

TECHNICAL DATA

Preface To Load Tables

The following pages contain load tables for the standard products available from Ferreri Concrete Structures. Load capacities are in conformance with the American Concrete Institute "Building Code Requirements for Reinforced Concrete (ACI 318-89)", however, values given in the tables are intended for preliminary member selections, not final designs.

In some instances, loads in excess of those shown can be accommodated by increasing release strength, altering standard strand patterns, reducing double tee widths, or other such modifying of general parameters.

General Notation

Width of Section (Ft)	Depth of Section (In)	Description of Section
		DT = Double Tee Slab IT = Inverted Tee Beam LB = Ell Beam

Material Properties

Concrete:

Compressive Strength:

Final (28-day) = 5000 psi (Precast)
 = 3000 psi (Topping)

At Prestress Release = 3500 to 3750 psi,

Normal Weight = 150 pcf for computing applied moments

Lightweight = 115 pcf.

Modulus of Elasticity = $w^{1.5} 33 \sqrt{f'c}$

Steel:

Prestressing Strand:

Sizes 3/8" or 1/2" Diameter Low Relaxation

Ultimate Strength = 270,000 psi

Initial Tension = 70 to 75% of Ult Strength

Modulus of Elasticity = 28,000,000 psi

Mild Steel:

Bar Sizes 3, 4, and 5 are A706 Grade 60

Bar Sizes 6 & larger are A615 Grade 60

Flexural Members (Double Tees)

In general, maximum spans shown for the various prestressing conditions will result in an upward camber under dead load, after loss of prestress has occurred. Roof deflection, however, should always be checked and/or a positive roof slope provided whenever span-to-depth ratio exceeds 30 in double tees. Also see UBC (1991), Sec. 2305(f).

For composite members, reinforcement (i.e. welded wire fabric) is required in the topping. Parking garages require special consideration.

For non-composite members, the 2" double tee deck has a 65 psf capacity. When the superimposed load is higher, additional deck reinforcing may be needed or the deck may need to be increased in thickness.

Design Recommendations	Bottom Tension Stresses	Range of Maximum Span-to-Depth Ratio
Double Tee Floor Slabs	$6 \sqrt{f'c}$ to $8 \sqrt{f'c}$	25 to 35
Double Tee Roof Slabs	$8 \sqrt{f'c}$ to $12 \sqrt{f'c}$	35 to 40
Inverted Tee or Ell Beam	$6 \sqrt{f'c}$	10 to 20

The required depth of a beam or slab is influenced by the ratio of live load to total load. When this ratio is high, deeper sections may be needed.

Compression Members

Allowable loads are calculated using equations in Chapter 10 of ACI 318-89 assuming minimum eccentricity and appropriate moment magnification factors.

Compression member loads require a more thorough investigation in those buildings without effective shear walls for lateral loads or when eccentricities larger than the minimum are encountered.

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