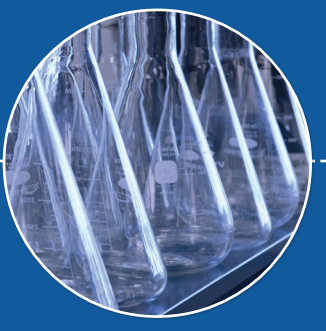
*NSF International Standard /*
*American National Standard*

# NSF/ANSI 51 - 2023

## Food Equipment Materials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NSF International Standard /
American National Standard
for Food Equipment –

# Food Equipment Materials

Standard Developer
**NSF International**

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**The NSF Joint Committee on Food Equipment**

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**Abbreviations**

The following table is provided as a reference for unit abbreviations for common forms of measurement used within NSF documents.

| | | |
|---|---|---|
| time | second | s |
| | minute | min |
| | hour | h |
| | day | d |
| | week | wk |
| | month | mo |
| | year | yr |
| length | inch | in |
| | foot | ft |
| | yard | yd |
| | rod | rd |
| | mile | mi |
| | micrometer | µm |
| | nanometer | nm |
| | millimeter | mm |
| | centimeter | cm |
| | meter | m |
| | kilometer | km |
| liquid measure | milliliter | mL |
| | liter | L |
| | liters per day | LPD |
| | liters per minute | LPM |
| | ounce | oz |
| | pint | pt |
| | quart | qt |
| | gallon | gal |
| | gallons per minute | GPM |
| | gallons per day | GPD |
| weight | microgram | µg |
| | picogram | pg |
| | nanogram | ng |
| | milligram | mg |
| | centigram | cg |
| | gram | g |
| | kilogram | kg |
| | pounds | lb |
| | tons | t |
| | metric tons | mt |

**Contents**

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## Foreword[2]

The purpose of this standard is to establish minimum food protection and sanitation requirements for the materials used in the construction of commercial food equipment.

By way of reference, this standard will define the basic materials requirements for all equipment covered by NSF/ANSI Food Equipment standards.

This standard establishes requirements intended to ensure that a material is not formulated such that it may impart deleterious substances to food in its intended end use application. This standard does not define specific extraction test methods or acceptance criteria to be used to assess the extent of chemical migration from food contact surfaces to food. Instead, the appropriate United States Federal Regulations have been cited as references upon which conformance with this standard is based. Other NSF/ANSI standards may establish extraction tests and acceptance criteria, as needed, for specific types of equipment based on the materials used in their construction and the nature of the food contact (i.e., beverage dispensing equipment, ice making equipment).

This standard establishes cleanability, corrosion resistance, impact resistance, abrasion resistance, heat resistance, and coating adhesion ability requirements and testing methods for food equipment materials of construction, as applicable.

The requirements established in this standard are intended to be consistent with the Food Code, recommendations of the US Public Health Service, Food and Drug Administration.

This edition of the standard contains the following revisions:

**Issue 27**

This revision affirms added and revised language regarding verification of lead content in Section 4.

The Interpretation Annex contains responses to interpretation requests. The responses will be published in each version of the standard until such time that the interpretation response is no longer applicable.

This standard was developed by the NSF Joint Committee on Food Equipment using the consensus process described by the American National Standards Institute.

This standard and the accompanying text are intended for voluntary use by certifying organizations, regulatory agencies, and/or manufacturers as a basis of providing assurances that adequate health protection exists for covered products.

Suggestions for improvement of this standard are welcome. This standard is maintained on a continuous maintenance schedule and can be opened for comment at any time. Comments should be sent to: Chair, Joint Committee on Food Equipment at standards@nsf.org, or c/o NSF International, Standards Department, P.O. Box 130140, Ann Arbor, Michigan 48113-0140, U.S.A.

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NSF/ANSI Standard
for Food Equipment –

# Food Equipment Materials

## 1 General

### 1.1 Purpose

This standard establishes minimum public health and sanitation requirements for materials used in the construction of commercial food equipment. The requirements of this standard are intended to ensure that the composition and surface finish of food equipment materials are such that a material will not adulterate food nor render food equipment difficult to clean and sanitize.

### 1.2 Scope

This standard is applicable to the materials and finishes used in the manufacture of food equipment (e.g., broiler, beverage dispenser, cutting board, stock pot). The standard is also applicable to components such as tubing, sealants, gaskets, valves, and other items intended for various food equipment applications.

These components shall meet the relevant design and construction requirements of the NSF standard applicable to the type of food equipment on which the component is used.

The requirements of Section 4 of this standard may also be applied separately to determine whether a material is suitable for use in a food zone based on its formulation alone. The other relevant requirements of this standard, including those for cleanability and corrosion resistance, would apply to the finished product for which the material is used.

Materials other than those specifically mentioned in this standard may be used, provided that such materials meet the minimum requirements described herein.

### 1.3 Measurement

Decimal and SI conversions provided parenthetically shall be considered equivalent. Metric conversions and significant figure rounding have been made according to IEEE/ASTM SI 10.

## 2 Normative references

The following documents contain requirements that, by reference in this text, constitute requirements of this standard. At the time of publication, the indicated editions were valid. All of the documents are subject to revision and parties are encouraged to investigate the possibility of applying the most recent editions of the documents indicated below. The most recent published edition of the document shall be used for undated references.

21 C.F.R., *Food and Drug,* §§ 170-199[3]

[3] National Archives and Records Administration, Office of the Federal Register. 7 G Street NW, Suite A-734, Washington, D.C. 20401. <www.ecfr.gov>