

MARCH 21, 2001 - Experiences with Heave

Speaker: Ronald Reed, P.E.

Our presenter was Ronald Reed, PE. Ronald is a geotechnical engineer from Dallas and has recently opened an office in Houston. He spoke on his experiences mainly in Dallas in regards to heave. He believes that the moisture active zone is much deeper than what most believe it is. He has found it to more than thirty feet at some sites. He has found cracks in Dallas that are 12 in. wide and 15 ft. deep! Surface water can obviously get a good start with those sorts of cracks. Then he believes that water can quickly permeate much lower if the relative soil suction is present. He believes that we have not been able to accurately test the permeability of clays because we cannot duplicate the suction pressures that he believes pulls the water through the clay structure very quickly and very deep.

Although Ronald is not a proponent of using any of the current standardized tests, including suction, for heave prediction, he has done in excess of 45,000 suction tests and finds the test to be a very valuable tool for determining many other soil properties. He warned that we should use moisture content results only in conjunction with Atterberg tests (i.e., each sample should have both tests) as the non-homogeneous nature soil can otherwise make the results misleading. However, if the suction test is provided, then the one-for-one Atterberg testing would not be a necessity.

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