STRENGTH REQUIREMENT – PRESTRESSING STEEL

The following values are to be used in design, and also in checking shop plans, unless other values are approved by the Transportation Laboratory.

High Tensile Strength Alloy Bars (ASTM A-722)

	Type I (Plain Bar)	Type II (Deformed Bar)
Ultimate Tensile Strength (psi)	150,000	150,000
Yield Strength @ 0.7% Extension (psi)	127,500	120,000

Grade 250 Prestressing Wire Strand (ASTM A-416)

	7/16"	1/2"	0.6"
Ultimate Tensile Strength (lb)	27,000	36,000	54,000
Yield Strength @ 1% Extension (lb)			
Low Relaxation	24,300	32,400	48,600
Normal	23,000	30,600	45,900

Grade 270 Prestressing Wire Strand (ASTM A-416)

	7/16"	1/2"	0.6"
Ultimate Tensile Strength (lb)	31,000	41,300	58,600
Yield Strength @ 1% Extension (lb)			
Low Relaxation	27,900	37,170	52,740
Normal	26,350	35,100	49,800

Supersedes Memo to Designers 11-21 dated June 3, 1981

Prestressing Wire (ASTM A-421)

	1/4" Type BA Wire	0.276" Type WA Wire
Ultimate Tensile (psi)	240,000	235,000
Yield Strength @ 1% Extension (psi)	204,000	199,750

Modulus of Elasticity

Prestressing Bars	28 to 34 x 10^6 psi
Prestressing Strand	27.5 x 10^6 psi
Prestressing Wire	28 to 29 x 10^6 psi

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