



*NSF International Standard /
American National Standard*

NSF/ANSI 240 - 2011

Drainfield Trench Product Sizing for
Gravity Dispersal Onsite Wastewater
Treatment and Dispersal Systems



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NSF International Standard/
American National Standard
for Wastewater Treatment Systems –

Drainfield Trench Product Sizing for Gravity Dispersal Onsite Wastewater Treatment and Dispersal Systems

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Foreword²

This American National Standard, NSF/ANSI 240 Drainfield Trench Product Sizing for Gravity Dispersal Onsite Wastewater Treatment and Dispersal Systems Standard, has been developed as part of the ongoing efforts of interested parties to establish minimum material, design, construction, and performance requirements for comparing gravity dispersal drainfield products based on hydraulic performance used in place of conventional coarse aggregate within onsite wastewater treatment and dispersal systems. This Standard also specifies the minimum literature that manufacturers shall supply to authorized representatives.

Two alternate methods for establishing the sizing relationship are provided:

(1) The Long Term Acceptance Rate (LTAR) establishes a methodology for determining the drainfield sizing relationship between gravity fed natural coarse aggregate and alternative manufactured products by measuring their relative long term acceptance rates (LTAR). The evaluation shall be conducted at an approved testing organization where independent variables are suitably controlled. Bottom area sizing and infiltration rate comparisons are based on test center data collected using multiple product and control trench cells under accelerated hydraulic loading conditions.

(2) The Field Performance Assessment (FPA) methodology evaluates relative failure rate studies of systems constructed using alternatives to conventional natural coarse aggregate. This methodology compares drainfields' bottom area (footprint) with respect to the system's hydraulic performance (hydraulic failure) to arrive at a suitable bottom area relationship. Technologies in use for 10 or more years may apply for certification under this option.

The comparative treatment performance of alternative products compared to performance of conventional systems is not within the scope of this Standard.

This Standard was developed by the NSF Joint Committee on Wastewater Technology using the consensus process described in the American National Standards Institute.

Suggestions for improvements of this Standard are welcome. Comments should be sent to Chair, Joint Committee on Wastewater Technology, c/o NSF International, Standards Department, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

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NSF International Standard
for Wastewater Treatment Systems –

Drainfield Trench Product Sizing for Gravity Dispersal Onsite Wastewater Treatment and Dispersal Systems

1 General

1.1 Purpose

The purpose of this Standard is to establish minimum material, design, construction, and performance requirements for comparing gravity dispersal drainfield products based on hydraulic performance used in place of conventional coarse aggregate within onsite wastewater treatment and dispersal systems. This Standard also specifies the minimum literature that manufacturers shall supply to authorized representatives. Two alternate protocols for establishing the sizing relationship are provided.

1.1.1 Long term acceptance rate (LTAR)

In 4, the long term acceptance rate (LTAR) of gravity dispersal drainfield products using alternatives is compared to conventional coarse aggregate trench media. Bottom area sizing and infiltration rate comparisons are based on test center data collected using multiple product and control trench cells under accelerated hydraulic loading conditions. Independent variables that may affect hydraulic infiltration shall be controlled.

1.1.2 Field performance assessment (FPA)

Field Performance Assessment (FPA) methodology evaluates relative failure rate studies of systems constructed using alternatives to conventional natural coarse aggregate. This methodology compares drainfields' bottom area (footprint) with respect to the system's hydraulic performance (hydraulic failure) to arrive at a suitable bottom area relationship. Manufacturers of general use products, as defined in 3, which include technologies in use for 10 or more years, may apply for certification under this Standard, including a statement of the bottom area relationship.

1.2 Scope

This Standard provides a methodology to compare, assess and document product sizing criteria for alternative or proprietary products with respect to conventional coarse aggregate used in onsite wastewater dispersal drainfields, based on comparative hydraulic performance.

The comparative treatment performance of alternative products compared to performance of conventional systems is not within the scope of this Standard.

1.3 Alternate materials, design, and construction

While specific materials, designs, and constructions may be stipulated in this Standard, products that incorporate alternate materials, designs, or constructions may be acceptable when it is verified that such products meet the applicable requirements.