



Designation: A 627 – 95

Standard Specification for Homogeneous Tool-Resisting Steel Bars for Security Applications¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers requirements for the performance characteristics including conventional mechanical tests, simulated service tests and testing equipment for determining the characteristics of homogeneous tool-resisting steel bars and does not preclude the possibility of severing or penetrating this material by cutting means other than those described herein. This material can be severed with tungsten/carbide coated or tipped saws.

1.2 Three tests, describing minimum performance characteristics required for bars of different diameters covered by this specification are: (1) drop-weight test, (2) cutting test, and (3) deflection test.

1.3 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 ASTM Standards:

C 39 Test Method for Compressive Strength of Cylindrical Concrete Specimens²

E 4 Practices for Force Verification of Testing Machines³

E 329 Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction⁴

2.2 Other Documents:

U. S. Federal Specification GGG-B-451c, dated April 11, 1960, and Amendments 1, 2, and 3: Blade, Hand Hacksaw and Blade, Power Hacksaw⁵

3. Terminology

3.1 **bars**—round, ribbed, hexagonal, or other shaped bars that can readily be reduced to a round cross-sectional shape, $\frac{7}{8}$ to 1 in. (22.2 to 25.4 mm) in diameter (see Fig. 1).

3.2 **cutting test**—a simulated service test in which the rating is based on the calculated theoretical number of a specific type of ordinary hacksaw blades required to cut through the bar.

3.3 **equipment manufacturer**—a manufacturer who fabricates and assembles security products, including tool-resisting steel enclosures, for installation in areas requiring security against ingress and egress. This manufacturer processes the semifinished bar to produce a finished bar suitable for fabrication into components and is responsible for all heat-treating and other fabricating processes to obtain the performance characteristics specified herein. This manufacturer is also responsible for fabricating and assembling all ancillary items so as not to impair the performance characteristics of the bar.

3.4 **homogeneous bar**—a bar that is nominally of uniform chemistry throughout.

3.5 **lot**—all bars of the same nominal diameter from the same mill heat.

3.6 **performance characteristic**—the response to any one test (drop-weight, cutting, or deflection) shown in Table 1.

3.7 **test completion**—conduct of one test sequence for each lot of bars.

3.8 **testing laboratory**—a recognized testing laboratory, capable of complying with Practice E 329, selected by the equipment manufacturer.

3.9 **test sequence**—conduct of drop-weight test and cutting test on one specimen bar, and conduct of deflection test on one additional specimen bar.

4. Ordering Information

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

4.1.1 Name of material (homogeneous tool-resisting steel),

4.1.2 Dimensions (nominal diameter),

4.1.3 Cross section (double-ribbed round, hexagon, other shapes),

4.1.4 ASTM designation (A 627),

4.1.5 Test reports (if required),

4.1.6 Certification (if required), and

4.1.7 Special requirements (if any).

4.2 Bars of different nominal diameters may be specified or shown on drawings. Each bar of the nominal diameter tested

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² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 03.01.

⁴ Annual Book of ASTM Standards, Vol 14.02.

⁵ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.