



**SLOVENSKI STANDARD**  
**SIST EN 12244-2:1999**  
**01-december-1999**

---

DfUbj'glfc'g'd`bg\_ ja `c[ fYj Ub^Ya `n`ja Ybg\_c'a c `c`Xc'j\_`f bc`&\$`\_K `E`&rXY.  
Ga cfbUfUVUYbYf[ ]^

Direct gas-fired washing machines of nominal heat input not exceeding 20 kW - Part 2:  
Rational use of energy

Direkt gasbefeuerte Waschmaschinen mit einer Nennwärmelastung bis 20 kW - Teil 2:  
Rationelle Energieverwendung

**ITeh STANDARD PREVIEW**

Machines a laver utilisant les combustibles gazeux, de débit calorifique nominal ne  
dépassant pas 20 kW - Partie 2: Utilisation rationnelle de l'énergie

[SIST EN 12244-2:1999](https://standards.iteh.ai/catalog/standards/sist/e747e968-7574-434c-91d6-c6904226312d/sist-en-12244-2-1999)

**Ta slovenski standard je istoveten z: EN 12244-2:1998**

---

**ICS:**

97.060

**SIST EN 12244-2:1999**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 12244-2:1999

<https://standards.iteh.ai/catalog/standards/sist/e747e968-7574-434c-91d6-e6904226312d/sist-en-12244-2-1999>

EUROPEAN STANDARD

EN 12244-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1998

ICS 97.060

Descriptors: household appliances, washing machines, gas appliances, flow rate, specifications, tests, energy consumption, effectiveness, testing conditions, computation

English version

## Direct gas-fired washing machines, of nominal heat input not exceeding 20 kW - Part 2: Rational use of energy

Machines à laver utilisant les combustibles gazeux, de débit calorifique nominal ne dépassant pas 20 kW - Partie 2: Utilisation rationnelle de l'énergie

Direkt gasbefeuerte Waschmaschinen mit einer Nennwärmebelastung bis 20 kW - Teil 2: Rationelle Energieverwendung

This European Standard was approved by CEN on 21 August 1997.

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.

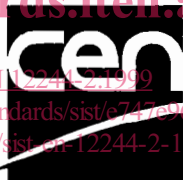
This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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.

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

SIST EN 12244-2:1998

<https://standards.iteh.ai/catalog/standards/sist/e747e968-7574-434c-91d6-e6904226312d/sist-en-12244-2-1998>



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Contents

<b>Foreword</b> .....	3
<b>1 Scope</b> .....	4
<b>2 Normative references</b> .....	4
<b>3 Definitions</b> .....	4
<b>4 Efficiency and heating-up time</b> .....	5
4.1 Requirements .....	5
4.1.1 Efficiency	
4.1.2 Heating-up time .....	5
4.2 Tests .....	5
4.2.1 Test conditions .....	5
4.2.2 Test procedure .....	5
4.2.3 Measurements and calculations .....	6

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 12244-2:1999

<https://standards.iteh.ai/catalog/standards/sist/e747e968-7574-434c-91d6-e6904226312d/sist-en-12244-2-1999>

## FOREWORD

This European Standard has been prepared by Technical Committee CEN/TC 299 "Gas-fired sorption appliances and domestic gas-fired washing and drying appliances", the secretariat of which is held by AENOR.

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 September 1998, and conflicting national standards shall be withdrawn at the latest by month of September 1998.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA in part 1.

The test gases, test pressures and appliance categories given in this European Standard are in accordance with those specified in EN 437: *"Test gases, test pressures and appliance categories"*.

The marking requirements in this European Standard take into account CR 1472 *"General guidance for the marking of gas appliances"*.

The first part of the standard specifies the requirements and test methods for the construction, safety, marking and testing of the appliances. The second part of the standard specifies the requirements for rational use of energy.

As there is no standard programme common to all types of appliances which could be taken for standardized tests on the specific gas consumption, this standard takes only a representative phase of the cycle, i.e. the heating-up phase, and determine the efficiency during that phase.

This standard covers type testing only.

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.

SIST EN 12244-2:1999

<https://standards.iteh.ai/catalog/standards/sist/e747e968-7574-434c-91d6-e6904226312d/sist-en-12244-2-1999>

## 1 Scope

This part 2 of the standard EN 12244 specifies the requirements and test methods for rational use of energy of direct gas-fired washing appliances with or without heat exchanger, with or without spin dryer, of types:

- $A_1$  and  $A_{1AS}$  not exceeding a heat input of 6 kW;
- $B_{11}$ ,  $B_{11AS}$  and  $B_{11BS}$  not exceeding a heat input of 20 kW,

hereafter referred to as "appliances".

This Standard does not apply to:

- a) catalytic combustion appliances;
- b) appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere;
- c) appliances intended to be used in vehicles or on board ships or aircraft.

Diese Norm behandelt nur die Typprüfung.

## 2 Normative references

This standard includes the provisions of other publications by dated or undated reference. These normative references are quoted in appropriate places in the text and the publications are listed below. For the dated references, amendments or revisions later than any of these publications apply to this standard only where they have been incorporated in it by amendment or revision. For the undated references, the latest edition of the publication to which reference is made applies.

EN 12244-1 Direct gas-fired washing machines of heat input not exceeding 20 kW -  
Part 1: safety

## 3 Definitions

For the purpose of this standard, the definitions of EN 12244-1 apply.

## 4 Efficiency and heating-up time

### 4.1 Requirements

#### 4.1.1 Efficiency

When tested in accordance with 4.2.2 and calculated in accordance with 4.2.3, the following minimum efficiencies (relative to  $H_i$ ) shall be obtained:

- appliances without heat exchanger 55 %;

- appliances with heat exchanger 60 %.

#### 4.1.2 Heating-up time

When tested in accordance with 4.2.2 and calculated in accordance with 4.2.3, the heating-up time shall not exceed 50 min.

### 4.2 Tests

#### 4.2.1 Test conditions

##### 4.2.1.1 Test appliance

The test is carried out on the same appliance as used for the tests specified in part 1 and in the same test conditions.

##### 4.2.1.2 Test gases

The test is carried out with one of the reference gases according to the category of the appliance.

##### 4.2.1.3 Ambient temperature

The ambient temperature of the room is maintained at  $(20 \pm 2)$  °C throughout the measurements.

#### 4.2.2 Test procedure

The appliance (including heat exchanger if existing) is filled with cold water, without any textile in the drum, as far as the programme or the water level control device allows. The mass of cold water is measured to 0,1 kg.

The burner is operated at nominal heat input and the heating procedure is made according to the programme allowing to reach the maximum temperature.

Determination of gas consumption for efficiency specification commences when the water contents, with the drum rotating, has reached a temperature of 20 °C and finishes when the water contents has reached a temperature of 80 °C. The time required to raise the water temperature from 20 °C to 80 °C is the heating-up time.

When the temperature of the water reaches 80 °C the heating system is switched off. The drum shall then rotate for a minute more and then measure the final temperature in order to calculate  $\Delta T$  (see 4.2.3.2).

The water temperature is measured either by reading the temperature indication or by replacing the temperature sensor in the appliance by a test sensor.

The test procedure is repeated four times, i.e. five tests are carried out.

### 4.2.3 Measurements and calculations

#### 4.2.3.1 General

Energy consumption, mass of cold water used and heating-up time are measured during the test.

The arithmetical average of the heating-up times and efficiencies obtained in the five tests is calculated.

#### 4.2.3.2 Calculation of the efficiency

The efficiency  $\eta$  in percent is calculated in each test using one of the formulae:

$$\eta = 100 \cdot \frac{m_w \cdot C_p \cdot \Delta T}{V_g \cdot H_i} \quad (1st, 2nd, 3rd \text{ family gases})$$

$$\eta = 100 \cdot \frac{m_w \cdot C_p \cdot \Delta T}{m_g \cdot H_i} \quad (3rd \text{ family gases})$$

where:

$m_w$  is the mass of cold water for the test, in kilogram;

$C_p$  is the specific heat of water,  $4,186 \times 10^{-3} \text{ MJ} \cdot \text{kg}^{-1} \cdot \text{K}^{-1}$ ;

$\Delta T$  is the temperature rise of the water during the heating-up time, in kelvin;

$V_g$  is the volume of dry gas (first, second and third family gases) used by the appliance during the heating-up time, corrected to reference conditions, in cubic metre;

$m_g$  is the mass of gas (third family gases) used by the appliance during the heating-up time and expressed in kilogram;

$H_i$  is the net calorific value of the dry gas used expressed, as appropriate:

- on the volume basis, in megajoule per cubic metre;
- on the mass basis, in megajoule per kilogram.