JANUARY 2015 MEETING

Wednesday, January 14, 2015 (1.0 PDH)

TECHNICAL PROGRAM

Perimeter Vertical Moisture Barriers for Residential Foundations

Speaker: Mr. Ken Douglass, P.E., Eric L. Davis Engineering, Inc. Tel: 281-808-7071

Kenneth L. Douglass is currently a Professional Engineer and the Houston Branch Manager for Eric L. Davis Engineering, Inc. in Houston, TX. He earned his Bachelor of Science Degree from the Colorado School of Mines in 1974 and his MBA from the University of Houston in 1983.

Mr. Douglass has 20 years of experience in the post-tensioning industry designing slab-on-ground foundations in Texas, California, Illinois and Nevada. He is an active voting member of the Post-Tensioning Institute Slab-on-Ground (SOG) Committee, Structural SOG Sub-Committee, SOG Construction & Maintenance Subcommittee, and Chairperson of the SOG Education & Communication Subcommittee. Mr. Douglass is also a FPA Member and a member of the FPA Structural Committee.

PRESENTATION SUMMARY

This was the first meeting of the FPA in 2015 and all are grateful to Mr. Douglass for his time and presentation. His slide presentation was very informative and there were 73 in attendance, 57 members and 16 guests.

One of the most common problems with slab on ground foundations is changes is soil moisture under and around the foundation. These problems occur because it is difficult to reasonably control soil moisture because of changes in rainfall, especially during and following drought conditions or during seasonal rainfall. Though there are several methods that are used to control soil moisture, including surface drainage, French drains, and other area drains. Nonetheless, problems still occur when soil moisture changes under a foundation.

One additional method used to control soil moisture under a slab on ground foundation is a ***Vertical Moisture Barrier.*** Vertical moisture barriers have been used for decades though using various materials. The system presented involves use of a heavy plastic liner installed against the foundation wall. This was presented as a viable solution to the problem of maintaining constant moisture content in expansive clay soils due to seasonal and climatic variations and the always troublesome site preparation, drainage and homeowner moisture maintenance. Vertical moisture barriers are a mitigation method to help prevent moisture variations that occur in the soil beyond the perimeter of the foundation from affecting the soil under the foundation. Reducing the variation in the moisture content of the soil under the perimeter of a foundation reduces potential foundation movement associated with expansive soil swell and shrinkage. The vertical moisture barrier described competes with other soil mitigation techniques and is designed to meet or exceed existing building codes.

Included in the presentation was a discussion of development of installation procedures, to include development of a specialized trenching machine that digs a narrow trench into which the moisture barrier material is placed. Though this procedure is currently suitable for used in new construction because it is installed before the foundation is placed, work is on-going to develop a procedure for existing buildings.

For a copy of Ken Douglass's slide presentation, click here.

To read summaries of previous FPA presentations by Ken Douglass, please click:

March 2011- WaffleMat Slab-on-ground Forming System