

Steel roller chains, types S and C, attachments and sprockets

ICS 21.220.30

National foreword

This British Standard reproduces verbatim ISO 487:1998 and implements it as the UK national standard. It supersedes BS 2947:1985 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/1, Chains and chain wheels for power transmission and conveyors, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

The following table identifies the current issue of each page. Issue 1 indicates that a page has been introduced for the first time by amendment. Subsequent issue numbers indicate an updated page. Vertical sidelining on replacement pages indicates the most recent changes (amendment, addition, deletion).

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INTERNATIONAL STANDARD

ISO 487

Third edition
1998-07-15

Steel roller chains, types S and C, attachments and sprockets

*Chaînes à rouleaux en acier, types S et C, plaques-attaches et roues
dentées*



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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 487 was prepared by Technical Committee ISO/TC 100, *Chains and chain wheels for power transmission and conveyors*.

This third edition cancels and replaces the second edition (ISO 487:1984), which has been revised to include the latest features and products that are needed by industries using these chains and attachments. This edition introduces a new range of higher strength chains ("H" series) and the "F4" attachments for the S45 and S55 chains whilst deleting the "corn picker" attachments as these are not deemed relevant to current practice in industry.

Annex A forms an integral part of this International Standard. Annex B is for information only.

Descriptors: machinery, chain drives, chains, roller chains, sprocket wheels, dimensions, marking, designation, accessories.

Steel roller chains, types S and C, attachments and sprockets

1 Scope

This International Standard specifies the characteristics of a range of steel roller chains, dimensionally derived from the malleable iron type and suitable for the conditions of operation and maintenance prevailing in such fields as agriculture, building, quarrying and related industry, mechanical handling, etc., and of associated chain sprockets.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 185:1988, *Grey cast iron — Classification*.

ISO 606:1994, *Short-pitch transmission precision roller chains and chain wheels*.

3 Chains

3.1 Nomenclature

The nomenclature of chains and their component parts is given in figures 1 and 2.

3.2 Designation

Steel roller chains shall be designated by the standard ISO chain numbers given in table 1.

3.3 Dimensions

The chains shall conform to the dimensions given in table 1. Maximum and minimum dimensions are specified to ensure the interchangeability of links produced by different chain makers. They represent limits for interchangeability, but are not the actual tolerances that should be used in manufacture.

3.4 Minimum tensile strength

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

3.4.2 A tensile force, not less than that 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 centre line, 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 force, 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 fail when subjected to the force equivalent to the minimum tensile strength, it will have been stressed beyond the yield point and will be unfit for service.

3.5 Pre-loading

It is recommended that all chains be pre-load tested by applying a force equivalent to at least one third of the minimum tensile strength given in table 1.

3.6 Length measurement

Finished chains shall be measured after pre-loading (where applicable) but before they are lubricated.

The standard length for measurement shall be a minimum of 20 times the pitch with a maximum length of 1 524 mm and shall terminate with an inner link at each end.

The chain shall be supported throughout its entire length and the measuring load in table 1 shall be applied.

To comply with this International Standard, the length shall be the nominal length subject to the limits of tolerance $^{+0,3}_{0}\%$.

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

3.7 Cranked link

A cranked link is required to obtain an odd number of pitches in a chain. The crank shall be central between pins. Using the symbols given in table 1, its length shall not exceed $p - 1,15h_2$.

Attachment plates shall not be part of a cranked link.

3.8 Marking

The chains shall be marked with the manufacturer's name or trademark.

It is recommended that the chains be marked with the ISO chain number specified in table 1.

4 Chain attachment plates

The three basic types of attachment plates covered by this International Standard are described in 4.1 to 4.3.

4.1 F1 and F4 attachment plates

F1 and F4 attachment plates form a vertical platform to serve as a pusher. Each attachment plate accepts one fixing bolt for this purpose. Dimensions shall be in accordance with tables 2 and 3.

4.2 K1 attachment plates

K1 attachment plates form a platform suitable to accommodate slats or other devices. Each attachment plate accepts one fixing bolt for this purpose. Dimensions shall be in accordance with tables 4 and 5. The dimensions not specified in these tables are at the discretion of the manufacturer.