



Designation: A 203/A 203M – 97 (Reapproved 2007)

Standard Specification for Pressure Vessel Plates, Alloy Steel, Nickel¹

This standard is issued under the fixed designation A 203/A 203M; 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.

1. Scope

1.1 This specification² covers nickel-alloy steel plates intended primarily for welded pressure vessels.

1.2 Plates under this specification are available with four strength levels and two nickel compositions as follows:

Grade	Nominal Nickel Content %	Yield Strength, min,		Tensile Strength,	
		ksi [MPa]	ksi [MPa]	min, ksi [MPa]	min, ksi [MPa]
A	2.25	37 [255]	65 [450]		
B	2.25	40 [275]	70 [485]		
D	3.50	37 [255]	65 [450]		
E	3.50	40 [275]	70 [485]		
F	3.50				
2 in. [50 mm] and under		55 [380]	80 [550] cccc		
Over 2 in. [50 mm]		50 [345]	75 [515]		

1.3 The maximum thickness of plates is limited only by the capacity of the composition to meet the specified mechanical property requirements. However, current practice normally limits the maximum thickness of plates furnished under this specification as follows:

Grade	Maximum Thickness, in. [mm]
A	6 [150]
B	6 [150]
D	4 [100]
E	4 [100]
F	4 [100]

1.4 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the 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 This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.11 on Steel Plates for Boilers and Pressure Vessels.

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² For ASME Boiler and Pressure Vessel Code applications, see related Specification SA-203/SA-203M in Section II of that Code.

2. Referenced Documents

2.1 *ASTM Standards:*³

A 20/A 20M Specification for General Requirements for Steel Plates for Pressure Vessels

A 435/A 435M Specification for Straight-Beam Ultrasonic Examination of Steel Plates

A 577/A 577M Specification for Ultrasonic Angle-Beam Examination of Steel Plates

A 578/A 578M Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications

3. General Requirements and Ordering Information

3.1 Material supplied to this material specification shall conform to Specification A 20/A 20M. These requirements outline the testing and retesting methods and procedures, permissible variations in dimensions and mass, quality and repair of imperfections, marking, loading, etc.

3.2 Specification A 20/A 20M also establishes the rules for the basis of purchase that should be complied with when purchasing material to this specification.

3.3 In addition to the basic requirements of this specification, certain supplementary requirements are available when additional control, testing, or examination is required to meet end use requirements. These include:

- 3.3.1 Vacuum treatment,
- 3.3.2 Additional or special tension testing,
- 3.3.3 Impact testing, and
- 3.3.4 Nondestructive examination.

3.4 The purchaser is referred to the listed supplementary requirements in this specification and to the detailed requirements in Specification A 20/A 20M.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.