

STN	Záchodové misy a záchodové príslušenstvá so zabudovaným zápachovým uzáverom	STN EN 997 72 4852
------------	--	--------------------------------------

WC pans and WC suites with integral trap

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/19

Obsahuje: EN 997:2018

Oznámením tejto normy sa ruší
STN EN 997+A1 (72 4852) z januára 2016

128050

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 997

October 2018

ICS 91.140.70

Supersedes EN 997:2012+A1:2015

English Version

WC pans and WC suites with integral trap

Cuvettes de WC et cuvettes à réservoir attenant à
siphon intégré

WC-Becken und WC-Anlagen mit angeformtem
Geruchverschluss

This European Standard was approved by CEN on 14 April 2018.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 997:2018 (E)**Contents**

Page

European foreword.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Classification.....	11
5 Functional characteristics and test methods for type 1 products.....	11
5.1 Depth of water seal.....	11
5.2 Flushing characteristics.....	11
5.2.1 General.....	11
5.2.2 Wash of bowl.....	11
5.2.3 Flushing of toilet paper	12
5.2.4 Flushing of fifty small plastic balls.....	12
5.2.5 Oversplashing.....	12
5.2.6 After-flush volume	12
5.3 Water absorption	12
5.4 Static load.....	12
5.5 Additional characteristics of flushing cisterns for close-coupled suites and one-piece WCs.....	12
5.5.1 General.....	12
5.5.2 Inlet valve of the flushing cistern	12
5.5.3 Supply piping.....	12
5.5.4 Flush volume(s) of the flushing cistern.....	13
5.5.5 Leak-tightness between flushing cistern and bowl	13
5.5.6 Outlet valve leak-tightness	13
5.5.7 Outlet valve reliability.....	13
5.5.8 Overflow	13
5.5.9 Safety margin – dimension “c”	14
5.5.10 Safety margin – dimension “a”	15
5.6 Durability	15
5.7 Test methods	15
5.7.1 Depth of water seal.....	15
5.7.2 Flushing tests.....	15
5.7.3 Determination of water absorption	18
5.7.4 Load test	19
5.7.5 Tests for flushing cisterns of close-coupled suites and one-piece WCs.....	20
5.8 Sub-types of independent WC pans, close-coupled suites and one-piece WCs	23
5.8.1 Nominal flush volume.....	23
5.8.2 Flushing devices	23
5.8.3 Verification of sub-types.....	24
6 Functional characteristics and test methods for type 2 products.....	24
6.1 Inlet valve.....	24
6.2 Backflow prevention.....	24
6.3 Marking of flushing cistern.....	24
6.4 Warning pipe and overflow provision.....	24

6.5	Flush volume	25
6.5.1	Full flush	25
6.5.2	Reduced flush.....	25
6.6	Flush rate.....	25
6.7	Physical endurance and leakage of flushing device.....	25
6.8	Chemical endurance of flushing device	25
6.9	Solids discharge and after-flush volume for maximum flush	25
6.10	Paper discharge for reduced-flush volume.....	25
6.11	Liquid contaminant dye retention.....	25
6.12	Wash of bowl	26
6.13	Depth of water seal	26
6.14	Static load of type 2 products	26
6.15	Water absorption.....	26
6.16	Durability of type 2 products	26
6.17	Test methods.....	26
6.17.1	Inlet valve tests.....	26
6.17.2	Warning pipe and overflow provisions	26
6.17.3	Flush volume and water trap seal tests.....	27
6.17.4	Flush rate test	27
6.17.5	Physical endurance and leakage test of flushing device	29
6.17.6	Chemical endurance test of flushing device.....	30
6.17.7	Solids discharge and after-flush volume for maximum flush volume test.....	30
6.17.8	Paper discharge for reduced-flush volume test	31
6.17.9	Liquid contaminant dye retention test	32
6.17.10	Wash of bowl	33
6.17.11	Summary of requirements for compatibility testing of type 2 products	33
7	Dangerous substances	34
8	Marking	34
9	Assessment and verification of constancy of performance – AVCP.....	37
9.1	General	37
9.2	Type testing	37
9.2.1	General	37
9.2.2	Test samples, testing and compliance criteria.....	38
9.3	Factory production control (FPC).....	39
9.3.1	General	39
9.3.2	Equipment.....	40
9.3.3	Raw materials and components.....	40
9.3.4	Product testing and assessment.....	40
9.3.5	Non-complying products.....	40
9.3.6	Corrective action.....	40
Annex A	(normative) Valve-type test flushing cistern	41
A.1	Valve-type test flushing cistern (Figures A.1 to A.3).....	41
A.2	Calibration of the valve-type test flushing cistern.....	43
A.3	Procedure to test the flush rate of the test flushing cistern.....	43
A.4	Procedure to test the flushing requirements of the WC	44
A.5	Procedure to measure the impact force of the test flushing cistern.....	44
A.5.1	General	44
A.5.2	Test device	44

EN 997:2018 (E)

A.5.3	Procedure for calibrating the load cell unit and the measurement amplifier	46
A.5.4	Measurement procedure	46
A.5.5	Calculation procedure for fixed time frame 0,35 s to 0,5 s	47
A.5.6	Calculation procedure for maximum impact force	47
Annex B (normative)	Test rig for test pressure flush valve	48
B.1	Test rig (Figure B.1)	48
B.2	Procedure to measure the impact force.....	49
Annex C (normative)	Test rig for after-flush volume test.....	51
C.1	Test rig for after-flush volume test for independent WC pans (Figures C.1 and C.2)	51
C.2	Test rig for after-flush volume test for one-piece WC pans, close-coupled suites and WC suites (Figure C.3).....	52
Annex D (normative)	Basket method.....	53
Annex E (normative)	Preparation of test specimens	54
Annex F (normative)	Examples of flush pipes and outlet valves for test flushing cisterns.....	57
Annex ZA (informative)	Relationship of this European Standard with Regulation (EU) No.305/2011	61
Bibliography	64

European foreword

This document (EN 997:2018) has been prepared by Technical Committee CEN/TC 163 “Sanitary appliances”, the secretariat of which is held by UNI.

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 2019 and conflicting national standards shall be withdrawn at the latest by July 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 997:2012+A1:2015.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

For relationship with EU Construction Products Regulation, see informative Annex ZA, which is an integral part of this document.

This standard is one of a series of standards for sanitary appliances. Supporting standards are those for flushing devices and connecting dimensions.

The main changes introduced in EN 997:2012+A1:2015 were the following:

- a) introduction of a new Annex ZA in accordance with the latest template (in the format of TF N 687 rev1 of 2015-06-02);
- b) modification of the marking of products;
- c) editorial modifications as agreed between representatives of EU/DG Growth, CEN/TC 163 and FECS on 2016-07-07 in Brussels for citation of standard in OJEU.

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

EN 997:2018 (E)**1 Scope**

This European Standard specifies constructional and performance characteristics together with test methods for close-coupled suites, one-piece and independent WC pans with integral trap used for personal hygiene manufactured from glazed ceramics or stainless steel.

This European Standard does not apply to squatting toilets, WC pans without integral trap or flushing cisterns as separate appliances.

In the case of independent WC pans, the associated flushing cisterns and pressure valves are covered by other standards and the reference to cisterns in this standard is related only to the definition and requirements of flushing volume.

In the case of close-coupled suites and one-piece WCs, this standard also specifies design, performance characteristics and the test methods for designated flushing cisterns with flushing mechanisms, inlet valves and overflows. For these products, this standard covers flushing cisterns designed to be connected to drinking water installations inside buildings.

Before installation of WCs, EN 12056-2 and national requirements need to be taken into consideration.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*

EN 12056-2, *Gravity drainage systems inside buildings - Part 2: Sanitary pipework, layout and calculation*

EN 14124, *Inlet valves for flushing cisterns with internal overflow*

AS 1172-1, *Water closets (WC) - Pans*

BS 1212-2:1990, *Float operated valves. Specification for diaphragm type float operated valves (copper alloy body) (excluding floats)*

BS 1212-3:1990, *Float operated valves. Specification for diaphragm type float operated valves (plastics bodied) for cold water services only (excluding floats)*

BS 1212-4:2016, *Float operated valves. Specification for compact type float operated valves for WC flushing cisterns (including floats)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN