Quality Assurance and Control

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I. INTRODUCTION

A drainage system only will operate satisfactorily in the long run if proper attention is given to quality in its design, installation, and maintenance. This chapter considers the main aspects of quality control when horizontal pipe drainage systems with a free outfall are installed. These aspects will enable quality-control systems to be set up for a country or a region. Local aspects, which also should be included in such a system, cannot be treated within the limited scope of this chapter. They cover such additional provisions as open drains, sumps, manholes, outlets, and pumps.

The quality of pipe drain installation is determined by the field conditions under which the work is done, and by the quality of workmanship and of the materials used. Section III gives guidelines for specifying limiting field conditions, Section IV lays the basis for workmanship requirements. For the quality control of materials, the reader is referred to Chapters 28 (Schwab & Fouss, 1999) and 29 (Stuyt & Willardson, 1999).

The limiting conditions of Section III and the requirements of Section IV form the core of this chapter. They are based on the present state of technology. These conditions and requirements must be incorporated into an installation contract, which will be elaborated further in Section II. This contract must be agreed upon by all interested parties before work commences. In this chapter, the parties are assumed to be private or government principals on the one hand, and private contractors on the other.

Section V deals with framing a set of limiting conditions and requirements for a country or region. Section VI briefly outlines expected future developments in quality control.