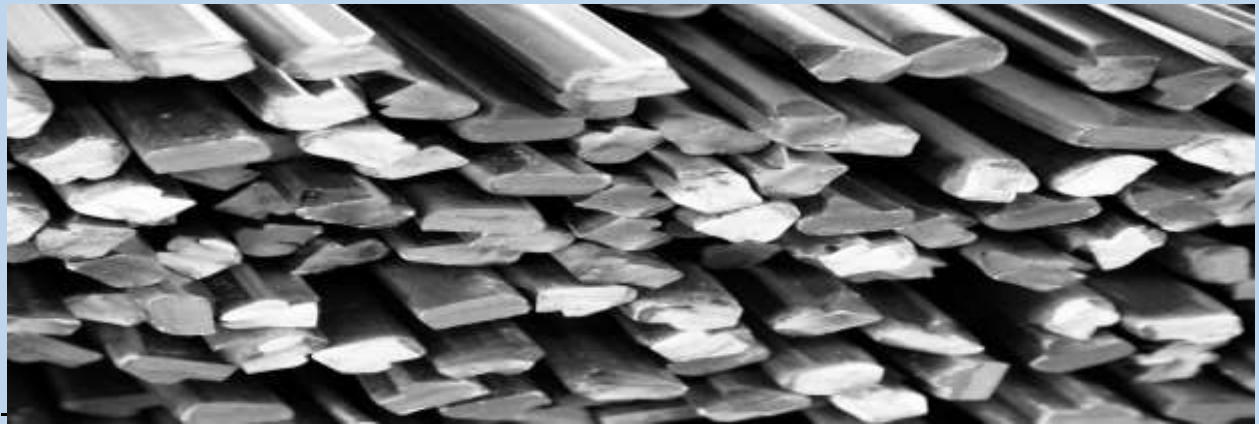




P.K.G. Exports Pvt. Ltd.



PRODUCT CODE :: PKG/RO/41

SPECIAL STEELS



A) NITRIDING STEELS ::

SPECIFICATION :: DIN-41 Cr AlMo7, 34 CrAlMo5. BS-905M39, 905M31, 835M30, IS 40 Cr 7Al 10Mo2. EN-40A, 40B, 40C, 30B, 41A & 41B.



B) SHOCK RESISTING STEELS :: IS-T55 Si 2 Mn90Mo33, T40W2Cr1V18, T50W2Cr1V18, AISI- S3, S1.

TYPICAL PRODUCED CHEMICAL COMPOSITION PERCENT WHICH IS NEAREST EQUIVALENT TO ABOVE SPECIFICATION ::

	C	Mn	Si	S&P	Cr	Mo	V	W
GR SR-2	0.58	0.90	2.00	0.025	-	0.30	0.10 (OPT)	-
GR SR-3	0.45	0.30	0.70	0.025	1.30	-	0.20	2.00
GR SR-4	0.55	0.30	0.70	0.025	1.30	-	0.20	2.00

C) CREEP RESISTANCE STEELS

SPECIFICATION ::

CHEMICAL COMPOSITION

GRADE DESIGNATION	C	Mn	P (Max)	S (Max)	Si	Cr	Mo	Others
Afnor 15CDV6	0.10/ 0.16	0.80/ 1.00	0.030	0.030	0.20 max	1.25/ 1.50	0.80/ 1.10	v:0.20 /0.30
ASTM A-213 T11	0.15 max	0.30/ 0.60	0.030	0.030	0.50/ 1.0	1.00/ 1.50	0.44/0.65	-
T22	0.15 max	0.30/ 0.60	0.030	0.030	0.50 max	1.90/ 2.60	0.87/1.13	-
ASTM A-210 GRADE A1	0.27 Max	0.93 max	0.048	0.058	0.10 min	-	-	-
GRADE C	0.35 Max	0.29/ 1.06	0.048	0.058	0.10 min	-	-	-
BS-1501 620B	0.80- 0.15	0.40- 0.70	0.050	0.050	0.10/ 0.30	0.70/ 1.00	0.45/0.65	-



HAD FIELD MANGANESE STEELS

SPECIFICATION ::

CHEMICAL COMPOSITION

C	Mn	Si (Max)	P (Max)	S (Max)
1.15	13.0	0.60	0.07	0.05

MECHANICAL PROPERTIES IN WATER-TOUGHEND CONDITION :

HARDNESS :: 220 BHN
T.S. :: 94 Kg/mm²
ELONG :: 50%

END USES :: THE HADFIELD MANGANESE STEEL PLATES ARE USED IN STATIC/
DYNAMIC COMPONENTS REQUIRING HIGH WEAR RESISTANCE & TOUGHNESS IN JAW CRUSHERS
BLAST FURNACE HOPPERS, BREAKER PLATE LINERS FOR HAMMER MILLS, ORE BRIDGE
HAULAGE DRUMS & BLOOMING MILL HOUSING ETC.



E) TOOL STEEL
SPECIFICATION

::

BS

DIN

SAE/AISI

BS-5	-	S-5
BS-1	45WCrV7	S-1
BS-1	60WCrV7	S-1
BH-12	X37CrMoV51	H-12
BH-13	X40CrMoV51	H-13
BH-21	X30WCrV93	H-21
BH-1	X38CrMoV51	H-11
BO-1	105WCr6	-
BA-2	X100CrMoV51	-
BD-2	X165CrMoV12	-
BD-3	X210Cr12	-
-	C70W2	W1
-	C80W2	W1
BW1A	C90W2	W1
BW1B	C100W2	W1
224/2	-	-
224/3	-	-
224/5	-	-
224/5	-	-
-	56NiCrMoV7	-

F) BORON BEARING STEELS

SPECIFICATION : : CHEMICAL COMPOSITION

GRADE	C	Mn	Si	S	P (Max)	Cr	Ni	Mo	Others
AISI 86B45	0.43 0.48	0.75/ 1.00	0.20 0.35	0.035	0.04	0.40 0.60	0.40/ 0.70	0.15/ 0.25	BORON .0005 min
AISI 10B35	0.32/ 0.39	0.60 min	0.15 0.35	0.040	0.05	-	-	-	BORON .0005 min



G) VALVE STEELS

SPECIFICATION : : CHEMICAL COMPOSITION

GRADE	C	Mn	Si	S	P (Max)	Cr	Ni	Mo	Others
En52	0.40/ 0.50	0.30/ 0.60	3.00/ 3.75	0.040	0.040	7.50/ 9.50	0.50/ max	--	--
En59	0.74- 0.84	0.2/ 0.60	1.75/ 2.25	0.030	0.030	19.0/ 20.5	1.16/ 1.65	--	--



H) HOT WORK TOOL STEELS

SPECIFICATION

: :

CHEMICAL COMPOSITION

ASP GR DESIG	C	Mn	Si	S	P	Cr	Mo	V	W	iS	AISI
HW-1	0.35	0.35	1.00	0.25	0.025	5.00	1.50	0.30	1.50	T33CrMoWiV30	H-12
HW-2	0.35	0.35	1.00	0.025	0.025	5.00	1.50	1.10	--	T33Cr5moV1	H-13
HW-3	0.32	0.35	0.25	0.025	0.025	3.10	--	0.40	90.00	T33w90Cr3V35	H-21
HW-4	0.35	0.35	1.00	0.025	0.025	5.00	1.50	0.30	--	T33Cr5Mo1V30	H-11



I) COLD WORK TOOL STEELS

SPECIFICATION

: :

CHEMICAL COMPOSITION

ASP GR DESIG	C	Mn	Si	S	P	Cr	Mo	V	W	iS	AISI
CW-1	0.90	1.30	0.25	0.025	0.025	0.50	--	0.20 (OPT)	0.50	T90Mn2W50Cr45	0-1
CW-2	1.00	1.00	0.25	0.025	0.025	5.00	1.10	0.40	--	--	A-2
-3	1.60	0.35	0.25	0.025	0.025	12.0	0.7 (OPT)	0.80 (OPT)		T160Cr12	D-2
CW-4	2.15	0.35	0.25	0.025	0.025	12.5	0.30 (OPT)	0.25 (OPT)	--	T215Cr12	D-3



J) CARBON TOOL STEELS

SPECIFICATION : : NOMINAL CHEMICAL COMPOSITION PERCENT
NEAREST EQUIVELENT SPECN

ASP GR DESIG	C	Mn	Si	S	P	Cr	Mo	V	W	iS	AISI
CTS-1	0.70	0.30	0.25	0.03	0.03	--	--	--	--	T-70	W-1
CTS-2	0.80	0.30	0.25	0.03	0.03	--	--	--	--	T-70	W-1
CTS-3	0.90	0.25	0.25	0.03	0.03	--	--	--	--	T-90	W-1
CTS-4	1.00	0.25	0.25	0.03	0.03	--	--	--	--	T-103	W-1



J) DIE BLOCK STEELS

SPECIFICATION : : NOMINAL CHEMICAL COMPOSITION PERCENT
NEAREST EQUIVELENT SPECN

ASP GR DESIG	C	Mn	Si	S	P	Cr	Ni	Mo	V	iS	BS/DIN
DB-2	0.55	0.65	0.25	0.04	0.04	--	1.25	--	--	T60Ni1	BSS:242/2
DB-3	0.55	0.65	0.25	0.04	0.04	0.65	1.45	--	--	---	BSS:224/3
DB-4	0.55	0.60	0.25	0.04	0.04	0.95	0.90	0.35	--	---	BSS:224/5
DB-5	0.50	0.55	0.25	0.04	0.04	0.95	0.90	0.35	0.03	--	BSS:224/5
DB-6	0.56	0.70	0.25	0.03	0.03	1.10	1.75	0.55	0.10	--	DIN:1.2714



L) COLD HEADING QUALITY STEELS

SPECIFICATION

: :

CHEMICAL COMPOSITION %

GRADES	C	Mn	Si	P MAX	S MAX	Cr	Mo	B	Ti	Equivalent End Grades applicat:
SAE 1008	.10 MAX	.30 .50	.10 MAX	.030	.030	--	--	--	--	Nuts. Rivets stude
SAE101 0	.08 .013	.30 .60	.10 MAX	.030	.030	--	--	--	--	C-10 (IS) Nute CK10 (DIN) extruder Roller, cycle Compenets-pedal -axel & hubcone screw
SAE 1012	.10 .15	.30 .60	.10 MAX	.030	.030	--	--	--	--	C-10 (IS) Rivets & CK-10 (din) Bolts En2 A,B,E
CQ 15	.12 .18	.30 .60	.10 .30	.040	.040	--	--	--	--	SAE 1015 Stude & CK 15 (DIN) BOLTS C-15 Mn 75 (IS)
SAE 1018	.15 .20	.60 .90	.10 MAX	.030	.030	--	--	--	--	EN20 SELF TAPPING H 111 (DIN) SCREW C-15 Mn 75 (IS)
SAE 1020	.18 .23	.30 .60	.15 .30	.040	.040	--	--	--	--	EN 3A,B,C Bolts CK22 (DIN) C-25 Mn 75 (IS)
MS (BQ)	.15 MAX	.60 MAX	.10 .20	0.040	.040	--	--	--	--	Commercial Quality bolts
SAE154 1	.036 .44	1.35 1.65	.15 .30	.030	.030	--	--	--	--	IS-37C15 HIGH EN-19,A,B,C TENSILE DIN 36 Mn7 Fasteners
SAE 4140	.38 .43	.75 1.00	.10 .35	.030	.030	.80 1.1 0	.15 .25	--	--	IS-40Cr4Mo3 High EN-19,A,B,C Tensile DIN-42CrMo4 Fastener
10B21	.17 .23	.80 1.20	.15 .35	.030	.030	.20 MAX	--	.0005 .0030	--	Is-21c10bt HIGH Tensile Fastners
15B25A	.23 .28	.90 1.20	.15 .35	.030	.030	.20 MAX	--	.0005. .0030	--	

M} GAS SHIELDED ELECTRODE STEELS

SPECIFICATION

: :

CHEMICAL COMPOSITION %

GRADE S	C	Mn	Si	P MAX	S MAX	Cr	Mo	Equivale nt	Grades
A. HIGH MAGANESE LOW SILICON GRADES									
WJQ	.11 .16	1.80 2.20	.15 MAX	0.030	0.030	--	--	WRI, UM3	
B. <u>HIGH MAGANESE HIGHT SILICON GRADE</u>									
WJM-1	.10 MAX	1.50 1.80	0.80 1.10	0.030	0.030	--	--	WR3	
WJM-II	.10 MAX	1.80 2.20	.70 1.10	.030	.030	--	--	WR4	
D) <u>MOLYBDENUM GRADES</u>									
WR6	.10 .18	1.65 2.15	.15 MAX	.030	.030	--	.45	UM4	
WR7	0.13 MAX	.40 .70	.20 MAX	.025	.0250	--	.45 .65	---	
D: <u>HIGH CHROMIUM GRADES</u>									
WLJ	0.35 .45	.90 1.10	.40 .60	.030	.030	1.00 1.20	--	- -	

DIMENSIONS : : THE ABOVE SPECIAL QULALITY STEELS ARE GENRALLY AVAILBLE
IN FORMS BARS, SQUARES, ROUND CORNERD SQUARES, HEXAGONS,
OCTAGONS, WIRE RODS FLATS ETC
SIZES : : MOST OF THE GENRAL STANDARD SIZES ARE PRODUCED
AND SPECIAL SECTIONS/SIZES TO SUIT AN INDIVIDUAL
REQUIRMENT CAN BE PRODUCED.

NOTE : : WE HAVE SELECTED ONLY THOSE SPECIAL STEEL PRODUCED WHO
FOLLOW THE PRINCIPLES OF TOTAL QUALITY MANAGEMENT (TQM) ,
SOME OF THE PRODUCERS ARE ALSO ACCREDITED BY ISO 9002
STATUS. THEREFORE THE OVERSEAS CUSTOMNERS MAY KINDLY
SEND US THEIR ENQUIRY AND WE SHALL ENDEAVOUR
BEST TO ARRANGE A WORKABLE OFFER.