
**APPROVED U.S. MANUFACTURERS OF
CONCRETE REINFORCING BARS**

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BAYOU STEEL CORP

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CASCADE STEEL ROLLING MILLS, INC

3200 Nt Highway 99W
McMinnville, OR 97128
Tel: 503-472-4181
Fax: 503-434-5739
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CHAPARRAL STEEL

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Web: www.chaparralsteel.com

COMMERCIAL METALS COMPANY (CMC)

Arkansas Mill
PO Box 1147
Magnolia, AR 71754
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Web: www.commercialmetals.com

COMMERCIAL METALS COMPANY (CMC)

Texas Mill
PO Box 911
Seguin, TX 78156
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Fax: 830-379-9873
Web: www.commercialmetals.com

COMMERCIAL METALS COMPANY (CMC)

South Carolina Mill
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Cayce, SC 29033
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CHICAGO HEIGHTS STEEL

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Chicago Heights, IL 60411
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Fax: 708-756-5628
Web: www.chs.com

GERDAU AMERISTEEL – Charlotte, NC

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GERDAU AMERISTEEL – Baldwin, FL

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GERDAU AMERISTEEL – Knoxville, TN

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GERDAU AMERISTEEL – Jackson, FL

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GERDAU AMERISTEEL – St. Paul, MN

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GERDAU AMERISTEEL – Beaumont, TX

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GERDAU AMERISTEEL – Sand Springs, OK

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GERDAU AMERISTEEL – Perth Amboy, NJ

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NUCOR STEEL BIRMINGHAM, INC.

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NUCOR STEEL JACKSON, INC.

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NUCOR STEEL SEATTLE, INC.

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NUCOR STEEL MARION, INC.

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NUCOR STEEL JEWETT, INC

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NUCOR STEEL PLYMOUTH, INC.

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NUCOR STEEL AUBURN, INC.

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ROCKY MOUNTAIN STEEL MILL

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STEEL DYNAMICS, INC

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ASTM STANDARD REINFORCING BARS

English Bar Size	Diameter (inches)	Metric Bar Size	Diameter (mm)
#3	0.375	#10	9.5
#4	0.500	#13	12.7
#5	0.625	#16	15.9
#6	0.750	#19	19.1
#7	0.875	#22	22.2
#8	1.000	#25	25.4
#9	1.128	#29	28.7
#10	1.270	#32	32.3
#11	1.410	#36	35.8
#14	1.693	#43	43.0
#18	2.257	#57	57.3

ASTM STANDARD REINFORCING CONVERSION GRADE CHART

<u>English</u>	<u>Metric</u>
Grade 40	300 MPa
Grade 60	420 MPa
Grade 75	520 MPa

Material Specifications for Reinforcing Bars

Mechanical Requirements for Standard ASTM deformed reinforcing bars

ASTM	Bar No. Range	Grade	Min. Yield Strength Kpsi	Min. Tensile Strength Kpsi	Chemical Composition, Element Max % per heat	Chemical Composition, Element Max % per Verification	Chemical Analysis of Elements	Notes
A615	3-6	40	40	60	Phosphorus 0.06	Phosphorus 0.075	Carbon, Manganese, Phosphorus, Sulfur	
	3-11, 14, 18	60	60	90				
	6-11, 14, 18	75	75	100				
A706	3-11, 14, 18	60	60	80	Carbon 0.30 Manganese 1.50 Phosphorus 0.035 Sulfur 0.045 Silicon 0.50	Carbon 0.33 Manganese 1.56 Phosphorus 0.043 Sulfur 0.053 Silicon 0.55	Carbon, Manganese, Sulfur, Phosphorus, Silicon, Copper, Nickel, Chromium, Molybdenum	*Tensile strength shall not be less than 1.25 times the actual Yield strength. *Maximum Yield Strength 78,000 psi

ASTM	Grade	Bar No. Range	% Elongation in 8 inches (min)	Cold Bend Test Pin diameter. D = nominal diameter of test specimen
A615	40	No 3 No 4, No 5, No 6	11 12	3.5D 3.5D, 3.5D, 5D
	60	No 3, No 4, No 5, No 6 No 7, No 8 No 9, No 10, No 11, No 14, No 18	9 8 7	3.5D, 3.5D, 3.5D, 5D 5D, 5D 7D, 7D, 7D, 9D, 9D
	75	No 6, No 7, No 8 No 9, No 10, No11, No 14, No 18	7 6	
A706	60	No 3, No 4, No 5, No 6 No 7, No 8, No 9, No 10, No 11 No 14, No 18	14 12 10	3D. 3D. 3D. 4D 4D, 4D, 6D, 6D, 6D 8D, 8D

Bar Deformation Requirements

Bar No. US [Metric]*	Max Ave. Spacing	Min. Ave. Height	Max Gap (Chord of 12.5 % of Nominal Perimeter)
3 [10]	0.262 [6.7]	0.015 [0.38]	0.143 [3.6]
4 [13]	0.350 [8.9]	0.020 [0.51]	0.191 [4.9]
5 [16]	0.437 [11.1]	0.028 [0.71]	0.239 [6.1]
6 [19]	0.525 [13.3]	0.038 [0.97]	0.286 [7.3]
7 [22]	0.612 [15.5]	0.044 [1.12]	0.334 [8.5]
8 [25]	0.700 [17.8]	0.050 [1.27]	0.383 [9.7]
9 [29]	0.790 [20.1]	0.056 [1.42]	0.431 [10.9]
10 [32]	0.889 [22.6]	0.064 [1.63]	0.487 [12.4]
11 [36]	0.987 [25.1]	0.071 [1.80]	0.540 [13.7]
14 [43]	1.185 [30.1]	0.085 [2.16]	0.648 [16.5]
18 [57]	1.58 [40.1]	0.102 [2.59]	0.864 [21.9]

*Bar numbers are based on the number of eighths of an inch included in the nominal diameter of the bars [bar numbers approximate the number of millimeters of the nominal diameter of the bar].