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Replacing GB/T 5796.1-2005

Trapezoidal screw threads - Part 1: Profiles

梯形螺纹 第 1 部分:牙型

(ISO 2901:2016, ISO metric trapezoidal screw threads - Basic and design profiles, MOD)

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020 “Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents”.

This document is Part 1 of GB/T 5796 “Trapezoidal screw threads”. GB/T 5796 has issued the following parts:

- Part 1: Profiles;
- Part 2: System of diameter and pitch;
- Part 3: Basic dimensions;
- Part 4: Tolerances.

This document replaces GB/T 5796.1-2005 “Trapezoidal Screw Threads - Part 1: Profiles”. Compared with GB/T 5796.1-2005, in addition to structural and editorial changes, the main technical changes in this document are as follows:

- Change the tooth height code of the basic profile. Use “H₂” to replace “H₁” (see Chapter 4 of this Edition, 3.2 of Edition 2005);
- Add the thread contact height code "H₀" of the design profile and the crest width and bottom width code "w" of the basic profile (see Chapter 4 of this Edition);
- Add the description of the starting position of the thread limit deviation (see Chapter 6 of this Edition);
- Change the number of decimal places for the coefficient in the calculation formula of the original triangle height H, from 3 decimals to 9 decimals (see Chapter 5 of this Edition, Table 1 of Edition 2005).

The revision of this document adopts ISO 2901:2016 "ISO metric trapezoidal screw threads - Basic and design profiles".

The technical differences between this document and ISO 2901:2016 and their reasons are as follows:

- Change ISO 5408 from informative reference to normative reference. Use GB/T14791 to replace (see Chapter 3) to make it meet the requirements of national standard preparation;
- Change the prompts in Tables 1 and 2 from declarative clauses to requirement-type clauses (see Chapters 5 and 6). Clarify the required attributes of the two tables;
- Delete the basic dimension formulas (D₁, d₂ and D₂, d₃, D₄) for the major diameter,

Trapezoidal screw threads - Part 1: Profiles

1 Scope

This document specifies the basic profile and design profile of trapezoidal screw threads.

This document applies primarily to mechanical transmission threads and may also be used for fastening threads.

2 Normative references

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.

GB/T 14791, *Screw Threads - Vocabulary* (GB/T 14791-2013, ISO 5408:2009, IDT)

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 14791 apply.

4 Codes

The following codes apply to this document.

D: Major diameter of the internal thread on the basic profile (nominal diameter);

D₄: Major diameter of the internal thread on the design profile;

d: Major diameter of external thread (nominal diameter);

D₂: Internal thread pitch diameter;

d₂: Pitch diameter of external thread;

D₁: Internal thread diameter;

d₁: External thread diameter on the basic profile;

d₃: External thread diameter on the design profile;

P: Pitch;

H: Original triangle height;

H₂: Basic profile tooth height;

H₀: Contact height of the thread on the design profile;

H₄: Height of the internal thread on the design profile;

h₃: External thread height on the design profile;

a_c: Major diameter, minor diameter gap on the design profile;

w: Crest width and base width on the basic profile;

R₁: Rounding radius of the external thread crest on the design profile;

R₂: Rounding radius of the inner and outer threads on the design profile.

5 Basic profile

The basic profile is shown in the thick solid line in Figure 1. The basic profile of the internal and external threads is the same.

The basic profile size shall meet the requirements of Table 1. The followings are the basic profile size formulas.

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