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**Gumene in polimerne cevi - Ugotavljanje volumenskega raztezanja (ISO/DIS 6801:2021)**

Rubber and plastics hoses - Determination of volumetric expansion (ISO/DIS 6801:2021)

Gummi- oder Kunststoffschläuche - Bestimmung der Volumenzunahme (ISO/DIS 6801:2021)

Tuyaux en caoutchouc ou en plastique - Détermination de l'expansion volumique (ISO/DIS 6801:2021)

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23.040.70	Gumene cevi in armature	Hoses and hose assemblies
83.140.40	Gumene cevi	Hoses

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## Rubber and plastics hoses — Determination of volumetric expansion

ICS: 23.040.70

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# Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Apparatus.....	1
5 Calibration of apparatus.....	2
6 Procedure.....	3
7 Expression of results.....	4
8 Test report.....	4

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## ISO/DIS 6801:2021(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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Rubber and plastics hoses and hose assemblies*.

This second edition cancels and replaces the first edition (ISO 6801:1983), which has been technically revised.

The main changes compared to the previous edition are as follows:

- incorporation of ISO 6801/AMD 1:2011 Deletion of alcohol as pressurizing fluid;
- addition of [Clause 3](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

When used for dispensing specific volumes of fluids, the volumetric capacity of a hose is often required to vary by only small amounts at the dispensing pressure. This document describes a method of checking that such requirements can be met.

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# Rubber and plastics hoses — Determination of volumetric expansion

## 1 Scope

This document specifies a method for the determination of the volumetric expansion of rubber or plastics hoses under hydrostatic pressure.

This document does not specify the dimensions of the test piece and the test pressure(s) as each of which will be specified in the appropriate specification.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 8330, *Rubber and plastics hoses and hose assemblies — Vocabulary*

## 3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in ISO 8330 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

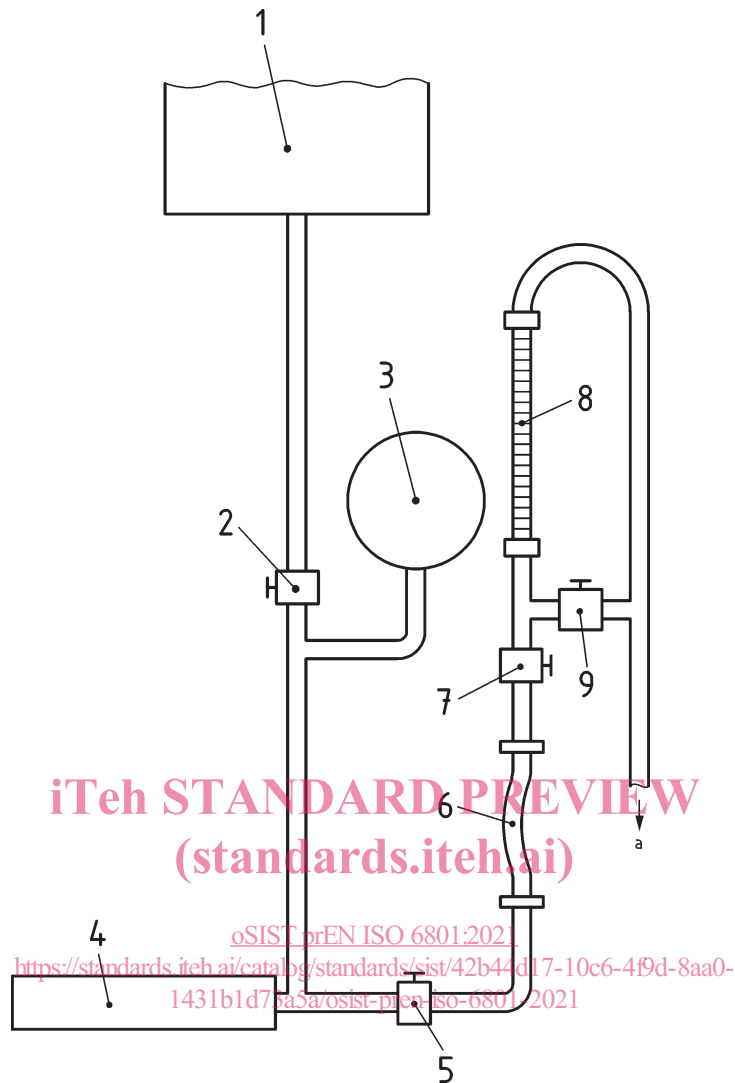
## 4 Apparatus

**4.1** See [Figure 1](#). The apparatus comprises a suitable source of fluid which can be maintained at the required pressure, together with pressure gauges, piping, valves and fittings, so that a vertical length of hose can be subjected to hydraulic pressure.

A graduated burette of sufficient accuracy is also required for measuring the volume of fluid corresponding to the expansion of the hose under pressure.

**4.2** The bore of all piping and connections shall be smooth without recesses or off-sets, so that all air can be freely removed from the system before carrying out each test. The valves shall be of such design as to open and close with minimum displacement of fluid. The apparatus shall be capable of increasing the pressure in the test piece in accordance with ISO 1402. The rate of pressure increase shall be

- a) between 0,075 MPa/s and 0,175 MPa/s for test pressures up to 12,5 MPa and
- b) between 0,35 MPa/s and 1,0 MPa/s for higher test pressures.



### Key

- |   |                      |   |            |
|---|----------------------|---|------------|
| 1 | tank (vented at top) | 6 | test piece |
| 2 | valve A              | 7 | valve C    |
| 3 | pressure gauge       | 8 | burette    |
| 4 | pressure source      | 9 | valve D    |
| 5 | valve B              |   |            |
| a | to drain             |   |            |

**Figure 1 — Schematic arrangement of test apparatus**

## 5 Calibration of apparatus

**5.1** Prior to testing the hose, the correction factor(s) for the apparatus, to allow for its increased capacity under the test pressure(s), shall be determined as described in [5.2](#).

**5.2** Following the procedure as described in [Clause 6](#), using a length of steel hydraulic tubing with external diameter 6,3 mm and minimum wall thickness 1,52 mm in place of the test pieces, determine the correction factor as the mean value of three expansions.