



# FINAL DRAFT International Standard

## ISO/FDIS 8745

### Fasteners — Taper grooved pins — Half-length progressive grooves

*Fixations — Goupilles cannelées progressives — Cannelures  
progressives sur la moitié de la longueur*

ISO/TC 2

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## Foreword

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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 document 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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This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185 *Fasteners*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 8745:1997) which has been technically revised.

The main changes are as follows:

- terms and definitions, principles for grooved pins and assembly (including hole dimensions), control of the expanded diameter  $d_2$  and pin straightness, mechanical and physical properties (including shear resistance and hardness) and inspection which are common for all grooved pins (product standards ISO 8739 to ISO 8747, ISO 13670 and ISO 13672) have been specified in the new reference standard ISO 13669;
- non-preferred diameters 1 mm, 3,5 mm, 7 mm, 9 mm, 14 mm and 18 mm have been added;
- values of expanded diameter  $d_2$  for steel pins have been slightly increased for the shortest length range, and have been added for stainless steel pins;
- tolerances for the rounded end and values for the chamfered end have been added;
- tolerances for the length of the grooves have been added;
- stainless steel grades A2, A4, C1 and F1 have been added;
- other materials (such as hardened steels, brass, aluminium) are by agreement (see [Table 3](#));
- specifications for labelling have been added as [Clause 8](#).

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).

# Fasteners — Taper grooved pins — Half-length progressive grooves

## 1 Scope

This document specifies the characteristics of taper grooved pins with half-length progressive grooves (with close-end at the insertion side), in steel and stainless steel, and with nominal diameter 1 mm to 25 mm.

These grooved pins are designed to fulfil the main following functions:

- positioning or guiding, and
- relative rotation of the assembled parts,

with an easy installation (due to its shape) and a medium level of pull-out resistance (due to the elastic fit behaviour of the pin).

NOTE The general requirements (including functional principles for grooved pins and assembly) are specified in ISO 13669.

## 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 3269, *Fasteners — Acceptance inspection* [ISO/FDIS 8745](https://standards.iteh.ai/catalog/standards/iso/301b1dc6-6fed-43c1-8d1f-4e9a67c10e08/iso-fdis-8745)

ISO 3506-6, *Fasteners — Mechanical properties of corrosion-resistant stainless steel fasteners — Part 6: General rules for the selection of stainless steels and nickel alloys for fasteners*

ISO 4042, *Fasteners — Electroplated coating systems*

ISO 9717, *Metallic and other inorganic coatings — Phosphate conversion coating of metals*

ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coating systems*

ISO 13669, *Fasteners — Grooved pins — General requirements*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13669 apply.

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

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

## 4 Principles of grooved pins and assembly

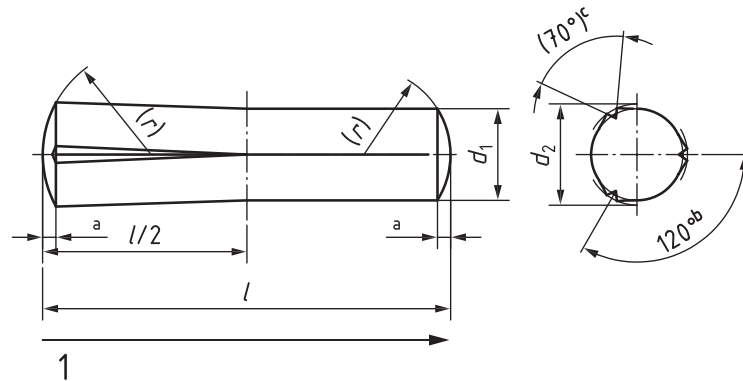
The principles of grooved pins and assembly specified in ISO 13669 shall apply.

## 5 Dimensions

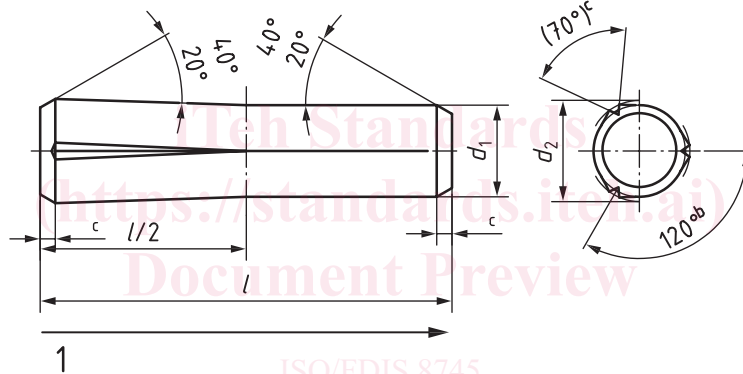
Dimensions shall be in accordance with [Figure 1](#) and with [Tables 1](#) and [2](#). The control of the expanded diameter  $d_2$  and the pin axial straightness  $t$  shall be as specified in ISO 13669.

For coated pins, dimensions and tolerances shall apply prior to coating.

Unless otherwise agreed at the time of the order, the pins are manufactured with rounded ends.



a) Pin with rounded ends (RN)



b) Option: pin with chamfered ends (CH)

### Key

- 1 insertion side
- a The pin diameter  $d_1$  is only applicable in areas where grooves are not present.
- b The angle of  $120^\circ$  between two grooves shall apply with a tolerance of  $\pm 20^\circ$ .
- c The groove angle of  $70^\circ$  is a reference dimension, see ISO 13669.

**Figure 1 — Taper grooved pins with half-length progressive grooves**

In accordance with [Figure 1](#), the length of the grooves shall be equal to  $l/2$  with the following tolerance:

—	$l \leq 10 \text{ mm}$	$l/2 \pm 0,3 \text{ mm}$
—	$10 \text{ mm} < l \leq 50 \text{ mm}$	$l/2 \pm 0,6 \text{ mm}$
—	$50 \text{ mm} < l \leq 100 \text{ mm}$	$l/2 \pm 1,0 \text{ mm}$
—	$100 \text{ mm} < l \leq 200 \text{ mm}$	$l/2 \pm 1,5 \text{ mm}$

The three grooves shall be open at the end opposite to the insertion side.