

EXECUTIVE SUMMARY

This evaluation was performed on shoot-in or “launched” soil nails based on information provided by the Federal Highway Administration (FHWA) and Soil Nail Launcher, Inc.

The soil nail launcher, typically mounted on an excavator, uses compressed air to launch 20-foot long, 1½-inch outside diameter steel or fiberglass tubes with closed steel tips into the ground in a single blast at speeds in excess of 200 miles per hour. The tubes can then be reinforced with a steel bar and grouted to achieve maximum strength. The tubes can also be perforated and pressure grouted to allow grout permeation into the soil, improving the adjacent soil properties and increasing the soil-nail bond.

Groups of launched nails can be used in both temporary and permanent applications including landslide remediation, bluff stabilization, micro-piling, ground anchoring, retaining wall applications, horizontal drainage, and excavation shoring. Corrosion protection is used on the launched tubes and on the inner reinforcing steel for permanent applications.

This system has seen limited but successful use in the United States since the mid-1990s with competitive costs and performance compared to competing technologies. Technology advantages include high nail installation rates and minimal environmental disturbance. Sites with high amounts of boulders and obstructions are not suitable for this technology.