IN-LB	Inch-Pound Units
SI	International System of Units

Guide to Underwater Repair of Concrete

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This document provides guidance on the selection and application of materials and methods for the repair and strengthening of concrete structures under water. An overview of materials and methods for underwater repair is presented as a guide for making a selection for a particular application.

Keywords: anti-washout; cathodic protection; concrete removal; deterioration; diver; formwork; marine placement; pile-jackets; polymer(s); repair; surface preparation; tremie; underwater.

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CHAPTER 1—GENERAL

1.1—Introduction

The repair of concrete structures under water presents many complex problems. Although the applicable basic repair procedures and materials are similar to those required in typical concrete repair, the harsh environmental conditions and specific problems associated with working under water or in the splash zone area (Fig. 1.1a) create many differences. The repair of concrete under water is usually difficult, requiring specialized products and systems, and the services of highly qualified and experienced design professionals and contractors.

Proper evaluation of existing structural condition is the essential first step in designing long-term repairs. To be most effective, the evaluation procedure should begin with a review of historical information on the structure and its envi-

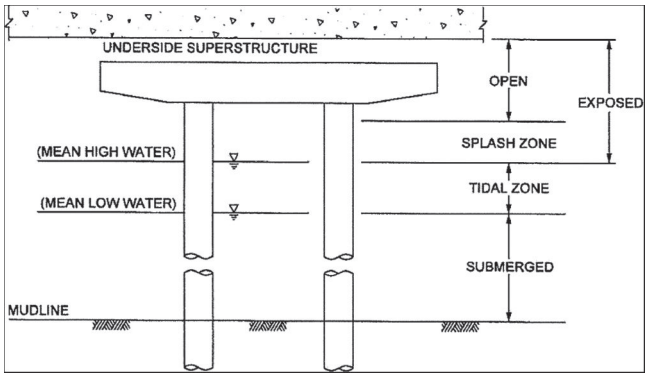

Fig. 1.1a—Repair zones: submerged, tidal, and exposed.

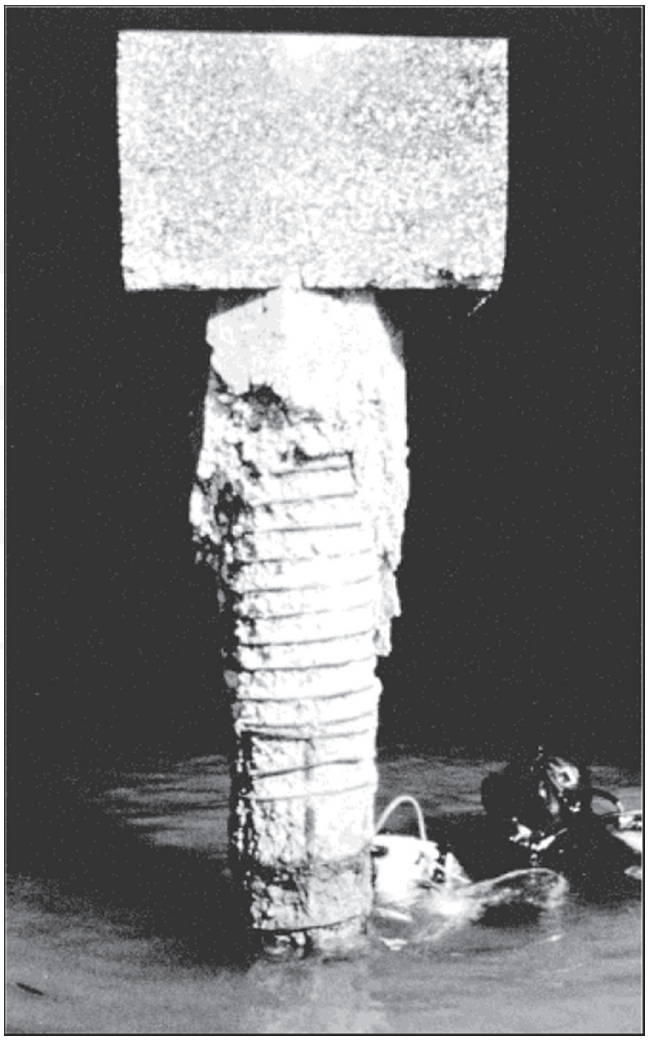

Fig. 1.1b—Deteriorated pile in tidal and exposed zones (image courtesy of M. J. Garlich).