International Standard 6110

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Plastics moulded footwear — Lined or unlined polyvinyl chloride industrial boots with chemical resistance

Articles chaussants moulés en plastique — Bottes en polychlorure de vinyle, doublées ou non, à usage industriel, résistant aux produits chimiques

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6110 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in December 1980.

It has been approved by the member bodies of the following countries:

Australia	India	Spain
Austria	Iraq	Sri Lanka
Belgium	Korea, Dem. P. Rep. of	Sweden
Brazil	Korea, Rep. of	Thailand
Canada	Netherlands	Turkey
Czechoslovakia	Portugal	United Kingdom
France	Romania	USA
Hungary	South Africa, Rep. of	USSR

The member body of the following country expressed disapproval of the document on technical grounds:

Denmark

Printed in Switzerland

Plastics moulded footwear — Lined or unlined polyvinyl chloride industrial boots with chemical resistance

1 Scope and field of application

1.1 This International Standard specifies requirements for lined or unlined moulded polyvinyl chloride (PVC) industrial boots, resistant to the chemicals specified in 3.2, for use in the chemical industry and in industrial plants. In the case of chemicals other than those specified, the advice of the footwear manufacturer shall be sought.

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

2 References

ISO 37, *Rubber, vulcanized — Determination of tensile stress-strain properties.*

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

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

ISO 527, *Plastics — Determination of tensile properties.*[1)]

ISO 1817, *Rubber, vulcanized — Determination of effect of liquids.*[2)]

ISO 4643, *Plastics moulded footwear — Polyvinyl chloride industrial boots — 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 Clean test pieces cut from the boot shall be tested in accordance with ISO 37 (type 2 test piece) or ISO 527, as appropriate, and ISO 48 before and after the treatment specified in 3.2.2. Where it is necessary to use different test pieces, such as for the tensile strength test, those tested after the treatment shall be from the same area of the same boot as those tested without being submitted to the treatment.

3.2.2 The test pieces shall then be immersed for a period of 70 ± 2 h in accordance with ISO 1817, at a standard laboratory temperature (see ISO 471), in the following reagents which shall be technically pure :

— sulphuric acid, 3,7 kmol/m³ [30 % (*m*/*m*)] solution;

— hydrochloric acid, 6,0 kmol/m³ [20 % (*m*/*m*)] solution;

— sodium hydroxide, 6,1 kmol/m³ [20 % (*m*/*m*)] solution.

Separate test pieces shall be used for each reagent.

1) At present at the stage of draft. (Revision of ISO/R 527-1966.)

2) At present at the stage of draft. (Revision of ISO 1817-1975.)

3.2.3 After immersion, the test pieces shall be tested in accordance with ISO 37 or ISO 527, as appropriate, and ISO 48. When the results are compared with those from test pieces which have not undergone the treatment :

a) the decrease in tensile strength shall not exceed 15 %;

b) the change in elongation at break shall not exceed 20 %;

c) the change in mass of any test piece shall not exceed 2 %;

d) the increase in hardness shall not exceed 10 IRHD.

When testing the hardness of the upper part of the boot, the microhardness method, specified in ISO 48, shall be used.

3.2.4 For the footwear to comply with this International Standard, the requirements of 3.2.3 a), b), c) and d) shall be met for each of the three reagents in 3.2.2.

4 Marking

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

a) size;

b) manufacturer's or supplier's identification;

c) a reference number issued by the appropriate national standards institute.