Rev 12/22/15

I am trying to enter some seven wire strands: one sample .6 and one sample ½" and I can't decide which material code to use. When I calculate the area of these it doesn't add up to any of the choices listed. What do I need to choose.

The official answer from Jamie is:

It depends on the Grade of the steel whether it is Grade 250 or Grade 270. If you look at ASTM A416 " Standard Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete" Table 1 lists all of the Nominal Diameters of the Strands which is what you listed Steve below (0.6 and ½"). The area of the strand is listed in square inches in the third column.

We usually only get Grade 270 in I believe which is what you have listed.

0.6 Diameter will have 0.217 in² area ½" Diameter will have 0.153 in² area

TABLE 1 Breaking Strength Requirements

Nominal Diameter of Strand, in. [mm]	Minimum Breaking Strength of Strand, lbf [kN]	Steel Area of Strand, in.^{2} [mm^2]	Weight [Mass] of Strand lb/1000 ft [kg/1000 m]
Grade 250 [1725]			
0.250 [6.4]	9 000 [40.0]	0.036 [23]	122 [182]
0.313 [7.9]	14 500 [64.5]	0.058 [37]	197 [294]
0.375 [9.5]	20 000 [89.0]	0.080 [52]	272 [405]
0.438 [11.1]	27 000 [120]	0.108 [69.7]	367 [548]
0.500 [12.7]	36 000 [160]	0.144 [92.9]	490 [730]
0.600 [15.2]	54 000 [240]	0.216 [139]	737 [1090]
Grade 270 [1860]			
0.375 [9.53]	23 000 [102]	0.085 [55]	290 [430]
0.438 [11.1]	31 000 [138]	0.115 [74.2]	390 [580]
0.500 [12.7]	41 300 [184]	0.153 [98.7]	520 [780]
0.520 [13.2]	45 000 [200]	0.167 [108]	570 [840]
0.563 [14.3]	51 700 [230]	0.192 [124]	650 [970]
0.600 [15.2]	58 600 [261]	0.217 [140]	740 [1100]
0.620 [15.7]	62 800 [279]	0.231 [150]	780 [1200]
0.700 [17.8]	79 400 [353]	0.294 [190]	1000 [1500]