

A8 Tool Steel Heat Treatment

The chemistry, the hardening cycle and the tempering response for A8, from the reference page on aobosteel.com. A reference summary of published practice and not an Aobo Steel specification.

Reference only. The chemistry, the hardening cycle and the tempering response are reproduced from the source named at the foot of this sheet. The figures are shop reference values rather than a specification, and the card carries no tolerances. Run a trial part before committing a production die to this cycle.

Chemistry of A8

Source, heat treating reference information for A8, printed page 182.

Element	Percent
Carbon	0.55
Manganese	0.30
Silicon	0.95
Chromium	5.00
Molybdenum	1.25
Tungsten	1.25

The card prints one figure for each element rather than a specification range. Vanadium, cobalt and sulfur appear on the card with no figure against them and are left out of the table rather than shown as a zero.

Hardening A8

Source, heat treating reference information for A8, printed page 182.

Step	A8
Preheat	1350 °F (730 °C)
Harden	1825 °F (995 °C)
Quench	Air quench

The card attaches no size condition to the preheat, so the step is not marked as one that only larger sections need. It prints one hardening temperature and one quench medium for the grade, with no oil or salt alternative alongside the air quench.

Tempering response of A8

Source, heat treating reference information for A8, printed page 182.

Temper, °F	°C	A8, HRC
As quenched	No temper	65
300	150	61
400	205	58
500	260	58
600	315	57
700	370	57
800	425	57
900	480	57
1000	540	57

The card steps the tempering temperatures by 100 °F from 300 °F to 1000 °F and prints one Rockwell C figure for each. The first row is the hardness as quenched, before any temper.

A8 sits at 65 HRC as quenched and at 61 HRC after a 300 °F (150 °C) temper. From 400 °F (205 °C) to 1000 °F (540 °C) the hardness moves one point, from 58 to 57 HRC.

Aobo Steel, tool steel supplier

Aobo Steel supplies tool steel to distributors and mold, tool and die shops, including D2, D3, O1, A2, H13, H11, M2, L6, P20 and 420 stainless. Forged or hot rolled, annealed or pre-hardened, cut to your sizes, with test certificates.

Reference data compiled from Heat Treatment, Selection, and Application of Tool Steels (William E. Bryson, second edition, Hanser). The chemistry, the hardening cycle and the tempering response for A8 come from the heat treating reference information on printed page 182.

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