

Specification for

Short-pitch transmission precision roller chains and chain wheels

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Machinery and Components Standards Policy Committee (MCE/-) to Technical Committee MCE/1, upon which the following bodies were represented:

- British Industrial Truck Association
- Institution of Mechanical Engineers
- Mechanical Handling Engineers' Association
- Precision Chain Manufacturers' Association

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National foreword

This British Standard has been prepared under the direction of the Machinery and Components Standards Policy Committee. It is identical with ISO 606:1994 *Short-pitch transmission precision roller chains and chain wheels*, published by the International Organization for Standardization (ISO).

This standard supersedes BS 228:1984, which is withdrawn.

Cross-reference

International standard	Corresponding British Standard
ISO 286-2:1988	BS EN 20286-2 <i>ISO System of limits and fits</i> Part 2:1993 <i>Tables of standard tolerance grades and limit deviations for holes and shafts</i> (Identical)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

The provisions of this revised International Standard have been established by including sizes of chains used by the majority of countries in the world, and by unifying dimensions, strengths and other data which differed in current national standards. At the same time, certain size ranges listed in some national standards, for which it was considered a universal usage had not been established, have been eliminated.

The whole field of application open to this medium of transmission has been covered by the ranges of chains already established. To achieve this, the sizes of 12,7 mm pitch to 76,2 mm pitch inclusive have been duplicated by the inclusion of chains derived from standards originating and centred around ANSI (denoted by suffix A) and, on the other hand, by chains representing the unification of the principal standards originating in Europe (suffix B), the two being complementary for the coverage of the widest possible field of application.

Both series of chains have been derived from earlier inch versions whose original values are recorded in Annex B.

Clause 5, covering chain wheels, represents the unification of all the relevant national standards in the world and includes, in particular, complete tolerances relating to tooth form.

The dimensions of chain specified ensure complete interchangeability of any given size and provide interchangeability of individual links of chains for repair purposes.

1 Scope

This International Standard specifies requirements for short-pitch precision roller chains of simple and multiplex construction suitable for the mechanical transmission of power and allied applications, together with those for their associated chain wheels. It covers dimensions, tolerances, length measurement, proof testing and minimum tensile strengths.

Although it applies to chain wheels for cycles and motor cycles, it does not apply to chains for cycles or for motor cycles, which are covered by ISO 9633 and ISO 10190 respectively.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards. ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

3 Chains

3.1 Nomenclature of assemblies and components

The nomenclature of chain assemblies and their component parts is illustrated in Figure 1 and Figure 2; the figures do not define the actual form of the chain plates.

3.2 Designation

Transmission precision roller chains shall be designated by the standard ISO chain number given in Table 1 and Table 2. The ISO chain numbers in Table 1 are supplemented by a hyphenated suffix 1 for simple chain, 2 for duplex chain, 3 for triplex chain: for example 16B-1, 16B-2, 16B-3, etc. Chains 081, 083, 084 and 085 do not follow this procedure since they are available in simple form only.

3.3 Dimensions

Chains shall conform to the dimensions shown in Figure 3 and given in Table 1 and Table 2. Maximum and minimum dimensions are specified to ensure interchangeability of links produced by different makers of chain. They represent limits for interchangeability, but are not the manufacturing tolerances.

3.4 Tensile testing

3.4.1 The minimum tensile strength is that value which shall be exceeded when a tensile force is applied to a sample which is tested to destruction as defined in **3.4.2**. This minimum tensile strength is not a working force. It is intended primarily as a comparative figure between chains of various constructions. For application information, the manufacturers or their published data should be consulted.

3.4.2 A tensile force, not less than the minimum tensile strength specified in Table 1, shall be applied slowly to the ends of a chain length, containing at least five free pitches, by means of shackles permitting free movement on both sides of the chain centreline, in the normal plane of articulation.

Failure shall be considered to have occurred at the first point where increasing extension is no longer accompanied by increasing load; i.e. the summit of the force/extension diagram.

Tests in which failures occur adjacent to the shackles shall be disregarded.

3.4.3 The tensile test shall be considered a destructive test. Even though a chain may not visibly fail when subjected to a force equivalent to the minimum tensile strength, it will have been stressed beyond the yield point and will be unfit for service.

3.5 Proof testing

All chains shall be proof tested by applying a tensile force equivalent to one-third of the minimum tensile strength given in Table 1.

3.6 Length accuracy

Finished chains shall be measured after proof testing but before lubrication.

The standard length for measurement shall be a minimum of

- a) 610 mm for ISO chain numbers 05B to 12B and 081 to 085 inclusive,
- b) 1 220 mm for ISO chain numbers 16A to 72B inclusive,

and the chain shall terminate with an inner link at each end.

The chain shall be supported throughout its entire length and the measuring force specified in Table 1 shall be applied.

The measured length shall be the nominal length $+0,15\%$.

The length accuracy of chains which have to work in parallel shall be within the above limits but matched by agreement with the manufacturer.

3.7 Marking

The chain shall be marked with the following:

- a) manufacturer's name or trademark;
- b) ISO chain number quoted in Table 1 or Table 2.

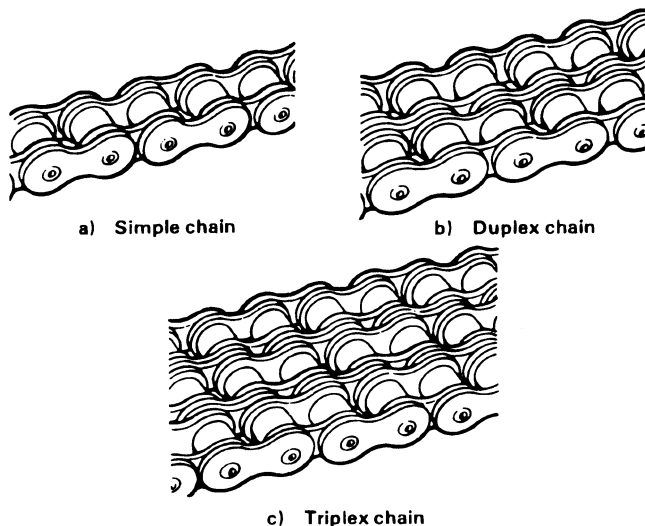


Figure 1 — Types of roller chain assembly

