

INTERNATIONAL  
STANDARD

ISO  
7176-16

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**Wheelchairs —**

**Part 16:**

Resistance to ignition of upholstered parts —  
Requirements and test methods

*Fauteuils roulants —*

*Partie 16: Résistance à l'inflammation des parties rembourrées —  
Exigences et méthodes d'essai*



Reference number  
ISO 7176-16:1997(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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75% approval by the member bodies voting.

International Standard ISO 7176-16 was prepared by Technical Committee ISO/TC 173, *Technical systems and aids for disabled or handicapped persons*, Subcommittee 1, *Wheelchairs*.

ISO 7176 consists of the following parts under the general title *Wheelchairs*:

- Part 1: *Determination of static stability*
- Part 2: *Determination of dynamic stability of electric wheelchairs*
- Part 3: *Determination of efficiency of brakes*
- Part 4: *Determination of energy consumption of electric wheelchairs and scooters — Theoretical range*
- Part 5: *Determination of overall dimensions, mass and turning space*
- Part 6: *Determination of maximum speed, acceleration and retardation of electric wheelchairs*
- Part 7: *Measurement of seating and wheel dimensions*

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- Part 8: *Requirements and test methods for static, impact and fatigue strengths*
- Part 9: *Climatic tests for electric wheelchairs*
- Part 10: *Determination of obstacle-climbing ability of electric wheelchairs*
- Part 11: *Test dummies*
- Part 13: *Determination of coefficient of friction of test surfaces*
- Part 14: *Power and control systems for electric wheelchairs - Requirements and test methods*
- Part 15: *Requirements for information disclosure, documentation and labelling*
- Part 16: *Resistance to ignition of upholstered parts - Requirements and test methods*

The following parts are also on the programme of work:

- Part 17: *Serial interface for electric wheelchair controllers*
- Part 18: *Stair-traversing devices*
- Part 19: *Wheeled mobility devices for use in motor vehicles*
- Part 20: *Determination of the performance of stand-up type wheelchairs.*
- Part 21: *Electromagnetic compatibility of powered wheelchairs and motorized scooters - Requirements and test methods.*
- Part 22: *Setup procedures*

A Technical Report will also be made available giving a simplified explanation of these International Standards.

## Wheelchairs —

### Part 16:

## Resistance to ignition of upholstered parts — Requirements and test methods

### 1 Scope

This part of ISO 7176 specifies requirements and methods of test to assess the resistance to ignition by cigarette and match of the materials used in wheelchair upholstered parts.

The tests measure only the resistance to ignition by cigarette and match of the materials tested and not the ignitability of the finished wheelchair. They give an indication of, but cannot guarantee, the ignition behaviour of the finished wheelchair.

NOTE: The requirements are minimal and less severe than legal requirements in some countries. Manufacturers are recommended to use materials with superior flame resistance where practical.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7176. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7176 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 6440:1985, *Wheelchairs - Nomenclature, terms and definitions.*

ISO 8191-1:1987, *Furniture - Assessment of the ignitability of upholstered furniture - Part 1: Ignition source: smouldering cigarette.*

ISO 8191-2:1988, *Furniture - Assessment of the ignitability of upholstered furniture - Part 2: Ignition source: match flame equivalent.*

ISO 7176-15:1996, *Wheelchairs - Part 15: Requirements for information disclosure, documentation and labelling.*

### 3 Definitions

For the purposes of this part of ISO 7176, the definitions given in ISO 6440, ISO 8191-1 and ISO 8191-2 apply.

### 4 Requirements

**WARNING:** The following requirements call for the use of procedures that may be injurious to health if adequate precautions are not taken.

**4.1** If the upholstered parts of wheelchairs consist of a permanent cover plus a filling, the materials used for the upholstered parts shall be tested by the methods specified in ISO 8191-1 and ISO 8191-2. Progressive smouldering ignition and flaming ignition, as defined in those International Standards, shall not occur.

**4.2** If the upholstered parts of wheelchairs consist of a foam material with or without an integral skin, progressive smouldering ignition and flaming ignition shall not occur when these materials are tested by the methods specified in ISO 8191-1:1987 and ISO 8191-2:1988, modified as follows:

Delete subclauses 9.2 and 10.1.

Replace subclause 9.3 with the following:

"Prepare blocks of the material to the dimensions shown in Figure 1. Attach the blocks to the test frame with the radii on the 450 mm edges touching as shown in Figure 2. Lock the frames at right angles by the bolts or pins."

### 5 Test report

The test report shall include the following:

- a) A statement that "The following test results relate only to the ignitability of the combination of materials under the particular conditions of the test. They are not intended as a means of assessing the full potential hazard of the finished wheelchair";
- b) identification and construction of the test samples;
- c) date of the test report;
- d) name and address of the test institution;
- e) name and address of the manufacturer(s) of the material tested;
- f) materials references, a brief description and any batch or serial numbers;

- g) name and address of the wheelchair manufacturer;
- h) statement that the tests conform to this part of ISO 7176;
- i) results of the tests carried out, and a statement as to whether the materials met the requirements of this part of ISO 7176;
- j) a unique test report reference.

## 6 Disclosure of results

Manufacturers shall disclose in their specification sheet(s), in the manner and sequence specified in ISO 7176-15, that the upholstered parts of the wheelchair conform to this part of ISO 7176.

Dimensions in millimetres

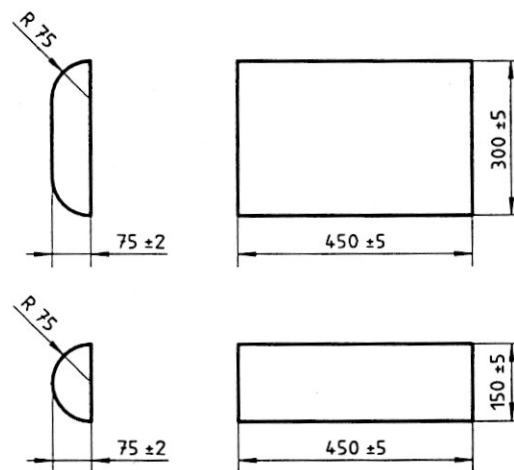


Figure 1 — Sizes of foam specimens

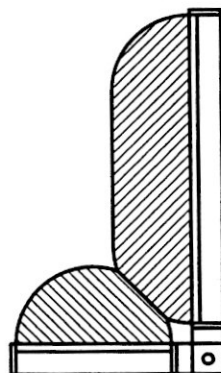


Figure 2 — Vertical section through test rig assembly for foam specimens  
(see also figures 1 and 2 of ISO 8191-1)

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**ICS 11.180; 13.220.40**

**Descriptors:** disabled persons aids, wheel chairs, upholstery, specifications, safety requirements, tests, physical tests, fire tests, flammability testing, determination, ignitability.

Price based on 3 pages

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