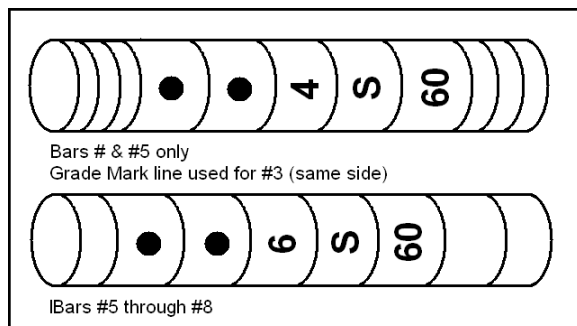


APPROVED U.S. MANUFACTURERS OF CONCRETE REINFORCING BARS

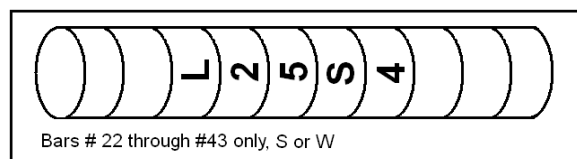
AB STEEL MILL INC

200 W. North Bend Road,
Cincinnati, OH 45216
Tel: 513.821.6400
Web: www.fredericksteel.com



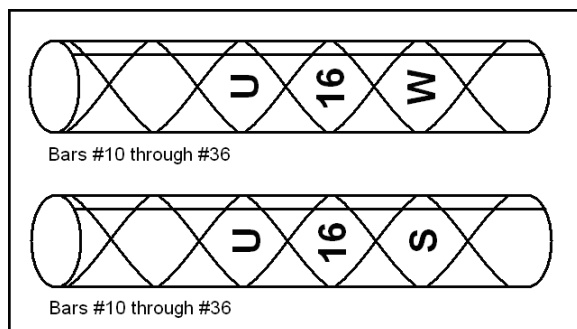
ALTON STEEL INC

#5 Cut Street
Alton, IL 62002
Tel: 618-463-4490
Web: www.altonsteel.com



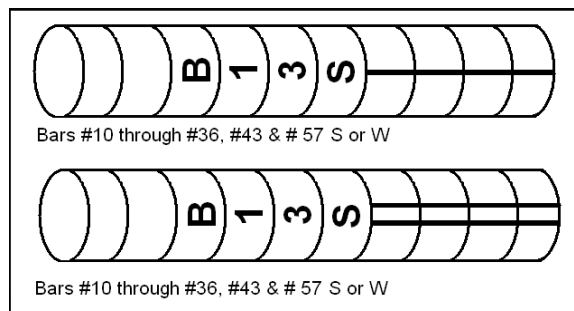
ARCELORMITTAL HARRIMAN

2404 Roane State Hwy
Harriman, TN 37748
Tel: (865) 882-5100
Web: www.bayousteel.com



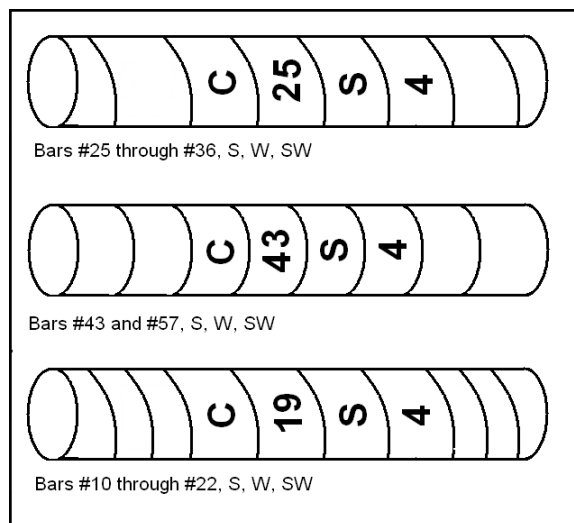
ARCELORMITTAL VINTON

P.O. Box 12843,
El Paso 79913
Tel: (800) 669-8464
Web: <http://www.arcelormittal.com/>



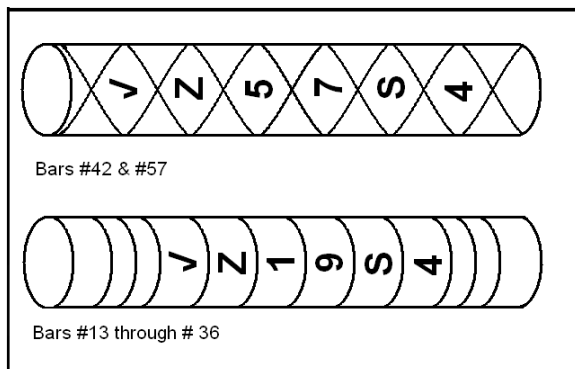
CASCADE STEEL ROLLING MILLS, INC

3200 Nt Highway 99W
McMinnville, OR 97128
Tel: 503-472-4181
Web: www.csrml.com



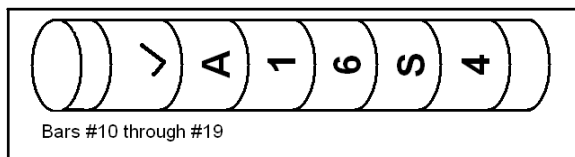
COMMERCIAL METALS COMPANY (CMC)

Arizona Mill
PO Box 6129
Mesa, AZ 85216
Tel: 480-396-7100
Web: <http://www.cmc.com>



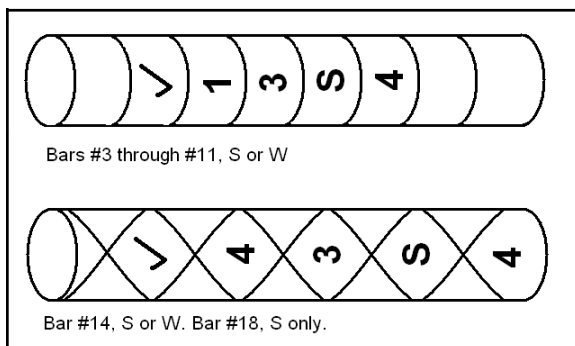
COMMERCIAL METALS COMPANY (CMC)

Arkansas Mill
PO Box 1147
Magnolia, AR 71754
Tel: 800-258-0022
Web: <http://www.cmc.com>



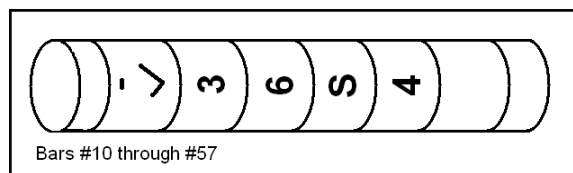
COMMERCIAL METALS COMPANY (CMC)

Texas Mill
PO Box 911
Seguin, TX 78156
Tel: 830-372-8200
Web: <http://www.cmc.com>



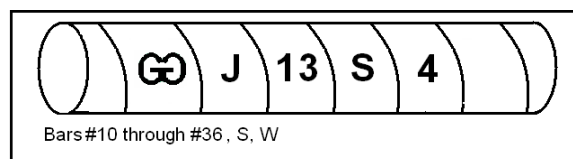
COMMERCIAL METALS COMPANY (CMC)

South Carolina Mill
310 New State Road
Cayce, SC 29033
Tel: 803-936-3700
Web: <http://www.cmc.com>



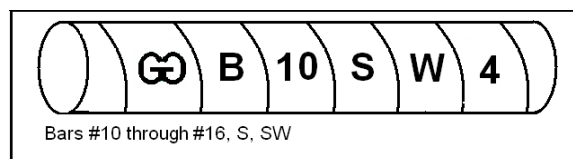
GERDAU AMERISTEEL – Baldwin, FL

Jacksonville Steel Mill Division
Highway 217 & Yellow Water Road
Baldwin, FL 32234
Tel: 904-266-4261
Web: www.gerdauameristeel.com



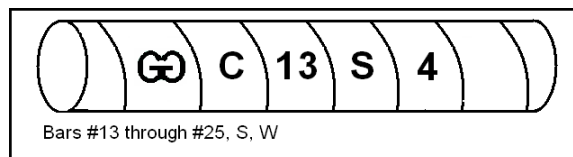
GERDAU AMERISTEEL – Beaumont, TX

Beaumont Mill
100 Old Highway 90 West
Vidor, TX 77662
Tel: 409-768-1211
Web: www.gerdauameristeel.com

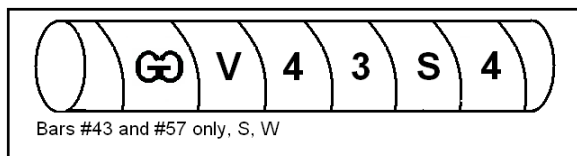


GERDAU AMERISTEEL – Charlotte, NC

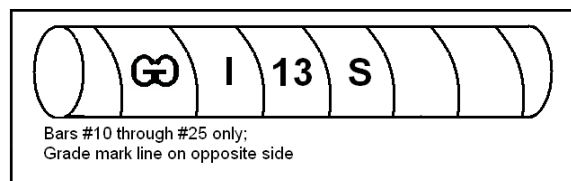
Charlotte Steel Mill Division
6601 Lakeview Road
Charlotte, NC 28269
Tel: 704-596-0361
Web: www.gerdauameristeel.com



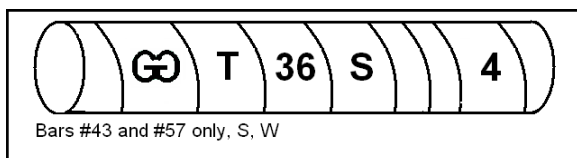
GERDAU AMERISTEEL – Jackson, TN
West Tennessee Steel Mill Division
801 Gerdau AmeriSteel Road
Jackson, TN 38305
Tel: 901-424-5600
Web: www.gerdauameristeel.com



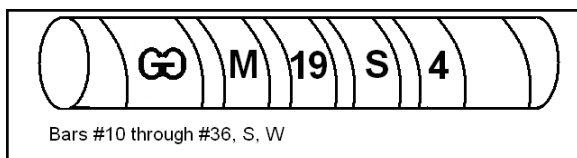
1500-2500 West 3rd St
Wilton, IA 52778
Tel: 563-732-3231
Web: www.gerdauameristeel.com



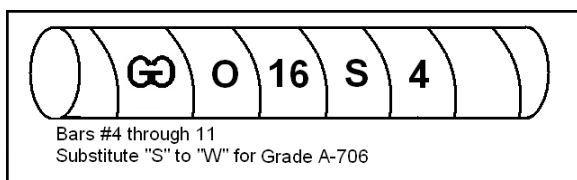
GERDAU AMERISTEEL – Knoxville, TN
Knoxville Steel Mill Division
1919 Tennessee Avenue NW
Knoxville, TN 37921
Tel: 865-546-5472
Web: www.gerdauameristeel.com



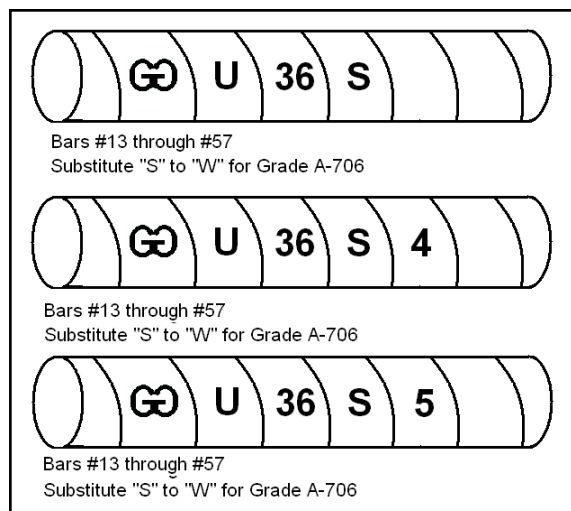
GERDAU AMERISTEEL – Midlothian, TX
300 Ward Road
Midlothian, TX 76065
Tel: 972-299-5212
Web: www.gerdauameristeel.com



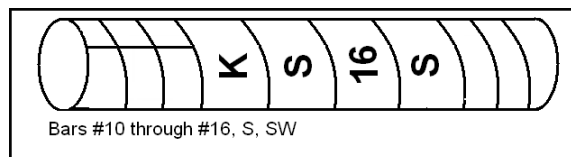
GERDAU AMERISTEEL – Sand Springs, OK
2300 South Highway 97
Sand Springs, OK 74063
Tel: 918-245-1335
Web: www.gerdauameristeel.com



GERDAU AMERISTEEL – St. Paul, MN
St. Paul Mill
1678 Red Rock Road
St. Paul, MN 55119
Tel: 651-731-5600
Web: www.gerdauameristeel.com



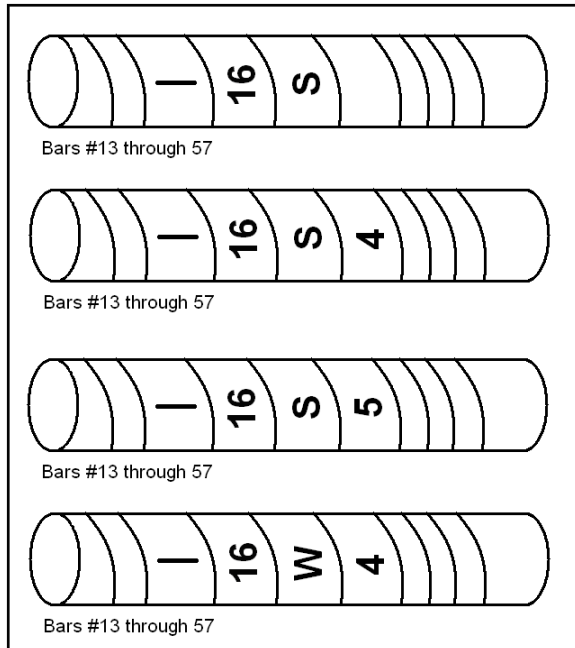
KEYSTONE STEEL AND WIRE CO.
7000 SW Adams st
Peoria, IL 61641
Tel: 309-697-4561
Web: www.keystonesteel.com



GERDAU AMERISTEEL – Wilton, IA

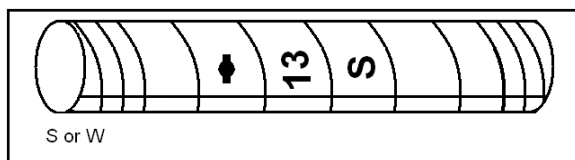
NUCOR STEEL AUBURN, INC.

Auburn Division
25 Quarry Road
Auburn, NY 13021
Tel: 315-253-4561
Web: www.nucor.com



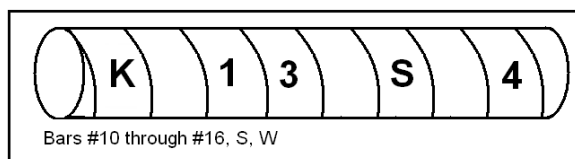
NUCOR STEEL BIRMINGHAM, INC.

Alabama Steel Division
2301 Shuttlesworth Drive
Birmingham, AL 35234
Web: www.nucor.com



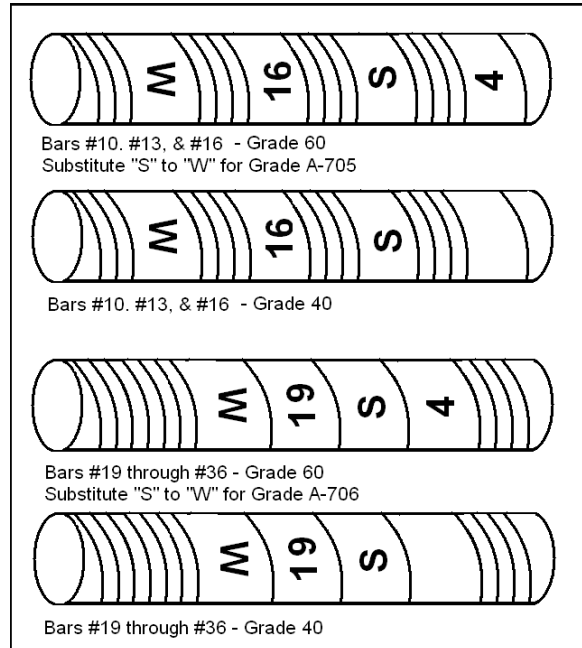
NUCOR STEEL CONNECTICUT, INC.

35 Toelles Road
Wallingford, CN 06492
Tel: 203-265-0615
Web: www.nucor.com



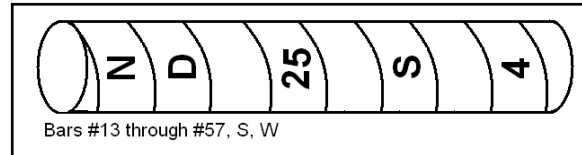
NUCOR STEEL JACKSON, INC.

Mississippi Steel Division
3630 Fourth Street
Flowood, MS 39232
Tel: 601-939-1623
Web: www.nucor.com



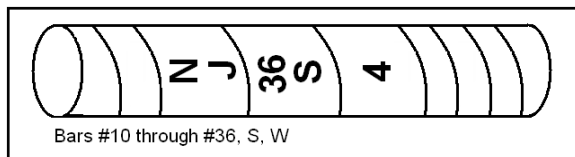
NUCOR STEEL DARLINGTON, INC

300 Steel Mill Road
Darlington, SC 29540
Tel: 843-393-5841
Web: www.nucor.com



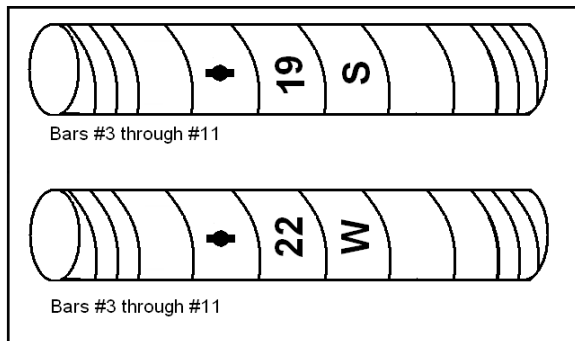
NUCOR STEEL JEWETT, INC.

8812 Highway 79 West
Jewett, TX 75846
Tel: 903-626-4461
Web: www.nucor.com



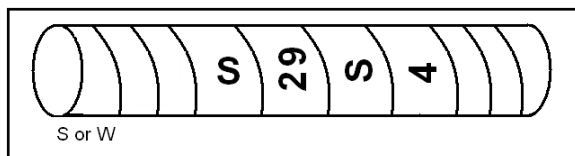
NUCOR STEEL KANKAKEE, INC.

Illinois Steel Division, Kankakee Plant
One Nucor Way
Bourbonnais, IL 69014
Tel: 815-937-3131
Web: www.nucor.com



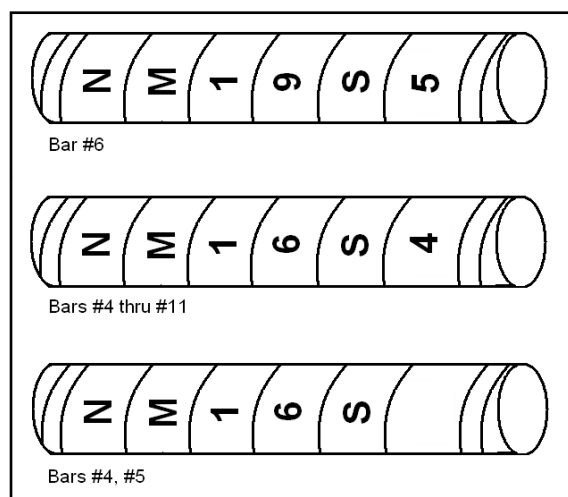
NUCOR STEEL SEATTLE, INC.

2424 SW Andover
Seattle, WA 98106
Tel: 206-933-2222
Web: www.nucor.com



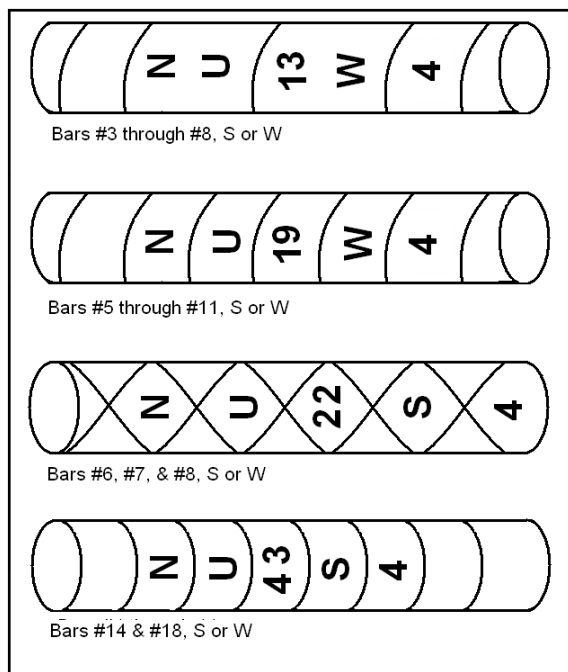
NUCOR STEEL MARION, INC.

912 Cheney Avenue
Marion, OH 43302
Tel: 740-383-4011
Web: www.nucor.com



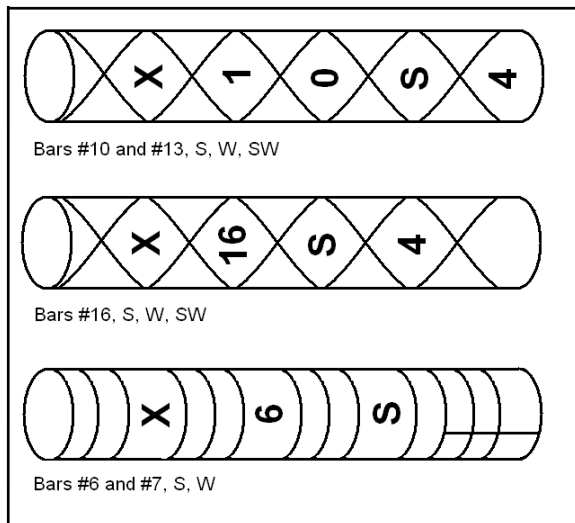
NUCOR STEEL PLYMOUTH, INC.

West Cemetery Road
Plymouth, UT 84330
Tel: 435-458-2300
Web: www.nucor.com



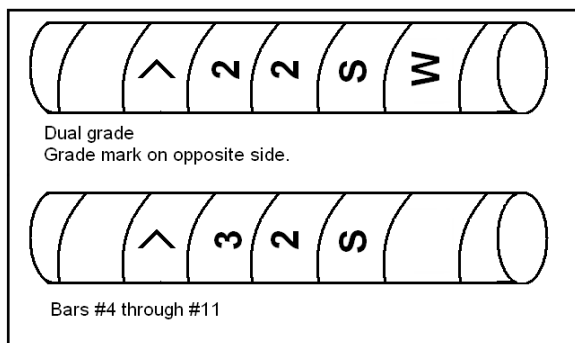
ROCKY MOUNTAIN STEEL MILL

P.O. Box 1830
Pueblo, CO 81002
Tel: 719-561-7019
Web: www.osm.com



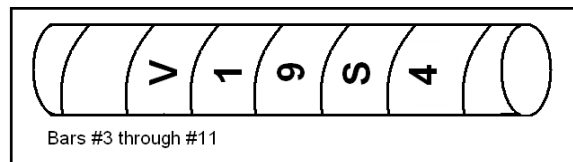
STEEL DYNAMICS, INC

Pittsboro Division
800 N County Road 225 E
Pittsboro, IN 46167
Tel: 317-892-7225
Web: www.steeldynamics.com



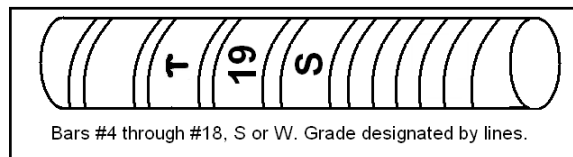
STEEL DYNAMICS, INC

Roanoke Division
PO Box 13948
Roanoke, VA 24038
Tel: 800-765-6567
Web: www.steeldynamics.com



TAMCO STEEL

12459-B Arrow Highway
Rancho Cucamonga, CA 91739
Tel: 909-899-0660
Web: www.tamcosteel.com



STANDARD REINFORCING BARS SIZES

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

STANDARD REINFORCING BARS 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, No 11, 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].