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**Rubber and plastics hoses and hose  
assemblies — Guide for use by  
purchasers, assemblers, installers and  
operating personnel**

*Tuyaux et flexibles en caoutchouc et en plastique — Guide technique à  
l'intention des acheteurs, des assembleurs, des installateurs et des  
utilisateurs*



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## 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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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/TR 17784 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Hoses (rubber and plastics)* in collaboration with the Nederlands Normalisatie-instituut (NEN). Its aim is to promote operating security when using hoses. Technical safety, inspection, system design and fitting of hoses are considered. This may reduce or avoid the possibility of errors when working on or with hoses.

## Introduction

Hoses are used in places where a rigid connection to one connecting point or between two points is impracticable or when a flexible connection is required for delivery purposes. Examples are suction and pressure hoses, loading and discharging hoses and connections between parts of moving and vibrating equipment. Hoses are used for carrying media which are generally under pressure in systems. Other applications include places where the frequent linking of one or both ends of a pipe may present problems. Users often ask hose suppliers' advice on potential uses of hoses for their applications. A hose supplier/manufacturer can give optimum advice only if he is fully informed of the specific operating circumstances. If insufficient information on envisaged use is obtained, incorrect advice may be given, so that a hose not suitable for the intended use is supplied and installed. Close consultation between user and hose manufacturer is therefore necessary. Thus, a major function of this Technical Report is to provide an information resource to assist in decision making.

The guidelines presented in this document are derived from the Nederlands Normalisatie-instituut (NEN) document SPE 5660 (Hoses and accessories, directives for the application), second edition 1999, and were prepared by a task group of ISO/TC 45/SC 1/WG 4. Metal hoses, included in SPE 5660, are excluded from this document because they fall outside the scope of ISO/TC 45/SC 1. Furthermore, the section in SPE 5660 concerning storage has been omitted as it is the subject of ISO 8331.

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# Rubber and plastics hoses and hose assemblies — Guide for use by purchasers, assemblers, installers and operating personnel

## 1 Scope

This Technical Report contains general information on rubber and plastic hoses with regard to both their properties and their practical application. This includes, amongst other things, the properties of materials used in hoses, the precautions to be taken when storing hoses and the care required when installing and fitting hoses and their couplings. Safety measures when testing hoses are also indicated. This Technical Report is intended for use by system designers, purchasers, assemblers, installers and operating personnel to improve the operating safety of hoses and hose assemblies.

**NOTE** Metal hoses are not included in this Technical Report. Attention is drawn to the following International Standards: ISO 8444, ISO 8445, ISO 8446, ISO 8447, ISO 8448, ISO 8449, ISO 8450, ISO 10807, ISO 10806 and ISO 10380.

This Technical Report cannot, in practice, cover all circumstances and therefore its content is largely based on examples. It is assumed that these examples will provide sufficient information to give guidelines for a range of practical circumstances.

## 2 Terms and definitions

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

## 3 General considerations for hoses

### 3.1 Choosing the type of hose

#### 3.1.1 General

When choosing the type of hose the chief criteria are:

- the resistance of the lining and cover of the hose to the media to which the hose comes into contact (air, oil, water, steam and chemicals) and/or external influences (ozone, UV light and weathering);
- the maximum working pressure including any peak pressures;
- the minimum and maximum temperatures that may arise during operation;
- operational conditions i.e. static, dynamic, ship to shore, dragging on the ground;
- hazard category of the medium;
- required working life.

Most hose manufacturers include a “resistance list” with their hose documentation, indicating the media against which their hose material is resistant. It should be remembered that this list refers only to the materials used by the specific manufacturer, who will use their own composition of the product indicated by the