

PROJECT SUMMARY

Application:
Split Slab Grouting (Joint
Sealing)

Product Used:
AV-170 FlexGel™

Project:
Light Rail Tunnel

SPLIT SLAB GROUTING AT LIGHT RAIL TUNNEL PROVIDES WATER INGRESS SOLUTION WITH FLEXIBLE ACRYLIC GROUT

A light rail tunnel project that had significant water ingress concerns. Initially, the plan was to curtain grout the tunnel's exterior to prevent water infiltration. However, this approach was not feasible due to the extensive amount of time required to complete the process.

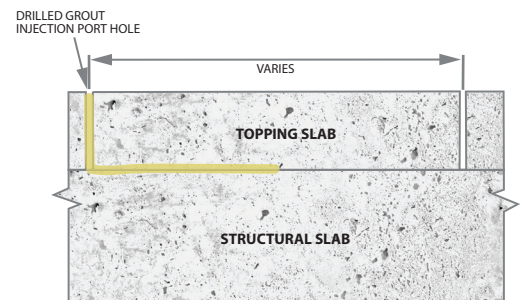
BACKGROUND

A split slab is a construction technique where a concrete slab is placed on top of another concrete slab. In below-grade applications, the joint between the two slabs can become a potential pathway for groundwater seepage therein compromising structural integrity. Water infiltration into the structure can occur due to various reasons, including the development of cracks on the upper concrete slab, the failure of the joint sealant, or the failure of the waterproofing system. Here is an illustration of how the use of a flexible acrylate grout for injection grouting can offer a lasting solution to water intrusion concerns in areas that experience movement and vibrations.

PROJECT EXAMPLE

Avanti provided assistance on a light rail tunnel project that had significant water ingress concerns. Initially, the plan was to curtain grout the tunnel's exterior to prevent water infiltration. However, this approach was not feasible due to the extensive amount of time required to complete the process. The short shutdown period did not permit such a lengthy operation. Furthermore, the curtain grouting process was estimated to consume multiple gallons of grout per square foot.

After examining the construction details, it was concluded that the most suitable approach would be to focus on the split slab construction joint for completing the work within a limited timeframe. A further advantage of this strategy was the lesser amount of material required to fill the narrow joint. The project used approximately 0.25 gallons of grout per square foot.



Although the reductions in material usage were advantageous, focusing on the joint introduced a new obstacle: vibration. Most grout products available do not have the appropriate characteristics, such as low viscosity and controlled curing rates, to penetrate the specific type of joint observed in this project. Of the products that meet these requirements, only one possesses the necessary flexural cured qualities to endure the constant movement and vibration resulting from passing trains in the area: AV-170 FlexGel™.

GEOTECHNICAL CASE STUDY

PRODUCT INFORMATION

AV-170 FlexGel™ by Avanti is a non-toxic, ultra-low viscosity solution grout that is specifically formulated to penetrate even the most confined areas where water may seep, including joints, cracks, honeycomb concrete, and other similar locations. Upon curing, FlexGel forms a remarkably adhesive, elastic gel which can withstand vibrations and movement.

For more information about AV-170 FlexGel, visit avantigrout.com