Designation: B675 – 22

Standard Specification for Iron-Nickel-Chromium-Molybdenum Alloy Welded Pipe[1]

This standard is issued under the fixed designation B675; 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. Scope*

1.1 This specification covers UNS N08367[2] welded pipe for general corrosion applications.

1.2 Specification B775 lists the dimensions of welded stainless steel pipe as shown in ANSI B36.19. Pipe having other dimensions may be furnished provided such pipe complies with all other requirements of this specification.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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 Safety Data Sheet (SDS) for this product/material as provided by the manufacturer, to establish appropriate safety, health, and environmental practices, and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[3]

B775 Specification for General Requirements for Nickel and Nickel Alloy Welded Pipe

B899 Terminology Relating to Non-ferrous Metals and Alloys

3. Terminology

3.1 Terms defined in Terminology B899 shall apply unless otherwise defined in this standard.

4. General Requirement

4.1 Material furnished in accordance with this specification shall conform to the applicable requirements of the current edition of Specification B775 unless otherwise provided herein.

5. Classification

5.1 *Class 1*—Welded, cold worked, solution treated, and each piece of each lot subjected to one of the following four tests: hydrostatic, pneumatic (air underwater), eddy current, or ultrasonic.

5.2 *Class 2*—Welded, cold worked, solution treated, and each piece of each lot leak tested (hydrostatic or pneumatic) plus electric tested (eddy current or ultrasonic).

6. Ordering Information

6.1 It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Examples of such requirements include, but are not limited to, the following:

6.1.1 Alloy name or UNS number,

6.1.2 ASTM designation and year of issue,

6.1.3 Dimensions:

6.1.3.1 Pipe size,

6.1.3.2 Length (specific or random),

6.1.4 Class (see Section 5),

6.1.5 Quantity (feet or number of pieces),

6.1.6 *Certification*—State if certification is required,

6.1.7 *Samples for Product (Check) Analysis*—State whether samples for product (check) analysis should be furnished, and

6.1.8 *Purchaser Inspection*—If the purchaser wishes to witness tests or inspection of material at the place of manufacture, the purchase order must so state indicating which tests or inspections are to be witnessed.

7. Material and Manufacture

7.1 Pipe shall be made from flat-rolled alloy by an automatic welding process with no addition of filler metal. Subsequent to welding and prior to final solution treatment, Class 1

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[2] Designation established in accordance with Practice E527 and SAE J1086, Practice for Numbering Metals and Alloys (UNS).

[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.

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

TABLE 1 Chemical Requirements

Element	Composition Limits, %
	N08367
Carbon	0.030 max
Manganese	2.00 max
Phosphorus	0.040 max
Sulfur	0.030 max
Silicon	1.00 max
Chromium	20.00–22.00
Nickel	23.50–25.50
Molybdenum	6.00–7.00
Nitrogen	0.18–0.25
Iron[A]	balance
Copper	0.75 max

[A] Iron shall be determined arithmetically by difference.

TABLE 2 Mechanical Properties

Type	Gauge	Tensile Strength, min, ksi (MPa)	Yield Strength, (0.2 % Offset), min, ksi (MPa)	Elongation in 2 in. or 50 mm (or 4*D*), min, %
N08367	≤ 3/16	100 (690)	45 (310)	30
	> 3/16	95 (655)	45 (310)	30

and Class 2 material shall be cold worked either in both weld and base metal or in weld metal only.

NOTE 1—The recommended heat treatment shall consist of heating to a minimum temperature of 2025 °F (1105 °C) for UNS N08367 and quenching in water or rapidly cooling by other means.

7.2 Pipe shall be furnished with oxide removed. When solution treatment is performed in a protective atmosphere, descaling is not necessary.

8. Chemical Composition

8.1 The material shall conform to the requirements as to chemical composition prescribed in Table 1. One test is required for each lot as defined in Specification B775.

8.2 If a product (check) analysis is performed by the purchaser, the material shall conform to the product (check) analysis variations specified in Specification B775.

9. Mechanical Properties and Other Requirements

9.1 *Mechanical Properties*—The material shall conform to the mechanical properties prescribed in Table 2. One test is required for each lot as defined in Specification B775.

9.2 *Flattening Test Requirements:*

9.2.1 Flattening test specimens shall show no cracks or breaks on the inside, outside, or end surfaces during the first step of the test.

9.2.2 Evidence of laminated or unsound material or of incomplete weld that is revealed during the entire flattening test shall be cause for rejection.

9.2.3 Surface imperfections not evident in the test specimens before flattening, but revealed during the first step of the flattening test, shall be judged in accordance with the finish requirements.

9.2.4 Superficial ruptures resulting from surface imperfections shall not be cause for rejection.

9.3 *Nondestructive Test Requirements:*

9.3.1 Pipe shall be subjected to a pressure test or nondestructive electric test in accordance with Specification B775.

10. Keywords

10.1 UNS N08367; welded pipe