Perhaps the largest chemical grouting project in North America...

After being asked by the EPA to find a solution to their Sanitary and Storm Sewer Overflow problems the City of Dearborn, Michigan built a series of underground storage tanks: 120 ft wide, 150 ft deep. However, in order to construct two of the tanks the permeability of the construction site had to be reduced to a depth of 200 feet. The product chosen to reduce the permeability yielded 10x better results than expected (0.2 lugeon). The product was Avanti’s AV-100.

After 10 years of study by the U.S. Department of Energy...

Seven different grout formulations were studied and Avanti’s AV-100 Chemical Grout became the product of choice for the encapsulation of radioactive and hazardous waste in Oakridge, Tennessee. Reducing the permeability to below $10^{-8} \text{ m/s}$, the DOE testing also determined AV-100 to have a 362-year half life in the soil. Subsequently, AV-100 was successfully used to encapsulate over 9.5 million gallons of waste left over from the 1950’s Manhattan Project.

Controlling seepage at a large copper/gold mine tailings dam...

Reduced hydraulic conductivity at a large Argentine tailings dam was not possible using cementitious grout. Ground engineers and grouting consultants determined that because over 25% of the rock formation was not amenable to the cementitious material, a true solution grout which contained no suspended solids would be required to penetrate the formation. Avanti’s AV-100, an acrylamide based product with a viscosity of 1-2 centipoise, was injected and the required hydraulic conductivity rating was successfully achieved.

Successful subway grouting program in place since 1997...

The Toronto Transit Commission recognized persistent and progressive water infiltration causing concrete and steel deterioration, as well as electrical and mechanical system problems and failures. Consulting firms recommended the use of acrylamide chemical grout to be injected through the subway walls into the soil to create a “grout curtain” and prevent groundwater from reaching the structure. The TTC grouting program is ongoing and continues to expand.

No more wasting money pumping water out of mines...

Used at depths of 3000 feet, Avanti’s chemical grouts have been injected into potash, diamond, salt, limestone, coal, gold and copper mines in order to stop groundwater infiltration. Avanti’s AV-100 grout can travel anywhere water can permeate and become a firm gel in a predictable, controllable time period ranging from 5 seconds to 10+ hours. By permeating the various hydrologic strata the grout creates a mechanical lock throughout the network of super-fine cracks, stopping infiltration into mines and underground structures and capable of withstanding significant head pressures.

TBM Recovery – saving millions of dollars...

After carving a tunnel 100 feet below the street of a major metropolitan area, shifts between clay and sand in the excavated earth force a large Tunnel Boring Machine off course. Rather than dig a new shaft to intercept the TBM and bring it to the surface, innovative project engineers were able to stabilize the sandy soils ahead of the TBM using Avanti’s AV-100. The stabilized strata enabled the TBM to realign itself saving contractors time, productivity and millions of dollars.