

# INTERNATIONAL STANDARD

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## Aerospace fluid systems — Elastomer seals — Storage and shelf life

*Systèmes de fluides pour l'aéronautique et l'espace — Joints élastomères — Stockage et durée de conservation*

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## Foreword

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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 27996 was prepared by Technical Committee ISO/TC 20, *Aircraft and Space Vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*.

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## Introduction

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within an enclosed circuit. Components are designed to meet these requirements under varying conditions. Testing of components to meet performance requirements provides users a basis of assurance for determining design application and for checking component compliance with their stated requirements.

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# Aerospace fluid systems — Elastomer seals — Storage and shelf life

## 1 Scope

This International Standard is applicable to the general requirements for data recording procedures, packaging, and storing of elastomeric seals and seal assemblies which include an elastomeric element prior to the seal being assembled into hardware components.

The requirements for packaging are an integral part of the controlled storage procedure and provide a means of positive product identity from the time of manufacture to the time of assembly into a component.

This International Standard does not establish limitations or storage times for assembled components nor the operating life of these components.

The information contained in this International Standard is intended for use by those organizations that do not have specific requirements or recommendations already in place for the control of elastomeric seals and seal assemblies.

This International Standard can be specified in control, storage and procurement documents. However, when the requirements of this International Standard are in conflict with the customer's requirements or specifications, the requirements of the customer's detailed specifications take precedence.

## 2 Normative references

ISO 27996:2009

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 1629, *Rubbers and lattices — Nomenclature*

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

## 3 Terms and definitions

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

### 3.1

#### **date of vulcanization**

date on which the elastomer product was vulcanized

NOTE Date of vulcanization is expressed in quarters (Q) of a year.

EXAMPLE 4Q08 (October to December, 2008).

### 3.2

#### **elastomer**

material that possesses elastic properties and has undergone vulcanization and/or conversion into a finished product

NOTE The basic building block of elastomer is the rubber polymer it contains.

**3.3**

**end user**

user carrying out the installation into a hardware component which can include an aircraft

**3.4**

**extended storage life**

period for which an elastomer seal element moulded from class III material and properly packaged can be stored after the initial storage period and the successful reinspection and testing of representative samples

**3.5**

**hardware component**

unit in which the elastomeric seal element is installed

**3.6**

**installation date**

date of the first installation into a hardware component

**3.7**

**limited storage life**

period of time during which an elastomeric seal element which has not been properly packaged by the manufacturer in an expedient manner after vulcanization can be installed without first testing for product integrity

**3.8**

**rubbers**

polymeric building blocks of an elastomer's chemical composition

NOTE

Rubbers are further defined in ISO 1629.

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**3.9**

**seal**

elastomeric seal configuration or an assembly with an elastomeric element which prevents the excursion of media on one side of the product from migrating to the other side

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**storage life**

period of time, in quarters of a year, from the date of vulcanization until installation into a hardware component

NOTE

The storage life is counted from the quarter following the date of vulcanization.

**3.11**

**storage life limit**

maximum period of time, starting from the quarter following vulcanization, that an elastomeric seal element, appropriately packaged, can be stored under specific conditions, after which time it is regarded as unserviceable for the purposes for which it was originally manufactured

## 4 General

The life of elastomeric seal elements is reduced by the influence of environmental factors, e.g. ozone, heat and light. To extend life to the full storage life limit, the seal elements shall be properly packaged and certified as such by the manufacturer as quickly as possible following vulcanization. If the seal elements are not properly packaged and certified as such by the manufacturer, then the limited storage life requirement is followed and package labels shall indicate this.