



Designation: B 690 – 9602

Standard Specification for Iron-Nickel-Chromium-Molybdenum Alloys (UNS N08366 and UNS N08367) Seamless Pipe and Tube¹

This standard is issued under the fixed designation B 690; 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.

¹ This specification is under the jurisdiction of ASTM Committee B-2 B02 on Nonferrous Metals Alloys and is the direct responsibility of Subcommittee B02.07 on Refined Nickel and Cobalt, and Alloys Containing Nickel or Cobalt or Both as Principal Constituents and Their Alloys.

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* New designation established in accordance with ASTM E 527 and SAE S1086, Practice for Numbering Metals and Alloys (UNS).

1. Scope

1.1 This specification covers iron-nickel-chromium-molybdenum alloys (UNS N08366 and UNS N08367)* cold-finished annealed or hot-finished annealed seamless pipe and tube intended for use in special corrosive service and for heat-resisting applications.

1.2 Pipe and tube shall be supplied in the solution heat treated and descaled condition. When bright annealing is used, descaling is not necessary.

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

1.4 The following safety hazards caveat pertains only to the test method portion, Section 12, of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to become familiar with all hazards including those identified in the appropriate Material Safety Data Sheet for this product/material as provided by the manufacturer, to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

A 450/A 450M Specification for General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes²

E-8 Test Methods

B 880 Specification for Tension Testing of Metallic Materials General Requirements for Chemical Check Analysis Limits for Nickel, Nickel Alloys and Cobalt Alloys³

E-29 Practice 8 Test Methods for Using Significant Digits in Test Data to Determine Conformance with Specifications Tension Testing of Metallic Materials⁴

E-38 Methods 29 Practice for Chemical Analysis of Nickel-Chromium and Nickel-Chromium-Iron Alloys Using Significant Digits in Test Data to Determine Conformance with Specifications⁵

E 351473 Test Methods for Chemical Analysis of High Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, Cobalt, and Cobalt High-Temperature Alloys⁶

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *average diameter, n*—average of the maximum and minimum outside diameters, or the maximum and minimum inside diameters, as determined at any cross section of the tube.

3.1.2 *pipe, n*—seamless tube conforming to the particular dimensions commercially known as standard pipe (Appendix X1).

3.1.3 *tube, n*—hollow product of round or any other cross section having a continuous periphery.

² Annual Book of ASTM Standards, Vol 01.01.

³ Annual Book of ASTM Standards, Vol 03.01; 02.04.

⁴ Annual Book of ASTM Standards, Vol 14.02; 03.01.

⁵ Discontinued—see 1989 Annual

⁵ Annual Book of ASTM Standards, Vol 03.05; 14.02.

⁶ Annual Book of ASTM Standards, Vol 03.05.