**TECHNICAL PRESENTATION**
**January 11, 2023**

**An Introduction to Polyurethane Foam Injection**
Presented by Mr. Don Deardorff, P.E. and
Mr. Matt Greene with Foundation Supportworks

**BIO**: Mr. Don Deardorff is a Senior Application Engineer for Supportworks, Inc. Don's main role is to provide preliminary design assistance for Supportworks installation contractors, engineers, architects, and other design professionals. Don specializes in large and challenging commercial and industrial applications involving helical piles, helical tiebacks, helical soil nails and hydraulically driven push pier systems. Don has performed over 1800 helical or push pier designs during his 17 years as a helical design professional. Don obtained his Bachelor of Science and Master of Science degrees in Civil Engineering from the University of Missouri-Rolla and has completed all but the dissertation requirements for a Ph.D. in Civil Engineering. Don is a licensed professional engineer in Missouri and Wisconsin.

**BIO**: Mr. Matt Greene is the Commercial Project Advisor for Supportworks and actively works with over 100 individual contractors across the United States and Canada that install the Supportworks line of products. He has worked in the commercial, industrial, and residential sectors and been involved with new construction foundations, foundation repair and concrete leveling projects for over 20 years. Matt's main role at Supportworks is to assist the installing contractors with the bidding process for commercial projects. Matt also specializes in training the Supportworks contractor network in best practices to install Supportworks products.

**ABSTRACT**: Polyurethane Foam offers solutions to a wide range of geotechnical and structural issues. The more commonly used products are two-part urethanes that, when mixed, expand into rigid foam to fill voids for stabilizing and lifting concrete slabs and other applications. The benefits of polyurethane foam injection, typical applications, design considerations, and installation procedures were presented. Case studies of projects utilizing polyurethane foam injection for a variety of applications were also presented.

**PRESENTATION SUMMARY:** The presentation illustrated how the foam material composition could be designed to accommodate any condition. The foam composition could be modified to control the rates of expansion, the degree of expansion, the foam density, and the cure rate. For example, the density and cure rate for a heave traffic pavement repair would allow for traffic after thirty minutes cure time. The density of the foam injection process was illustrated by examples of train rail crossing repairs.

**PREVIOUS FPA PRESENTATIONS BY MR. DEARDORFF:**
April 2009 - Design, Installation and Testing of Helical Piles & Anchors

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