

---

---

## Fasteners — Acceptance inspection

*Fixations — Contrôle réception*

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

[ISO 3269:2019](https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019)

<https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019>



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

ISO 3269:2019

<https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019>



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
Foreword .....	iv
Introduction .....	v
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
<b>4 Symbols .....</b>	<b>2</b>
<b>5 Incoming acceptance inspection procedures for fasteners .....</b>	<b>2</b>
5.1 General requirements .....	2
5.2 Inspection procedures .....	3
5.2.1 General .....	3
5.2.2 Sample size .....	3
5.2.3 Inspection modalities .....	3
5.3 Acceptance inspection categories .....	3
<b>6 Result of inspection and disposition .....</b>	<b>5</b>
6.1 General .....	5
6.2 Purchaser's options for lot disposition .....	6
6.3 Reference acceptance procedure .....	6
<b>Annex A (informative) Sampling plans basics .....</b>	<b>7</b>
<b>Annex B (informative) Operating characteristic of sampling plans .....</b>	<b>9</b>
<b>Bibliography .....</b>	<b>10</b>

[ISO 3269:2019](https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019)  
<https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019>

## 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)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 2, *Fasteners*, Subcommittee SC 7, *Reference standards*.

This fourth edition cancels and replaces the third edition (ISO 3269:2000), which has been technically revised.

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

- introduction of an additional approach for incoming inspection with smaller sample sizes based on  $N_A = 0$ ;
- use of a reference approach in case agreement is not reached;
- sample size specified on the basis of lot size;
- addition of informative [Annexes A](#) and [B](#) explaining the basis for sample size selection.

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

The manufacturer of fasteners is expected to take due care and apply process control (see ISO 16426) during production in order to minimize the chances of producing parts that do not satisfy requirements of the standard or technical specification to which they are specified. Although every fastener should meet all the specified requirements, this objective is not guaranteed in mass production.

The purchaser of fasteners is expected to decide whether it is reasonable to assume that the delivered fasteners were made to specification. Considering the limitations of inspection by attributes of a fastener inspection lot, it is desirable that both the purchaser and the manufacturer (or supplier) possess a clear understanding of the acceptance inspection procedure to be used by the purchaser. This document describes an inspection procedure for use by the purchaser where no prior agreement exists.

Such acceptance inspection cannot provide complete confidence that non-conforming fasteners do not exist within a production lot. Conversely, the acceptance of a lot based on acceptance quality limit (AQL) values in this document does not imply that the supplier has a right to knowingly supply non-conforming fasteners.

This fourth edition introduces a layered approach for incoming acceptance inspection that begins with small sample sizes associated with a sampling plan based on  $A_c = 0$ .

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

[ISO 3269:2019](https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019)

<https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019>

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

ISO 3269:2019

<https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-a5da28f09faa/iso-3269-2019>

# Fasteners — Acceptance inspection

## 1 Scope

This document specifies an inspection procedure to be used by the purchaser where no prior agreement exists.

It also specifies a reference acceptance procedure for acceptance or rejection of an inspection lot, when no agreement can be reached between the purchaser and the supplier, or where conformance to specification is disputed.

It applies to inspection lots of bolts, screws, studs, nuts, pins, washers, rivets and other related fasteners.

This document applies to fasteners not intended for high volume machine assembly, special-purpose applications or specially engineered applications requiring more advanced in-process control and lot traceability.

For in-process control or final inspection by the manufacture and sorting, see ISO 16426.

## 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 1891-4, *Fasteners — Vocabulary — Part 4: Control, inspection, delivery, acceptance and quality*

ISO 2859-1:1999, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3534-2, *Statistics — Vocabulary and symbols — Part 2: Applied statistics*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1891-4, ISO 2859-1 and ISO 3534-2 and the following 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/>

### 3.1

#### **inspection lot**

quantity of fasteners of the same designation received from the same supplier at the same time and, if available, of the same manufacturing lot number

### 3.2

#### **characteristic**

dimensional element, mechanical, physical or functional property or other recognizable product feature for which limits are specified

EXAMPLE Head height, body diameter, tensile strength or hardness.

**3.3 acceptance quality limit**  
**AQL**

acceptable percentage of non-conforming fasteners in an *inspection lot* (3.1) corresponding to a specific probability of acceptance defined in the AQL index

Note 1 to entry: AQL<sub>95</sub> is the percentage of non-conforming fasteners where the inspection lot has a 95 % chance of being accepted by the purchaser under the sampling plan; in other words, the supplier's risk of rejection is less than 5 %.

**3.4 limiting quality**  
**LQ**

percentage of non-conforming fasteners in an *inspection lot* (3.1) corresponding to a specific probability of acceptance defined in the LQ index

Note 1 to entry: LQ<sub>10</sub> is the percentage of non-conforming fasteners where the inspection lot has a 10 % chance of being accepted by the purchaser under the sampling plan; in other words, the consumer's risk of accepting the lot is less than 10 %.

Note 2 to entry: For a given sampling plan, limiting quality (LQ) and acceptance quality limit (AQL) are linked in the corresponding operating characteristic (OC) curve.

**4 Symbols**

For the purposes of this document, the following symbols apply.

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

Ac acceptance number

Re rejection number

[ISO 3269:2019](#)

LQ<sub>10</sub> limiting quality at 10 % probability of acceptance, in per cent

<https://standards.iteh.ai/catalog/standards/sist/275c0d97-ec47-4d16-82c9-25da261071a/iso-3269-2019>

AQL<sub>95</sub> acceptance quality limit at 95 % probability of acceptance, in per cent

N lot size

P<sub>a</sub> probability of acceptance, in per cent

**5 Incoming acceptance inspection procedures for fasteners**

**5.1 General requirements**

The requirements of this document shall apply to fasteners as delivered by the supplier, i.e. without alteration from the as-delivered condition. In case of alteration or further processing performed by the purchaser, the purchaser shall assume responsibility for conformance of all characteristics altered by such processing.

This document applies after receiving the fasteners, before releasing the lot to any subsequent processing.

Inspections according to this document shall be performed in accordance with [Tables 1](#) and [2](#).

In case of non-conformity found during inspection, [6.2](#) and/or [6.3](#) shall apply.

The purchaser shall give the supplier the opportunity to verify any alleged non-conformity prior to any disposition.



## 5.2 Inspection procedures

### 5.2.1 General

The purchaser can choose this document to verify that the fasteners comply with the technical requirements of the product standard or other specified requirements.

### 5.2.2 Sample size

Sample size shall be based on the size of the inspection lot specified in [Table 1](#). If the sample size is greater than the lot size, 100 % inspection is required for non-destructive tests.

Sample size, acceptance number,  $A_c$ , and rejection number,  $R_e$ , for each selected characteristic shall be determined individually.

### 5.2.3 Inspection modalities

Inspection category for the characteristic being inspected shall be in accordance with [Table 2](#), which lists the primary characteristics of various fastener types.

The selection of the characteristics for inspection shall be at the discretion of the purchaser. The purchaser is not required to inspect all characteristics listed in [Table 2](#). The purchaser shall decide which characteristics to inspect based on their impact on the form, fit and function of the fasteners used.

The purchaser can select any other characteristics specified in the relevant product standard or in other technical specifications for inspection.

NOTE The frequency and extent of acceptance inspection are at the discretion of the purchaser and are related to previous experience with the supplier and the purchaser's opinion of the critical nature of the fastener and its application.

Mechanical, physical and functional properties shall be inspected as specified in the relevant basic and reference standards (e.g. ISO 898-1, ISO 3506-2, ISO 16047, ISO 10683, ISO 6157-1).

Dimensional characteristics shall be inspected in accordance with relevant product standards and/or technical specifications.

The inspection of a listed mechanical, physical or functional characteristic can include several tests and/or test results (e.g. tensile strength may be tested using full-size, wedge tensile or specimens).

A listed dimensional characteristic can include several features (e.g. inspecting the drive for a hexagon head includes measuring width across flats, width across corners and minimum wrenching height).

## 5.3 Acceptance inspection categories

[Table 1](#) specifies sampling plans for acceptance inspection. Categories 1, 2 and 3 are explained in [Annex A](#). Category 3 sampling plans are selected from ISO 2859-1.

For more information on sampling concept, see [Annex B](#).