SAE International™

SURFACE VEHICLE STANDARD

SAE J741
ISO 6485

CAN-CELLED MAY2003

Issued 1948-12
Cancelled 2003-05

Superseding J741 JUN1993

Capacity Rating—Scraper, Open Bowl

This document is equivalent to ISO 6485 except for the addition of SAE document references in Sections 1 and 2.

Foreword—This cancelled document has been superseded by SAE J/ISO 6485.

1. Scope—This SAE Standard specifies a procedure for approximating the volume of typical materials contained in the bowl of Open Bowl scrapers as defined in SAE J728 and SAE J1057. The volumes are based on the inside dimensions of the bowl and representative volumes on top of the bowl. This rating method is intended to provide a consistent means of comparing capacities; it is not intended to define actual capacities that might be observed in any specific application.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J728 JUL90—Component Nomenclature—Loader
SAE J1057 SEP88—Identification Terminology of Earthmoving Machines

2.1.2 ISO PUBLICATION—Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002.

ISO 6485—Earth-moving machinery—Tractor-scraper volumetric rating

2.2 Related Publication—The following publication is provided for information purposes only and is not a required part of this document.

2.2.1 ISO PUBLICATION—Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002.

ISO 7133—Earth-moving machinery—Tractors-scrapers—Terminology

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3. *Definitions*

3.1 Open Bowl Scraper—Scrapers which require the application of tractive effort to load material into the bowl. This tractive effort may be provided by the tractor-scraper itself, by another tractor-scraper temporarily or permanently connected, or by a pushing tractor.

3.2 Components of Open Bowl Scrapers—See Figures 1 and 2.

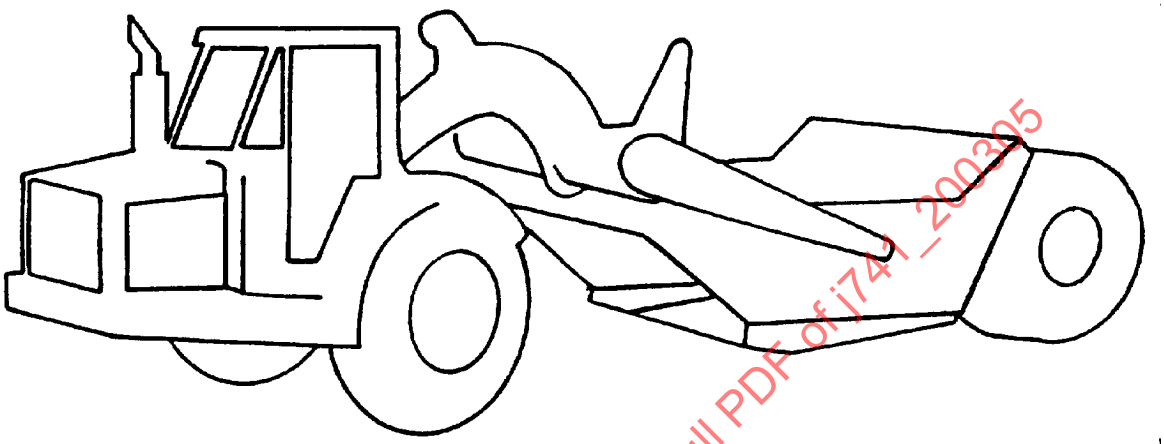

FIGURE 1—RUBBER-TIRED TRACTOR-SCRAPER

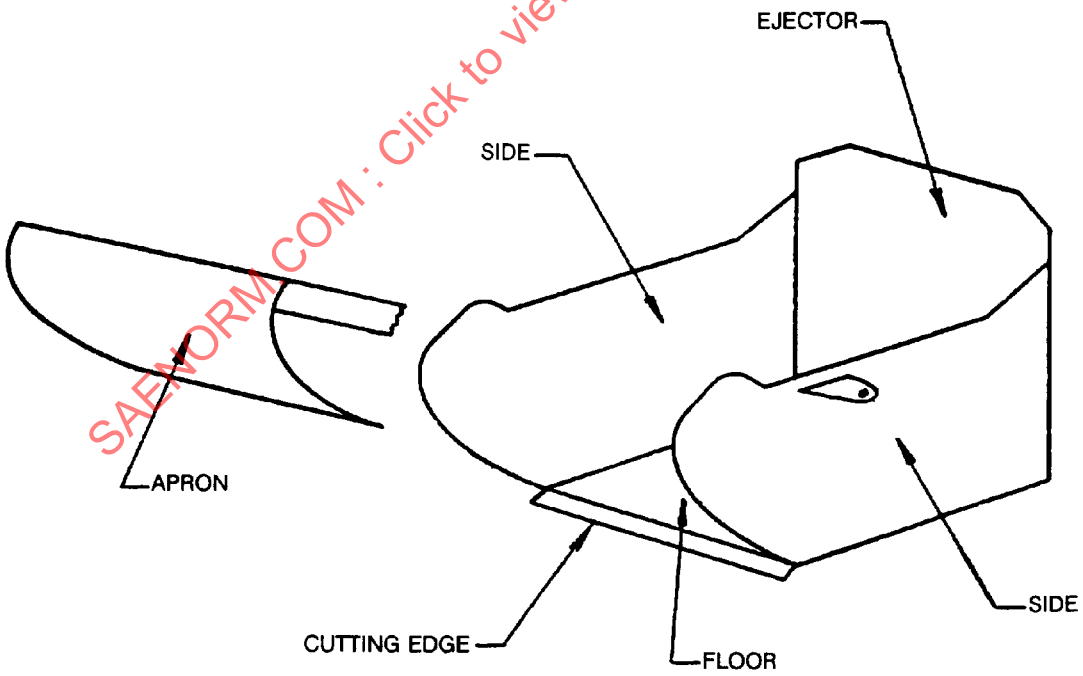

FIGURE 2—COMPONENTS OF SCRAPER BOWLS

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4. Volumetric Ratings

4.1 Positioning of the Bowl

4.1.1 The bowl shall be positioned so that the lowest flat surface of the floor is horizontal or as close to horizontal as possible.

4.1.2 The ejector shall be fully retracted.

4.1.3 The apron shall be fully closed. Any adjustment of apron closure shall be such as to minimize any opening between the apron and cutting edge.

4.2 Boundaries of the Struck Volume

4.2.1 The interior surface of the apron.

4.2.2 When the top of the apron in the closed position is below the plane of the bowl mean sides, a plane of 1:1 (45degrees) slope, up and rearward, from the top edge of the apron to the plane of the bowl mean sides, is added. See Figure 3.

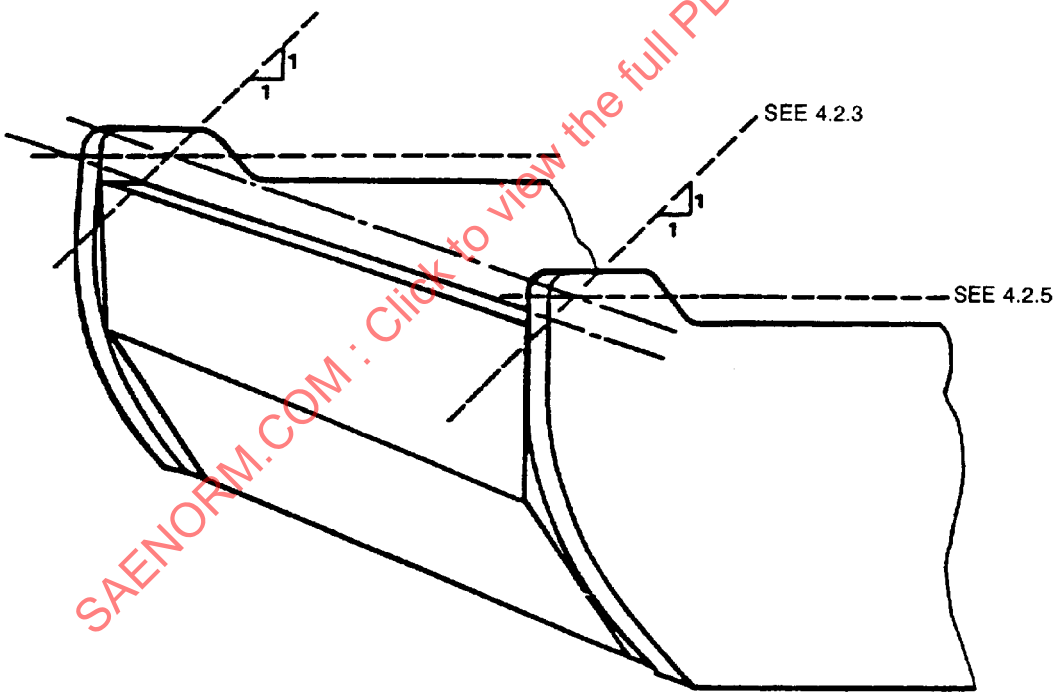

FIGURE 3—BOUNDARIES OF STRUCK VOLUME: PLANE OF 1:1 (45 DEGREES)

4.2.3 If in the position of 4.1.3, the apron does not contact the cutting edge, the opening shall be closed by the plane defined by the line of intersection of the cutting edge and the bowl floor and the line defined by the outermost points of the apron lip.

4.2.4 The interior surfaces of the cutting edge, bowl floor, ejector, and bowl sides.

4.2.5 The plane defined by the mean lines above which, in a side view of the bowl, there is an area of bowl side equal to the non-bowl side area under the lines. See Figure 4.

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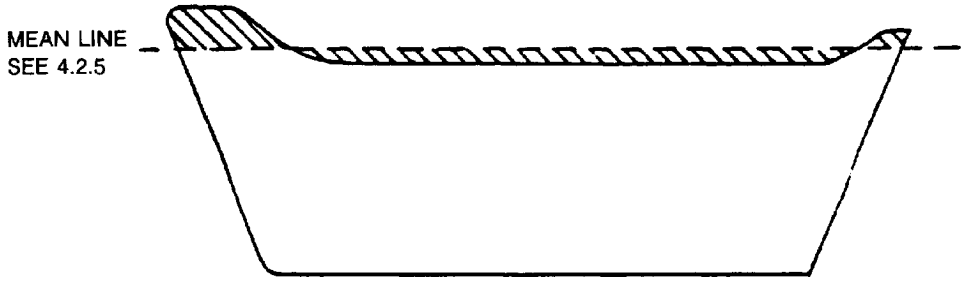

FIGURE 4—BOUNDARIES OF STRUCK VOLUME: PLANE DEFINED BY MEAN LINE

4.3 Boundaries of the Top (Heaped) Volume

4.3.1 Any load-carrying extension of the ejector above the upper plane of the struck volume. See Figure 5.

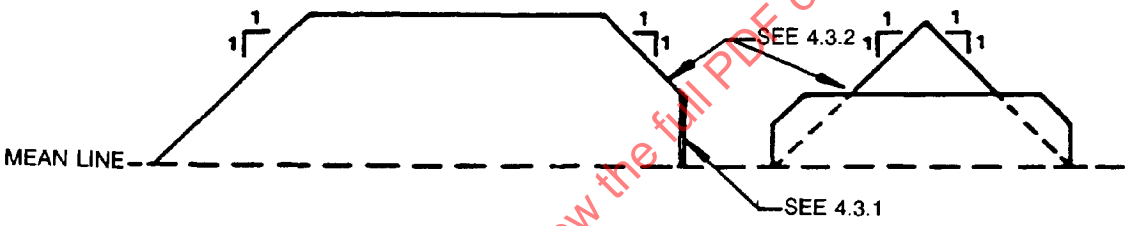

FIGURE 5—BOUNDARIES OF TOP (HEAPED) VOLUME: PLANES OF 1:1 (45 DEGREES)

4.3.2 Planes of 1:1 (45 degree) slope, up and in, from the upper edges of the struck volume and surfaces of 4.3.1. See Figure 5. It does not mean that the material will form this angle but this angle of repose generally expresses best the angle of repose of the usual soils.

4.4 Rated volume is the sum of the struck and top (heaped) volumes.

4.5 The effect of local discontinuities—gussets, apron arms, etc., on the volume shall be ignored.

5. Expression of Ratings

5.1 Any published ratings must be within ±3% of the volume determined by this procedure.

5.2 Ratings for volumes less than 10 m^3 should be expressed to the nearest 0.1 m^3 while those larger should be expressed to the nearest 0.5 m^3.

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