

LIVE WEBINAR

Design of Composite Insulated Concrete Wall Panels Using Beam Spring Theory

Marc Maguire, Ph.D., Associate Professor, University of Nebraska Lincoln
Justin Callahan, Eriksson Software, Inc.

About:

Eriksson Software is pleased to announce a seminar on the analysis and design of composite concrete wall panels using beam spring modeling (BSM) theory. Traditionally, such panels have been designed using an estimated or assumed percent composite action between the inner and outer wythes of a panel. However, this approach provides limited insight into the actual structural behavior of the panels. The BSM approach, however, models each composite connector separately using properties obtained from testing to model the panels and composite connectors as a structural system, which greatly enhances the understanding and insight of the behavior of composite wall panels. Of particular importance to the structural engineer is the ability of BSM to relatively accurately predict elastic deformations and cracking of composite concrete wall panels.

This course is essential to the understanding of the effective and efficient design of composite wall panel systems. It is applicable to all major composite connector systems.

About the Presenters:

Presenting will be Professor Marc Maguire, PhD, a leading expert on BSM, and Justin Callahan, software engineer and lead developer of the Eriksson Wall software. The seminar will be presented in two parts on separate days. Each segment will be 90 minutes in duration (3.0 PDH total for both parts). Both BSM theory and its application to design will be covered in the two-part series.

Please Note: This two-part series will be non-commercial. No details of specific software will be mentioned. A future webinar will cover BSM using Eriksson Wall.

When:

Part 1: Tuesday December 12th, 2023, 12:00– 1:30 PM ET

Part 2: Thursday December 14th, 2023, 12:00– 1:30 PM ET

Who Should Attend:

- Engineers designing precast/prestressed or mildly reinforced concrete sandwich panels
- Researchers interested in the behavior of sandwich panels
- Precast/prestressed concrete plant engineers

Learning Objectives:

- Percent composite method of wall panel analysis
- Technical basis for beam spring theory
- FEM model used in BSM
- Five-layer shear (double shear push-off) test for connectors
- Connector forces versus slip
- Wall panel boundary conditions: vertical and horizontal
- Wall panel end blocks
- Applied forces, prestress, and thermal loads
- Second order effects
- Failure mechanisms
- Shear connector layout strategy
- Design examples
- Design issues: thermal results, end failures, erection, and multi-span systems

Fee: \$395 single viewer

Learning Units: 1.5 PDH per unit (3.0 PDH for both sessions)