

## **OCTOBER 15, 2003 - Case Study of the Pavement Distress at a Service Station**

*Speaker:* H. Stephen Tien, Ph.D. of Geotech Engineering and Testing, Houston.

### **PRESENTATION SUMMARY**

To an audience of 25, Mr. Tien presented a forensic case study of a pavement distress case from the Houston area. The pavement was constructed in 1998 with design thicknesses of 5", 6" and 7", depending on the intended use. Mr. Tien used standard evaluation forms from ACI to tabulate the distress, which was found to be widespread.

Testing included 17 cores and petrographic analyses. The cores showed that 60 percent had the rebar too low in the slab and some were too thin. The petrographic analyses showed too much air (up to 17 percent) in some of the samples, indicating the concrete was already hot when placed that summer. Though site reconnaissance it was found 41 percent of the 18 wheeler trucks were running on the 5 inch pavement instead of the intended 7 inch pavement. He calculated a design life of only 56 days for this condition whereas it would be over 20 years on the 7 inch pavement.

Problems found to lead to the early pavement distress included a faulty geotechnical investigation, improper maintenance, poor signing and poor construction.

For a copy of the paper presented by Mr. Tien, [click here](#).

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