

FireStorm

Carbon Damascus Core (1084 / 15N20) — Heat Treatment Specification

Revision 1.0 | Baker Forge & Tool, Boone NC

STEEL PROFILES

1084 / 15N20 carbon Damascus core (DamCore). Heat treat is aimed at 1084. Copper-shim FireStorm variants heat treat identically — the shim is non-hardening.

	1084 (Dark / Edge Layer)	15N20 (Bright / Contrast)
Classification	Carbon / tool steel	High-carbon + nickel
Carbon	~0.84%	~0.75%
Heat treat driver	Drives all HT decisions	Hardens with 1084 — same schedule
Forge Range	1500–2000°F	1500–2000°F

STEP 1 — NORMALIZE (DO THIS FIRST)

Relieve forge stress and refine grain before hardening. Even, repeatable grain is the foundation of a clean hardening result.

Parameter	Spec
Cycles	2 cycles
Temp	1500°F
Hold time	Until evenly heated through — soak briefly at temp, then still-air cool
Cool	Still air — no forced cooling
Atmosphere	Neutral

STEP 2 — AUSTENITIZE & HARDEN

Heat treat is driven entirely by the 1084 core. 1084 and 15N20 harden together on the same schedule.

Parameter	Spec
Austenitize temp	1475°F (target)
Soak time	5–10 min at temp
Atmosphere	Controlled kiln
Quench medium	Parks 50 (preferred) or canola — canola acceptable for 1084
Quench technique	Edge-first, straight vertical plunge
Oil temp	100–120°F (warm oil)
Agitate?	Yes — up-and-down motion only for first 10–15 sec. Never figure-8.

No snap temper and no cryo — there is no stainless layer present. The carbon-steel-core rule applies.

STEP 3 — TEMPER

Double-temper is standard. Carbon steel core: 2 hours per cycle, full air cool between cycles.

Parameter	Spec
Cycles	2 cycles (double-temper)

Temper temp — hard	375°F → target HRC 61–63
Temper temp — balanced	400°F → target HRC 59–61
Temper temp — tough	450°F → target HRC 56–58
Hold time	2 hours per cycle (carbon steel core)
Cool between cycles	Full air cool to room temp before second cycle

EXPECTED HARDNESS RESULTS

Temper Temp	1084 / 15N20 (HRC)	Cladding / Contrast	Use Case
375°F	61–63	Uniform	Hard use / high edge retention
400°F	59–61	Uniform	Balanced everyday carry
450°F	56–58	Uniform	High toughness / flexible use

FULL PROCESS SUMMARY

#	Step	Temp / Setting	Notes
1	Normalize ×2	1500°F	Still air cool. 2 cycles.
2	Austenitize	1475°F Soak 5–10 min	Even heat throughout billet
3	Quench	Parks 50 or canola 100–120°F	Edge-first, straight plunge. Up-and-down agitation 10–15 sec.
4	Temper ×2	375–450°F 2 hrs each	Full air cool between cycles. No snap temper, no cryo.

WATCH POINTS & COMMON FAILURES

Issue	What to Watch For / Why It Happens
Warp on quench	Straight, edge-first plunge. Thin damascus can move — quench decisively and check straightness while warm.
Over-soak	Do not hold long past 5–10 min at 1475°F — grain growth softens the final edge.

POST-HEAT TREAT — ETCHING

FireStorm's Damascus core etches with bold dark/bright contrast. Gator Piss Original for the carbon body; switch to Heavy on copper-shim variants to reveal the copper.

Product	Use
Gator Piss Original	Classic etch for the carbon Damascus body. For copper-shim FireStorm variants, use Gator Piss Heavy to pop the copper.
Gator Skin	Apply after etch for protection. Locks in contrast and extends finish life.

Grime Reaper	Pre-etch cleaning. Remove all oil, fingerprints, and grinding residue before etching.
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