US Army Corps of Engineers®
Engineer Research and Development Center

CORE-LOC® Concrete Armoring

Description

CORE-LOC® is an innovative coastal structure protection armor unit designed to withstand the harshest of wave climates. Its unique shape provides a strong interlocking unit optimized for high stability and low cost. Its superior hydraulic stability is attributed to the extraordinary interlocking of its symmetrically tapered octagonal members. This product is the result of years of concrete armor research within the Coastal Structures Group at the Coastal and Hydraulics Laboratory (CHL), U.S. Army Engineer Research and Development Center (ERDC).

Benefits

CORE-LOC® has become the concrete unit of choice for both new construction and repair of existing concrete-armored slopes because of its extraordinary efficiency. Advantages are that it dissipates the maximum amount of wave energy with the least amount of concrete, requiring significantly less materials; its layer has a reserve stability when properly designed and constructed; it is placed in a single layer, unlike many other types of concrete armor units which are placed in two layers. Keeping in mind that the cost of an armor layer is proportional to the total volume of concrete on the slope, CORE-LOC® has one of the lowest packing densities in the industry, which brings about significant reduction in on-slope concrete volume. Together these factors account for as much as 50 percent cost-savings over many other popular concrete armor units.

Status

CORE-LOC® armor layers have been designed for hundreds of structures and over 30 have been constructed to-date. The first CORE-LOC® project was constructed in 1996 in Port St. Francis, South Africa with 800 15-ton CORE-LOC® units. This site has endured three design level storms with excellent performance and no resultant damage. Patents and/or trademarks for CORE-LOC® have been granted in more than 45 countries. The technology has been regionally licensed worldwide to several firms.

Distribution Sources

Gordon K. Prestedge (Prestedge, Retief, Dresner, Wijnberg) Marina Center, can be reached at Commercial Phone: 27-21-418-3830, West Quay Road, Victoria and Alfred Waterfront, Cape Town, South Africa, P.O. Box 50023, Waterfront 8002, e-mail: gprestedge@prdw.co.za.

Minoru Hanzawa, hanzawa@tetra.co.jp can be reached at Commercial Phone: +81-29-831-741, Manager, Planning Section, TETRA Technical Research Institute, TETRA Co., Ltd., 2-7 Higashi Nakanuki, Tsuchiura, Ibaraki, 300-0006, Japan.

Core-Loc International (CLI) (*http://www.coreloc.com*) can be reached at Commercial Phone: 33 0 2 47 74 18 10, Michel Denechere, 3 cour du 56, av. Marcel Dassault, 37200 Tours, France, e-mail, michel.denechere@coreloc.com.

Application

Over 30 structures have been constructed. A list is available at the Web site *http://chl.erdc.usace.army.mil*.

Point of Contact

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