

## 1. Scope\*

- 1.1 This specification covers welded stainless steel tubing for mechanical applications where appearance, mechanical properties, or corrosion resistance is needed. The grades covered are listed in Table 1.
- 1.2 This specification covers as-welded or cold-reduced mechanical tubing in sizes to 16 in. (406.4 mm) outside dimension, and in wall thicknesses 0.020 in. (0.51 mm) and over.
- 1.3 Tubes shall be furnished in one of the following shapes as specified by the purchaser: round, square, rectangular, or special.
- 1.4 Supplementary requirements of an optional nature are provided and when desired shall be so stated in the order.
- 1.5 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

## 2. Referenced Documents

### 2.1 *ASTM Standards:* 2

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products

E 30 Test Methods for Chemical Analysis of Steel, Cast Iron, Open-Hearth Iron, and Wrought Iron<sup>3</sup>

E 59 Practice for Sampling Steel and Iron for Determination of Chemical Composition<sup>3</sup>

### 2.2 *Military Standards:*

MIL-STD-129 Marking for Shipment and Storage<sup>4</sup>

MIL-STD-163 Steel Mill Products Preparation for Shipment and Storage<sup>4</sup>

### 2.3 *Federal Standard:*

Fed. Std. No. 123 Marking for Shipments (Civil Agencies)<sup>4</sup>

## 3. Ordering Information

3.1 Orders for material under this specification should include the following, as required, to describe the desired material adequately:

3.1.1 Quantity (feet, mass, or number of pieces),

3.1.2 Name of material (welded stainless steel mechanical tubing),

3.1.3 Form (round, square, rectangular, special, see 1.3),

3.1.4 Dimensions:

3.1.4.1 Round-outside diameter and wall thickness for all conditions (Section 8). Alternatively, for cold-reduced condition, outside diameter and inside diameter or inside diameter and wall dimensions may be specified,

3.1.4.2 Square and rectangular outside dimensions and wall thickness (see 9.1),

3.1.4.3 Special (to be specified),

3.1.5 Length (mill lengths, cut lengths, or multiple lengths (see 8.3)),

3.1.6 Grade (Table 1),

3.1.7 Condition (see 6.1),

3.1.8 Inside diameter bead condition (see 6.2),

3.1.9 Surface finish (see Section 11),

3.1.10 Report of chemical analysis, if required (Section 7),

3.1.11 Individual supplementary requirements, if required,

3.1.12 End use,

3.1.13 Specification designation,

3.1.14 Special requirements,

3.1.15 Special marking (Section 14), and

3.1.16 Special packing (Section 15).

**4. Process**

4.1 The steel may be made by any process.

4.2 If a specific type of melting is required by the purchaser, it shall be stated on the purchase order.

4.3 The primary melting may incorporate separate degassing or refining and may be followed by secondary melting, such as electroslag remelting or vacuum-arc remelting. If secondary melting is employed, the heat shall be defined as all of the ingots remelted from a single primary heat.

ASTM A554, JIS G3446, CNS 5802							
Standard\Item	Outside Diameter				Thickness		Length
ASTM A554		O.D. <	12.7mm	± 0.10mm	± 10%		Definite Cut Lengths
	12.7mm ≤	O.D. ≤	25.4mm	± 0.13mm			
	25.4mm <	O.D. ≤	38.1mm	± 0.20mm			
	38.1mm <	O.D. ≤	50.8mm	±0.25mm			
	50.8mm <	O.D. ≤	63.5mm	± 0.30mm			
	63.5mm <	O.D. ≤	88.9mm	±0.36mm			
	88.9mm <	O.D. ≤	127.0mm	±0.51mm			
	127.0mm <	O.D. ≤	190.5mm	±0.64mm			
	190.5mm <	O.D. ≤	406.4mm	Each add 1" Tolerance ±0.03mm			
CNS 5802		O.D. <	50.0mm	± 0.25mm	< 3mm	±0.3mm	+50.0mm
JIS G3446		O.D. ≥	50.0mm	± 0.5%	≥ 3mm	±0.5%	-0mm

