

Specification for

Flat-top chains and associated chainwheels for conveyors

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British Compressed Air Society	Health and Safety Executive
British Electrical and Allied Manufacturers' Association (BEAMA)	Institution of Gas Engineers
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	The Society of Motor Manufacturers and Traders Limited
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The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

British Industrial Truck Association	Individual experts
Mechanical Handling Engineers' Association	

This British Standard, having been prepared under the direction of the Mechanical Engineering Standards Committee, was published under the authority of the Executive Board and comes into effect on 31 December 1979

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National foreword

This British Standard has been prepared under the direction of the Mechanical Engineering Standards Committee and specifies the characteristics of flat-top chains used for conveyors. It is identical with ISO 4348:1978 “*Flat-top chains and associated chainwheels for conveyors*” published by the International Organization for Standardization (ISO).

The publication of this British Standard effectively supersedes the requirements for metal slat band chains specified in clause 2 of BS 2075:1971 “*Chains and chainwheels for slat conveyors*”. An amendment slip is concurrently being published to delete reference to these chains from BS 2075.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

The comma has been used in some places as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10 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.

0 Introduction

This International Standard lays down the dimensions of a selected range of flat-top chains which are manufactured in various countries and which are in world-wide use. Flat-top chains are also known as “slat band” and “table top” chains.

It should be noted that the specified dimensions for the chains are based upon inch units.

1 Scope and field of application

This International Standard specifies the characteristics of flat-top chains and associated chainwheels as used principally on conveyors for bottles. It covers dimensions, limits for interchangeability, measuring loads and minimum ultimate tensile strengths.

2 Chains

2.1 Nomenclature

Two types of chain are specified:

- single-hinge (see Figure 1 and Table 1 and Table 1M);
- double-hinge (see Figure 4 and Table 2 and Table 2M).

2.2 Designation

Flat-top chains are designated by the letter C followed by the nominal slat width expressed in units of 0.25 in, followed by S or D depending upon whether the chains are of single-hinge or double-hinge design.

Example: C12S designates a single-hinge chain with a nominal slat width of 3.0 in.

2.3 Dimensions

2.3.1 The chains shall conform to the dimensions given in Table 1, Table 1M, Table 2 and Table 2M. Maximum and minimum dimensions are specified to ensure interchangeability of slats produced by different manufacturers.

2.3.2 Hinge clearance dimensions e and f are both based on the maximum values of t and d_1 as given in Table 1 and Table 1M, and must be recalculated for any other values.

The basis for the calculations shall be that no part of an adjacent slat may come within the swept clearance k as shown in Figure 2 and Figure 3.

2.3.3 The dimensions d_2 and d_3 given in Table 1 and Table 1M ensure free movement of the articulating curls around the bearing pin.

The methods of torsional and axial bearing pin restraint within the fixed curls shall be at the manufacturer's discretion.

2.4 Minimum ultimate tensile strength

2.4.1 The minimum tensile strength is the minimum strength of samples tested to destruction in tensile loading, as defined in **2.4.2**. This strength is not a working load. 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.

2.4.2 A tensile load shall be applied 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 load, i.e. the first crest on the load/extension diagram.

NOTE This will indicate failure in the terms of this International Standard whether hinges break or uncurl.

2.4.3 The tensile test shall be considered a destructive test. Even though a chain may not fail when subjected to the minimum ultimate tensile load, as given in Table 1, Table 1M, Table 2 or Table 2M, it will have been stressed beyond the yield point and will be unfit for service.

2.5 Length accuracy

The standard length for measurement shall be 40 pitches measured before lubrication.

The chain shall be supported throughout its entire length and the measuring load specified in Table 1, Table 1M, Table 2 or Table 2M applied. To comply with this International Standard, the nominal standard length shall be subject to a tolerance of $^{+0,3}_{-0,1}$ %.

2.6 Marking

It is recommended that the chains should be marked with:

- a) the manufacturer's name or trade mark;
- b) the ISO chain number (column 1 of Table 1, Table 1M, Table 2 and Table 2M).