
**Water reuse in urban areas —
Guidelines for water reuse safety
evaluation — Assessment parameters
and methods**

*Réutilisation de l'eau en milieu urbain — Lignes directrices
concernant l'évaluation de la sécurité de la réutilisation de l'eau...
Paramètres et méthodes d'évaluation*

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Foreword

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Introduction

With economic development, climate change, increases in population and rapid urbanization, water has become a strategic resource especially in arid and semi-arid regions. Water shortages are considered as one of the most serious threats to the sustainable development of society. To address these shortages, reclaimed water resources are increasingly being used to satisfy water demands. In addition, some communities are expanding water supply by employing potable reuse. These strategies have proven useful in increasing the reliability of long-term water supplies in many water-scarce areas.

The role of water reuse is growing for urban areas in many countries including: landscape irrigation; industrial uses; municipal non-potable uses such as toilet and urinal flushing; fire-fighting and fire suppression; environmental and recreational uses (ornamental water features, water bodies' replenishment); and vehicle washing. These non-potable water reuse systems have been developed to the degree that they are considered as an effective component of urban water management and are widely used in many cities and countries.

However, there are several types of pollutants in wastewaters, including dissolved organic matter, nutrients, salts, toxic and harmful chemicals, and pathogens. Therefore, safety evaluation and public acceptance of water quality are important issues which are of high concern during water reuse in urban areas. Water reuse safety includes health safety, environmental safety and facilities safety. For different types of reclaimed water uses, exposure pathways and potential hazards are very different. The diversity of reclaimed water applications and related hazards can result in significant differences in water quality parameters for such applications.

This document provides assessment parameters and methods for safety evaluation of non-potable water reuse in urban areas. They are intended to assist water engineers, authorities, decision makers and stakeholders in determining the safety of reclaimed water for end uses.

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