SLOVENSKI STANDARD
SIST EN 12571:2000

01-april-2000

Materiali in predmeti v stiku z živili - Transportne enote za preskrbovalne posode za pripravljena živila - Toplotne in higienske zahteve in preskušanje

Materials and articles in contact with foodstuffs - Transport units for catering containers containing prepared foodstuffs - Thermal and hygienic requirements and testing

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln - Transporteinheiten für fertige Speisen in Speisenbehältern - Thermische und hygienische Anforderungen und Prüfverfahren

Matériaux et articles en contact avec les denrées alimentaires - Conteneurs pour le transport de bacs contenant des denrées alimentaires préparées - Prescriptions thermiques et d'hygiene et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 12571:1998**

ICS:

67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs

SIST EN 12571:2000 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12571

December 1998

ICS 67.250

Descriptors: kitchen utensils, foodstuffs transport, food-container contact, containers, definitions, specifications, materials, hygiene, hygiene conditions, food products, temperature, tests, temperature measurements, technical notices, instructions, marking

English version

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This European Standard was approved by CEN on 29 November 1998.

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, 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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Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 194 "Utensils in contact with food", the secretariat of which is held by BSI.

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 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

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.

Introduction

This standard deals with transport units used for local and short-time transportation of prepared foodstuffs. It is intended to guarantee consumer protection, minimize the hygienic and toxicological risks (see annex A) and avoid reduction of food quality.

1 Scope

This European Standard specifies the thermal and hygienic requirements and test methods for transport units used for short-time transportation of catering containers.

Foodstuffs are packaged in these catering containers, complying with EN 631-1, which are fitted with a cover (e.g. lid) to prevent spillage.

This standard is applicable for local and short-time delivery, only.

NOTE: Attention is drawn to the EU-directives mentioned in Annex B.

2 Normative references

This European 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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 4287:1997 Geometrical Product Specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters

ISO 4288:1996 Geometrical Product Specifications (GPS) - Surface texture: Profile method - Rules and procedures for the assessment of surface texture

3 Definitions

For the purposes of this Standard the following definitions apply:

3.1 transport unit
Movable equipment with or without additional thermal maintenance to hold catering containers in order to transport them.

3.2 local and short-time transportation
Movement of a transport unit from the preparation area to the consumer area within 3 hours.

3.3 food area
Area composed of surfaces in contact with foodstuff.

NOTE 1: The food area also includes the surfaces with which part of the foodstuffs may come into contact under intended conditions of use, after which they may return into the foodstuffs.

NOTE 2: The catering container, covered with a tight lid is a food area.

3.4 splash area:
Area composed of surfaces on or along which parts of foodstuffs may splash or flow under intended conditions of use and do not return into the foodstuffs.

NOTE: An example is the inside area of the transport unit when the lid or door is shut with the catering containers removed.

3.5 non-food area
Any area which is not intended to come into contact with foodstuffs and is not a splash area.

3.6 cleanable
Designed and constructed so that soils are removed by recommended cleaning methods.

3.7 disinfection
Inactivation of pathogens and other micro-organisms to achieve hygienic conditions.

4 Requirements

4.1 Materials

Materials shall be resistant to foodstuffs and normal wear and tear.

Surfaces of materials and coatings shall be durable, cleanable and, if necessary, shall be capable of being disinfected. They shall be in a sound condition (e.g. have no breaks, cracks, or strikes) and be resistant to cracking, chipping, flaking and abrasion and prevent penetration of unwanted matter under intended use.

The materials shall be resistant to appropriate cleaning substances and disinfecting agents.

The materials
– shall not transfer undesirable odours, taste, colours or taint to the foodstuffs;

– shall not contribute to the contamination of foodstuffs or have any adverse influence on the foodstuffs.

4.2 Design and construction

4.2.1 General

All surfaces including all removable parts, when fitted, shall be accessible for cleaning and disinfection. Moreover, their assembly shall allow liquids to drain off completely from the outside of the transport unit (in an inclined position, if necessary); if this is impracticable due to weight restrictions, an effective drainage system shall be provided.

4.2.2 Surfaces of the splash area

All surfaces shall present surface roughness R_a, as defined in ISO 4287 and measured according to ISO 4288, not greater than 6,3 µm.

The arrangement of the surfaces shall be such that no product particles (foodstuffs or cleaning product) can become trapped in small crevices becoming difficult to dislodge and so introducing a contamination hazard.

Adjacent continuous, inner surfaces and corners shall have a minimum radius of 2 mm.

Joints between inner surfaces (e.g. side and base) shall be made in the vertical sides at a suitable distance from the base radius. The joints shall be continuous, smooth and free of crevices.

4.2.3 Non-food area

All equipment shall be designed and constructed in such a manner to prevent the retention of moisture, ingress and harbourage of vermin and soils and to facilitate inspection, servicing, maintenance, cleaning, handling and transportation. Tubular framing shall be totally closed, effectively tightened or sealed.

4.3 Thermal characteristics

Transport units shall meet the following thermal requirements independent of their materials and design and regardless of the way in which maintenance of the inner temperature is achieved.

During and after 3 h transport at the ambient temperature stated in 5.1, the temperature of the content of each catering container shall comply with the values given in table 1.

Table 1

Thermal class	Condition	Behaviour of temperature
A	hot	≤ 10 K decrease
B	cold	≤ 4 K increase
C	deep frozen	≤ 4 K increase

For the cold condition, the temperature of the contents shall remain within + 3 °C and + 7 °C.

These requirements shall be verified by use of the tests described in clause 5.

5 Test of thermal characteristics

5.1 Test conditions

Transport units shall be preconditioned at an average ambient temperature of (25 ± 0,5) °C, with a maximum dispersion of 2 °C. This temperature is the arithmetic mean of the temperatures of two probes located at 0,10 m from the geometric centre of the inner surfaces of two external adjacent walls of the transport unit; it shall be placed at least 0,20 m from the ground.

The tests shall be carried out in still air defined by a stirring up rate between 10/h and 20/h.

NOTE: Stirring up rate = air flow (m^3/h) / volume of the test room (m^3), measured in normal atmospheric conditions.

For insulated transport units with additional thermal maintenance, the additional thermal maintenance means shall be fitted in accordance with the manufacturer´s requirements as given in the instruction handbook before starting the measurement.

5.2 Preparation

The transport unit shall be loaded in such a way that the ratio between the volume of the test load and the inner volume of the transport unit is equal to (50 ± 5) %. If not otherwise stated the test medium shall be water.

For the test load a minimum number of catering containers – made of stainless steel – shall be used. The containers shall have the same size and the test load shall be distributed equally.

The catering containers filled with the test medium and their lids shall be preconditioned at a temperature of

(a) 2 °C higher than the initial reference temperature (see 5.3), with a maximum dispersion of 1 °C, for hot conditions;

(b) 2 °C lower than the initial reference temperature (see 5.3), with a maximum dispersion of 0,5 °C, for cold conditions and for deep frozen conditions.

The measuring test points shall be located at the geometrical centre of the test load of each catering container.

Immediately prior to the measurement, the transport unit shall be closed.

5.3 Measurement

The measuring points shall be located at the geometrical centre of the test load of each catering container.

The accuracy of the temperature measurement instruments shall be ≤ 0,5 K.

The lids and doors of the transport unit shall be kept closed during the test.

a) hot conditions
- Initial reference temperature: 75 °C
- Final reference temperature: 65 °C

b) cold conditions
- Initial reference temperature: 3 °C
- Final reference temperature: 7 °C

c) deep frozen condition

The tests shall be carried out with diluted glycol (50 % glycol, 50 % water) instead of water.

- Initial reference temperature: - 22 °C
- Final reference temperature: - 18 °C

The test results are positive if the temperatures of the contents of all catering containers remain within the indicated values (see 4.3) during the test time of 3 h.

6 Verification of hygiene requirements

Verification of compliance with hygiene requirements shall be undertaken by:

(a) visual inspection,

(b) check of material specification,

(c) measurement (e.g. temperature, surface roughness),

(d) practical and functional tests,

where appropriate.

7 Operating instructions

Each transport unit shall be supplied with operating instructions. These instructions shall be brief and easily comprehensible. They shall contain at least the following:

(a) guidance on how to maintain the necessary level of hygiene e.g. cleaning of the different areas. This guidance should set out criteria e.g. how often and when this procedure has to take place, which detergents and/or disinfectants may be and may not be used;

(b) guidance on how to ensure correct functioning of the unit during transportation and also of all its elements e.g. seals, hinges and their interfaces by appropriate checks at random;

(c) guidance on installation, where necessary, and putting into operation for the first time;

(d) advice on how to proceed in case of malfunction;

(e) recommendations (e.g. temperature range) for regular maintenance and cleaning to keep the equipment in good condition;

(f) maximum loading (kilograms and litres);

(g) temperature range for use according to thermal class (see 4.3 and 5.3);

(h) guidance on how to prepare and handle the transport unit to comply with the requirements of the thermal classes;

(i) guidance on how to ensure safety of the user.

8 Marking

Each transport unit shall be legibly and indelibly marked externally with at least the following

(a) the supplier´s name or other means of identification;

(b) the number of this European Standard EN 12571:1998 [1]);

(c) thermal classes;

(d) thermal range for use and maximum cleaning temperature.

NOTE 1: Additional information about product properties can be helpful for the proper use of the transport unit.

NOTE 2: Other compulsory information may be required by national legislation.

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[1]) Such marking is a claim of compliance with EN 12571:1998 but does not imply CEN approval of the product; the accuracy of this claim is therefore solely the responsibility of the person applying the marking.