SIST

SLOVENSKI STANDARD

SIST EN ISO 8442-5:2005

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Materiali in predmeti v stiku z živili – Jedilni pribor in namizna posoda - 5. del: Specifikacija za ostrino in preskus obstojnosti roba jedilnega pribora (ISO 8442-5:2004)

Materials and articles in contact with foodstuffs - Cutlery and table holloware - Part 5: Specification for sharpness and edge retention test of cutlery (ISO 8442-5:2004)

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln - Schneidwaren und Tafelgeräte - Teil 5: Festlegung der Schneidfähigkeit und Prüfung der Kantenbeständigkeit (ISO 8442-5:2004)

Matériaux et objets en contact avec les denrées alimentaires - Coutellerie et orfevrerie de table - Partie 5: Spécification du tranchant et essai de conservation du tranchant (ISO 8442-5:2004)

Ta slovenski standard je istoveten z: **EN ISO 8442-5:2004**

ICS:

67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs
97.040.60	Kuhinjska posoda, jedilni servisi in jedilni pribor	Cookware, cutlery and flatware

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EUROPEAN STANDARD

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Materials and articles in contact with foodstuffs - Cutlery and table holloware - Part 5: Specification for sharpness and edge retention test of cutlery (ISO 8442-5:2004)

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This European Standard was approved by CEN on 10 October 2002.

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.

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

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Contents

Foreword

This document (EN ISO 8442-5:2004) has been prepared by Technical Committee CEN /TC 194, "Utensils in contact with food", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 186 "Cutlery and table and decorative metal hollow-ware".

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 June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

Annex A is normative.

EN ISO 8442 consists of the following parts:

Part 1: *Requirements for cutlery for the preparation of food*

Part 2: *Requirements for stainless steel and silver-plated cutlery*

Part 3: *Requirements for silver-plated table and decorative holloware*

Part 4: *Requirements for gold-plated cutlery*

Part 5: *Specification for sharpness and edge retention test of cutlery*

Part 6: *Lightly silver-plated table holloware protected by laquer*

Part 7: *Specification for table cutlery made of silver, other precious metals and their alloys*

Part 8: *Specification for silver table and decorative holloware*

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.

1 Scope

This European Standard specifies the sharpness and edge retention of knives which are produced for professional and domestic use in the preparation of food of all kinds, specifically those knives intended for hand use.

Powered blade instruments of any kind are excluded.

Generally these types of knives are manufactured with blades of either plain edge design or with edges incorporating particular features to enhance or optimize aspects of cutting ability.

The following two types of knife blade are suitable for the cutting test:

Type A edges: Cutting edges which can be resharpened by the user and edges with a pitch greater than 1 mm;

Type B edges: Cutting edges which are not intended to be resharpened on a steel.

Whilst these knives are predominantly manufactured with blades made from various grades of heat treated steels, the testing of knives of any construction or blade material is not precluded providing that the test criteria are met.

The principle of the testing is to reproduce a cutting action, by forward and reverse strokes, against a pack of synthetic test medium under controlled parameters.

2 Terms and definitions

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

2.1
cutlery
utensils for the preparation and serving of food having a blade with a cutting edge

2.2
centre line
line which generally bisects the cross-section of the blade passing through the cutting edge and the back of the blade (see Figure 1)

EXAMPLE

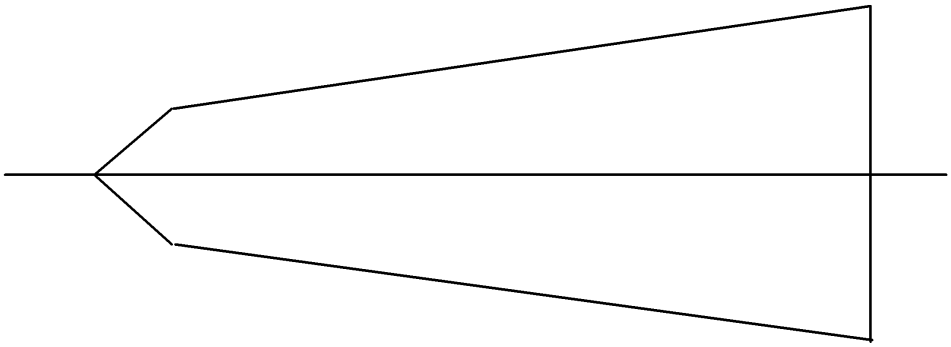


Figure 1 — Centreline

2.3
initial cutting performance (ICP)
cutting ability to be expected by the user from a knife when supplied “as new” from the factory or point of sale

2.4
cutting edge retention (CER)
ability of the knife blade’s edge to resist wear throughout its useful life

2.5
total card cut (TCC)
cumulative amount of card cut (measured in millimetres) by the test knife over the duration of a full test

2.6
cutting cycle
one forward plus one reverse stroke of the designated length of the blade against the medium

3 Testing

3.1 General

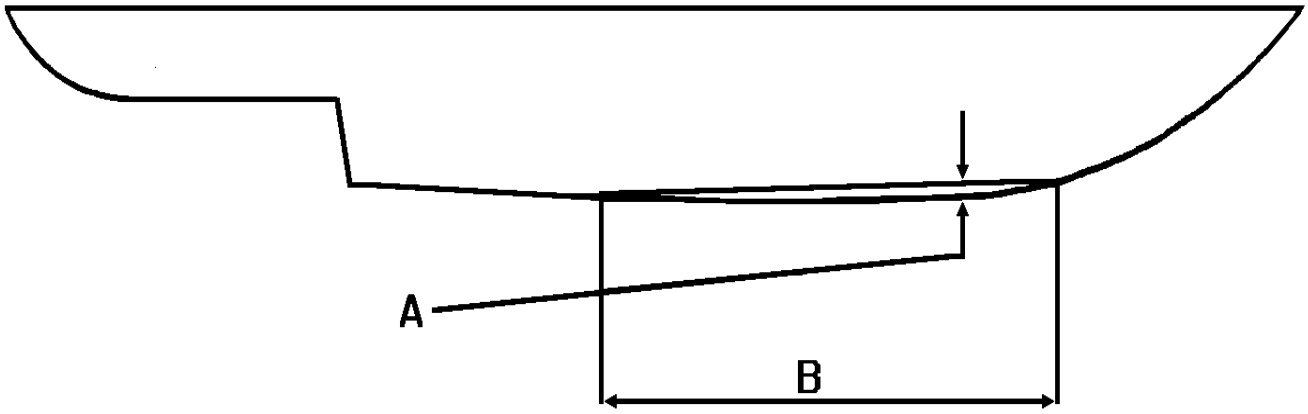
When tested in accordance with the test method of clause 7 each type of knife shall conform to 3.2 to 3.4.

This test shall be carried out before any other physical or mechanical test so that edge performances are assessed in the “as received” condition.

3.2 Test length

The portion of the cutting edge of the blade to be tested (see 3.3) shall be straight except for a maximum deviation (positive or negative, not both) of 1 mm.

In the case of type “ B “ edges the shape of the blade is considered to be the underlying profile on which the detail is superimposed (see Figure 2).



Key

A Max. deviation from straight (shown positive)

B Stroke length

Figure 2 — Blade to be tested

3.3 Test conditions

The same test is applied to both types of knives but the duration for the purpose of establishing cutting edge retention is determined by the type of edge. Test parameters are given in Table 1.

Table 1 — Cutting test parameters

Blade edge Type	Test load N	Stroke Length (mm)	Nominal cutting speed (mm/s)	Total no. Cutting cycles (F)
A	50	40	50	60
B	50	40	50	200

3.4 Cutting performance

When tested in accordance with clause 7 the minimum initial cutting performance (ICP) and cutting edge retention (CER) shall conform to the performance levels specified in Table 2.

Table 2 — Performance levels

Blade edge type	Minimum ICP mm	Minimum CER (TCC) mm
A	50	150
B	50	1 500

4 Principle

Performance of the blade in terms of distance cut through the medium on each cycle is measured throughout the duration of the test, which is designed to accelerate wear of the knife blade over a short period.

Blades shall cut an adequate amount of medium to complete the test and the two cutting performance indicators ICP and CER are calculated in accordance with clause 8 from the accumulated data.

5 Test medium

A specially developed chemical pulp is produced in the form of sheets of card containing a controlled amount of abrasive material i.e. quartz. This card shall be pure chemical soda pulp without any other chemical additive except for the addition of silica in the proportion of (5 ± 0,5) % by weight.

The properties of the quartz shall conform to Tables 3 to 5.

The quartz shall have the percentage composition of chemical elements specified in Table 3.

Table 3 — Composition of silica abrasive

Compound	Composition %
SiO_2	99
Fe	0,013
Al_2O_3	0,22
MgO	Nil
Alkalines	Nil

The grain size distribution of quartz shall be as specified in Table 4.

Table 4 — Grain size distribution of silica - C 400

Grain size µm	Composition *(in weight)* %
> 50	0,2
> 30	4,7
> 20	15
> 16	2
> 12	11
> 10	10
> 8	7
> 6	9
> 4	12
> 2	29

To satisfy the test arrangement the card is cut into 10 mm wide strips (with the fibres of the card grain flowing across the strip) and compiled into a pack maximum 50 mm deep when clamped under pressure (130 ± 2,5) N in a holder as shown in Figure 3.

The physical properties of each strip shall be as specified in Table 5.

Table 5 — Physical properties

Thickness mm	Weight g/m²	Strip (pack) width mm
0,31 ± 0,02	200 ± 10	10,0 ± 0,1