

Retaining systems



Retaining systems are required in excavations where the site does not allow for sides to be safely sloped back. Typically this applies to excavations greater than 8 feet or deeper in soil or unstable rock.

There are several systems typically used depending on the conditions. In soil, common systems include H-beam and wood lagging, and soil nailing. In rock, protection can be as simple as chain link fence to contain loose rocks or the more positive system of friction rock stabilizers (split sets) and a shotcrete face.

Top down

Top down construction of walls is the process of completing the retaining or exterior wall from the top down. The process is usually used in conjunction with soil nailing or rock nailing. The soil nails serve the function of tying back the excavation and supporting the vertical loads of the wall. The advantages include significant cost and time savings, the flexibility to accommodate design modifications during construction, and a "one wall" system that supports construction and provides a permanent wall.

Soil Nailing

Soil nailing is a procedure to reinforce and strengthen ground adjacent to an excavation by installing closely spaced steel bars, called "nails", as construction proceeds from the top down. The process is effective in cohesive soil, broken rock, shale, or mixed face conditions.

The technique permits flexibility to conform to a variety of geometric shapes to meet specific site needs. Spacing, placement angle and nail length can be varied to meet almost any site-specific conditions such as easement or utility location problems.