

C	Si	Mn	Cr	Mo	W	V
0.50	0.65	0.30	1.50		2.25	0.20

Features and Uses

PAX 2 is an alloy shock-resisting tool steel for both hot and cold work applications. The tungsten content of this steel confers fatigue resistance, the chromium content gives depth of hardness and resistance to abrasion.

PAX 2 is suitable for cold work tools subject to heavy shock and uneven loading, for example, press tools used for punching heavy gauge material, shear blades, nut blanking tools, perforating and piercing punches.

This steel is also used with great success for chisels, punches and sates required for heavy work on hard tough materials.

PAX 2 is resistant to heat checking. It is suitable for hot-work applications where high fatigue strength in combination with medium hot hardens is desirable. Tools made from this material may be water cooled in service with little risk of cracking. Typical hot work applications include mandrel bars for drawing steel tubes, hot heading, swaging, forming and gripper dies used in medium temperature work, punching, piercing, and trimming dies and shear blades working at medium temperature including flying shear blades.

Working and Heat Treatment

Forging

Heat slowly to 1000° / 1050°C and forge with light rapid blows. Reheat when temperature falls below 900°C. Slow cool, preferably in the furnace, to shop temperature.

Normalising

Normalising is not recommended for this steel.

Annealing

Pack anneal in a tube or other closed container with clean cast iron borings at 800°/810°C for at least 2 to 3 hours. Cool slowly with the furnace

Stress relieving

For applications where distortion must be kept to a minimum or where the machining operations have been severe, we recommend stabilizing just before the tools are finish machined in order to relieve machining strains. Heat slowly to 700°C and allow to cool in air.

Hardening

Preheat at 650°C followed by rapid increase of temperature to 900 / 950°C quench in oil. When it is not intended to grind after hardening, tools should be packed into a container with clean cast iron borings for heating for hardening, or heated to the hardening temperature in a neutral salt bath or gas atmosphere furnace followed by quenching in oil.

Tempering

The hardened steel must always be tempered. Heat slowly to the required tempering temperature, soak thoroughly for 2 hours per 25 mm of ruling section and allow to cool in still air. For hot work applications a minimum tempering temperature of 550°C should be used.