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SAFETY OF A CONSTRUCTED FACILITY: GEOTECHNICAL ASPECTS

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INTRODUCTION

Civil engineers have always given priority to the safety of the facilities they design and help construct. Indeed, the public, through its action groups and governmental regulatory agencies, demands a high degree of safety for certain constructed facilities. However, differences exist in the degree of safety employed by engineers. Structural engineers use factors of safety ranging from 1-1/2-4 and higher in designing structures of steel, concrete, and wood to allow for "unknown and unforeseen factors." Geotechnical engineers also employ factors of safety for the geotechnical aspects of constructed facilities. Unfortunately, economic considerations often require that the geotechnical engineer use lower factors of safety than those used by the structural engineer despite the fact that the properties of soil, the geotechnical medium, vary more than those of steel, concrete, and wood. The geotechnical engineer usually employs factors of safety ranging from 1.1-1.5 for earth slopes (but higher safety factors for foundations).