

# INTERNATIONAL STANDARD

**ISO**  
**6112**

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## **Moulded plastics footwear — Lined or unlined poly(vinyl chloride) industrial boots with general-purpose resistance to animal fats and vegetable oils — Specification**

*Articles chaussants moulés en plastique — Bottes industrielles doublées  
ou non doublées en poly(chlorure de vinyle) résistant aux corps gras  
d'origines animale et végétale d'usage général — Spécifications*



Reference number  
ISO 6112:1992(E)

## **Foreword**

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6112 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition cancels and replaces the first edition (ISO 6112:1982), of which it constitutes a technical revision.

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# Moulded plastics footwear — Lined or unlined poly(vinyl chloride) industrial boots with general-purpose resistance to animal fats and vegetable oils — Specification

## 1 Scope

This International Standard specifies requirements for lined or unlined moulded poly(vinyl chloride) (PVC) industrial boots, having resistance to animal fats and vegetable oils consistent with general-purpose industrial usage.

NOTE 1 Where resistance to specific liquids is required, the advice and recommendations of the footwear manufacturer should be sought.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 48:1979, *Vulcanized rubbers — Determination of hardness (Hardness between 30 and 85 IRHD)*.

ISO 471:1983, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces*.

ISO 4643:1992<sup>1)</sup>, *Moulded plastics footwear — Lined or unlined poly(vinyl chloride) boots for general industrial use — Specification*.

1) To be published.

## 3 Requirements

### 3.1 General

Boots shall comply with the requirements of ISO 4643 except for marking.

### 3.2 Resistance to animal fats and vegetable oils (as determined by oleic acid)

#### 3.2.1 Preparation of test pieces

##### 3.2.1.1 Soling

Two clean test pieces, nominally 25 mm wide by 150 mm long, shall be taken from the soling and reduced to an overall thickness of  $7 \text{ mm} \pm 0,2 \text{ mm}$ , by cutting and very light buffing on both sides, removing any sole pattern.

##### 3.2.1.2 Upper

Two clean test pieces,  $64 \text{ mm} \pm 2 \text{ mm}$  wide by  $64 \text{ mm} \pm 2 \text{ mm}$  long, shall be taken from the upper part of the boot. The lining shall be removed from the test pieces by splitting it off using a leather splitting machine, or by buffing.

#### 3.2.2 Procedure

3.2.2.1 Determine the mass of each test piece, both soling and upper, and determine the hardness using the microhardness method for the upper and the normal test method for the soling as specified in ISO 48.

**3.2.2.2** Immerse the test pieces, both soling and upper, in oleic acid for a period of  $120 \text{ h} \pm 2 \text{ h}$  at a standard temperature (see ISO 471). Wipe the test pieces dry with a dry cloth or tissue. Proceed with subsequent tests within 2 h.

**3.2.2.3** Determine the mass and hardness of each test piece after immersion, both soling and upper, using the method specified in 3.2.2.1.

**3.2.2.4** For soling test pieces, test for resistance to cut growth by the method specified in annex C of ISO 4643:1992 at a temperature of  $-5 \text{ }^{\circ}\text{C} \pm 2 \text{ }^{\circ}\text{C}$ . The cut shall be inserted after the immersion and drying specified in 3.2.2.2.

**3.2.2.5** For upper test pieces, test for resistance to flexing by the method specified in annex B of ISO 4643:1992 at a temperature of  $-5 \text{ }^{\circ}\text{C} \pm 2 \text{ }^{\circ}\text{C}$ .

### **3.2.3 Performance requirements**

#### **3.2.3.1 All test pieces**

**3.2.3.1.1** The change in mass of the test piece, as determined in 3.2.2.1 and 3.2.2.3, shall not exceed 2 %.

**3.2.3.1.2** The change in hardness of the test piece, as determined in 3.2.2.1 and 3.2.2.3, shall not exceed 10 IRHD.

#### **3.2.3.2 Soling test pieces**

The minimum number of flex cycles to achieve not more than 6 mm cut growth (8 mm crack), as determined in 3.2.2.4, shall be 150 000 cycles.

#### **3.2.3.3 Upper test pieces**

No cracks shall have formed after 150 000 cycles, as determined in 3.2.2.5.

## **4 Marking**

Each boot shall be indelibly and legibly marked with the following particulars:

- a) the size;
- b) the manufacturer's or supplier's identification;
- c) the reference number of this International Standard.

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