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**Road vehicles — Pneumatic braking  
systems —**

**Part 1:**

Pipes, male fittings and tapped holes with  
facial sealing surface

*Véhicules routiers — Dispositifs de freinage pneumatique —*

*Partie 1: Tuyauteries, raccords mâles et logements à portée faciale*



## 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 4039-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 2, *Braking systems and equipment*.

This first edition of ISO 4039-1 cancels and replaces ISO 4039:1977, of which it constitutes a technical revision.

ISO 4039 consists of the following parts, under the general title *Road vehicles — Pneumatic braking systems*:

- Part 1 : *Pipes, male fittings and tapped holes with facial sealing surface*
- Part 2 : *Pipes, male fittings and tapped holes with conical sealing surface*

Annex A to this part of ISO 4039 is given for information only.

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Printed in Switzerland

# Road vehicles — Pneumatic braking systems —

## Part 1:

## Pipes, male fittings and tapped holes with facial sealing surface

### 1 Scope

This part of ISO 4039 specifies the essential dimensions and material requirements for metallic and thermoplastic pipes, male fittings and tapped holes with a facial sealing surface, of the metric series, used in pneumatic braking systems on road vehicles using compressed air at a pressure below 2 MPa (20 bar).

Annex A gives, for information, a recommendation as to how to indicate conformity with this part of ISO 4039.

### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 4039. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4039 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9227:1990, *Corrosion tests in artificial atmospheres — Salt spray tests*.

### 3 Pipes

#### 3.1 Dimensions

The external diameter,  $D_1$ , shall be as specified in table 1. It may be used in any combination with the threads specified in table 2.

**Table 1 — Dimensions of pipes**

Dimensions in millimetres

External diameter, $D_1$	6	8	10	12	14	15	16	18	20
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#### 3.2 Materials

Pipes may be made of metal (examples: steel, copper, copper alloys, etc.) or thermoplastics (example: polyamide, etc.).

#### 3.3 Surface condition

The inner and outer surfaces of the pipes shall be free from oxidation, and shall be smooth and clean.

The outer surface shall be protected against corrosion. Sensitivity to corrosion shall be evaluated in accordance with one of the methods specified in ISO 9227, to be agreed between the interested parties, but with a minimum exposure to salt spray of 200 h.

**4 Tapped holes and male fittings**

**4.1 Dimensions of tapped holes with facial sealing surface**

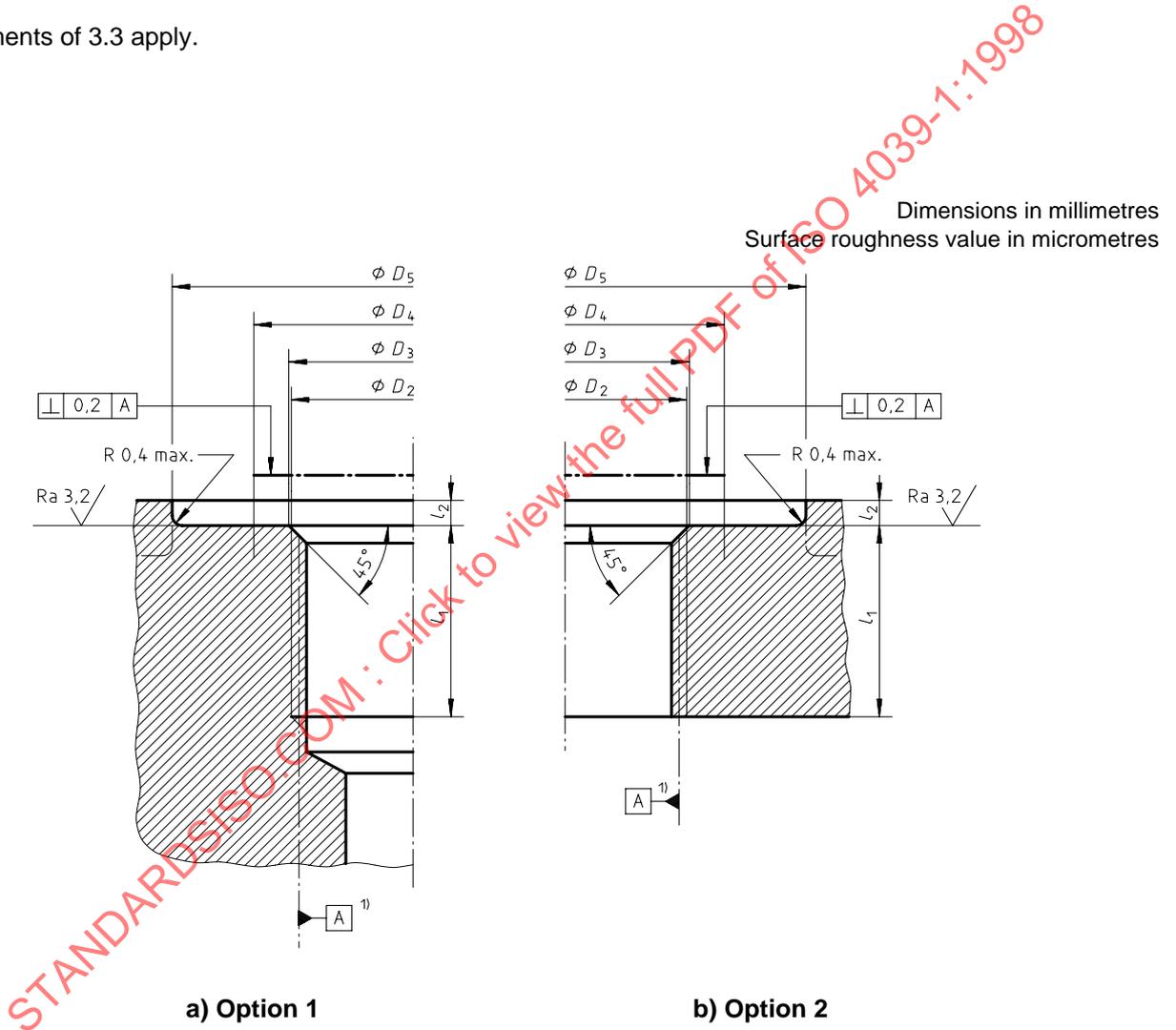
Tapped holes with a facial sealing surface shall conform to figure 1 and to the dimensions given in table 2.

**4.2 Dimensions of male fittings**

Male fittings shall conform to figure 2 and to the dimensions given in table 3.

**4.3 Surface condition**

The requirements of 3.3 apply.



1) Pitch diameter.

**Figure 1 — Connection port**

Table 2 — Connection port dimensions

Dimensions in millimetres

$D_2$ 6H	$D_3$ $+0,2$ $0$	$D_4$	$D_5$ <sup>1) 2)</sup> min.	$l_1$ <sup>3)</sup> min.	$l_2$ <sup>1) 4)</sup> max.
M 10 x 1	10	13	20	8	1
M 12 x 1,5	12	16	22	12	1,5
M 14 x 1,5	14	18	24		
M 16 x 1,5	16	20	26		
M 22 x 1,5	22	32	33	13	2
M 26 x 1,5	26		38	15	
M 27 x 2	27				

1) If the face of the boss is on a machined surface, dimensions  $D_5$  and  $l_2$  do not apply.  
2) Recommended diameter of the seating face or equivalent flat surface.  
3) Minimum full thread length.  
4) Maximum recommended depth of the centring face to allow sufficient engagement of the wrench to ensure appropriate tightness of fittings and lock-nuts.

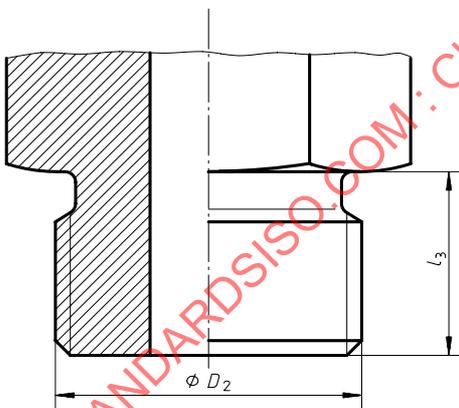


Figure 2 — Male fitting

Table 3 — Male fitting dimensions

Dimensions in millimetres

$D_2$ 6g	$l_3$ max.
M 10 x 1	8
M 12 x 1,5	12
M 14 x 1,5	
M 16 x 1,5	
M 22 x 1,5	13
M 26 x 1,5	15
M 27 x 2	

## **Annex A** (informative)

### **Identification statement** (reference to this part of ISO 4039)

It is recommended that manufacturers who elect to conform to this part of ISO 4039 should use the following identification statement in their test reports, catalogues and sales literature:

"Tapped holes with a facial sealing surface conforming to ISO 4039-1:1998, *Road vehicles — Pneumatic braking systems — Part 1: Pipes, male fittings and tapped holes with facial sealing surface.*"

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