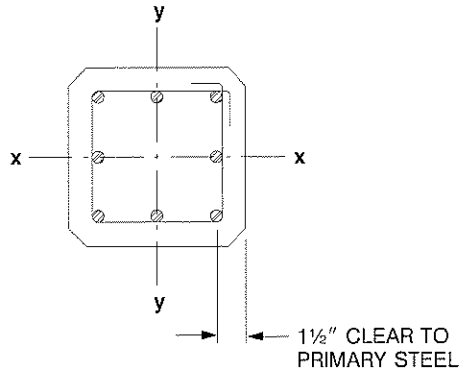


PRECAST, REINFORCED COLUMNS

Figure 2.6.2 Design strength interaction curves for precast, reinforced concrete columns

CRITERIA

1. CONCRETE $f'_c = 5000$ psi
2. REINFORCEMENT $f_y = 60,000$ psi
3. CURVES SHOWN FOR FULL DEVELOPMENT OF REINFORCEMENT
4. HORIZONTAL PORTION OF CURVE IS THE MAXIMUM FOR TIED COLUMNS = $0.80 \phi P_o$.
5. ϕ VARIES LINEARLY FROM 0.9 FOR TENSION-CONTROLLED SECTIONS TO 0.7 FOR COMPRESSION-CONTROLLED SECTIONS IN ACCORDANCE WITH ACI 318-95 SECT. B.9.3.2.



USE OF CURVES

1. ENTER AT LEFT WITH APPLIED FACTORED AXIAL LOAD, P_u
2. ENTER AT BOTTOM WITH APPLIED MAGNIFIED FACTORED MOMENT, δM_u
3. INTERSECTION POINT MUST BE TO THE LEFT OF CURVE INDICATING REQUIRED REINFORCEMENT.

NOTATION

- ϕP_n = DESIGN AXIAL STRENGTH
 ϕM_n = DESIGN FLEXURAL STRENGTH
 ϕP_o = DESIGN AXIAL STRENGTH AT ZERO ECCENTRICITY
 A_g = GROSS AREA OF THE COLUMN
 δ = MOMENT MAGNIFIER (SECT. 10.11-10.13, ACI 318-95)

THE INTERACTION CURVES HAVE BEEN SMOOTHED FOR PLOTTING PURPOSES. EXACT CALCULATED VALUES MAY BE SLIGHTLY DIFFERENT.

