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Materials and articles in contact with foodstuffs - Cutlery and table holloware - Part 6:
Lightly silver plated table holloware protected by lacquer (ISO 8442-6:2000)

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln -Schneidwaren und
Tafelgeräte - Teil 6: Lackierte, leicht versilberte Tafelgeräte (ISO 8442-6:2000)

Matériaux et objets en contact avec les denrées alimentaires -Coutellerie et orfèvrerie de
table - Partie 6: Orfèvrerie de table laquée et avec un léger placage d'argent (ISO 8442-
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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
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 8442-6

December 2000

ICS 67.250; 97.040.60

English version

Materials and articles in contact with foodstuffs - Cutlery and table holloware - Part 6: Lightly silver plated table holloware protected by lacquer (ISO 8442-6:2000)

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This European Standard was approved by CEN on 9 April 2000.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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Foreword

The text of EN ISO 8442-6:2000 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 March 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.

Attention is drawn to the European Community Directives relative to materials in contact with foodstuffs, in particular Directives 89/109/EEC and 90/128/EEC.

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

Further parts are proposed with the following titles

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

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

Part 8: Requirements 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This Standard specifies material and performance requirements for table holloware and cast attachments, made from metals which are lightly silver-plated and protected by lacquer.

This Standard is applicable to such items as jugs, dishes, wine coolers, tea- and coffee-pots, trays and tureens.

Requirements are specified for brass, copper, bronze, nickel-silver, pewter and stainless steel holloware with a light silver-plating and a lacquered coating.

The standard does not cover holloware made entirely of precious metals, brass, nickel-silver, stainless steel or made from ceramics or glass or non-stainless steel or zinc-based die cast.

Composition limits are specified for the basic metals for fabrication of the holloware prior to silver-plating and lacquering.

The standard does not include requirements for design, size or any other characteristics which are matters of personal choice or which can be readily assessed by the purchaser at the point of sale.

2 Normative references

This Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ISO 301	Zinc alloy ingots intended for casting
EN ISO 2177	Metallic coatings - Measurement of coating thickness – Coulometric method by anodic dissolution (ISO 2177:1985)
ISO 4481	Cutlery and flatware - Nomenclature

ISO 6508	Metallic materials - Hardness test - Rockwell test (scales A-B-C-D-E-F—G-H-K)
EN ISO 8442-2:1997	Materials and articles in contact with foodstuffs — Cutlery and table holloware - Part 2: Requirements for stainless steel and silver-plated cutlery (ISO 8442-2 : 1997)
EN 10088-1	Stainless Steels - Part 1: List of stainless steels
ENV 12875-1:1998	Mechanical dishwashing resistance of domestic utensils — Part 1:Reference test method

3 Terms and definitions

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

3.1

table holloware

items formed into a hollow shape for the containment of food or drinks.

3.2

functional surface

exterior surface of table holloware or the interior surface of a shallow item of holloware, the surface of which will receive usage equivalent to, or exceeding that of, the exterior.

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3.3

other surfaces

surface of an item of holloware which is lightly silver-plated and lacquered principally for aesthetic reasons, e.g. the interiors of pots, or which is lightly silver-plated and lacquered for use with food or drinks but which will receive a minimum of abrasive usage.

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3.4

attachments

component of an item of holloware joined to it.

3.5

load-bearing attachments

attachment upon which a force resulting from the support of the mass of the holloware and/or its contents will be applied in normal use and comprising such items as handles, taps, feet, bases, spouts and goblet stems.

3.6

burr

metal in excess of that required to shape an article and which forms a thin plate at its edges.

3.7**vessel**

item of holloware specifically intended as a container for food and/or liquid.

3.8**usable capacity**

volume of liquid required to fill a vessel to 15 mm \pm 1 mm from its rim.

3.9**popping**

sudden transformation of an apparently flat surface of an item of holloware from convex to concave when a load is applied to the convex side, usually accompanied by a distinctive sound.

3.10**visual inspection**

examination carried out from a distance of (250 \pm 50) mm with the unaided eye, or using normal corrected vision only, at ambient light levels sufficient to provide 250 lux at the surface under inspection

3.11**light silver plating**

silver coating with a thickness in excess of 0,3 μ m but less than 5 μ m

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3.12**lacquer**

polymer coating

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4 Materials**4.1 Metal**

4.1.1 The composition of the metals from which the holloware is made shall be as given in table 1.

4.1.2 When determined in accordance with annex B.3 silver coatings shall have a minimum content of 98,5 % Ag.

4.2 Non-metals

Non-metal parts of table holloware shall be capable of withstanding either washing processes in aqueous dishwashing solutions at 50 °C or the test according to annex A.

NOTE Non-metal parts of lacquered lightly silver-plated holloware may be made of such materials as glass, ceramic, bone, horn, vulcanized fibres, plastics, wood, wood-plastics laminates or impregnated wood.

Table 1 —Base metals for lacquered, lightly silver-plated holloware

Materials	Chemical composition (%)									
	C max	Cr Min	Ni min	Cu min	Mn max	Fe max	Pb max	As min	Sn min	Zn min
Austenitic stainless steel ³⁾	0,10	17	8							
Ferritic stainless steel ³⁾	0,10	13								
Mild steel	0,08	0,087			0,45					
Nickel-silver (Cu, Ni, Zn)			9	60	0,5	0,3	0,5			
Brass (Cu, Zn)				60			3,5 ²⁾			
Copper				99,4			0,2	0,2		
ISO 301 Alloy ZnA14										
ISO 301 Alloy ZnA14Cu1				max						
Pewter Alloy ¹⁾							0,5		90	
							0,3			

¹⁾ Only for attachments which do not come into contact with food.

²⁾ Any part of the item that comes into direct contact with foodstuffs shall not have a Pb content of greater than 0,05%

³⁾ The chemical composition of the stainless steel sections of the articles shall conform to the requirements of EN 10088-1

5 Construction

5.1 Average thickness

When measured in accordance with annex B (mass of coatings) and annex B of EN ISO 8442-2 : 1997 (area of coatings), the average thickness of silver coatings on the surface(s) of each finished item, with the exception of the other surfaces of an item of holloware, shall not be less than 0,3 µm with a minimum local thickness of 0,2 µm.

5.2 Uniformity and absence of defects

5.2.1 All surfaces shall be free from cracks and other defects.

5.2.2 All accessible edges shall be free from burrs and shall not be rough

5.2.3 Gaps between components shall not exceed 0,4 mm. Seams joining hollow sections together shall be watertight unless otherwise required by the design.

5.2.4 Compliance with the requirements of 5.2.1 to 5.2.3 shall be checked by touch or visual inspection and 5.2.3 with a feeler gauge of appropriate thickness.

5.3 Lacquering

All surfaces shall be free from cracks and other defects. There shall be no dimnesses and discolourations

NOTE Attention is drawn to the requirements of EEC Directives 89/109 [1] and 90/128 [2].

6 Performance

6.1 Lacquering

6.1.1 Resistance of lacquering to discolouration and peeling

After testing in accordance with annex A, the lacquer shall be free from white discolourations. Lacquering shall show no signs of looseness, blistering or peeling.

6.1.2 Resistance to scratching

After testing in accordance with annex C, the lacquer shall show no signs of scratching.

NOTE: Insignificant mat stripes producing a milky dimness may be ignored.

6.1.3 Resistance to ultraviolet radiation

After testing in accordance with annex D, the lacquer shall be free from discolouration.

6.2 Strength under load

6.2.1 Resistance of rectangular and square trays and dishes to twisting

The temporary deflection of a rectangular or square tray or flat dish exceeding 300 mm at its maximum axis shall not exceed 3,5 mm in 100 mm deviation from flat in any diagonal across the surface of the base when tested in accordance with annex E.

6.2.2 Resistance of trays and dishes to popping

A tray or dish shall not exhibit popping when tested in accordance with annex F.

6.2.3 Load strength of vessels

A vessel shall exhibit no permanent deformation when tested in accordance with annex G.

6.3 Attachment strength

6.3.1 There shall be no breakage, visible deformation or disengagement of any load-bearing attachment when it is tested in accordance with annex H.

6.3.2 There shall be no breakage, visible deformation or disengagement of a lid knob or any hinge retaining the lid when a vessel is suspended by the lid knob whilst containing a mass, in grams, equal to 1,5 times its usable capacity in millimetres.

6.4 Stability

When placed on a hard plane surface an item with feet shall be stable to within the clearance limit given in table 2 and no flat item shall be capable of being spun around by the application of a tangential force.

Table 2 — Stability criteria

Overall width of items at its widest axis mm	Maximum permitted clearance between any foot and a plane surface mm
< 100	0,25
100 to 250	0,40
> 250	1

6.5 Pouring and leakage

Spout openings shall pour cleanly without dribbling when tested in accordance with annex J. There shall be no leakage from the vessel during the test.

6.6 Adhesion of silver coating

Silver coatings shall show no signs of looseness, blistering or peeling, when the holloware is tested in accordance with annex E of EN ISO 8442-2:1997. If items of holloware are too large to be fitted within the test apparatus, they shall be tested at a temperature of $150\text{ °C} \pm 10\text{ °C}$ for $30\text{ min} \pm 5\text{ min}$ followed by immediate quenching in water at a temperature of $20\text{ °C} \pm 5\text{ °C}$.

All attachments shall be secure (see 6.3) following the test described in annex E of EN ISO 8442-2:1997.

Discolourations of the lacquer shall be disregarded.

6.7 Dishwasher safety (optional)

If the product is labelled as dishwasher-safe, it shall be tested in accordance with ENV 12875-1 for 125 cycles and shall subsequently conform to 6.1.1, 6.3 and 6.6.

7 Marking and labelling

7.1 Marking

Each item of lacquered, lightly silver-plated holloware shall be marked durably with:

- the name and/or trade mark or any other means of identifying the manufacturer or responsible supplier;
- the number of this Standard.¹⁾

7.2 Labelling

The following information shall be available at the point of sale:

- number and title of this Standard and a statement that the holloware meets the requirements of this standard;

NOTE: The information may be provided by labels, leaflets, display cards or on the packaging.

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¹⁾ Such marking is a claim of compliance with this standard but does not imply approval of the product; the accuracy of this claim is therefore the sole responsibility of the person applying the marking.