INTERNATIONAL
RECOMMENDATION

OIML R 52
Edition 2004 (E)

Hexagonal weights -
Metrological and technical requirements

Poids hexagonaux -
Exigences métrologiques et techniques

ORGANISATION INTERNATIONALE
DE MÉTROLOGIE LÉGALE

INTERNATIONAL ORGANIZATION
OF LEGAL METROLOGY
Contents

Foreword .................................................................................................................................................. 3

1 General ................................................................................................................................................ 4
  1.1 Scope ............................................................................................................................................ 4
  1.2 Units and nominal values for hexagonal weights ................................................................. 4

2 Metrological requirements .................................................................................................................. 4

3 Technical requirements ...................................................................................................................... 4
  3.1 Shape .......................................................................................................................................... 4
  3.2 Construction ................................................................................................................................. 4
  3.3 Material ....................................................................................................................................... 4
  3.4 Dimensions ................................................................................................................................. 4
  3.5 Surface conditions ....................................................................................................................... 5
  3.6 Adjustment ................................................................................................................................. 5
  3.7 Marking ..................................................................................................................................... 5

4 Metrological controls .......................................................................................................................... 5
Foreword

The International Organization of Legal Metrology (OIML) is a worldwide, intergovernmental organization whose primary aim is to harmonize the regulations and metrological controls applied by the national metrological services, or related organizations, of its Member States.

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International Recommendations and International Documents are published in French (F) and English (E) and are subject to periodic revision.

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Hexagonal weights -
Metrological and technical requirements

1 General

1.1 Scope

This Recommendation applies to hexagonal weights made of grey cast iron with the denominations specified in 1.2 below.

1.2 Units and nominal values for hexagonal weights

Hexagonal weights shall be made in the nominal values listed in Table 1.

2 Metrological requirements

The maximum permissible errors for hexagonal weights are listed in Table 1.

3 Technical requirements

3.1 Shape

A hexagonal weight shall be in the shape of an inverted frustum of a pyramid with a hexagonal base.

3.2 Construction

3.2.1 A hexagonal weight shall be of one-piece construction and shall be cast with an adjustment cavity.

3.2.1.1 The adjustment cavity for hexagonal weights shown in Figure 1 shall be in the shape of a right circular cone located axially and having its smaller diameter opening into the bottom face of the weight (see 3.6).

3.2.2 Hexagonal weights of 5, 10, 20 and 50 kg shall be cast with an integral lifting handle.

3.3 Material

Hexagonal weights shall be made of grey cast iron.

3.4 Dimensions

All six sides of a hexagonal weight (i.e. excluding the top and the bottom) shall be equal in size and shape. The recommended dimensions for hexagonal weights are presented in Tables 2 and 3, which reference Figures 1 and 2.

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Table 1  Nominal values and maximum permissible errors for hexagonal weights

<table>
<thead>
<tr>
<th>Nominal value</th>
<th>Maximum permissible errors for initial verification*</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 g</td>
<td>± 100 mg</td>
</tr>
<tr>
<td>200 g</td>
<td>± 100 mg</td>
</tr>
<tr>
<td>500 g</td>
<td>± 250 mg</td>
</tr>
<tr>
<td>1 kg</td>
<td>± 500 mg</td>
</tr>
<tr>
<td>2 kg</td>
<td>± 1 000 mg</td>
</tr>
<tr>
<td>5 kg</td>
<td>± 2 500 mg</td>
</tr>
<tr>
<td>10 kg</td>
<td>± 5 000 mg</td>
</tr>
<tr>
<td>20 kg</td>
<td>± 10 000 mg</td>
</tr>
<tr>
<td>50 kg</td>
<td>± 25 000 mg</td>
</tr>
</tbody>
</table>

* Values for subsequent verification are left to the discretion of each state
3.5 Surface conditions

3.5.1 The surfaces of a weight shall be smooth and free from blemishes and porosity.

3.5.2 A weight shall not have sharp edges or corners.

3.5.3 If necessary, a hexagonal weight shall be protected against corrosion by a suitable wear and impact resistant coating.

3.6 Adjustment

3.6.1 Adjustments shall be made with lead cast into the adjustment cavity.

3.6.2 At least two-thirds of the total volume of the adjustment cavity shall be empty after initial calibration.

3.7 Marking

3.7.1 The nominal value of a hexagonal weight shall appear on its top surface and shall be shown as 100 g, 200 g, 500 g or 1 kg, 2 kg, 5 kg, 10 kg, 20 kg or 50 kg. Unit symbols (i.e. g or kg) shall be clear and easily readable.

3.7.2 The manufacturer’s name may appear on the top surface of a hexagonal weight.

4 Metrological controls

Control marks shall be placed on the lead seal that closes the adjustment cavity.
Figure 1 Hexagonal weights from 100 g to 2 kg  (See Table 2 for dimensions)
Figure 2 Hexagonal weights from 5 kg to 50 kg (See Table 3 for dimensions)