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Standard Specification for Steel Forgings, Microalloy, for General Industrial Use¹

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1. Scope*

1.1 This specification covers wrought, microalloyed carbon steel forgings for industrial use. Microalloyed steels develop their properties by the addition of small amounts of microalloying elements such as vanadium, columbium, titanium, or molybdenum. The properties may be influenced also by control of the hot working process and temperature and by control of the subsequent cooling rate.

1.2 The forgings shall be furnished to chemical composition and mechanical property requirements as specified herein. Chemical composition is based on standard carbon steel grades modified to include microalloying elements. Strength level is specified based on desired mechanical properties in the forgings. Depending on the forging process, different strength classes may be attainable from a single chemical composition. Conversely, mechanical properties of a given strength class may be achieved using different chemical compositions. The manufacturer should be consulted if development of chemical composition is necessary.

1.3 For the purpose of this specification, forgings with maximum section thickness of 4 in. (102 mm) are to be considered.

1.4 Supplementary Requirements S1 to S8 are provided for use when additional controls or requirements are desired. These shall apply only when specified on the purchase order.

1.5 The values stated in either inch-pound units or SI (metric) units are to be regarded separately as standard. Within the text and tables, SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with this specification.

1.6 Unless the order specifies the applicable “M” specification designation, the material shall be furnished to the inch-pound units.

¹ This specification is under the jurisdiction of ASTM Committee A-1 A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.06 on Steel Forgings and Billets.

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***A Summary of Changes section appears at the end of this standard.**