



American Concrete Institute®
Advancing concrete knowledge

**The Art of Designing Ductile
Concrete in the Past 50 Years: The
Impact of the PCA Book and Mete
A. Sozen, Part 1**

ACI Fall 2012 Convention
October 21 – 24, Toronto, ON

ACI
WEB SESSIONS





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ACI
WEB SESSIONS

Impact of the Blume, Newark, and Corning Text on the Development of a Composite Core-Wall System for Use in Earthquake-Resistant Tall Buildings

Selvarajah Ramesh, Michael Kreger,
& Mark Bowman



Composite Core-Wall System –
The Devil's in the Details

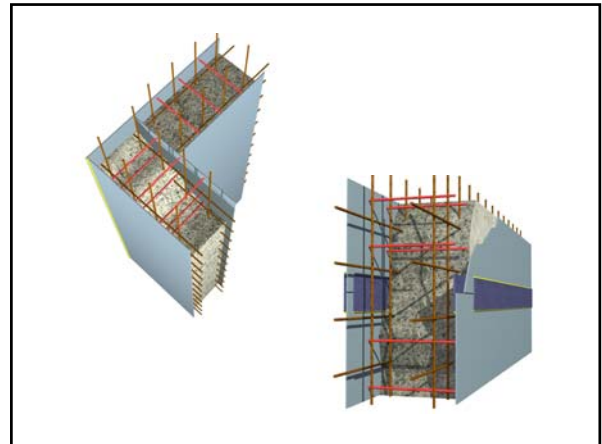
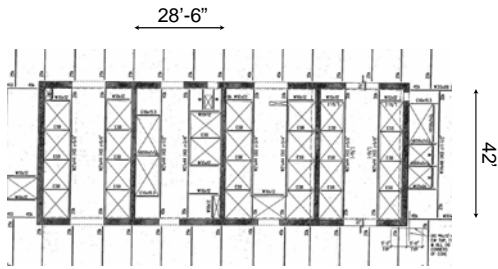
Acknowledgements

- Charles Pankow Foundation
- CANRON
- Magnusson Klemencic Associates
- Prof. Michael Engelhardt (UT-Austin)

Why a composite core-wall?



Typical Core Wall Configuration



Project Phases

- Transverse ties between plates
- Plate-to-plate connection
- Stability of plate assemblies
- Foundation details
- Base connection
- Proof-of-concept wall test
- Development of design procedures

Stability of Plate Assemblies



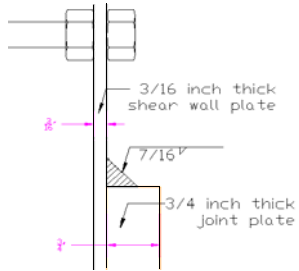
Foundation Details



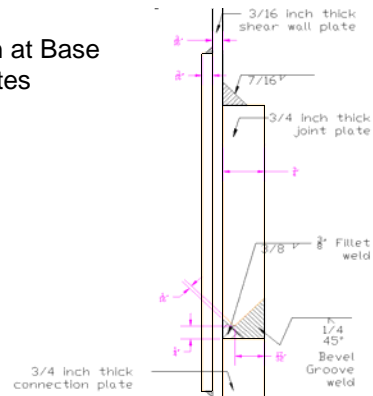
Welds between Rebar and Plate



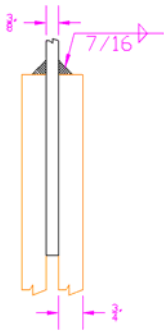
Connection at Base of Wall Plates



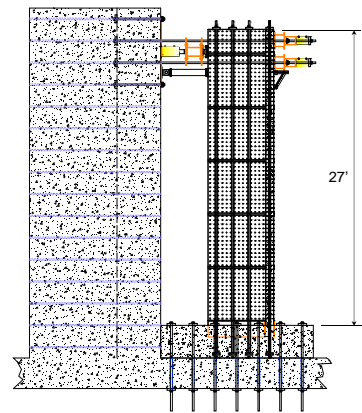
Alternative Connection at Base of Wall Plates



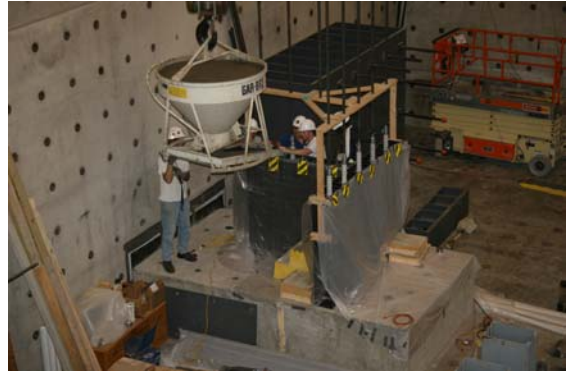
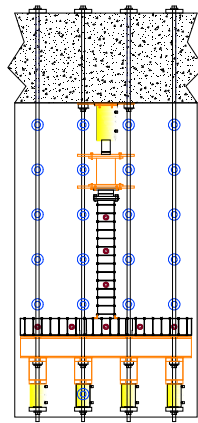
Weld Tests



Wall Test - Elevation



Wall Test - Plan





Final Cast



Testing

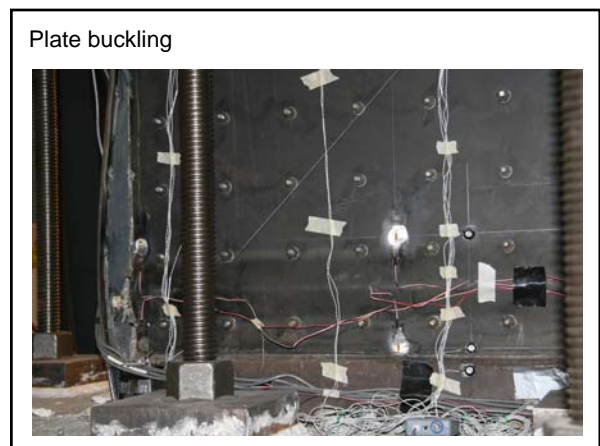
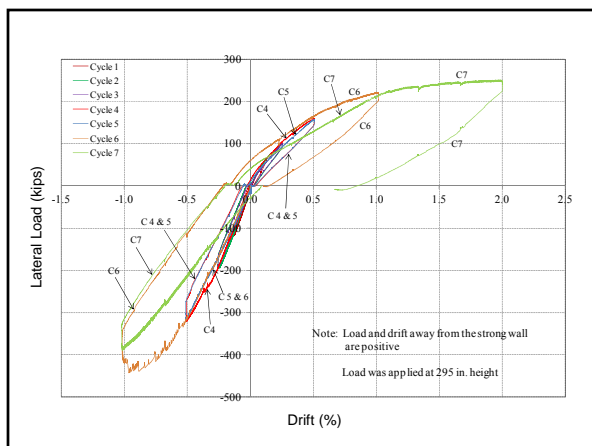
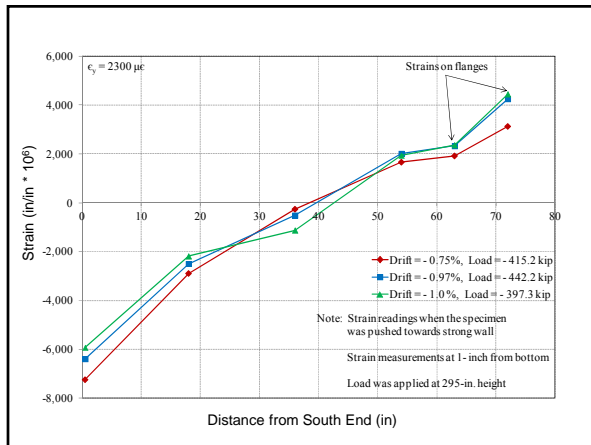
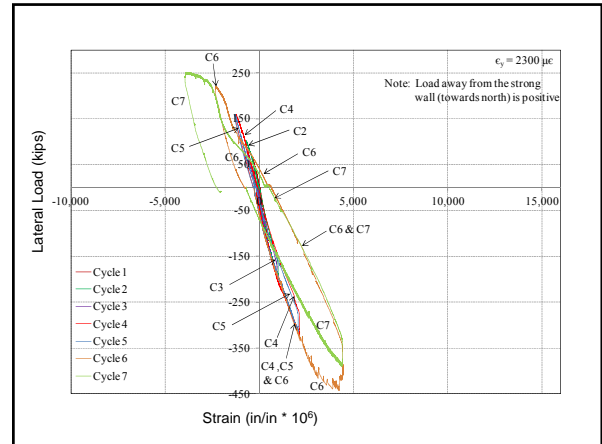
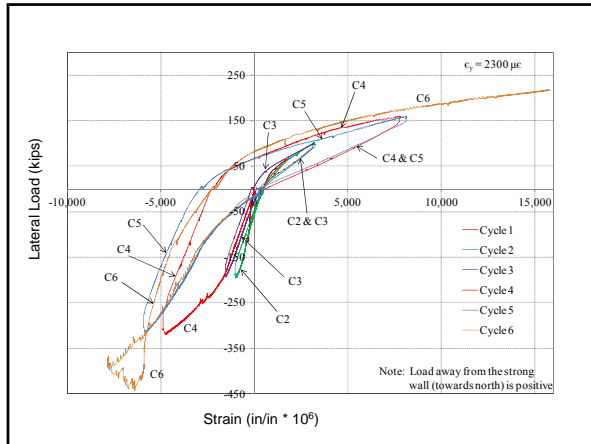


Plate buckling



- ### Concluding Remarks
- Details
 - Flanges at Wall Ends
 - Developing Design Procedures