



BROWN METALS COMPANY

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ALLOY TECHNICAL DATA SHEET

1008 / 1010 LOW CARBON STEEL

Mild Steel · Cold-Rolled Strip per ASTM A109 · UNS G10080 · G10100

GENERAL PROPERTIES

BMC's 1008 / 1010 low carbon steel — commonly called mild steel — is cold-rolled carbon steel strip produced to ASTM A109. Because BMC buys it to meet both grades, carbon is held to 0.08–0.10%, so it is soft, tough and easy to work, and cold rolling lets it be supplied in tempers from hard to dead soft to suit the forming operation.

It is one of the most economical metals available, and it is widely used for parts that do not need the corrosion resistance or high strength of stainless or alloy steels.

KEY PROPERTIES & ADVANTAGES

- Ductility — bends, rolls and forms into complex shapes without cracking or losing toughness.
- Machinability — cuts, punches, drills and machines easily, keeping production time and tooling costs down.
- Weldability — low carbon content produces sound, strong welds by most common welding methods.
- Economy — low material cost and easy processing with standard tools and equipment.
- Magnetic — the high iron content makes it ferromagnetic.
- Recyclable — steel is among the most widely recycled materials, supporting sustainable manufacturing.

TYPICAL USES

- Shims, washers, stampings and blanked parts
- Brackets, clips, framing and enclosure components
- Machinery, automotive and industrial equipment parts
- Appliance, furniture and housewares components
- Roofing, cladding and other formed building products
- Plated, painted or coated parts

LIMITATIONS

- Corrosion — rusts when exposed to moisture and air. Plating, painting, galvanizing or rust-preventive oil is needed for most service, especially outdoors or in harsh environments.
- Strength — lower tensile strength than medium- and high-carbon or alloy steels, so it is less suited to highly stressed or heavily loaded parts.
- Heat — loses strength at elevated temperatures and is not intended for high-heat service.

CHEMICAL COMPOSITION

Heat analysis, percent by weight, maximum unless range is specified — SAE J403 (flat rolled) and ASTM A109

Element	SAE 1008	SAE 1010	ASTM A109	BMC strip
Carbon	0.10	0.08–0.13	0.25 / 0.15*	0.08–0.10
Manganese	0.50	0.30–0.60	0.90 / 0.60*	0.30–0.50
Phosphorus	0.030	0.030	0.025	0.025
Sulfur	0.035	0.035	0.025	0.025
Copper	—	—	0.20	0.20
Nickel	—	—	0.20	0.20
Chromium	—	—	0.15	0.15
Molybdenum	—	—	0.06	0.06

*Tempers 1–3 / Tempers 4–5. BMC buys strip to meet 1008, 1010 and A109 at the same time; the BMC column is the window where all three overlap. Under A109, copper + nickel + chromium + molybdenum may not exceed 0.50% unless one of them is specified. SAE J403 sets residual limits by agreement.

TEMPERS — ASTM A109

Hardness requirements by thickness (in.) for BMC's range, through .031 — each range includes its lower limit and runs up to, but not including, its upper limit

Temper	Under .010 (Vickers)	.010–.025 (HR15T)	.025–.040 (HR30T)
No. 1 Hard	185 min.	90 min.	76 min.
No. 2 Half hard	125–165	83.5–88.5	63.5–73.5
No. 3 Quarter hard	107–137	80–85	56.5–67
No. 4 Skin rolled	115 max.	82 max.	60 max.
No. 5 Dead soft	100 max.	78.5 max.	53 max.

Maximum values are approximate. Hardness applies at time of shipment; aging may cause slightly higher readings later. BMC stocks No. 1 (Hard), No. 2 (Half hard) and No. 5 (Dead soft / annealed).

PHYSICAL PROPERTIES

Density	0.284 lb/in ³ (7.87 g/cm ³)
Specific gravity	7.87
Modulus of elasticity (tension), typical	29–30 × 10 ⁶ psi (200–205 GPa)
Magnetic	Yes — ferromagnetic

Values are typical or specification minimums as noted, provided for information only, and should not be used as design limits or as a guarantee of properties for any particular lot or application. Certified test reports are supplied with each order.

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