

Specification for

Lifting twistlocks

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- British Airways
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- British Ports Association and the National Association of Ports Employers
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- Department of Transport (Transport Industries)
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Foreword

This revision of BS 5237 has been prepared under the direction of the Packaging and Freight Container Standards Committee. It supersedes BS 5237:1975 which is withdrawn.

This standard specifies certain features of a component for lifting freight containers and certain other equipment. These components are generally known as lifting twistlocks, and are referred to as such in this standard.

This standard does not, however, cover the design features of twistlocks which may be used for the location and restraint of containers on vehicles.

The lifting twistlock designs in this standard are compatible with series 1 freight containers which comply with BS 3951-1.1 and which are equipped with corner fittings as specified in BS 3951-1.2.

The lifting twistlock provides a means of locking freight containers to a lifting frame suitable for automatic, semi-automatic or manual operating systems.

Lifting twistlocks are associated with spigots which locate the twistlock in the corner fittings of the container and the profiles of the twistlocks are such as to provide a degree of gather. Suitable dimensions for such corner locating spigots are included for guidance (see Figure 2).

Four lifting twistlocks may also be used for occasionally lifting equally distributed loads equipped with corner fittings, such as hatch covers, sub-spreaders etc., which may be heavier than a fully laden 1AA, 1A or 1AX freight container, as specified in BS 3951-1.1, provided always that the rating of the twistlock is not exceeded. This revision of BS 5237 corrects certain errors contained in the tables and figures of the first edition, updates references and clarifies certain points in the text.

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.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, 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.

1 Scope

This British Standard specifies the characteristics of the head and adjacent portions of the shank and the dimensional requirements and material properties for lifting twistlocks used in conjunction with series 1 freight containers that comply with BS 3951-1.1 and are equipped with corner fittings as specified in BS 3951-1.2. Test load, rating and marking requirements are also specified.

Certain dimensions of the lifting twistlocks are specified on the assumption of correct spacing of the twistlocks in the lifting frame. It has therefore been necessary to specify the centre distances which apply. For fixed centre twistlocks the tolerances on these distances are also specified (see Table 2). These dimensions and tolerances are based on series 1 freight container and corner fitting dimensions. The method by which the tolerances are derived is given in Appendix A. Appendix B outlines the factors to be considered in deducing the maximum imposed load on the twistlock.

The attachment of lifting twistlocks to their relevant supporting members is not covered nor are details of safety interlocks or position-indicating devices. The end of the shank and the method of attachment to the operating mechanism and spreader are not specified.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Types of lifting twistlocks

2.1 Lifting twistlocks with fixed centres

These twistlocks shall be located at fixed centre distances in a lifting frame.

2.2 Lifting twistlocks with floating centres

These twistlocks shall be provided with a degree of both lateral and longitudinal movement or float to enable them to position themselves separately with respect to container corner fittings.

NOTE In this case the twistlocks may be larger in certain dimensions. The method of achieving float should not significantly increase the likelihood of the load being taken on one side of the twistlock head only.

3 Form and dimensions

3.1 Lifting twistlocks

The form and dimensions of the head and adjacent shank area of lifting twistlocks shall be in accordance with Figure 1 and Table 1.

For twistlocks that are located at fixed centre distances in the lifting frame the dimensions shall be in accordance with the first line of Table 1.

NOTE 1 For twistlocks that are provided with horizontal movement or float the dimensions may be modified, depending on the amount of float provided, in accordance with the subsequent lines of Table 1. The twistlock dimensions, however, should not exceed those given in the last line of Table 1, which correspond with the minimum acceptable clearance in the container corner fitting for all possible positions of the twistlock.

NOTE 2 The mounting of twistlocks should be such as to ensure that the head does not overhang the associated corner locating spigot when in the in-line (unlocked) position. Suitable dimensions for such spigots are shown in Figure 2.

NOTE 3 Dimensions between centres of fixed twistlocks when mounted on lifting frames should (using the notation in Figure 3) comply with the relevant parts of Table 2 or an equivalent table derived in a similar manner (see Appendix A).

For floating twistlocks it should be noted that although nominal centre-to-centre dimensions will remain as shown in Table 2, tolerances should be deduced with due allowance for the amount of float.

Where the minimum amount of float is employed, the dimensions between centres about which float is introduced should have tolerances and allowable differences between diagonals similar to those applicable to the centres of fixed centre twistlocks.

Table 1 — Minimum lateral and longitudinal float requirements for a range of twistlock dimensions

Minimum lateral and longitudinal float per twistlock	Dimensions represented in Figure 1 and Figure 2 by:				
	<i>D</i>	<i>d</i>	<i>A</i>	<i>B</i>	<i>C</i>
	mm	mm	mm	mm	mm
0 (fixed)	$54^{+0.1}_{-0}$	53 to 53.1	$97^{+0}_{-0.5}$	$56^{+0}_{-0.25}$	48 nominal
1	$55^{+0.1}_{-0}$	53 to 54	$98^{+0}_{-0.5}$	$57^{+0}_{-0.25}$	49 nominal
2	$56^{+0.1}_{-0}$	53 to 55	$99^{+0}_{-0.5}$	$58^{+0}_{-0.25}$	50 nominal
3	$57^{+0.1}_{-0}$	53 to 56	$100^{+0}_{-0.5}$	$59^{+0}_{-0.25}$	51 nominal
4	$58^{+0.1}_{-0}$	54 to 57	$101^{+0}_{-0.5}$	$60^{+0}_{-0.25}$	52 nominal
5 or more	$59^{+0.1}_{-0}$	55 to 58	$102^{+0}_{-0.5}$	$61^{+0}_{-0.25}$	53 nominal

