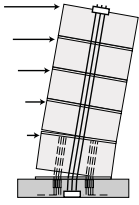


HYBRID PRECAST WALL SYSTEMS

FOR SEISMIC REGIONS



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November 7, 2007

Draft Industry Meeting Resolutions

Meeting Date: October 20, 2007

Meeting Venue: PCI Annual Convention, Phoenix, Arizona

In Attendance: S. K. Ghosh, N. Hawkins, W. Korkosz, Y. Kurama, B. Smith

The following resolutions have been made based on the recommendations of the industry panel during the meeting:

Prototype Buildings

- The prototype buildings will use hybrid precast concrete shear walls as the lateral force resisting system in both directions.
- The selection of the design gravity and lateral force demands on the structures will be based on a study of various parking, office, and residential buildings with different dimensions. Buildings in moderate seismic zones as well as high seismic zones will be considered. This study will determine a range of typical ratios between the design axial loads, lateral loads, and overturning moments subjected on shear wall panels.

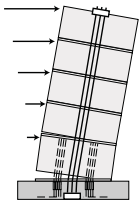
Test Specimens

- The test specimens will be 1/3 to 0.4-scale models based on a four-story wall with the first story height equal to 12 to 18-feet and the upper story heights equal to 10.5 to 11-feet.
- Both "intermediate" and "special" wall panel details will be considered.
- Openings within the test specimens may be included in the base panel; however, a final decision was not reached by the industry committee.
- Fiber-reinforced concrete will not be used in the wall panels, but high-strength fiber-reinforced grout will be used at the horizontal joints.
- External steel plates at the toes of the walls may be used, but only if the inclusion of these plates would reduce the amount of confinement steel within the base panel and if the plates can be adequately anchored into the concrete.
- As a means to reduce potential damage to the cover concrete at the base of the wall, the toes of the base panel will be chamfered at 45-degree angles.
- A recessed pocket will not be used at the interface between the foundation and the base panel.
- Alignment dowels will not be used between the foundation and the base panel.

This project is funded by the Charles Pankow Foundation and the Precast/Prestressed Concrete Institute. Any opinions, findings, conclusions, and/or recommendations expressed in this material are those of the researchers and do not necessarily represent the views of the sponsors.

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Mild Steel Reinforcement

- The energy dissipating mild steel bars will be embedded inside the foundation and then grouted over the required development length within the base panel. The development of the bars inside the foundation will be achieved using hooked bars (as opposed to mechanical anchors).
- The energy dissipating bars will be debonded over a predetermined length to reduce the possibility of low cycle fatigue fracture due to gap opening at the base-panel-to-foundation joint. The debonded length of the bars will be located within the foundation and not within the base panel. This process will eliminate the potential for damage to the debonding material during the placement of the base panel over the bars and during the subsequent grouting process. Note that it may not be necessary to have a debonded length for the energy dissipating bars in moderate seismic regions.
- The energy dissipating bars will have a constant diameter over their length (i.e., the diameter of the bars will not be reduced at the location where yielding is expected).

Post-Tensioning Steel Reinforcement

- Either single-strand or multi-strand anchors may be used for the PT tendons within the wall specimens.
- The PT tendons will be unbonded over their entire length.
- For simplicity during the experimental program, corrosion protection for the PT tendons and anchors will not be provided within the wall specimens.

ACI ITGT 5.1 (Final Version) & ITG T5.2 (Draft 3)

- Regarding T5.1, Section 9.1.4(3): The requirement that the “maximum allowable shear-slip between horizontal joints shall not exceed 0.06-inches” will not be scaled for experimental testing.
- Regarding T5.2, Section 5.6.2: ϕ -factors will not be used in the design of the test specimens.
- Regarding T5.2, Section 5.8.3: The cube strength of the fiber-reinforced grout at the base-panel-to-foundation horizontal joint will be higher than the strength of the confined concrete in the foundation and base panel.

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