BS 4998:1985

Specification for

Moulded thermoplastics dustbins (excluding lids)

Confirmed February 2012

UDC 628.463.2-036.5

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Building Services Standards Committee (SEB/-) to Technical Committee SEB/20 upon which the following bodies were represented:

Association of Metropolitan Authorities
Container Handling Equipment Manufacturers
Engineering Industries Association
Institute of Housing
Institute of Wastes Management
Institution of Civil Engineers
Institution of Environmental Health Officers
Institution of Public Health Engineers
Packaging and Industrial Films Association

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The following BSI references relate to the work on this standard;
Committee reference SEB/20
Draft for comment 83/12185 DC

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Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

Foreword

This revision of this British Standard has been prepared under the direction of the Building Services Standards Committee. It was originally proposed by the British Plastics Federation to provide performance requirements for dustbins manufactured from plastics materials. Such dustbins are being used increasingly and are suitable for use with all normal household waste except hot ashes. It supersedes BS 4998:1974 which is withdrawn.

This revision differs from the earlier edition in only specifying requirements for dustbin bodies made of thermoplastics materials. In particular, the requirements for the amount of rework material permitted, the dimensions of the dustbins and the appropriate test loads have been changed. The standard now specifies a maximum mass for the dustbin body. Requirements for dustbin lids will be specified in a forthcoming British Standard.

Certification. Attention is drawn to the certification facilities described on the inside back cover of this standard.

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 8, 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 requirements for the dimensions, materials, design and performance of moulded dustbins (excluding lids) manufactured from thermoplastics materials suitable for use with normal household refuse except hot ashes, and having capacities from 0.05 m^3 to 0.12 m^3.

This standard does not take account of:

a) whether the dustbin is to be used in conjunction with a bin liner;

b) the special design requirements necessary if the dustbin is to be subjected to regular dragging or rolling as part of a collection system.

NOTE The title of the publication referred to in this standard is given on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1
thermoplastics

a plastics material capable of being repeatably softened by heat and hardened by cooling

2.2
capacity

the volume of liquid the dustbin contains when it is filled to the brim

3 Materials

3.1 The dustbin shall be produced from a formulated and compounded thermoplastics material. If rework material is used, it shall not constitute more than 30 % of the total material and shall be the manufacturer's material, of the same type, in accordance with this standard. No other rework material shall be used.

3.2 The body handles shall be made either from metal or from a thermoplastics material complying with **3.1**. Metal handles and any associated fastenings shall be protected from corrosion, and shall show no pitting when tested in accordance with BS 5466-1 for a period of 96 ± 1 h. Staining shall not constitute a failure.

4 General dimensions

4.1 The internal height and the internal diameter of the dustbin shall comply with Table 1, as appropriate.

4.2 The sidewalls of the dustbin shall taper from top to bottom. The taper and the position of the handles shall be such that, when one dustbin is stored inside another, the degree of nesting shall be not less than half the height of a dustbin.

5 Mass

The maximum mass of the dustbin shall be 5 kg.

Table 1 — General dimensions

Capacity		Internal height (max.)	Internal diameter (max.)
m^3	L	mm	mm
0.060 to 0.070	60 to 70	575	480
0.071 to 0.080	71 to 80	625	480
0.081 to 0.090	81 to 90	675	480
0.091 to 0.120	91 to 120	775	500

6 Design

6.1 Body

The internal form and surface of the dustbin shall be such that it will not trap the contents when the dustbin is being emptied. The body shall be smooth and free from flashes and shall have no sharp edges.

6.2 Base

The base shall have a projection or indentation of depth 15 mm minimum and length 100 mm minimum, positioned vertically below each body handle, and not more than 50 mm inward from the intersection of the side wall of the body and the base, which shall provide a finger grip.

NOTE A suitable finger grip may be provided by means of raised cross hatching or radial ribs.

6.3 Body handles

6.3.1 Each dustbin shall be fitted with two diametrically opposite body handles, situated above the centre of gravity of the empty dustbin.

6.3.2 Each body handle shall be shaped so as to give a hand hold. A rigid test block of the dimensions shown in Figure 1 shall pass freely through each handle along a minimum length of 105 min.

6.3.3 The gripping part of the handles shall have no sharp corners or edges.

6.3.4 When tested in accordance with the method described in Appendix B and using the test rig layout given in Appendix A, there shall be no visible weakening of the attachments and no permanent distortion or splitting to the main body of the dustbin. After a minimum period of 30 min from the end of the test, a rigid test block of the dimensions shown in Figure 1 shall pass freely through each handle along a minimum length of 105 mm.

7 Impact strength

7.1 Impact strength of the base

7.1.1 *At normal temperature* (23 °C). When tested in accordance with the method described in **C.1**, the dustbin shall show no splitting, puncture or permanent distortion.

7.1.2 *At low temperature* (– 10 °C). When tested in accordance with the method described in **C.2**, the dustbin shall show no splitting, puncture or permanent distortion.

7.2 Impact strength of the sidewall

When tested in accordance with the method described in Appendix D, the dustbin shall show no splitting, puncture or permanent distortion.

8 Deformation resistance

When tested in accordance with the method described in Appendix E, the distortion of the dustbin mouth shall not exceed 9 %.

9 Marking

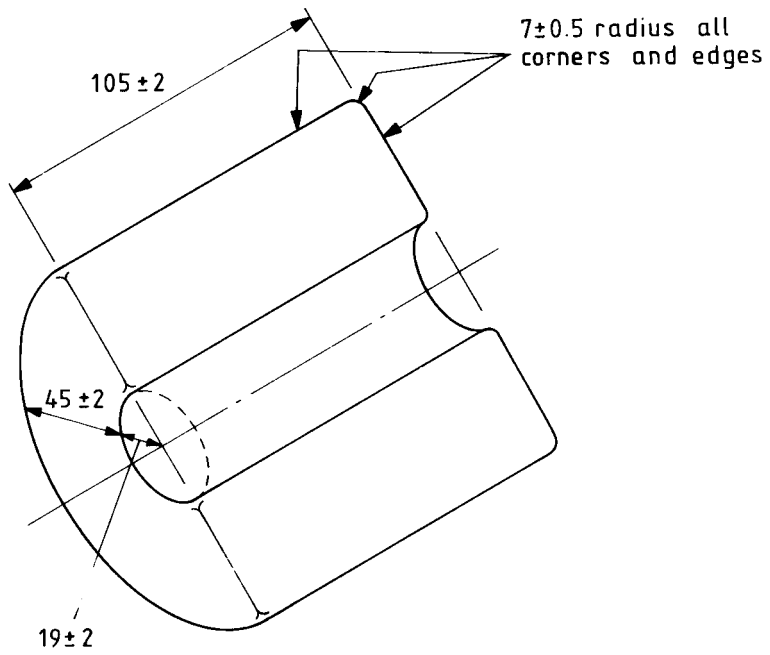
Each dustbin shall be clearly and permanently marked with the following.

a) The manufacturer's name or identification.

b) The number and date of this British Standard, i.e. BS 4998:1985[1)].

c) The capacity of the dustbin.

d) The year and month of manufacture.



All dimensions are in millimetres.

Figure 1 — Test block for handle

[1)] Marking BS 4998:1985 on or in relation to a product is a claim by the manufacturer that the product has been manufactured to the requirements of the standard. The accuracy of such a claim is therefore solely the manufacturer's responsibility. Enquiries as to the availability of third party certification to support such claims should be addressed to the Director, Quality Assurance Division, BSI, PO Box 375, Milton Keynes MK14 6LO for certification marks administered by BSI or to the appropriate authority for other certification marks.

Appendix A Test rig

The general layout of the test rig shall be as shown in Figure 2, Figure 3, Figure 4 and Figure 5.

Prepare test loads consisting of free flowing solid material of bulk density between 400 kg/m^3 and 480 kg/m^3 according to the equation

test load (in kg) = brimful capacity (in m^3) × 335

NOTE The test load can conveniently consist of plastics granules contained in a polyethylene bag to prevent spillage from the dustbin.

Appendix B Test for strength of handles

Set up the test rig as described in Appendix A and as shown in Figure 6 and Figure 7.

Fill the dustbin with the appropriate test load. Put the loop (see Figure 7) through one handle and on to the crossbar; attach the yoke to the dustbin. Raise the dustbin so that there is 300 ± 5 mm of slack on the loop (see Figure 6). Release the dustbin using the release hook. Examine the handle and body of the dustbin for damage. Repeat the test with the other handle.

Appendix C Test for impact strength of the base

C.1 Test at normal temperature (23 °C)

C.1.1 Set up the test rig described in Appendix A and as shown in Figure 8.

C.1.2 Condition the dustbin at 23 ± 2 °C for at least 2 h prior to testing.

C.1.3 Attach the yoke to the dustbin containing the appropriate test load distributed throughout a minimum of 50 % of the dustbin capacity. Lower the dustbin until the base rim rests on the 25 ± 2 mm thick spacer (see Figure 8). Adjust the position of the striker so that it touches the base not more than 25 mm beyond the centre of the base, opposite to the point at which the foot is in contact with the 25 mm packing. Raise the dustbin 450 ± 5 mm above the striker. Remove the spacer and release the dustbin. Examine the dustbin for damage.

C.2 Test at low temperature (– 10 °C)

C.2.1 Set up the test rig as described in Appendix A.

C.2.2 Condition the dustbin at – 10 ± 2 °C for at least 2 h prior to testing in a chamber of convenient size, e.g. a commercial deep-freeze for foodstuffs.

C.2.3 Within 1 min of removing the dustbin from its cooling environment, place the appropriate test load in the dustbin and test as described in **C.1.3**. Examine the dustbin for damage.

Appendix D Test for impact strength of the sidewall

Condition the dustbin as described in **C.2.2**.

Remove the dustbin from its cooling environment. Place the dustbin on its side, and, within 1 min of its removal from the cooling environment, strike the uppermost face of the sidewall of the dustbin at a point 100 ± 5 mm measured from the lip/rim of the dustbin mouth, using a striker having a mass of 2.7 ± 0.2 kg with a hemispherical striking surface of 25 ± 2 mm radius, dropped from a height of 3.00 ± 0.05 m above the target point.

Appendix E Test for deformation resistance of the dustbin

Condition the dustbin as described in **C.1.2**.

Suspend the dustbin by one of its body handles from a hook or by other suitable means. Record the distance across the mouth of the dustbin along an axis running through the dustbin handles.

Suspend a 4.0 ± 0.2 kg weight from the other handle of the dustbin. After 60 ± 5 s record the distance across the mouth of the dustbin along an axis running through the dustbin handles. Calculate the percentage distortion of the dustbin mouth.

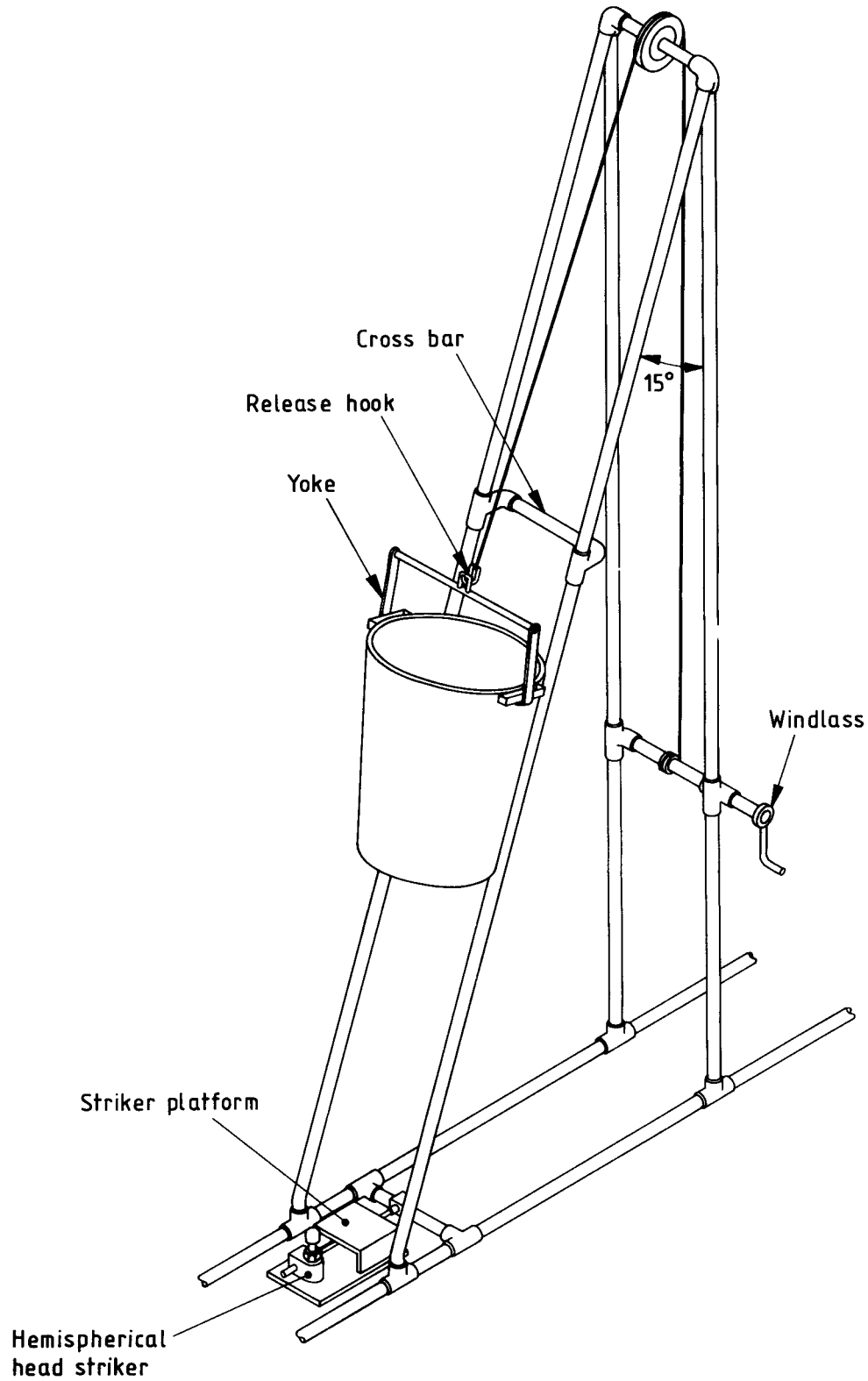


Figure 2 — General layout of dustbin test rig

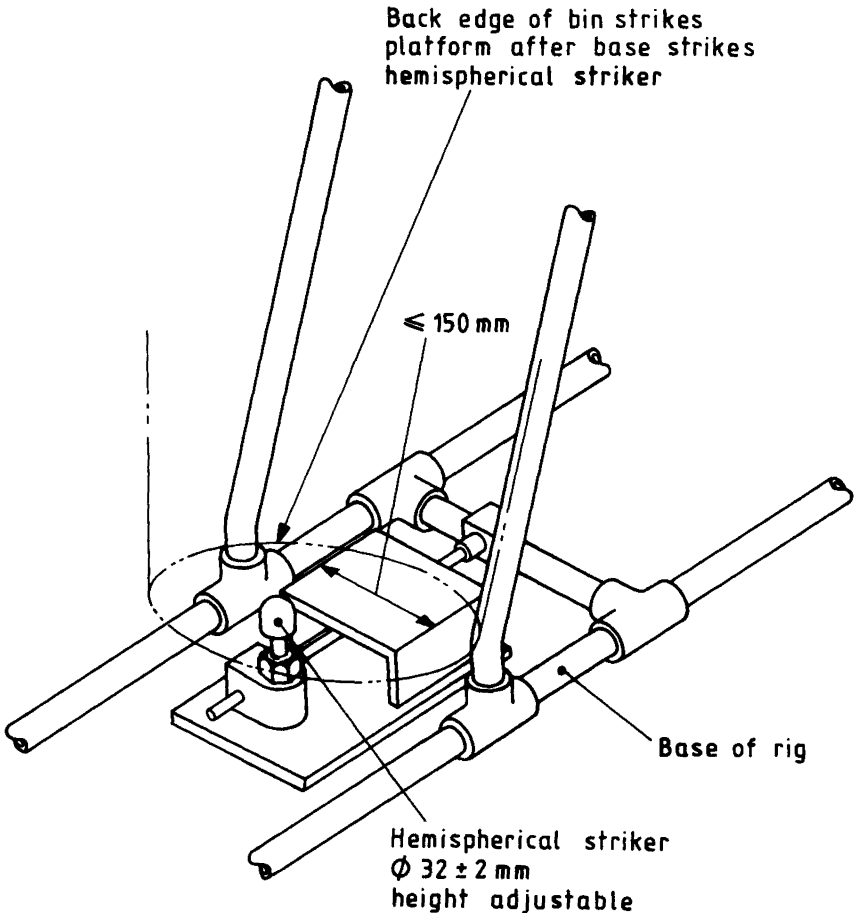


Figure 3 — Striker base

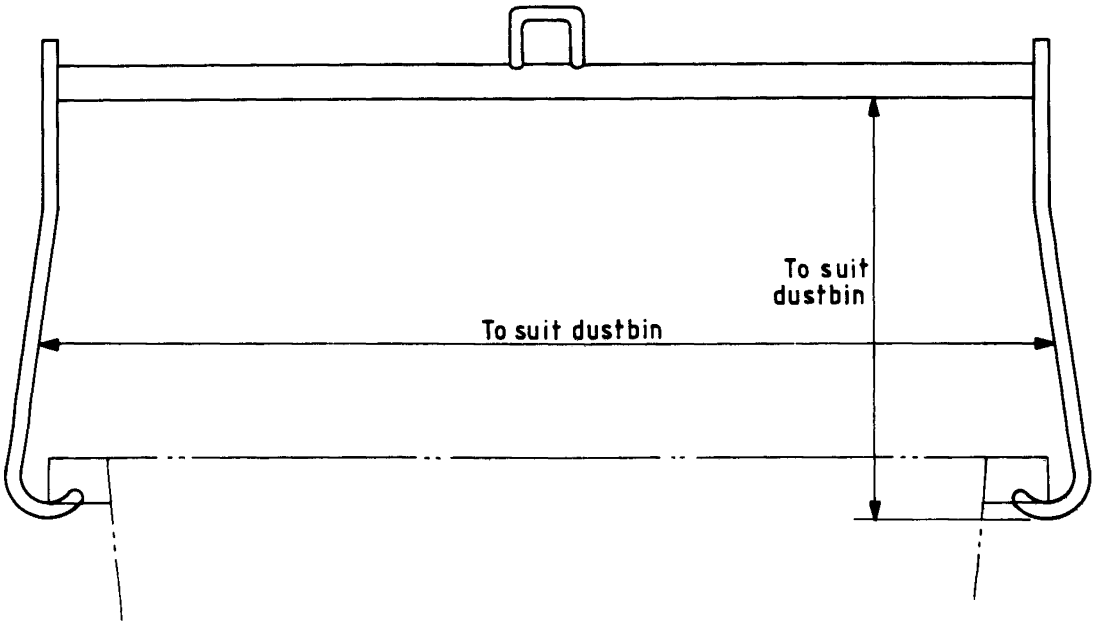


Figure 4 — Yoke made of low carbon steel

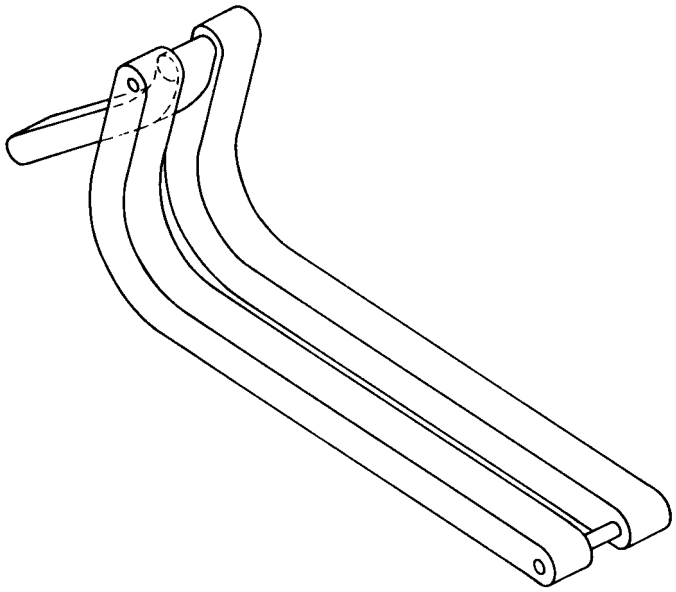
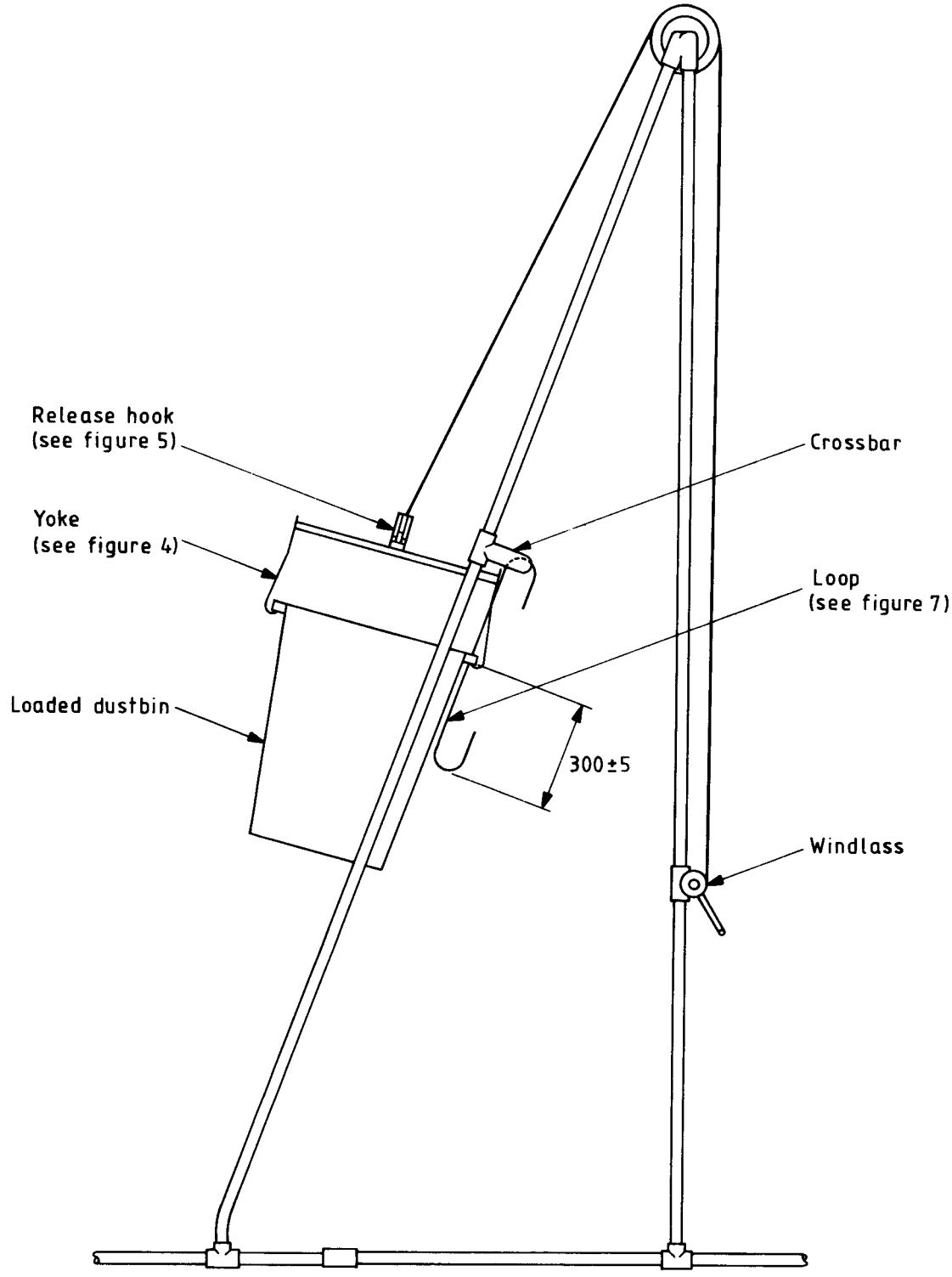
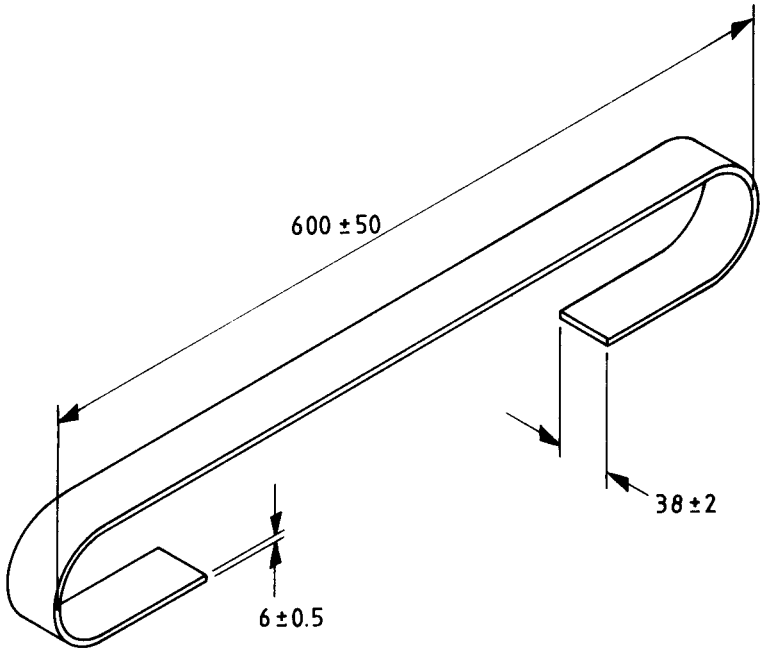


Figure 5 — Release hook



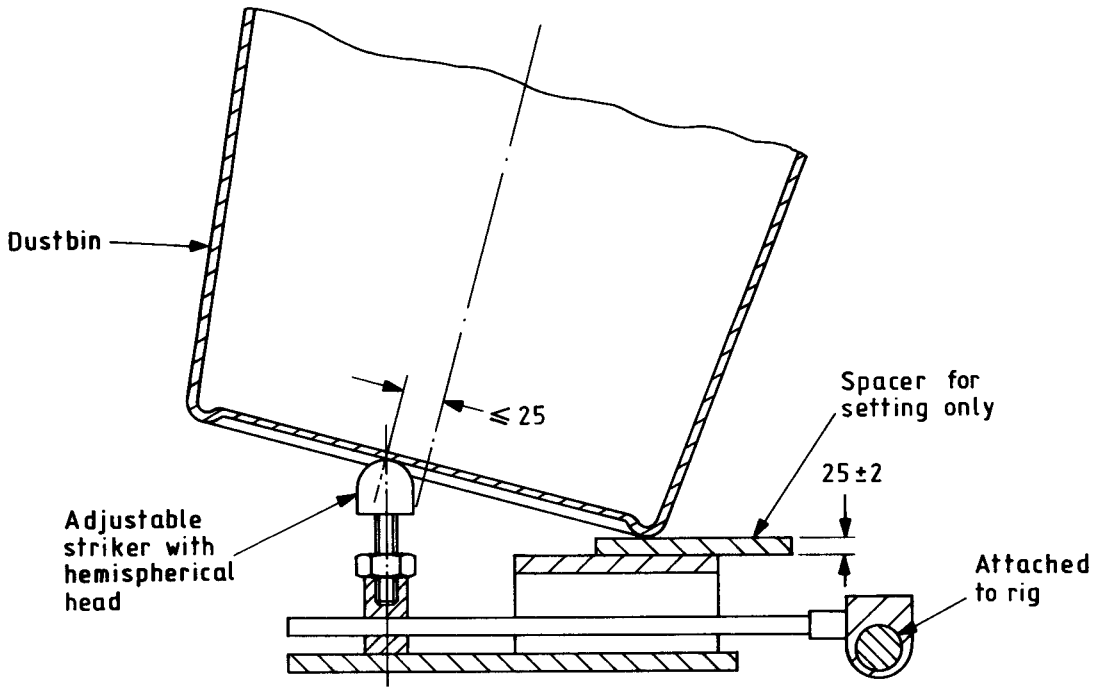
Dimension is in millimetres.

Figure 6 — Arrangement for handle test



All dimensions are in millimetres.

Figure 7 — Loop for handle made from low carbon steel



All dimensions are in millimetres.

Figure 8 — Setting position for base impact

Publication referred to

BS 5466, *Method for corrosion testing of metallic coatings.*
BS 5466-1, *Neutral salt spray test.*

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