



# SLOVENSKI STANDARD

## SIST EN 14812:2006

01-marec-2006

---

**Oprema, ki se uporablja za pripravo pitne vode v stavbah – Naprave za doziranje kemikalij – Prednastavljivi dozirni sistemi – Zahteve za delovanje, varnost in preskušanje**

Water conditioning equipment inside buildings - Chemical dosing systems -Pre-set dosing systems- Requirements for performance, safety and testing

Anlagen zur Behandlung von Trinkwasser innerhalb von Gebäuden - Dosiersysteme - Nicht einstellbare Dosiersysteme - Anforderungen an Ausführung, Sicherheit und Prüfung

Equipement de traitement d'eau a l'intérieur des bâtiments - Systemes de dosage de réactifs chimiques - Systemes de dosage non ajustables - Exigences relatives aux performances, a la sécurité et aux essais

**Ta slovenski standard je istoveten z: EN 14812:2005**

---

**ICS:**

13.060.20	Pitna voda	Drinking water
91.140.60	Sistemi za oskrbo z vodo	Water supply systems

**SIST EN 14812:2006** en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 14812:2006

<https://standards.iteh.ai/catalog/standards/sist/6ddd29c7-0e6a-4c29-a34a-e6c631098220/sist-en-14812-2006>

ICS 91.140.60

English Version

Water conditioning equipment inside buildings-Chemical dosing  
systems-Pre-set dosing systems- Requirements for  
performance, safety and testing

Équipement de traitement d'eau à l'intérieur des bâtiments -  
Dispositifs de dosage de réactifs chimiques - Exigences de  
performances, de sécurité et d'essais

Anlagen zur Behandlung von Trinkwasser innerhalb von  
Gebäuden - Dosiersysteme - Anforderungen an  
Ausführung, Sicherheit und Prüfung

This European Standard was approved by CEN on 26 August 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

<https://standards.cen.eu/catalog/standards/sist/6ddd29c7-0e6a-4c29-a34a-e6c631098220/sist-en-14812-2006>



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Contents

Page

Foreword .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	6
4 Design requirements .....	6
4.1 Materials of construction.....	6
4.2 Connections .....	7
4.3 Venting.....	7
4.4 Radio interference and electrical safety.....	7
4.5 Dosing agent containers .....	7
4.6 Accessibility .....	7
4.7 Nominal size .....	7
5 Performance requirements.....	8
5.1 Dosing and dosing agents .....	8
5.1.1 Dosing agents .....	8
5.1.2 Dosing.....	8
5.2 Working ranges .....	8
5.3 Protection against backflow of proprietary chemical .....	9
5.4 Working temperature range .....	9
5.5 Pressure conditions.....	9
5.5.1 Nominal pressure and working pressure range .....	9
5.5.2 Effects of pressure variations .....	9
5.5.3 Pressure drop.....	9
5.5.4 Water hammer .....	9
6 Testing .....	9
6.1 General .....	9
6.2 Dosing and dosing agents .....	10
6.2.1 Test rig.....	10
6.2.2 Analysis .....	11
6.2.3 Quality of test water.....	11
6.2.4 Sampling.....	11
6.2.5 Evaluation of results .....	11
6.2.6 Dosing agents .....	11
6.2.7 Dosing.....	11
6.3 Working ranges.....	12
6.4 Protection against backflow of dosing agent .....	12
6.4.1 Procedure .....	12
6.4.2 Evaluation of results.....	12
6.5 Pressure conditions.....	12
6.5.1 Nominal pressure and working pressure range .....	12
6.5.2 Static pressure .....	13
6.5.3 Dynamic pressure .....	13
6.5.4 Working pressure range.....	13
6.5.5 Pressure drop.....	13
7 Labelling .....	13
7.1 Nameplate on dosing apparatus.....	13
7.2 Information to be given on dosing agent container .....	14
8 Manufacturer's product information.....	14
Annex A (informative) Examples of connections.....	15

**Bibliography**.....16

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 14812:2006](https://standards.iteh.ai/catalog/standards/sist/6ddd29c7-0e6a-4c29-a34a-e6c631098220/sist-en-14812-2006)

<https://standards.iteh.ai/catalog/standards/sist/6ddd29c7-0e6a-4c29-a34a-e6c631098220/sist-en-14812-2006>

## Foreword

This European Standard (EN 14812:2005) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this European Standard:

- 1) This European Standard provides no information as to whether the product may be used without restriction in any of the Member States in EU or EFTA.
- 2) It should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

(standards.iteh.ai)

SIST EN 14812:2006

<https://standards.iteh.ai/catalog/standards/sist/6ddd29c7-0e6a-4c29-a34a-e6c631098220/sist-en-14812-2006>

## 1 Scope

This European Standard specifies definitions, principles of construction (but not dimensions) and design, requirements on performance and operation as well as methods for testing the performance of chemical pre-set dosing systems for conditioning water intended for human consumption inside buildings (see [7]) which are permanently connected to the mains supply.

## 2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies: For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 806-2, *Specification for installations inside buildings conveying water for human consumption - Part 2: Design*

EN 1267, *Valves – Test of flow resistance using water as test fluid*

EN 55011, *Industrial, scientific and medical (ISM) radio-frequency equipment - Radio disturbance characteristics - Limits and methods of measurement (CISPR 11:1997, modified)*

EN 60204-1, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements (IEC 60204-1:1997)*

EN 60335-1<sup>1</sup>, *Household and similar electrical appliances – Safety – Part 1: General requirements (IEC 60335-1:2001, modified)*

EN 60335-2-41, *Household and similar electrical appliances - Safety - Part 2-41: Particular requirements for pumps (IEC 60335-2-41:2002)*

EN 60730-2-8:2002, *Automatic electrical controls for household and similar use — Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements (IEC 60730-2-8:2000, modified)*

EN ISO 10304-1, *Water quality – Determination of dissolved fluoride, chloride, nitrite, orthophosphate, bromide, nitrate and sulphate ions, using liquid chromatography of ions – Part 1: Method for water with low contamination (ISO 10304-1:1992)*

EN ISO 10304-2, *Water quality – Determination of dissolved anions by liquid chromatography of ions – Part 2: Determination of bromide, chloride, nitrate, nitrite, orthophosphate and sulfate in waste water (ISO 10304-2:1995)*

EN ISO 10304-3, *Water quality – Determination of dissolved anions by liquid chromatography of ions – Part 3: Determination of chromate, iodide, sulphite, thiocyanate and thiosulfate (ISO 10304-3:1997)*

EN ISO 10304-4, *Water quality – Determination of dissolved anions by liquid chromatography of ions – Part 4: Determination of chlorate, chloride and chlorite in water with low contamination (ISO 10304-4:1997)*

EN ISO 11885, *Water quality – Determination of 33 elements by inductively coupled plasma atomic emission spectroscopy (ISO 11885:1996)*

EN ISO 12100-1, *Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

---

<sup>1</sup> Observe transition period for EN 60335-1(1994) ending 2008-07-01.

### 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

#### 3.1

##### **conditioning of water intended for human consumption**

processes that modify the quality of water intended for human consumption within the Drinking Water Directive or national drinking water regulations with regard to specific individual constituents as defined in EN 806-2

#### 3.2

##### **pre-set dosing system**

device used for the controlled addition of dosing agents in one or more fixed quantities

#### 3.3

##### **working range**

range of treated water flow rates between which the dosing system provides the required accuracy of concentration of the dosing agent within limits of concentration and pressure drop prescribed by the manufacturer. It covers the range between the upper and lower working limits

#### 3.4

##### **dosing volume per recharge**

water volume that can be treated with one recharge of dosing agent

#### 3.5

##### **proprietary chemical**

specific composition of one or more dosing agents in a particular physical form that is put on the market by the manufacturer under his trade name and supplied together with the dosing apparatus

#### 3.6

##### **dosing agents**

active chemical substances for conditioning water intended for human consumption

#### 3.7

##### **manufacturer**

company (manufacturer or supplier) under whose name the dosing system and the proprietary chemical(s) are put on the market

### 4 Design requirements

#### 4.1 Materials of construction

Until EAS comes into force, the current national regulations remain applicable.

NOTE Products intended for use in water supply systems should comply, when existing, with national regulations and testing arrangements that ensure fitness for contact with drinking water. The Member states relevant regulators and the EC Commission agreed on the principles of a future unique European Acceptance Scheme (EAS), which would provide a common testing and approval arrangement at European level.

If and when the EAS is adopted, European Product Standards will be amended by the addition of an Annex Z/EAS under Mandate M/136 which will contain formal references to the testing, certification and product marking requirements of the EAS.



## 4.2 Connections

Examples of connections are shown in Annex A.

## 4.3 Venting

The dosing apparatus shall be designed so that accumulation of air or other gases during operation is avoided or does not impair the dosing accuracy.

Compliance with this requirement shall be checked on the basis of the detailed technical design documents supplied with the apparatus.

## 4.4 Radio interference and electrical safety

It is the responsibility of the manufacturer that the dosing system conforms to EN ISO 12100-1, EN ISO 12100-2, EN 60204-1, EN 60335-1 and EN 60335-2-41, following the provisions of Directive 89/336/EEC and Directive 73/23/EEC (see [8], [9]).

## 4.5 Dosing agent containers

Materials selected for the manufacture of dosing agent containers shall protect the contents against harmful effects of light. The design of the connection between the dosing agent container and the dosing apparatus shall exclude any accidental contamination of the contents during either normal operation or change of the container.

NOTE The size of the dosing agent container – or the recharge volume, if a solid type of dosing agent is used – should be calculated so that a replacement becomes necessary after not more than six months.

## 4.6 Accessibility

SIST EN 14812:2006

<https://standards.itech.ai/catalog/standards/sist/6ddd29c7-0e6a-4c29-a34a-cc6b17822051-EN-14812-006>

All parts which have to be actuated for replacing of the dosing agent container and for operation and control shall be easily accessible. It shall be possible to protect them against unauthorised actuation, for example by means of special tools, seals or locks. Renewal of the dosing material shall be carried out only by replacing by a ready-made container filled with proprietary chemical.

Replacement of the dosing agent container shall be possible without having to disconnect the dosing apparatus from the connecting pipework.

## 4.7 Nominal size

The nominal size of system connection shall correspond to the flow rates given in Table 1. The inlet connection size of the dosing device may be one size larger or smaller than the nominal size. For flange connections, the inlet flange shall conform to nominal size.

Table 1 — Flow rate values at upper limit of working range

Nominal size DN	15	20	25	32	40	50	65	80	100
Upper limit of working range flow rate $Q_N$ l/s	0,35	0,63	1,0	1,6	2,53	3,89	6,67	10	15,56
Upper limit of working range flow rate $Q_N$ $m^3/h$	1,27	2,27	3,6	5,8	9,1	14	24	36	56

NOTE These flow rates correspond to a velocity of approximately 2 m/s.