



Inhibiting Glacial Clays

PROJECT:	39-Story Residential Building
LOCATION:	Chicago, IL
CLIENT:	Case Foundation
PRODUCTS USED:	BIG-FOOT® Polymer Slurry, MESH-SET® Granular Sealing Material, FORTIFY® Slurry Loss Additive

CHALLENGE

The main challenge of the polymer slurry on this project was to inhibit the glacial clays encountered while drilling. These ductile fat gray clays will react when wetted and swell into the opening created by drilling.

SOLUTION

BIG-FOOT® polymer slurry encapsulated the surface area of the clay soil so this reaction was prevented. This allowed the drilling to continue and meet a tight schedule just before the Christmas Holiday break.

This project studies the new 39-story residential building located at 1001 South State Street, Chicago, Illinois and the challenges of inhibiting glacial clays. Our client, Case Foundation is one of the most highly respected full service deep foundation specialists in North America.

While our main goal was to inhibit the glacial clays encountered while drilling, we had the additional challenge of freezing temperatures of 10-15° F causing the mix tanks, valves and fittings along with the hoses to be susceptible to freezing. The slurry mix tanks had to be positioned in the corner of a space the size of a postage stamp, in the heart of downtown Chicago, to allow enough space to work. The portability of the BIG-FOOT® Polymer Slurry made it an ideal solution on this space-challenging project.

Yet another challenge arose when the polymer slurry needed to be mixed quickly and then used immediately in order to install the Test Shaft that was being Load Tested. The MATRIX products are dry so no threat from freezing interfered with production. The MATRIX products were packaged in plastic containers protecting the ingredients from damage, as they were stored onsite outdoors in freezing temperatures.

Big Dan Rivera was the Drilling Superintendent with Case Foundation on this project. Big Dan had not been in charge as a full Superintendent and was comfortable knowing that the MATRIX staff onsite were veteran slurry experts. Big Dan commented that using MATRIX products was made easier because we were open to adjustments and changes to the schedule and operations.

MATRIX studied the geology and developed a recipe for the slurry mix. MESH-SET was also added at the drilled hole into the slurry to aide in sealing the sidewalls and allowing the slurry to stabilize the gravelly sand.

We recommended a dosage of BIG-FOOT® polymer and FORTIFY® within the slurry needed to apply the required positive differential pressure against the sidewalls of the excavation. The concentration of BIG-FOOT polymer, used for optimal concentration was 10.0 pounds per 1,000 gallons or 1.2 kilograms per meters cubed of water. At these concentrations, the Marsh funnel viscosity per quart of BIG-FOOT polymer slurry was 95 seconds per quart.

BIG-FOOT® Polymer Slurry is so good you won't believe it!

For more information regarding this project or any other MATRIX products and services please visit our website at matrixcp.com or call 877.591.3137.