IMS SPA**, since more than seventy years on the market for special steels, offers its customers a wide range of tool steels ready to ship ex stock and the capability to produce cut to length pieces, thanks to the best available cutting machines. Our company offers to the customer the experience and education of its Technical Service in order to assist on materials, processing, heat treatments and to help studying the optimal delivery specifications for the final use of the material. Any customer who, for different reasons, is not able to present its own specifications, is aware he will always receive products matching not only to international standards but also to a particular specification studied to ensure a better quality of the product.

**IMS SPA** sales of tool steels are classified in four families :

● **Cold Work**

This group includes tool steels used to fabricate tooling with operating conditions used to maintain operating temperatures below 200°C.

● **High Speed Steels**

Tool steels intended for highly stressed cold work applications : cutting or cold work tools used in processes where high temperatures may be reached locally.

● **Hot Work**

This group includes tool steels used to fabricate tooling intended for non continuous use operating conditions where the tool works at temperature in the range 450° e 600° C.

● **Tool steels for plastic moulds**

Including all steels used to fabricate dies for plastic and complementary tools.

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Ours main grades are :

Quality IMS	Reference standard	SIAU	UNI	DIN	W.N.	AFNOR	BS	JIS	AISI SAE
MCV	-	MCV	-	-	-	-	-	-	-
58SiMo8	UNI 2955	MOC	58SiMo8KU	-	-	(Y60SC7)	(BS5)	-	(S5)
100CrMo7	UNI 3097	KS25	100CrMo7	(100CrMo7)	(1.2303)	-	-	-	-
W.2080	DIN 17350	K12	X205Cr12KU	X210Cr12	1.2080	(Z200C12)	BD3	SKD1	(D3)
W.2311	DIN 17350	2311	-	40CrMnMo7	1.2311	(35CMD7)	-	PDS5	-
W.2312	DIN 17350	2312	-	40CrMnMoS8-6	1.2312	(40CMD8S)	-	-	-
W.2343	DIN 17350	MTB	(X37CrMoV51KU)	X38CrMoV51	1.2343	Z38CDV5	(BH11)	SKD6	(H11)
W.2344	DIN 17350	MTV	(X40CrMoV51.1KU)	X40CrMoV51	1.2344	Z40CDV5	(BH13)	SKD61	(H13)
W.2365	DIN 17350	MT33V	(30CrMoV1227KU)	X32CrMoV33	1.2365	(30DCV28)	(BH10)	SKD7	(H10)
W.2379	DIN 17350	KORV	(X155CrVMo121KU)	X155CrVMo121	1.2379	Z160CDV12	BD2	SKD11	D2
W.2516	DIN 17350	SV	(100W4KU)	120WV4	1.2516	(105WC13)	-	-	(F1)
W.2550	DIN 17350	2550	(55WCrV8KU)	60WCrV7	1.2550	(55WC20)	(BS1)	-	(S1)
W.2714	DIN 17350	M10EX	(56NiCrMoV7KU)	56NiCrMoV7	1.2714	-	-	-	-
W.2767	DIN 17350	MA	(40NiCrMoV16KU)	X45NiCrMo4	1.2767	(Y35NCD16)	-	-	-
W.2842	DIN 17350	F	(90MnVCr8KU)	90MnCrV8	1.2842	(90MV8)	(B02)	-	(02)
W.3243	DIN 17350	M35	HS 6-5-2-5	S 6-5-2-5	1.3243	(Z85WDKCV06-05-02)	(BM35)	SKH55	-
W.3247	DIN 17350	M42	HS 2-9-1-8	S 2-10-1-8	1.3247	(Z110DKCWV09-08-04-02-01)	(BM42)	SKH59	(M42)
W.3343	DIN 17350	M2	HS 6-5-2	S 6-5-2	1.3343	(Z85WDCV06-05-04-02)	(BM2)	SKH51	(M2)
W.2738	ISO 4957	2738	40CrMnNiMo8-6-4	40CrMnNiMo8-6-4	1.2738	40CrMnNiMo8-6-4	40CrMnNiMo8-6-4	-	-
W.2083	ISO 4957	2083	X40Cr14	X40Cr14	1.2083	X40Cr14	X40Cr14	SUS420	(420C)
W.2085	-	2085	-	X33CrS16	1.2085	-	-	-	-
W.2316	ISO 4957	2316	X38CrMo16	X38CrMo16	1.2316	X38CrMo16	X38CrMo16	-	-

**Cold Work**

Designation according to DIN 17350	C	Si	Mn	Cr	Mo	Ni	V	W
(58SiMo8KU)	0,50 ÷ 0,65	1,70 ÷ 2,10	0,70 ÷ 0,90	Min 0,30	0,25 ÷ 0,45	-	-	-
(100CrMo7)	0,95 ÷ 1,10	0,20 ÷ 0,40	0,25 ÷ 0,45	1,65 ÷ 1,95	0,30 ÷ 0,40	-	-	-
40CrMnMo7	0,35 ÷ 0,45	0,20 ÷ 0,40	1,30 ÷ 1,60	1,80 ÷ 2,10	0,15 ÷ 0,25	-	-	-
X155CrVMo121	1,50 ÷ 1,60	0,10 ÷ 0,40	0,15 ÷ 0,45	11,00 ÷ 12,00	0,60 ÷ 0,80	-	0,90 ÷ 1,10	-
120WV4	1,15 ÷ 1,25	0,15 ÷ 0,30	0,20 ÷ 0,35	0,15 ÷ 0,25	-	-	0,07 ÷ 0,12	0,90 ÷ 1,10
60WCrV7	0,55 ÷ 0,65	0,50 ÷ 0,70	0,15 ÷ 0,45	0,90 ÷ 1,20	-	-	0,10 ÷ 0,20	1,80 ÷ 2,10
X45NiCrMo4	0,40 ÷ 0,50	0,10 ÷ 0,40	0,15 ÷ 0,45	1,20 ÷ 1,50	0,15 ÷ 0,35	-	-	-
90MnCrV8	0,85 ÷ 0,95	0,10 ÷ 0,40	1,90 ÷ 2,10	0,20 ÷ 0,50	-	-	0,05 ÷ 0,15	-

**Hot Work**

Designation according to DIN 17350	C	Si	Mn	Cr	Mo	Ni	V	W
MCV	~ 0,45	~ 0,45	~ 0,40	~ 2,10	~ 0,80	~ 1,10	~ 0,75	~ 1,10
X38CrMoV51	0,36 ÷ 0,42	0,90 ÷ 1,20	0,30 ÷ 0,50	4,80 ÷ 5,50	1,10 ÷ 1,40	-	0,25 ÷ 0,50	-
X40CrMoV51	0,37 ÷ 0,43	0,90 ÷ 1,20	0,30 ÷ 0,50	4,80 ÷ 5,50	1,20 ÷ 1,50	-	0,90 ÷ 1,10	-
X32CrMoV33	0,28 ÷ 0,35	0,10 ÷ 0,40	0,15 ÷ 0,45	2,70 ÷ 3,20	2,60 ÷ 3,00	-	0,40 ÷ 0,70	-
56NiCrMoV7	0,50 ÷ 0,60	0,10 ÷ 0,40	0,65 ÷ 0,95	1,00 ÷ 1,20	0,45 ÷ 0,55	1,50 ÷ 1,80	0,40 ÷ 0,70	-

**Tool steels for plastic moulds**

Designation according to DIN 17350	C	Si	Mn	Cr	Mo	S	Ni	P
W.1.2311	0,35 ÷ 0,45	0,20 ÷ 0,40	1,30 ÷ 1,60	1,80 ÷ 2,10	0,15 ÷ 0,25	-	-	-
W.1.2312	0,35 ÷ 0,45	0,30 ÷ 0,50	1,40 ÷ 1,60	1,80 ÷ 2,00	0,15 ÷ 0,25	0,30 ÷ 0,50	-	-
W.12738	0,35 ÷ 0,45	0,20 ÷ 0,40	1,30 ÷ 1,60	1,80 ÷ 2,10	0,15 ÷ 0,25	≤ 0,035	0,90 ÷ 1,20	≤ 0,035
W.1.2083	0,38 ÷ 0,42	≤ 1,00	≤ 1,00	12,50 ÷ 13,50	-	≤ 0,003	-	≤ 0,025
W.1.2085	0,28 ÷ 0,30	≤ 1,00	≤ 1,00	15,00 ÷ 17,00	-	0,05 ÷ 0,08	~ 0,30	≤ 0,030
W.1.2316	0,33 ÷ 0,43	≤ 1,00	≤ 1,00	15,50 ÷ 17,00	1,00 ÷ 1,20	≤ 0,005	~ 0,50	≤ 0,025

**High Speed Steels**

Designation according to DIN 17350	C	Co	Cr	Mo	V	W	Si
S 6-5-2	0,86 ÷ 0,94	-	3,80 ÷ 4,50	4,70 ÷ 5,20	1,70 ÷ 2,10	5,90 ÷ 6,70	≤ 0,45
S 6-5-2-5	0,87 ÷ 0,95	4,50 ÷ 5,00	3,80 ÷ 4,50	4,70 ÷ 5,20	1,70 ÷ 2,10	5,90 ÷ 6,70	≤ 0,45
S 2-10-1-8	1,05 ÷ 1,15	7,50 ÷ 8,50	3,50 ÷ 4,50	9,00 ÷ 10,00	0,90 ÷ 1,30	1,20 ÷ 1,90	≤ 0,70

The same grades could be delivered as per UNI EN ISO 4957.

	Quality IMS	DIN 17350	Execution	Supply condition	Size range			Application
					Rounds Ø	Square □	Flat #	
COLD WORK	W.2080	X210Cr12	Peeled / Turned	Annealed	10 ÷ 603	-	-	Rolls for cold strip mills and wire squeezer mills, dies for small metal parts, punches and drawing dies, dies for sintering.
			Rolled – Forged		-	20 ÷ 200	20x10 ÷ 500x150	
	W.2379	X155CrVMo121	Peeled / Turned	Annealed	10 ÷ 723	-	-	Shear blades, blanking punches, die chasers, rolls for cold mills, threading rolls and chasers, molds for plastic materials.
			Rolled – Forged		-	20 ÷ 200	50x30 ÷ 600x150	
	W.2842	90MncrV8	Peeled / Turned	Annealed	10 ÷ 503	-	-	Taps, shear knives, molds for plastic materials, gages, knives for wood and paper working.
			Rolled – Forged		-	20 ÷ 200	20x10 ÷ 500x150	
	W.2550	60WcrV7	Peeled / Turned	Annealed	20 ÷ 303	-	-	Tools exposed to violent impacts such as piercing punches, hammers, debarring and coining tools, shear blades.
W.2516	120WV4	Grinded	Annealed	4 ÷ 40	-	-	Spade, center drills, taps, small broaches, piercing punches for automatic shearing machines, scrapers, gravers, socket punches, guide pins.	
100CrMo7	100CrMo7	Peeled / Turned	Annealed	91 ÷ 403	-	-	Rolls of profiling tools, straightened rolls of continuous cutting lines, small rolls of cold strip mills.	
58SiMo8	58SiMo8	Peeled / Turned	Annealed	18 ÷ 383	-	-	Shear blades, extractor punches, collets, chisels.	
HOT WORK	W.2365	X32CrMoV33	Peeled / Turned	Annealed	30,8 ÷ 403	-	-	Dies for pressure casting of heavy alloys with high melting temperature, liners, spindles and other parts for extrusion presses, tooling for the production of nuts and bolts.
	W.2343	X38CrMoV51	Peeled / Turned	Annealed	30,8 ÷ 362	-	-	Dies for pressure casting of light alloys, dies for presses for hot forming steels, brass, aluminium and its alloys, hot work shear blades.
			Rolled – Forged		-	80 ÷ 150	-	
	W.2344	X40CrMoV51	Peeled / Turned	Annealed	20,8 ÷ 513	-	-	Dies for pressure casting of light alloys, dies for aluminium extrusion, dies for hot forming of steels, extractors.
			Rolled – Forged		-	-	160x100 ÷ 600x400	
	W.2344R	X40CrMoV51 ESR	Turned	Annealed	102 ÷ 553	-	-	Similar to W.2344 with more needs.
	W.2714	56NiCrMoV7	Turned	Hardened & tem. to R=1.250÷1.400 N/mm <sup>2</sup>	91 ÷ 703	-	-	Blocks for dies, hammers and pile drivers, rams for power hammers, hot mill rolls, very hard cold work dies and punches.
Forged			-		200 ÷ 400	200x100 ÷ 530x200		
W.2767	X45NiCrMo4	Peeled / Turned	Annealed	20,8 ÷ 553	-	-	Anvils and rams for hammers, dies and punches for horizontal forging machines, rolls for hot work bending machines.	
		Rolled – Forged		-	20 ÷ 230	100x20 ÷ 350x50		
MCV	Qualità non unificata (X45CrNiW2)	Peeled / Turned	Annealed	16 ÷ 162	-	-	Punches and drawings dies for hot forming of gauges, dies for pressure casting of light alloys and brass, hot work shear blades, tooling for hot extrusion presses.	
		Forged		-	-	250x40 ÷ 605x203		

	Quality IMS	DIN 17350	Execution	Supply condition	Size range			Application
					Rounds Ø	Square □	Flat ≠	
HIGH SPEED	M2	S 6-5-2	Peeled rolled	Annealed	5,3 ÷ 20,5	-	-	Twist drills, taps, die chasers, rotating files, cutters, broaches, woodworking tools, applies sectors for circular and straight blades, dies and tools for fine cutting.
			Peeled		21,5 ÷ 101	-	-	
	M35	S 6-5-2-5	Peeled rolled	Annealed	5,3 ÷ 20,5	-	-	Tools for roughing work at very high cutting speeds on steels and cast iron, high performance twist drills, cutters and taps, highly stressed dies and tools in cold shearing and extrusion processes.
			Peeled		21,5 ÷ 101	-	-	
	M42	S 2-10-1-8	Peeled rolled	Annealed	5,3 ÷ 20,5	-	-	Tools for the machining of very hard metals, nickel, cobalt and titanium based alloys, broaches, cutters, twist drills, taps, cutting tools and cold work punches.
			Peeled		21,5 ÷ 101	-	-	
PLASTIC	W.2311	(DIN 40CrMnMo7)	Peeled	Hardened & temp.	25 ÷ 102	Sheets thickness 20 ÷ 800		Steel suitable for dies up to 400 mm about of thickness, with very good polishing and photoincisivening qualities. It can be nitrided.
			Turned		112 ÷ 703			
	W.2312	40 CrMnMoS8-6	Peeled	Hardened & temp.	25 ÷ 102	Sheets thickness 20 ÷ 800		In comparison with 2311, it offers a better workability, applications are the same but with smaller polishing requirements.
			Turned		263 ÷ 703			
	W.2738	(DIN 40CrMnNiMo8)	Peeled	Hardened & temp.	25 ÷ 102	Sheets thickness 20 ÷ 1.000		This plastic mould steel has been developed from the standard grade 2311. It is best suited for mould dimensions from 400 mm thick. Adding 1% nickel by alloying ensurs full quenching and tempering up to 1.000 mm thickness. This good machinability combined with polishability and etch-granability are defining characteristics of this standard steel.
			Turned		112 ÷ 703			
	W.2083	(X42Cr13)	Peeled	Hardened & temp.	25 ÷ 102	Sheets thickness 20 ÷ 800		Steel suitable for dies up to 400 mm about of thickness, with very good polishing and photoincisivening qualities. It can be nitrided.
			Turned		112 ÷ 703			
	W.2085	(X33CrS16)	Peeled	Hardened & temp.	25 ÷ 102	Sheets thickness 20 ÷ 800		Steel suitable for dies up to 400 mm about of thickness, with very good polishing and photoincisivening qualities. It can be nitrided.
			Turned		112 ÷ 703			
	W.2316	(X36CrMo17)	Peeled	Hardened & temp.	25 ÷ 102	Sheets thickness 20 ÷ 800		Well suited for processing chemically aggressive and acid-releasing plastic such as PVC, amino plastic and halogenated flame retardant additives. Application : injection moduls, mould inserts, slit dies, profile dies, extrusion dies, drop forging tools and coaxial hausing for PVC amino plastic and additives, blowing moulds.
			Turned		112 ÷ 703			