

AISI 8620, Cold Drawn Round**1. SCOPE**

This specification defines the requirements for Cold Drawn Steel Bar conforming to AISI chemistry specifications and ASTM A29 dimensional tolerances.

2. APPLICATION

This specification includes material requirements, ordering information and quality requirements to be used by Engineering, Purchasing and Manufacturing.

3. DRAWING SPECIFICATIONS

3.1 C.D. Round AISI 8620

3.2 C.D. Round AISI 8620, Ground and Polished

4. RELATED SPECIFICATIONS**4.1 REFERENCE STANDARDS**

AISI Steel Bar Standards

ASTM A29—Standard Specifications for Steel Bar, Carbon and Alloy, Hot Wrought and Cold Finished, General Requirements.

ASTM A331—Standard Specification for Steel Bar, Alloy, Cold Finished, Standard Quality.

ASTM A322—Standard Specification for Steel Bar, Alloy, Standard Grades

86050124 (FNHA-2-A-027.00)—General Requirements for Carbon and Alloy Steel Bars, Hot-Rolled and Cold Finished

86599832 (FNHA-2-A-406.01)—Material List for 86050110

WS 50.03—Material 21NiCrMo2

4.6 This standard replaces the following company standard:

Versatile

MS - 623

5. ORDERING INFORMATION

5.1 AISI 8620 Steel

5.2 Cold Drawn Bar, Standard Quality

5.3 Dimensions (size, bar length, and whether cut length or random length)

5.4 Condition: Cold Drawn or CD Ground and Polished

5.5 Grain size, if required

6. CHEMICAL COMPOSITION FOR AISI 8620 STEEL**6.1 CHEMISTRY**

Carbon, %	0.18 to 0.23
Manganese, %	0.70 to 0.90
Phosphorus, %	0.035 maximum
Sulfur, %	0.040 maximum
Silicon, %	0.15 to 0.35
Nickel, %	0.40 to 0.70
Chromium, %	0.40 to 0.60
Molybdenum, %	0.15 to 0.25

7. DIMENSIONAL TOLERANCES

7.1 Size tolerances for Cold Drawn Rounds—see Tables 1 and 2.

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7.2 Length tolerance for cut lengths + 2" / - 0, unless otherwise specified by part number drawing.

7.3 Straightness tolerances for Cold Drawn Rounds—see Table 3.

8. MECHANICAL PROPERTIES

Cold Drawn Properties:

Tensile Strength, psi, typical	102 000
Yield Strength, psi, typical	85 000
Elongation in 2", typical %	22
Reduction in Area, typical %	58
Rockwell B Hardness, typical	95
Brinnell Hardness, typical	212

Table 1: Size Tolerance for 8620 C.D. Ground and Polished Rounds

Size, Inches	CD Ground and Polished Tolerance from Specified Size, Minus Only, Inches
To 1 1/2, incl.	0.001
Over 1 1/2 to 2 1/2, incl.	0.0015
Over 2 1/2 to 3, incl.	0.002
Over 3 to 4, incl.	0.003

Table 2: Size Tolerance for 8620 C.D. Rounds

Size, Inches	Cold Drawn Tolerance from Specified Size, Minus Only, Inches
To 1 1/2, incl.	0.003
Over 1 1/2 to 2 1/2, incl.	0.004
Over 2 1/2 to 4, incl.	0.005
Over 4 to 6, incl.	0.006
Over 6 to 8, incl.	0.007
Over 8 to 9, include.	0.008

Table 3: Straightness Tolerance for 8620 C.D. Rounds

Size, Inches	Length, Feet	Straightness Tolerance, Inches, Maximum Deviation from Straightness in any 10 ft. Portion of Bar
Less than 5/8	Less than 15	1/8
Less than 5/8	15 and over	1/8
5/8 and over	Less than 15	1/16
5/8 and over	15 and over	1/8



NAME

STD AISI 8620 CD RD

ENGINEERING SPECIFICATION

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FRAME
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OF
2

PART NUMBER

86050110



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