



BSI Standards Publication

Synchronous belts — Calculation of power rating and drive centre distance

National foreword

This British Standard is the UK implementation of ISO 5295:2017.

The UK participation in its preparation was entrusted to Technical Committee MCE/10, Belts & Pulley Drive.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Synchronous belts — Calculation of power rating and drive centre distance

*Courroies synchrones — Calcul de la puissance transmissible et de
l'entraxe*



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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 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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 41, *Pulleys and belts (including veebelts)* Subcommittee SC 4, *Synchronous belt drives*.

This third edition cancels and replaces the second edition (ISO 5295:1987), which has been technically revised. The scope been revised to clarify the applicability of the document.

Synchronous belts — Calculation of power rating and drive centre distance

1 Scope

This document establishes formulae for the calculation of power rating and centre distance of standard synchronous belts on two pulley drives.

It is applicable to trapezoidal belts only. It does not apply to curvilinear synchronous belts.

The numerical values of certain parameters used in the calculations depend upon the pitch and the construction of the belt and are specified by the belt manufacturer.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1

power rating

power that a specified synchronous belt can transmit under specified geometrical and ambient conditions for a satisfactory period of time, provided that the drive has been installed and is maintained in a proper manner

Note 1 to entry: The power rating depends on the following:

- the pitch of the belt and pulley teeth;
- the belt width;
- the mass of a linear metre of belt;
- the allowable working tension in the belt;
- the angular velocity of the smaller pulley;
- the number of teeth of the smaller pulley;
- the number of teeth in mesh on the smaller pulley.