Australian Standard®

EARTH-MOVING MACHINERY—RATED LOADS AND VOLUMETRIC RATINGS

Part 6—HYDRAULIC EXCAVATORS—HOE TYPE BUCKETS—VOLUMETRIC RATINGS

(ISO Title: Earth-Moving machinery—Hydraulic excavators—Hoe type buckets—Volumetric ratings)

This Australian Standard was prepared by Committee ME/63, Earthmoving Equipment. It was approved on behalf of the Council of the Standards Association of Australia on 3 March 1988 and published on 17 June 1988.

The following interests are represented on Committee ME/63:

Australian Mining Industry Council
Bureau of Steel Manufacturers of Australia
Construction Equipment Importers and Manufacturers of Australia
Department of Administrative Services
Department of Conservation, Forests and Lands, Vic.
Department of Defence
Department of Forestry, Qld.
Department of Industrial Relations and Employment, N.S.W.
Department of Labour, Vic.
Department of Mines, Qld.
Earth-movers and Road Contractors Association of Australia
Forestry Commission of New South Wales
Local Government Engineers Association of New South Wales
Metal Trades Industry Association of Australia
National Association of Australian State Road Authorities
Rural Water Commission, Vic.
Safety Institute of Australia
Telecom Australia
Tractor and Machinery Association of Australia
Water Board, Sydney

This Standard was issued in draft form for comment as DR 85191.

Australian Standard®

EARTH-MOVING MACHINERY—RATED LOADS AND VOLUMETRIC RATINGS

Part 6—HYDRAULIC EXCAVATORS—HOE TYPE BUCKETS—VOLUMETRIC RATINGS

(ISO Title: Earth-moving machinery—Hydraulic excavators—Hoe type buckets—Volumetric ratings)

First published as AS 2954.6/ISO 7451—1988.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5002 3

CONTENTS

FOREWORD

1. This Australian Standard corresponds with ISO 7451—1983, *Earth-moving machinery—Hydraulic excavators—Hoe type buckets—Volumetric ratings*.
2. Introduction to and complete listing of the SAA series of earth-moving machinery Standards (AS 2951 to AS 2958) is available on request.
3. Error.

   Clause 2. It should be stated that ISO 7135 at present is at the stage of draft.
4. For the purpose of this Australian Standard the words 'International Standard' should be replaced by 'Australian Standard'.
5. ISO Standard referred to in this Standard corresponds with the following Australian Standard:

ISO Standard	Australian Standard
ISO 7546	AS 2954.5

Earth-moving machinery—Rated loads and volumetric ratings
Part 6—Hydraulic excavators—Hoe type buckets—Volumetric ratings

1 Scope and field of application

1.1 This International Standard specifies a procedure for approximating the volume of typical materials contained in the hoe type buckets of excavators as defined in ISO 7135. The volume ratings are based on the inside dimensions of the bucket and representative volumes on top of the bucket.

1.2 The method employs the technique of dividing the complex shape of the material in the bucket into simple geometric forms.

NOTE — These volumes of different bucket configurations may be calculated by the use of any combination of analytical, graphical or measuring techniques.

1.3 The rating method is intended to provide a consistent means of comparing bucket capacities. It is not intended to define actual capacities that might be observed in any specific application.

1.4 This International Standard applies to buckets for hoe type excavators and excludes buckets for cable operated excavators.

2 References

ISO 7135, *Earth-moving machinery — Hydraulic excavator — Terminology*.

ISO 7546, *Earth-moving machinery — Volumetric ratings of loader and front loading excavator buckets*.

3 Restrictions and limitations

3.1 The effect on volumes of local discontinuities such as bucket teeth, tooth adapters, extensions of side sheets, extensions of back sheets or cutting edges, chamfers, holes or gussets shall be ignored.

3.2 The bucket volume shall be positioned so that the plane defined by the top of the cutting edge and top of the back sheet is horizontal.

4 Definitions and symbols

4.1 bucket component : See figure 2 and ISO 7135 and 7546.

4.2 The X dimension in figures 3 and 4 is the dimension of the bucket opening between the cutting edge and the back sheet. The Y dimension is the vertical distance between the tip of the cutting edge and the depth of the contour of the side sheet.

4.3 strike plane : A horizontal plane across the width of the bucket from the cutting edge to the back sheet. (See figure 3.) The strike plane is used when the ratio of X/Y is 12 or greater.

4.4 strike surface : The cylindrical contour defined by lines lying across upper edges of the side sheets and parallel to the cutting edge shown in figure 4. The strike surface is used when the ratio of X/Y is less than 12.

4.5 W is the average value of the interior width and is shown in figures 3 and 4 at approximately 2/3 the height for a tapered bucket.

4.6 struck volume, V_S : The volume which lies beneath the strike plane in figure 3 and the strike surface in figure 4.

4.7 top volume, V_T : The volume at a 1:1 slope which lies on top of the strike plane in figure 5 and the strike surface in figure 6.

4.8 rated bucket volume, V_R : Rated bucket capacity. This capacity is calculated by adding the struck and top volumes:

$$V_R = V_S + V_T$$

5 Volumetric ratings of hoe type buckets

5.1 Boundaries of struck volume, V_S**, when** X/Y **is 12 or greater** (see figure 3).

5.1.1 The points of intersection of the cutting edge and the side sheets.