

# CRAFTSMAN CRIBSHEET

## AISI System of Identification

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Prior to the Society of Automotive Engineers taking responsibility for Steel Grade nomenclature in the United States (1995), the American Iron and Steel Institute determined U.S. standard steel grades in collaboration with SAE. As many legacy prints for federal and defense procurement may still have prior AISI Grade designations, here are the letters used for prefixes and suffixes employed by the former AISI designation system. These notes are based on the AISI numbering system as published in the February 10, 1942, edition of the SAE Handbook.

Capital letters designate prefixes to indicate method of steel manufacture. Lowercase letters used as suffixes to indicate various special requirements affecting quality. Numbers are used to indicate the grades of steel by chemical composition.

### Letter Suffixes

- a** Restricted chemical compositions closer (tighter) than standard ranges
- b** Bearing steel quality
- c** Guaranteed segregation limits affected by methods of sampling
- d** Special discard
- e** Homogeneity tests (macro-etch)
- f** Rifle barrel quality
- g** Limited austenitic grain size
- h** Guaranteed hardenability (This evolved into the H-band steels, with a capital H suffix after the four numeric digit grade indicating wider chemical range and compliance with hardenability curves)
- i** Guaranteed conformity to non-metallic inclusions standards
- j** Fracture test
- t** Extensometer test
- v** Aircraft quality or Magnaflux testing requirements.

### Other Items to Keep in Mind

Acid bessemer carbon steel is not furnished with specified silicon content; for standard basic open-hearth carbon steels, silicon may be ordered only as 0.10% maximum; 0.10-0.20%; or 0.15-0.30 %. (Special practices were required to comply with silicon specifications.)

For open-hearth alloy and electric furnace alloy steels, the lowest standard maximum phosphorus and sulfur is 0.05% weight each. Lowest standard minimum silicon is 0.15% for both open-hearth acid and acid electric furnace processes.

**NE** denotes a **N**ational **E**mergency standard steel designation promulgated by Office of Production Management. **P**

### Letter Prefixes

- A** designates basic open-hearth alloy steels
- B** denotes acid bessemer carbon steel
- C** denotes basic open-hearth carbon steel
- CB** denotes either acid bessemer or basic open-hearth carbon steel at option of manufacturer
- D** denotes acid open-hearth carbon steel
- E** designates electric furnace alloy Steel

