

HAZARD ALERT

Blocks alone do not make safe retaining walls

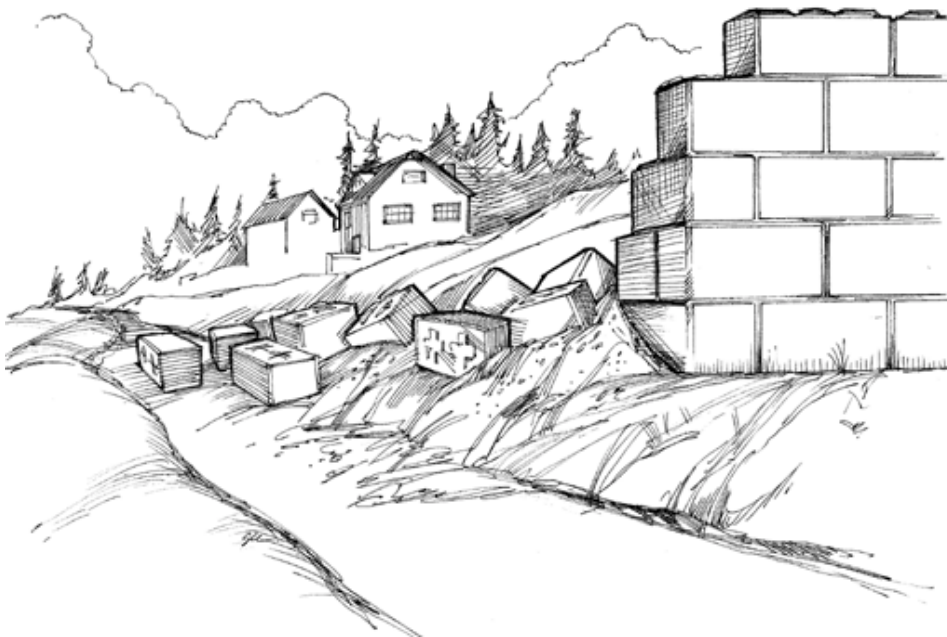
Three recent incidents involved the collapse of retaining walls made from modular concrete blocks:

1. A bobcat was preparing the final grade for paving adjacent to the top of a retaining wall 3 m high. The top section of wall suddenly dislodged and collapsed, causing the bobcat to roll over the top of the wall and land on the grade below. The operator received minor injuries.
2. A large section of a retaining wall, intended to support a cut bank, collapsed during construction. The section of blocks that collapsed was approximately 4.5 m (6 blocks) high and 24 m long. No workers were injured.
3. A retaining wall was being built on the downhill side of a sloping lot to reclaim land for a parking lot. The wall measured approximately 43 m long and varied in height from 2.25 m (3 blocks) at one end to 3.75 m (5 blocks) at the other end. Dredged material from the ocean shore was used as fill. During construction, the top 3 rows of the wall collapsed. No workers were injured.

Safe work practices:

Ensure that manufacturers and/or engineering documents and specifications are used when retaining walls are constructed:

- Follow safe work procedures for working with geogrid fabric.
- Follow safe work procedures for fill placement.
- Maintain safe distances when working with heavy equipment in areas near the top of retaining walls.



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Use guidelines, design documents, and written procedures when constructing modular block retaining walls

A modular concrete block retaining wall five blocks (12-½ feet) high collapsed during construction. On another occasion, a 15-foot-high modular concrete block retaining wall system also collapsed during construction. In both cases, information about the construction of walls with locking modular concrete blocks was not available to workers, supervisors, employers, and contractors directly involved with the construction.

Locking concrete blocks have become a popular manufactured product, not just a convenient way to get rid of surplus ready-mix. They may be used many times for many years.

Many mechanically stabilized earth (MSE) wall systems use locking concrete blocks. MSE wall systems are often used for retaining walls on construction sites. MSE structures should be designed by a professional engineer and constructed as specified by the design documents. In addition, only the engineer who developed the design documents can:

- Approve substitution of products specified by the design documents
- Certify any changes in design document details and site conditions

Changes in the design documents must be documented and reflected in the original design documents.

Safe work practices:

- Before starting the construction of an MSE wall system, the following must be available at the workplace:
 - Erection procedures
 - Clear and site-specific engineering documentation
- Consult block manufacturers and suppliers, the National Concrete Masonry Association, and AASHTO for additional information on the design and construction of MSE walls.

Manufacturer's obligation to provide information

Under the Workers Compensation Act, a supplier of modular concrete blocks has a general duty to supply directions for safe use of the product and to comply with the Occupational Health and Safety Regulation when these blocks are used at a workplace by workers. Seek a manufacturer that has:

- Written designs, procedures, and quality control methods in place to ensure the integrity of precast concrete blocks, during all stages of use, and
- Established a safe standard for reinforcing concrete blocks when cold seams are permitted as part of the manufacturing process.