



ACI 318 Code Sections Relevant for Precast Wall Panels:

- 14.8.4: The maximum deflection due to service loads, including P-Delta effects, shall not exceed $L/150$.
- 14.3.6, 18.11.2.2: Column ties not required when flexural tension controls
- 14.2.7: Maximum height/thickness ratio of 25:1 can be waived when structural analysis is done (P-Delta)
- 14.2.7, 16.4.2, 18.11.2.3: Minimum transverse reinforcement ratio of 0.001 can be used (instead of 0.002)
- 11.10.8: Shear walls do not usually need any shear reinforcement
- 10.11.5: Must use a 2nd order non-linear analysis including the effects of cracking to compute forces and moments due to slenderness effects when $kl/r > 100$.

Design Tips to Save \$\$:

- Use repetition to reduce form changes
- Use precaster's library of standard connection details
- Anticipate erection sequence to minimize move-ins
- Use modules for bay spacing: 42' or 48' for 12' wide panels
40' or 50' for 10' wide panels
- Punched openings preferred over "pork-chops" and C-shapes

References:

- PCI Committee Report: State-of-the-Art of Precast/Prestressed Sandwich Wall Panels
Pub. JR-403
- PCI Mnl 116: "Manual for Quality Control for Plants and Production of Structural
Precast Concrete Products"
- PCI Design Handbook - Precast and Prestressed Concrete, Fifth Edition, Mnl 120-99
- The Precast/Prestressed Concrete Institute, www.PCI.org, 312 786-0300
- Precast/Prestressed Producers of Illinois and Wisconsin, www.PPPIW.org, 708 386-3715