



SLOVENSKI STANDARD
SIST-TP CEN/TR 15623:2008
01-april-2008

Stroji za predelavo hrane - Smernice - Materiali v stiku z živili

Food processing machinery - Route map - Materials for food area

Leitlinie - Materialien in Kontakt mit Nahrungsmitteln

Machines pour les produits alimentaires - Carte routière - Matériaux destinés à la zone alimentaire

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ICS:

67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs
67.260	Tovarne in oprema za živilsko industrijo	Plants and equipment for the food industry

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TECHNICAL REPORT
RAPPORT TECHNIQUE
TECHNISCHER BERICHT

CEN/TR 15623

January 2008

ICS 67.260

English Version

**Food processing machinery - Route map - Materials for food
area**

Machines pour les produits alimentaires - Carte routière -
Matériaux destinés à la zone alimentaire

Nahrungsmittelmaschinen - Leitlinie - Werkstoffe im
Nahrungsmittelbereich

This Technical Report was approved by CEN on 16 June 2007. It has been drawn up by the Technical Committee CEN/TC 153.

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Foreword

This document (CEN/TR 15623:2008) has been prepared by Technical Committee CEN/TC 153 “Machinery intended for use with foodstuffs and feed”, the secretariat of which is held by DIN.

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1 Scope

This document gives guidance to machinery manufacturers for the selection of suitable materials which will be used in the food area of machines intended for the production of food.

It provides a selection process, showing those matters that need to be taken into consideration and the decisions that have to be made.

NOTE Be aware that references of this document can be amended, deleted or new references can become available.

2 Terms and definitions

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

- 2.1**
food
any product, ingredient or material intended to be orally consumed by human or animal
[EN 1672-2:2005, definition 3.1]
- 2.2**
food area
machinery surfaces which are exposed to the food and from which the food or other materials can drain, drip, diffuse or be drawn into (self returned) the food or food container
[EN 1672-2:2005, definition 3.4.1]

3 Selection method for the materials

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3.1 Global consideration

3.1.1 Not only the production conditions shall be considered but for instance also environmental and cleaning conditions, economical considerations, hygienic aspects will influence the choice of the materials see Figures 1 and 2.

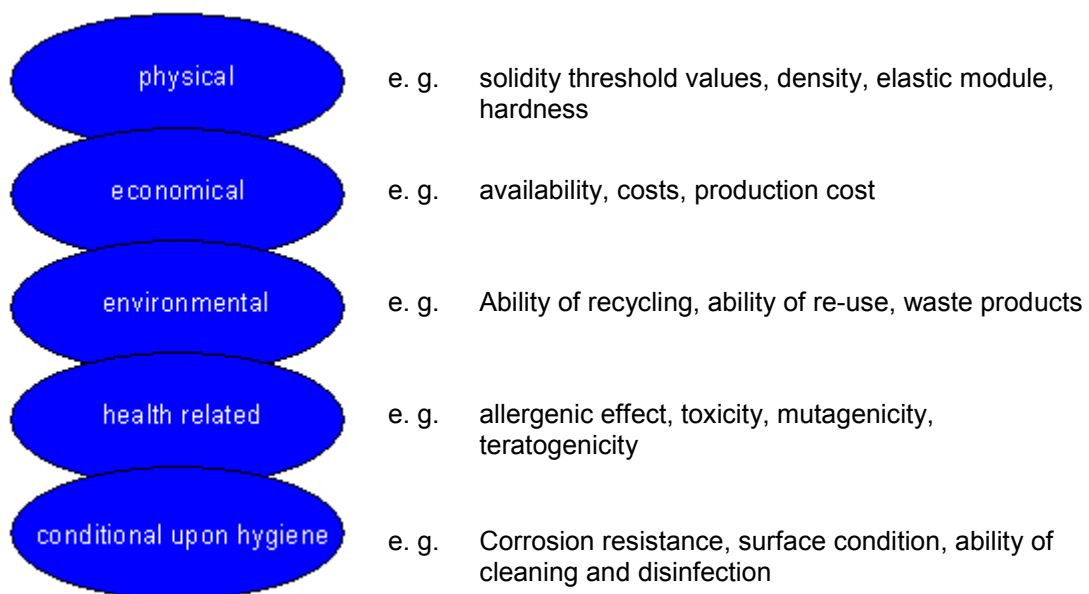


Figure 1 — Schematic approach to the choice of materials

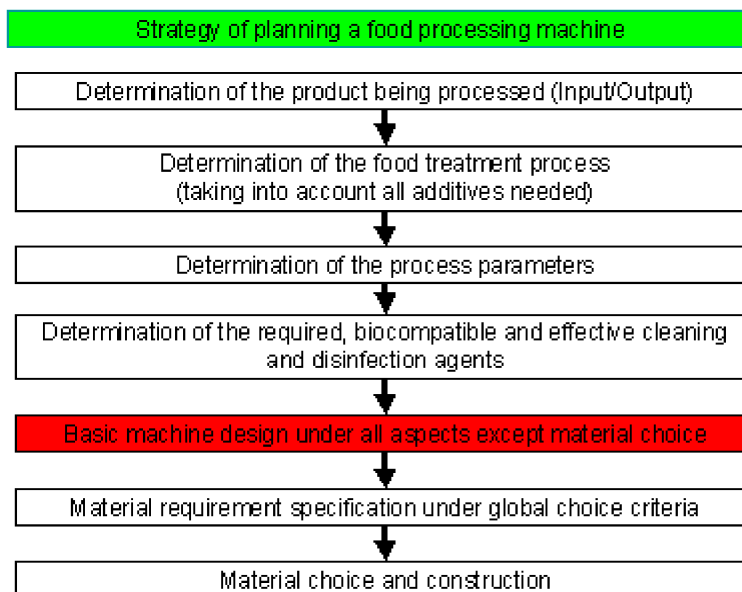


Figure 2 — Flow chart for the choice of materials

3.1.2 Materials shall be suitable for intended use.

Surfaces of materials and coatings shall be durable, cleanable and where required capable of being disinfected, without breaks, resistant to cracking, chipping, flaking and abrasion and prevent penetration of unwanted matter under intended use.

NOTE This subclause corresponds to 5.2.1 of EN 1672-2:2005.

3.1.3 In addition to the general requirements (see 3.1.2), under intended conditions of use, the materials shall be:

- corrosion resistant;
- non toxic;
- non absorbent (except when technically or functionally unavoidable).

The materials shall:

- not transfer undesirable odours, colours or taint to the food;
- not contribute either to the contamination of food or have any adverse influence on the food.

NOTE This subclause corresponds to 5.2.2 of EN 1672-2:2005.

3.2 Example list of considerations to be taken into account at each stage of the flow chart (see Figure 2)

a) Consider the nature of the food and physical environmental conditions:

- description of the food coming into contact with the surface in the food area:
 - type of food (vinegar, salted products, fruit juice, sausage, presence of abrasives particles, stones of fruits, tough powder, etc.);
 - type of additives (citric acid, acetic acid, colorants, etc.);

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- composition of the elements in contact:
 - pH of the food product;
 - combined with high level of salt, with high temperature;
 - quality of water (TH, CaCO₃, Fe, Cl, etc.);
 - presence of pieces of food, flour, etc;
 - description of the cleaning and disinfecting products:
 - composition of the cleaning and disinfecting agents;
 - parameters during cleaning and disinfecting (time, concentration and pH, temperature, flow rate, etc);
 - temperature:
 - during production time;
 - during cleaning time;
 - humidity of the environment.
- b) Consider the conditions of production, cleaning, disinfection and/or sterilisation:
- conditions of circulation, agitation (speed, turbulence);
 - thermal stress (hot, cold, cycling); [SIST-TP CEN/TR 15623:2008](https://standards.iteh.ai/catalog/standards/sist/d3772eb3-ac3f-4b49-9df0-c195741b05da/sist-tp-cen-tr-15623-2008)
 - pressure stress; <https://standards.iteh.ai/catalog/standards/sist/d3772eb3-ac3f-4b49-9df0-c195741b05da/sist-tp-cen-tr-15623-2008>
 - radiation (Ultra Violet, Infra Red, etc.);
 - mechanical erosion (mixing, scraping);
 - chemical corrosion;
 - condensation.
- c) Consider the material:
- type of materials (metals, alloys, plastics, rubbers, etc.);
 - structure and composition;
 - corrosion (galvanic, pitting, stress, etc.);
 - state of the material at the delivery (relief treatment, temper, etc.);
 - surface treatment (mechanical, electrolytic, thermal, coating, etc.);
 - stress zone (welding area, deflection, etc.).
- d) Consider the need for testing (corrosion tests, qualification of thermal or chemical treatment, mechanical properties, cleanability, etc.).

4 Legal and normative references for materials

The Regulation (EC) No. 1935/2004 entry into force on 6 December 2004 (20 days after publication) and 27 October 2006 in the case of article 17 on traceability requirements. This regulation repeals directives 80/590/EEC and 89/109/EEC. Also the Regulation 2023/2006 is published. The main content is defined below.

The recourse to regulations as a legal instrument for execution provisions, in place of specific execution provisions, will allow provisions to be applied in a uniform manner throughout the European Union. A regulation need not be transcribed into national law for it to become applicable.

The inclusion of “active and intelligent materials and articles”.

The procedure for the authorisation of new substances and for their addition to an existing positive list is detailed. Request is to be submitted to the relevant national authority which informs and forwards the application to the European Food Safety Authority (EFSA instituted by regulation EC no. 178/2002). EFSA informs the other member states and the Commission, checks the validity of the dossier and must issue an opinion within six months (possibly 6 months more with justification). It should also be noted that there will be general access to applications except for parts which are clearly marked as and accepted as being confidential (Article 20 of the Regulation).

NOTE Guidance on the administrative and technical data required and on the format for formal submissions is available on the EFSA website address (see Annex A).

Requirements for establishing systems for good manufacturing practices (GMP) are introduced for materials intended to come into contact with food.

NOTE Regulation 2023/2006 applies from 1st August 2008.

Traceability requirements for materials and articles intended to come into contact with food are provided in article 17 (see also consideration 18).

Specific safeguarding measures for materials and articles intended to come into contact with food are provided in article 18. These may be taken by a member state, should circumstances so require it, in the event of a risk to human health.

Reference laboratories: A community reference laboratory and several national reference laboratories shall be designated according to article 24 (see also consideration 23).

New materials that may be subject to specific directives: In addition to “active and intelligent materials and articles”, there are plans to add two additional groups of materials, these being ion exchange resins and glues.

Annex 1 of the regulation 1935/2004 gives a list of groups of materials for which specific measures may be adopted, such as (see article 5 of the regulation for the complete list of the "Specific measures for groups of materials and articles"):

- a. a list of substances authorised for use in the manufacturing;
- b. purity standards for substances referred to in (1);
- c. limits on the migration of certain constituents;
- d. global limit of migration, etc.

The elements of this list are indicated below in the Table 1.

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Table 1

Groups of materials	Legal references	Standards references	Other references
All materials	Regulation 1935/2004 Regulation 2023/2006	—	Materials in contact with food – EHEDG document 32.
Active and intelligent materials and articles	No specific Directive	-	-
Adhesives	No specific Directive	-	-
Ceramics	— Directive 84/500/EEC — Directive 2005/31/EC ¹⁾ — Directive 69/493/EEC (Crystal glass)	-	-
Cork	No specific Directive	-	Resolution AP (2004) 2
Rubbers	Directive 93/11/EEC	—	— Resolution AP (2004) 4 — Policy statement concerning rubber products
Glass	Directive 69/493/EEC (Crystal glass) ²⁾	—	Guidelines on lead leaching from glass tableware into foodstuffs
Ion-exchange resins	No specific Directive	—	Resolution AP (2004) 3
Metals and alloys – General	—	—	Policy statement – Guidelines on metals and alloys
Metals and alloys – Aluminium and aluminium alloys	No specific Directive	— EN 573-3 — EN 601 — EN 602	Guidelines on metals and alloys used as food contact materials
Metals and alloys – Steels	No specific Directive	— EN 10333 — EN 10334 — EN 10335 — EN 14392:2007	—

1) Second modification of the directive 84/500/EC planned to establish stricter migration limits on lead and cadmium and to extend its scope to glass and enamelled articles.

2) In fact, this directive does not relate to the food aspects of crystal glass, but solely to the designations authorised depending on the composition.

Table 1 (continued)

Groups of materials	Legal references	Standards references	Other references
Metals and alloys – Stainless steels	There is no directive which deals with migration test for metals and alloys.	<ul style="list-style-type: none"> — EN 10020 — EN 10028-7 — EN 10088-1 — EN 10088-2 — EN 10088-3 — EN 10095 — EN 10151 — EN 10213-4 — EN 10216-5 — EN 10217-7 — EN 10222-5 — EN 10217-7 — EN 10222-5 — EN 10250-4 — EN 10263-5 — EN 10264-4 — EN 10270-3 — EN 10272 — EN 10283 — prEN 10296-2 	—
Paper and board	—	—	<ul style="list-style-type: none"> — Resolution AP (version 2, 13-04-2005) on paper and board materials and articles — Policy statement (2004)

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