PRECAST, REINFORCED COLUMNS

Figure 2.7.2  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 = $0.80\phi P_c$
5. Varies linearly from 0.9 for tension-controlled sections to 0.65 for compression-controlled sections in accordance with ACI 318-02 Section 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, $\delta M_u$
3. Intersection point must be to the left of curve indicating required reinforcement.

NOTATION
- $\phi P_n =$ Design axial strength
- $\phi M_n =$ Design flexural strength
- $\phi P_c =$ Design axial strength at zero eccentricity
- $A_g =$ Gross area of the column
- $\delta =$ Moment magnifier (Section 10.11–10.13 ACI 318-02)

The interaction curves have been smoothed for plotting purposes. Exact calculated values may be slightly different.