



Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, for Fluid Power Applications¹

This standard is issued under the fixed designation A 695; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

^{ε1} NOTE—Keywords were added editorially in March 1995.

1. Scope

1.1 This specification² covers hot-wrought, special quality, round carbon steel bars subject to mechanical property requirements and intended for fluid power applications.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

A 29/A29M Specification for Steel Bars, Carbon and Alloy, Hot-Wrought and Cold-Finished, General Requirements for³

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products⁴

3. Classification

3.1 The bars are available only as hot-wrought rounds 3.0 in. (76 mm) in diameter and larger. Smaller sizes are specified and procured to a cold-finished specification.

3.2 The bars are furnished in the following types and grades:

Type	Composition, %
A	Si 0.15–0.35
B	C 0.35 max; Mn 1.10 max; Si 0.15–0.35
C	S 0.08–0.13; Si 0.35 max
D	Si 0.15–0.35; Pb 0.15–0.35
Grade	Yield Strength, psi (MPa)
35	35,000 (240)
40	40,000 (275)
45	45,000 (310)
50	50,000 (345)

3.3 All grades are not available in all types and sizes. See Section 8.

4. Ordering Information

4.1 Orders for material under this specification should include the following information:

4.1.1 Quantity (weight or number of bars),

4.1.2 Name of material (carbon steel bars),

4.1.3 Condition (hot wrought),

4.1.4 Finish (if descaled required, so state) (Section 9 and S 3),

4.1.5 Dimensions (diameter and length),

4.1.6 ASTM designation and date of issue,

4.1.7 Type and grade (Table 1 and Table 2),

4.1.8 End use, and

4.1.9 Additions to the specification and supplementary requirements if required.

NOTE 1—A typical ordering description is as follows: 10,000 lb, Carbon Steel Bars, Hot Wrought, 4.5-in. diameter by 10 ft, ASTM A 695 dated —, Type A, Grade 40, End Use Accumulator Heads; Supplementary Requirement S1 Straightness 0.125 in. in any 5 ft.

5. Materials and Manufacture

5.1 *Melting Practice*—The steel shall be made by one or more of the following primary processes: open-hearth, basic-oxygen, or electric-furnace. The primary melting may incorporate separate degassing or refining and may be followed by secondary melting using electroslag remelting or vacuum arc remelting. Where secondary melting is employed, the heat shall be defined as all of the ingots remelted from a single primary heat.

5.2 *Deoxidation*—Types A, B, and D steels shall be silicon killed. Type C steel may be silicon killed at the manufacturer's option.

5.3 *Quality*—The bars shall be special quality.

5.4 *Hot Working*—The bars shall be hot wrought, as wrought.

6. Chemical Composition

6.1 The heat analysis shall conform to the requirements for chemical composition specified in Table 1.

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys, and is the direct responsibility of Subcommittee A01.15 on Bars.

Current edition approved Aug. 31, 1990. Published October 1990. Originally published as A 695 – 74. Last previous edition A 695 – 90a.

² For ASME Boiler and Pressure Vessel Code applications see related Specification SA-695 in Section II of that Code.

³ *Annual Book of ASTM Standards*, Vol 01.05.

⁴ *Annual Book of ASTM Standards*, Vol 01.03.