

Australian Standard™

Steel drums



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Australian Standard™

Steel drums

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PREFACE

This Standard was prepared by Standards Australia Committee PK-001, Metal Drums, to supersede AS 2905—1986, *Steel drums*. This new edition is the result of a comprehensive review of the Standard.

The objective of this Standard is to specify structural and performance requirements for a range of sizes of steel drums.

This Standard has been revised to include examples of common drum sizes and shapes. The list of definitions has been expanded and updated to reflect current industry usage and to align with other Standards. Drums have been classified according to types and performance levels rather than material specification.

During this revision, the following International Standards were considered:

ISO

15750 Packaging—Steel drums

15750-1 Part 1: Removable head (open head) drums with a minimum total capacity of 208 L, 210 L and 216.5 L

15750-2 Part 2: Non-removable head (tight head) drums with a minimum total capacity of 212 L, 216.5 L and 230 L

15750-3 Part 3: Inserted flange-type closure systems

The Committee considers that there are considerable advantages in having all relevant requirements for all sizes and types of steel drums in the one Standard.

Statements expressed in mandatory terms in footnotes to tables are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of the Standard, while an ‘informative’ appendix is only for guidance and information.

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STANDARDS AUSTRALIA

Australian Standard

Steel drums

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies stock sizes and performance requirements for steel drums having a nominal base diameter of 220 mm or greater, and a maximum nominal capacity of 250 L. It describes both open-head drums and closed-head drums.

For the purpose of this Standard, the term ‘drum’ also includes containers commonly referred to as ‘pails’.

This Standard describes specifications and type-testing only. Relevant parties should decide upon acceptable quality levels (AQLs) based on the relevant part of the AS 1199 series.

1.2 APPLICATION

This Standard applies principally to drums for the packaging of contents that require normal protection.

NOTE: Drums manufactured to this Standard may also be suitable for the transport of dangerous goods if approved and marked in accordance with the requirements of the legislation applicable to the chosen mode of transport.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|--------|---|
| 1199 | Sampling procedures for inspection by attributes (series) |
| 1517 | Tinplate and blackplate |
| 2582 | Complete, filled transport packages—Methods of test |
| 2582.3 | Method 3: Stacking tests using a static load |
| 2582.4 | Method 4: Vertical impact test by dropping |
| 2582.8 | Method 8: Internal hydraulic pressure test |

AS/NZS

- | | |
|------|---|
| 1365 | Tolerances for flat-rolled steel products |
| 1595 | Cold-rolled, unalloyed, steel sheet and strip |

ISO

- | | |
|---------|---|
| 15750 | Packaging—Steel drums |
| 15750-1 | Part 1: Removable head (open head) drums with a minimum total capacity of 208 L, 210 L and 216.5 L |
| 15750-2 | Part 2: Non-removable head (tight head) drums with a minimum total capacity of 212 L, 216.5 L and 230 L |
| 15750-3 | Part 3: Inserted flange-type closure systems |

1.4 DEFINITIONS

For the purpose of this Standard, the definitions set out below apply:

1.4.1 Bail ear

A device fastened to the body of the drum, to hold the ends of a handle.

1.4.2 Capacity

1.4.2.1 Capacity

The internal volume of a drum with its closures secured as for transport.

1.4.2.2 Fillable capacity

The capacity of a drum, in litres, measured to the bottom of the filling opening, when a drum is in its normal filling position. However, for open-head drums the fillable capacity is identical with capacity (see Figure 1.1).

NOTE: This term is synonymous with the term 'total capacity' used in ISO 15750-1 and ISO 15750-2.

1.4.2.3 Nominal capacity

The volume of contents, in litres, for which the drum is designed (see Figure 1.1).

1.4.3 Chime

The outer edge or rim of a drum, including the end seams (see Figure 1.1).

1.4.4 Closure

1.4.4.1 Closure

A sealing or covering device affixed to or on a container, for the purpose of retaining the contents and preventing their leakage.

1.4.4.2 Closing ring

A device that is used to retain the removable lid on top of a pail or open-head drum.

1.4.4.3 Friction closure

A sealing system consisting of a removable bung or lid which presses into or onto a ring which is permanently formed in one end of the drum. The lid is held into the ring by the friction forces between the walls of the lid and the ring.

1.4.4.4 Lug cover

A removable cover with integral crimping lugs and gasket (see Figure 2.1).

1.4.5 Corrugation

A series of beads on the sides of the drum (see Figure 1.2).

1.4.6 Drum

A flat-ended cylindrical or tapered receptacle made of metal, the bottom end of which is permanently fixed to the body.

1.4.7 Drum, closed-head

A drum which has the head permanently attached by double seaming or some similar method (also called non-removable head drum or tight-head drum) (see Figures 2.2, 2.3, 2.5, 2.6 and 2.7).

1.4.8 Drum, open-head

A drum which has parallel walls and a fully-removable head secured to the body by either a separate closing ring or lug cover (also called a removable head drum) (see Figures 2.1, 2.4 and 2.8).

1.4.9 Filling margin

The difference between fillable capacity and nominal capacity of a drum (see Figure 1.1) and expressed as a percentage of the nominal capacity as follows:

$$\text{Filling margin} = \frac{\text{Fillable capacity} - \text{Nominal capacity}}{\text{Nominal capacity}} 100\%$$

1.4.10 Handle

1.4.10.1 *Handle*

A carrying or holding device made of plastics and/or metal that is attached to the top end or side of a drum.

1.4.10.2 *Bail-type (side mounted) handle*

A hoop-shaped handle that pivots about the two points (bail ears) of attachment to an open-head drum.

1.4.10.3 *Drop handle*

A handle attached to the top of a closed-head drum by means of a saddle or cleats. The drop handle, normally pivoting at its ends and lying flat when not in use, allows stacking of drums.

1.4.11 Lug cover

A removable cover fitted with integral crimping lugs and gasket (see Figure 2.1).

1.4.12 Neck

A reduction in diameter at one end of a drum, used as an aid to stacking (see Figure 1.1).

1.4.13 Pail

A tapered drum that has a fully removable head secured to the body by either a crimped-on lug lid or a separate closing ring.

1.4.14 Rolling hoop (bead)

An expanded hoop formed into the drum body (see Figure 1.1). Large drums may have one or two rolling hoops. Smaller drums may not require rolling hoops.

1.4.15 Saddle (cleat)

A device that is fastened to the top face of a container, intended to attach a small handle.

1.4.16 Seam

1.4.16.1 *Seam*

A joint or method of connecting two or more parts of the drum.

1.4.16.2 *Double seam*

The means by which the body and end components are mechanically joined together.

1.4.16.3 *Side seam*

The seam joining two edges of a blank to form the body of a metal drum. This may be a lock seam or a welded seam.

1.4.16.4 Lock seam

A seam formed by two edges of a metal container body which have previously been edged or bent into hooks, then locked together and flattened, so that the final seam is composed of four thicknesses.

1.4.16.5 Welded seam

A seam formed by electro-resistance welding and used to join the lapped longitudinal edges of drum bodies.

1.4.17 Side opening (side flange)

A closure fitted to the side of the drum.

1.4.18 Ullage

The amount of vacant space left in a drum (as shown in Figure 1.1), to accommodate thermal expansion of the contents, determined as the difference between capacity and nominal capacity expressed as percentage of the nominal capacity of the drum as follows:

$$\text{Ullage, design} = \frac{\text{Capacity} - \text{Nominal capacity}}{\text{Nominal capacity}} 100\%$$

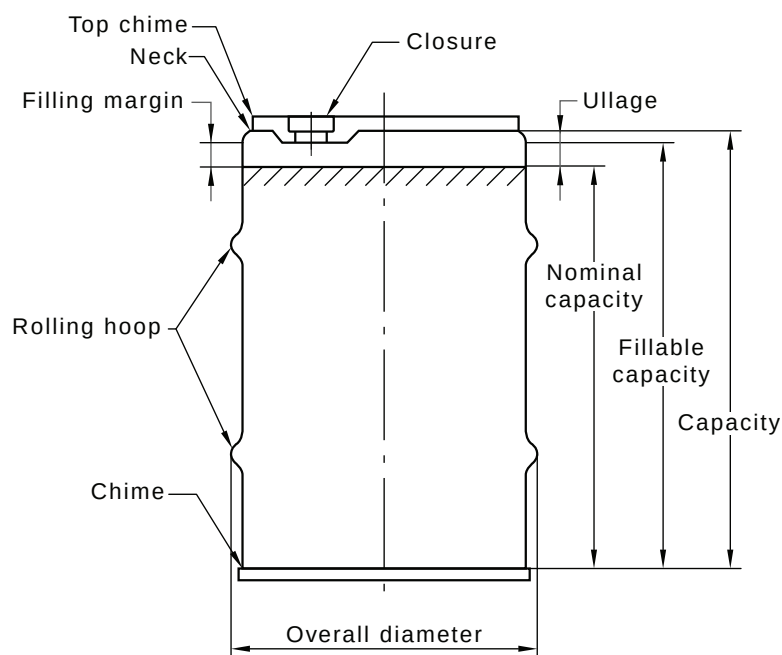


FIGURE 1.1 DRUM TERMINOLOGY

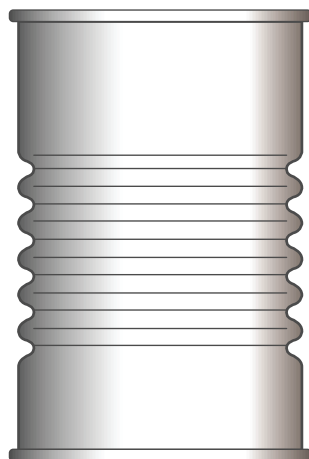


FIGURE 1.2 DRUM WITH CORRUGATED SIDES

1.5 PERFORMANCE

Drums shall meet the type-test performance requirements described in Section 3, with the exception of drums for the packaging of dangerous goods, which shall meet the relevant regulatory requirements.

A suitable quality assurance program shall be maintained, to ensure that the performance of the drums is within the required test limits.

To cope with severe transport conditions, drums of increased performance may be required. Under these conditions, thickness of the material may require specification.

NOTE: The list given in Appendix A may be used as a purchasing guide.

When selecting a drum that is to be used as a returnable container, consideration should be given to the distances and type of terrain over which the drum will be transported and the modes of transport that will be used during its useful life.

1.6 MARKINGS

Where the drum is to contain dangerous goods, it shall be marked in accordance with the relevant regulations.

Any other markings required by the purchaser should be indelibly marked.