SLOVENSKI STANDARD
SIST ISO 9555-3:2013

01-april-2013

Meritve pretoka tekočin v odprtih kanalih - Metode z redčenjem markerja za merjenje enakomernega pretoka - 3. del: Kemični markerji

Measurement of liquid flow in open channels - Tracer dilution methods for the measurement of steady flow - Part 3: Chemical tracers

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Mesure de débit des liquides dans les canaux découverts - Méthodes de dilution en régime permanent utilisant des traceurs - Partie 3: Traceurs chimiques

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99aff02b2-cd10-46c0-a76d-6e488564a419/sist-iso-9555-3-2013

Ta slovenski standard je istoveten z: ISO 9555-3:1992

ICS:

17.120.20 Pretok v odprtih kanalih Flow in open channels

SIST ISO 9555-3:2013 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST ISO 9555-3:2013

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99af02b2-cd10-46c0-a76d-6e488564a419/sist-iso-9555-3-2013

SIST ISO 9555-3:2013

INTERNATIONAL STANDARD

ISO 9555-3

First edition
1992-11-01

Measurement of liquid flow in open channels — Tracer dilution methods for the measurement of steady flow —

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Part 3: Chemical tracers

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/...

Mesure de débit des liquides dans les canaux découverts — Méthodes de dilution en régime permanent utilisant des traceurs —

Partie 3: Traceurs chimiques

Reference number
ISO 9555-3:1992(E)

SIST ISO 9555-3:2013

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99af02b2-cd10-46c0-a76d-6e488564a419/sist-iso-9555-3-2013

© ISO 1992
All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

SIST ISO 9555-3:2013

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99af02b2-cd10-46c0-a76d-6e488564a419/sist-iso-9555-3-2013

SIST ISO 9555-3:2013

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

International Standard ISO 9555-3 was prepared by Technical Committee ISO/TC 113, *Measurement of liquid flow in open channels*, Sub-Committee SC 4, *Dilution methods*.

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99aff02b2-cd10-46c0-a76d-

ISO 9555 consists of the following parts, under the general title *Measurement of liquid flow in open channels — Tracer dilution methods for the measurement of steady flow*:

— *Part 1: General*

— *Part 2: Radioactive tracers*

— *Part 3: Chemical tracers*

— *Part 4: Fluorescent tracers*

Annex A forms an integral part of this part of ISO 9555.

SIST ISO 9555-3:2013

Introduction

The former standard series ISO 555 was subdivided into parts on the basis of the method of field measurement, i.e. constant-rate injection method and integration (sudden injection) method. Since the choice of the type of tracer to be used in a field measurement will often depend on the expertise and the laboratory facilities available, this new series of standards ISO 9555 is divided into parts based on the type of tracer used. This revision has enabled the unnecessary repetition of text of the various parts to be avoided and will, it is hoped, prove to be a more convenient form of presentation for the user.

ISO 9555 deals with the measurement of steady flow in open channels by dilution methods using tracers. The methods described may also be applied to the measurement of slowly varying flow, but they may only be used when flow conditions ensure adequate mixing of the injected solution throughout the flow.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

For the measurement of very large flows, tracer methods can be onerous in terms of tracer costs and measurement times. However, the use of tracers often reduces danger to personnel during flood periods.

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99af02b2-cd10-46c0-a76d-0c4885bfa419/sist-iso-9555-3-2013

ISO 9555-1 presents the general principles of the methods of constant-rate injection and integration (sudden injection). ISO 9555-2, ISO 9555-3 and ISO 9555-4 deal with the specific aspects of the use of radioactive, chemical and fluorescent tracers, respectively, as well as specific analytical procedures.

This approach has been adopted for the following reasons:

— to facilitate subsequent updating, additions or revisions which concern only ISO 9555-2, ISO 9555-3 or ISO 9555-4;

— to provide a more practical document for the user, who is often obliged to choose the tracer best suited to the available analytical equipment.

SIST ISO 9555-3:2013

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This page intentionally left blank

SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99af02b2-cd10-46c0-a76d-6e488564a419/sist-iso-9555-3-2013

SIST ISO 9555-3:2013

Measurement of liquid flow in open channels — Tracer dilution methods for the measurement of steady flow —

Part 3:
Chemical tracers

1 Scope

This part of ISO 9555 deals with the use of chemical tracers in discharge measurements by the dilution method. Apparatus and methods of general application are set out in ISO 9555-1 and are not repeated here, with the exception of those relating specifically to chemical tracers.

Chemical tracers have several advantages as follows.

a) As with fluorescent tracers, the handling of the tracer follows normal chemical laboratory practice, and no special equipment (e.g. radiation shielding) is required. Care is still required, however, when handling concentrated tracer, to avoid contamination of samples and, with some tracers, for reasons of chemical toxicity.

b) In general, chemical tracers are widely available commercially, and may be stored indefinitely.

c) Analysis may be possible using laboratory facilities currently used for water quality determination.

d) In general, chemical tracers are photochemically stable.

The disadvantages of chemical tracers are as follows:

a) Their detection limits are relatively high and therefore a larger quantity of tracer is required for each gauging than in the case of radioactive or fluorescent tracers. For practical reasons this may restrict their application to small discharges. However, for certain tracers, reconcentration techniques can permit the measurement of large discharges (of the order of 1 000 m^3/s) where conditions of mixing and tracer loss are acceptable.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ISO 9555-3:2013
https://standards.iteh.ai/catalog/standards/sist/99a102b2-cd10-46c0-a76d-6e488564a419/sist-iso-9555-3-2013

b) With the exception of the conductivity method for sodium choride, the determination ranges of laboratory analysis methods are limited, so dilution of river samples may be necessary before analysis. This limitation means that the constant-rate injection method is preferable for chemical tracers (excepting the conductivity method) since determination of the peak concentrations resulting from a sudden injection would be difficult.

c) Natural background levels, particularly of conductivity (resulting from dissolved solids in natural waters), may be high and variable, and this necessitates the use of a larger amount of tracer than would be apparent from a consideration of detection limits only.

d) It is not possible to use a carrier, as in the case of radioactive tracers, and losses by adsorption may be serious in some cases.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 9555. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9555 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.