

Rock-Socketed Drilled Shafts – The State of Practice

Design and construction of drilled shafts in rock has advanced considerably over the past 25 years. Several of the most significant advancements have been made possible by the ability to perform load tests with the bi-directional load cell, originally called the Osterberg Cell. Over his distinguished career, Professor Jorj Osterberg made many contributions to our collective knowledge on the behavior and design of drilled shafts in rock. A brief overview of these contributions will be presented at the start this year's Osterberg Lecture.

This presentation will then highlight the aspects of rock socket design and construction for which the state of practice has changed and improved. These include:

- better analytical models for calculating side, base, and lateral geotechnical resistances
- improved methodologies for characterizing rock mass strength
- advances in structural design of rock sockets
- more powerful equipment and tools for excavating rock
- improved knowledge and technologies for tremie-placed concrete
- innovative tools for inspection and post-construction non-destructive testing

All of the above provide the opportunity for engineers and contractors to design and build better, more reliable, and more cost-effective rock-socketed foundations.