

KAL TAB - Shock Resistant Tool Steel (S7)



Equivalent Grade

AISI	ASTM
S7	ASTM A681-S7

Chemical Composition

	Element	C	Mn	Si	Cr	V	Mo	P	S
AISI S7	Min	0.45	0.20	0.20	3.00		1.30		
	Max	0.55	0.90	1.00	3.50	0.35	1.80	0.030	0.030

Characteristics

- High Mechanical fatigue Resistance
- Excellent Toughness at high Strength levels
- Good Wear Resistance
- High Hardenability & Softening Resistance at elevated temperature

Application

It is used for hot and cold shock applications, medium hot-work dies and medium-run cold work tools and dies.

1. For Tools with Good Resistance to Impact and Softening
2. Tool Industry: Forging Dies, Punches, Chisels, Hammer, Hot Heading Dies and Gripper Dies
3. Cutting Tool : Shear Blades

Heat Treatment

Annealing:

Heat to 840-850°C, hold as per 1" inch per 30 mm , slow cool @ 35°C per hour to 550° C then air cool.

Annealed Hardness ~ 200 HBW

Stress Relief

Heat to 660-675°C, hold as per 1" per 30 mm, then cool in still air.

Hardening

Preheat: Heat to ~750°C, equalize and heat to 940-950°C at the rate 100°C/1 hr max and quench in gas or Oil, Higher section may require higher agitation

Temper:

Temper in 205-550°C depending upon the required hardness levels, soak for at least 1 hour per 25 mm of thickness. Double Tempering is recommended.