INTERNATIONAL STANDARD

ISO 6110

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Moulded plastics footwear — Lined or unlined poly(vinyl chloride) industrial boots with chemical resistance — Specification

Articles chaussants moulés en plastique — Bottes industrielles doublées ou non doublées en poly(chlorure de vinyle) résistant aux produits chimiques — Spécifications

Reference number
ISO 6110:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 6110 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition cancels and replaces the first edition (ISO 6110:1982), of which it constitutes a technical revision.

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Moulded plastics footwear — Lined or unlined poly(vinyl chloride) industrial boots with chemical resistance — Specification

1 Scope

This International Standard specifies requirements for lined or unlined moulded poly(vinyl chloride) (PVC) industrial boots, resistant to selected chemicals, for use in the chemical industry and in industrial plants.

NOTES

1 In the case of chemicals other than those specified, the advice of the footwear manufacturer should be sought.

2 It is recommended that footwear used in contact with chemicals be washed daily and examined for the presence of cracks.

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 1817:1985, *Rubber, vulcanized — Determination of the effect of liquids.*

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

3 Requirements

3.1 General

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

3.2 Resistance to specified chemicals

3.2.1 Reagents

The following reagents, which shall be technically pure, are required:

3.2.1.1 Sulfuric acid, solution of strength 3,7 kmol/m^3 [30 % (*m*/*m*)].

3.2.1.2 Hydrochloric acid, solution of strength 6,0 kmol/m^3 [20 % (*m*/*m*)].

3.2.1.3 Sodium hydroxide, solution of strength 6,1 kmol/m^3 [20 % (*m*/*m*)].

3.2.2 Preparation of test pieces

3.2.2.1 Soling

Two clean test pieces, nominally 25 mm wide by 150 mm long, for each reagent in 3.2.1, shall be taken from the soling and reduced to an overall thickness of 7 mm ± 0,2 mm, by cutting and very light buffing on both sides, removing any sole pattern.

1) To be published.

3.2.2.2 Upper

Two clean test pieces, 64 mm ± 2 mm wide by 64 mm ± 2 mm long, for each reagent in 3.2.1, 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.

3.2.3 Procedure

3.2.3.1 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.

3.2.3.2 Immerse the test pieces, both soling and upper, for a period of 70 h ± 2 h, in accordance with ISO 1817, at a standard temperature (see ISO 471), in each of the reagents specified in 3.2.1, using a separate pair of test pieces for each reagent. Wipe the test pieces dry with a dry cloth or tissue. Proceed with subsequent tests within 2 h.

3.2.3.3 Determine the mass and hardness of each test piece, both soling and upper, after immersion, using the methods specified in 3.2.3.1.

3.2.3.4 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 °C ± 2 °C. The cut shall be made after the immersion and drying described in 3.2.3.2.

3.2.3.5 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 °C ± 2 °C.

3.2.4 Performance requirements

3.2.4.1 All test pieces

3.2.4.1.1 The change in mass of the test piece, as determined in 3.2.3.1 and 3.2.3.3, shall not exceed 2 %.

3.2.4.1.2 The change in hardness of the test piece, as determined in 3.2.3.1 and 3.2.3.3, shall not exceed 10 IRHD.

3.2.4.2 Soling test pieces

The minimum number of flex cycles to achieve not more than 6 mm cut growth (8 mm crack), as determined in 3.2.3.4, shall be 150 000 cycles.

3.2.4.3 Upper test pieces

No cracks shall have formed after 150 000 cycles, as determined in 3.2.3.5.

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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