



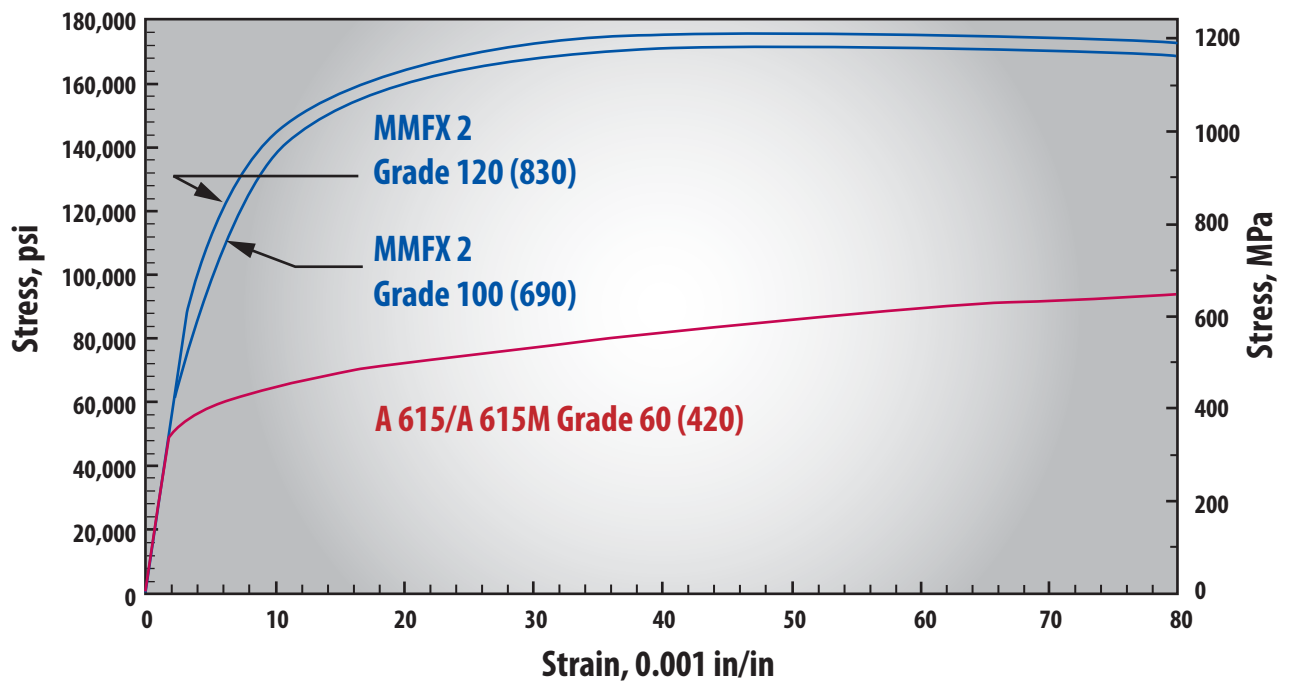
MECHANICAL PROPERTIES

MMFX 2 (ASTM A1035/A1035M)

MMFX 2 (ASTM A1035/A1035M)

Standard Specification for Deformed and Plain, Low-Carbon, Chromium, Steel Bars for Concrete Reinforcement

Typical Stress-Strain Curves for MMFX 2 (ASTM A1035/A1035M) Reinforcing Bars



Tensile Properties of MMFX 2 (ASTM A1035/A1035M) Reinforcing Bars

Tensile Properties Requirements

	Grade 100 [690]	Grade 120 [830]
Tensile strength, min, psi [MPa]	150,000 [1030]	150,000 [1030]
Yield strength (0.2% offset, min, psi [MPa])	100,000 [690]	120,000 [830]
Stress corresponding to an extension under load of 0.0035 in./in. (0.0035mm/mm), min, psi [MPa]	80,000 [550]	90,000 [620]
Elongation in 8 in. [203.2 mm], min.%; Bar Designation No. 3 through 11 [10 through 36]	7	7
Bar Designation No. 14, 18, [43, 57]	6	--



Chemical Constituents (Weight %)

Element	ASTM A1035/A1035M Maximum Amount *	Typical MMFX 2
Carbon	0.15%	0.08%
Chromium	8 to 10.9%	9%
Manganese	1.5%	0.5%
Nitrogen	0.05%	0.05%
Phosphorus	0.035%	0.035
Sulfur	0.045%	0.045%
Silicon	0.50%	0.50%

*Maximum unless range indicated.

Physical Properties per ASTM A1035/A1035M

Bar Designation No.	Diameter, in. [mm]	Cross-Sectional area, in. ² [mm ²]	Weight, lb/ft [kg/m]
3[10]	0.375 [9.5]	0.11 [71]	0.376 [0.560]
4[13]	0.500 [12.7]	0.20 [129]	0.668 [0.994]
5[16]	0.625 [15.9]	0.31 [199]	1.043 [1.552]
6[19]	0.750 [19.1]	0.44 [284]	1.502 [2.235]
7[22]	0.875 [22.2]	0.60 [387]	2.044 [3.042]
8[25]	1.000 [25.4]	0.79 [510]	2.670 [3.973]
9[29]	1.128 [28.7]	1.00 [645]	3.400 [5.060]
10 [32]	1.270 [32.3]	1.27 [819]	4.303 [6.404]
11 [36]	1.410 [35.8]	1.56 [1006]	5.313 [7.907]
14 [43]	1.693 [43.0]	2.25 [1452]	7.65 [11.38]
18 [57]	2.257 [57.3]	4.00 [2581]	13.60 [20.24]

Physical Properties per BS 4449

Nominal diameter mm	Cross Sectional area mm ²	Mass per meter kg
10	78.5	0.617
12	113	0.888
16	201	1.58
20	314	2.47
25	491	3.85
32	804	6.31
40	1257	9.86
50	1963	15.4