

---

---

**Connections for hydraulic fluid power  
and general use — Hose fittings —**

Part 5:

**Hose fittings with ISO 8434-2 37° flared  
ends**

*Raccordements pour transmissions hydrauliques et applications  
générales — Flexibles de raccordement —  
Partie 5: Flexibles avec embouts évasés à 37° conformes à  
l'ISO 8434-2*

[ISO 12151-5:2007](https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007)

<https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007>



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 12151-5:2007](https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007)

<https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

**Contents**

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Performance requirements</b> .....	<b>2</b>
<b>5 Designation of hose fittings</b> .....	<b>2</b>
<b>6 Design</b> .....	<b>3</b>
<b>7 Manufacture</b> .....	<b>3</b>
<b>8 Procurement information</b> .....	<b>4</b>
<b>9 Marking</b> .....	<b>4</b>
<b>10 Identification statement</b> (reference to this part of ISO 12151).....	<b>4</b>
<b>Annex A</b> (informative) <b>Application illustrations for short, medium and long elbows</b> .....	<b>10</b>
<b>Bibliography</b> .....	<b>11</b>

ISO 12151-5:2007

<https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007>

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12151-5 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

ISO 12151 consists of the following parts, under the general title *Connections for hydraulic fluid power and general use — Hose fittings*:

- Part 1: *Hose fittings with ISO 8434-3 O-ring face seal ends*
- Part 2: *Hose fittings with ISO 8434-1 and 8434-4 24° cone connector ends with O-rings*
- Part 3: *Hose fittings with ISO 6162-1 or ISO 6162-2 flange ends*
- Part 4: *Hose fittings with ISO 6149 metric stud ends*
- Part 5: *Hose fittings with ISO 8434-2 37° flared ends*
- Part 6: *Hose fittings with ISO 8434-6 60° cone ends*

## Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. In general applications, the fluid can be conveyed under pressure.

Components are connected through their ports by stud ends on fluid conductor connectors to tubes and pipes or to hose fittings and hoses.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 12151-5:2007](https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007)

<https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 12151-5:2007](https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007)

<https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf21f4a0f7b/iso-12151-5-2007>

# Connections for hydraulic fluid power and general use — Hose fittings —

## Part 5: Hose fittings with ISO 8434-2 37° flared ends

### 1 Scope

This part of ISO 12151 specifies the general and dimensional requirements for the design and performance of 37° flared hose fittings in accordance with ISO 8434-2, made of carbon steel, for nominal hose sizes of 6,3 mm through 51 mm inclusive in accordance with ISO 4397.

NOTE 1 Other materials can be supplied as agreed between the manufacturer and user.

NOTE 2 See ISO 4038 and ISO 4039 for hose fittings used in hydraulic and pneumatic braking systems on road vehicles (as defined in the scope of ISO/TC 22).

These hose fittings (see Figure 1 for a typical example) are for use in hydraulic fluid power systems with hose that meets the requirements of the respective hose standards and in general applications with suitable hose.

### 2 Normative references

ISO 12151-5:2007

[https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-](https://standards.iteh.ai/catalog/standards/sist/40246bfa-e7da-498a-9dfb-7cf218a90f71/iso-12151-5-2007)

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 68-2, *ISO general-purpose screw threads — Basic profile — Part 2: Inch screw threads*

ISO 263, *ISO inch screw threads — General plan and selection for screws, bolts and nuts — Diameter range 0.06 to 6 in*

ISO 4397, *Fluid power systems and components — Connectors and associated components — Nominal outside diameters of tubes and nominal inside diameters of hoses*

ISO 4759-1:2000, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 6149-1, *Connections for hydraulic fluid power and general use — Ports and stud ends with ISO 261 metric threads and O-ring sealing — Part 1: Ports with truncated housing for O-ring seal*

ISO 6605, *Hydraulic fluid power — Hoses and hose assemblies — Test methods*

ISO 8434-2:—<sup>1)</sup>, *Metallic tube connections for fluid power and general use — Part 2: 37° flared connectors*

---

1) To be published. Revision of ISO 8434-2:1994

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

ISO 19879, *Metallic tube connections for fluid power and general use — Test methods for hydraulic fluid power connections*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 apply.

### 4 Performance requirements

Hose assemblies shall meet the performance requirements specified in the appropriate hose specification without leakage or failure when tested in accordance with ISO 6605.

The working pressure of the hose assembly shall be the lower of the pressures for that size given in ISO 8434-2 for the end connection or in the relevant hose specification.

The working pressure of the hose fitting shall be verified through testing conducted in accordance with ISO 19879, but the entire hose assembly shall be tested in accordance with ISO 6605. During the cyclic endurance test, the hose fitting shall be subjected to the number of cycles specified in the relevant hose specification.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

### 5 Designation of hose fittings

5.1 Hose fittings shall be designated by an alphanumeric code to facilitate ordering. They shall be designated by the words "Hose fitting", followed by "ISO 12151-5", followed by a spaced hyphen, then the connection type and shape letter symbol, followed by another spaced hyphen, the 37° flared-end size (tube outside diameter in accordance with ISO 8434-2) and the hose size (nominal hose inside diameter in accordance with ISO 4397), each separated by a multiplication symbol (×).

EXAMPLE A female swivel 45° elbow for 12 mm OD tubing and 12,5 mm nominal ID hose, is designated as follows:

**Hose fitting ISO 12151-5 - SWE45 - 12 × 12,5**

5.2 The following letter symbols shall be used:

Connection end type	Symbol
Swivel	SW

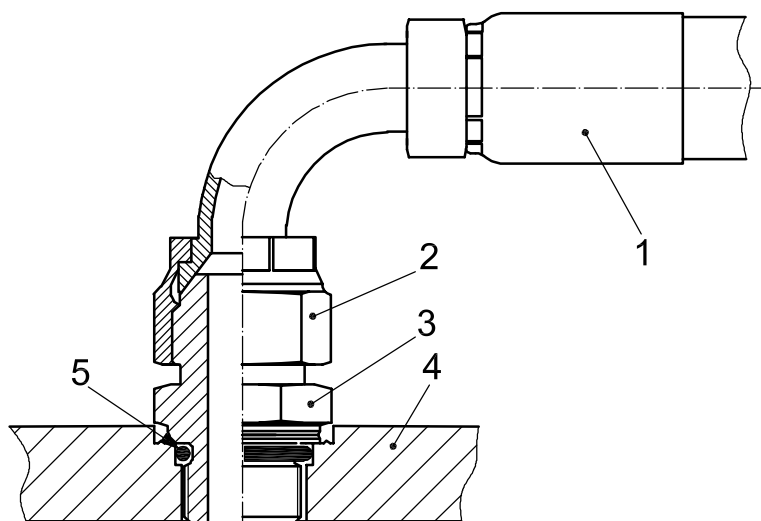
Shape	Symbol
Straight	S
45° elbow	E45
90° elbow — short	ES
90° elbow — medium	EM
90° elbow — long	EL

5.3 Tube ends are assumed to be male type and thus do not need to be included in the code. However, if another type of end is involved, it shall be designated.



## 6 Design

6.1 Figure 1 shows a typical example of a hose fitting with 37° flared end.



### Key

- 1 hose fitting
- 2 nut
- 3 straight stud connector (ISO 8434-2)
- 4 port (ISO 6149-1)
- 5 O-ring seal

Figure 1 — Typical example of hose fitting connection with 37° flared end

6.2 Hose fitting dimensions shown in Figures 2 through 5 shall conform to those given in Tables 1 through 4 and to the relevant dimensions given in ISO 8434-2.

6.3 Hex tolerances across flats shall be in accordance with ISO 4759-1:2000, product grade C.

6.4 The angular tolerance on axis of ends of elbows shall be  $\pm 3^\circ$  for all sizes.

6.5 Details of contour shall be as chosen by the manufacturer, provided that the dimensions given in Tables 1 through 4 are maintained.

6.6 The screw threads on the flare connection ends of the hose fittings shall be inch screw threads in accordance with ISO 263 and ISO 68-2.

## 7 Manufacture

### 7.1 Construction

Hose fittings may be forged, cold-formed, machined from barstock or manufactured from multiple components.

### 7.2 Workmanship

Workmanship shall conform to the best commercial practice to produce high quality hose fittings. Hose fittings shall be free from visual contaminants, all hanging burrs, loose scale and slivers that can be dislodged in use, and any other defects that might affect the function of the parts. All machined surfaces shall have a surface roughness value, *R<sub>max</sub>*, of 6,3  $\mu\text{m}$ , except where otherwise specified.