
**Non-sewered sanitation systems —
Prefabricated integrated treatment
units — General safety and
performance requirements for design
and testing**

*Systèmes d'assainissement autonomes — Unités de traitement
intégrées préfabriquées — Exigences générales de performance et de
sécurité pour la conception et les essais*

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Project Committee ISO/PC 305, *Sustainable non-sewered sanitation systems*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

It is estimated that 2,3 billion people do not have access to basic sanitation systems. The devastating consequences of the lack of sanitation facilities include an estimated 1,8 billion people globally using a source of drinking water that is faecally contaminated and 361 000 children under 5 years of age dying per year, primarily from dysentery-like diarrhoeal diseases.

In March 2013, the United Nations (UN) issued a global call to action to eliminate the practice of open defecation by 2025. The UN and regional sanitation leaders have concluded that areas where open defecation is common have the highest levels of child death and disease, as a result of ingesting human faecal matter that has entered the food or water supply. A lack of safe, private sanitation is also associated with the highest overall levels of malnutrition, poverty, and disparity between rich and poor, and makes women and girls more vulnerable to violence.

On 1st January 2016, the 17 UN Sustainable Development Goals (SDG) were launched, including SDG 6: ensure access to water and sanitation for all. The SDGs are a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of the new UN sustainable development agenda.

Targets 6.2 and 6.3 of SDG 6 state:

- by 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations;
- by 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

In this context, the purpose of this document is to support the development of stand-alone sanitation systems designed to address basic sanitation needs and promote economic, social, and environmental sustainability through strategies that include minimizing resource consumption (e.g. water, energy) and converting human excreta to safe output.

This document is intended to promote the implementation of sanitation systems where increased sustainability is desired, or where traditional sanitary sewer systems are unavailable or impractical and thus, to ensure human health and safety as well as protecting of the environment.

However, this document does not attempt to exhaustively address sustainability concerns with respect to non-sewered sanitation systems (NSSS). There are many aspects to sustainability that are not covered in this document.

The concept of a NSSS is indicated in [Figure 1](#), showing the integration of the frontend(s) and backend(s) along with the input and output. Inputs entering the NSSS primarily comprise of human faeces and urine, menstrual blood, bile, flushing water, anal cleansing water, toilet paper, other bodily fluids/solids. Outputs substances exiting the NSSS include the products of the backend treatment process such as solid output and effluent, as well as noise, air, and odour emissions.

By design, such sanitation systems operate without connection to any sewer or drainage network. The NSSS can be either manufactured as one package or manufactured as a set of prefabricated elements designed to be assembled without further fabrication or modification that influences the system function. The prefabricated components of NSSS are intended to require minimal work to be integrated and quickly provide fully functioning sanitation systems.