

Specification for

Leaf chains, clevises and sheaves

UDC 621.855

Committees responsible for this British Standard

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- 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 4347 : 1992 *Leaf chains, clevises and sheaves*, published by the International Organization for Standardization (ISO).

This standard supersedes BS 5594 : 1986, which is withdrawn.

Cross-references

International standard	Corresponding British Standard
ISO 286-2 : 1988	BS 4500 <i>ISO limits and fits</i> Section 1.2 : 1990 <i>Tables of commonly used tolerance and grades and limits deviations for hole and shafts</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 606 : 1982¹⁾, to which normative reference is made in the text and has decided that they are acceptable for use in conjunction with this standard.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

¹⁾ Under revision.

Introduction

This International Standard has been prepared after examining the possibility of having one single series of chains derived directly from the short-pitch precision chains defined in ISO 606.

Consequently, this International Standard includes two series of chains, the one derived from the ISO 606 A series and ANSI B 29.8 being designated by the symbol LH, and the one from ISO 606 B series designated by the symbol LL.

The dimensions are shown in millimetres and are derived from the original dimensions in inches, which are given in annex A.

Leaf chains, clevises and sheaves

1 Scope

This International Standard specifies characteristics of chains used for general lifting purposes, together with the rim profiles of sheaves and the chain attachment ends of clevises. It covers dimensions, limits for interchangeability, length measurement, proof testing and minimum tensile strengths.

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 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

ISO 606:—¹⁾, *Short-pitch transmission precision roller chains and chain wheels*.

3 Chains

3.1 Nomenclature

The nomenclature of chains is indicated in figure 1 and tables 1 and 2; the figure does not necessarily define the actual form of the chain plates.

3.2 Chain designation

Leaf chains shall be designated by the same numerical components, taken from the standardized ISO chain number, as laid down in ISO 606 for chains with the same pitch: i.e. two digits expressing

the pitch in sixteenths of an inch, preceded by the prefix LH for chains from the ISO 606 series A, and LL for chains from ISO 606 series B; followed by the two numbers indicating the number of plates on pin links and articulating links, respectively.

EXAMPLES

The designation of a chain with nominal pitch of 12,7 mm derived from chain 08B, consisting of pin links and articulating links, each including two plates is as follows:

LL 0822

The designation of a chain with nominal pitch of 19,05 mm, consisting of pin links including three plates and articulating links including four plates is as follows:

LH 1234

3.3 Dimensions

Chains shall conform to the dimensions given in tables 1 and 2. Maximum and minimum dimensions are specified to ensure interchangeability of complete chains in clevises. They represent limits for interchangeability, but are not the actual tolerances that should be used in manufacture.

NOTE 1 Chains from different manufacturers should not be placed together within the same application.

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 strength is not a working load. 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.

1) To be published. (Revision of ISO 606:1982)

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 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 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 as 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 at least one-third of the minimum tensile strength given in table 1.

3.6 Length accuracy

As LL leaf chains are normally constructed from plates also used for short-pitch transmission roller chains, the actual pitch of the chain does not

necessarily equal its nominal pitch but depends upon each manufacturer. For the specific chain length, consult the manufacturer.

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

The standard measurement length for a chain shall be 49 pitches or 1 524 mm, whichever is the smaller, and the chain shall terminate with an identical link at each end.

The chain shall be supported throughout its entire length and a measuring force equal to 1/100 of the minimum tensile force given in table 1 shall be applied.

The measured length shall be the manufacturer's specified design length, subject to a tolerance of $\pm 0,25\%$.

3.7 Cranked links

Cranked links shall not be used in leaf chains.

3.8 Marking

The chains shall be marked with

- a) the manufacturer's name or trade mark;
- b) the ISO chain number as given in table 1.