

Australian Standard[®]

**Farm silos—Determination of
storage capacity**

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The following interests are represented on Committee BD/5:

Association of Consulting Engineers, Australia
Australian Federation of Construction Contractors
Australian Construction Services (Department of Administrative Services)
Australian Institute of Steel Construction
Australian Road Research Board
Bureau of Steel Manufacturers of Australia
CSIRO, Division of Building, Construction & Engineering
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National Association of Australian State Road Authorities
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Department of Agriculture and Rural Affairs, Vic.
Department of Public and Consumer Affairs, S.A.

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PREFACE

This Standard was prepared by the Standards Australia Committee on General Requirements for Structural Design in response to a request from the Department of Agriculture and Rural Affairs, Victoria, to assist in reducing the confusion in description of storage capacity of farm silos.

The preparation of this standard has been supported by the Department of Public and Consumer Affairs of some States and the Commonwealth on the basis that the Standard provides better consumer information to persons purchasing farm silos.

This Standard is based on American Society of Agricultural Engineers Standard ASAE S 413, *Procedure for Establishing Volumetric Capacity of Grain Bins*, and acknowledgement is made of the help gained from this source. This Standard also takes note of the requirements of the *Trade Standards Regulations, 1985* (No 102 of 1985 as amended) under the *Trade Standards Act, 1979*, South Australia.

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STANDARDS AUSTRALIA

Australian Standard

Farm silos—Determination of storage capacity

1 SCOPE. This Standard sets out a method for determining volumetric capacity of farm silos (referred to as 'silos' in this Standard) used for storage of grain and other agricultural bulk materials.

NOTE: A method for converting the volumetric capacity to nominal mass capacity for different materials is given in Appendix A.

2 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

2.1 Open-eave silo—silo having a gap between silo sidewall and roof which allows the free passage of air and which does not prevent the stored material from passing through (see Figure 1).

2.2 Tight-eave silo—silo having a connection between the silo sidewall and roof, which although not necessarily airtight, is sufficient to restrict the flow of air substantially and prevent stored material from passing through (see Figure 2).

2.3 Cone-based silo—silo with a symmetrical or off-set circular cone base.

2.4 Silo diameter (d)—diameter of the silo measured from the centreline or neutral axis of the

corrugated sidewalls, or the inside diameter of a smooth-walled silo.

2.5 Wall height (h_w)—distance from the top of the permanent structural floor in a flat-based silo, or the intersection between the sidewall and the cone-base in a cone-based silo and the top of the silo sidewall.

NOTE: Permanently fixed drying floors are considered as permanent structural floors.

2.6 Roof slope—slope or inclination of the silo roof measured from the horizontal.

2.7 Level full storage capacity—volumetric capacity of a silo based on the stored material having a level surface flush with the top of the silo sidewall, or in the case of an open-eave silo, 25 mm below the top of the sidewall.

2.8 Peaked storage capacity—volumetric capacity of a silo based on the level full storage capacity plus the capacity of the conical volume within the roof space of the silo.

NOTE: If a silo has a roof slope less than the angle of repose of the stored material, the full storage capacity of the silo may not be utilized.

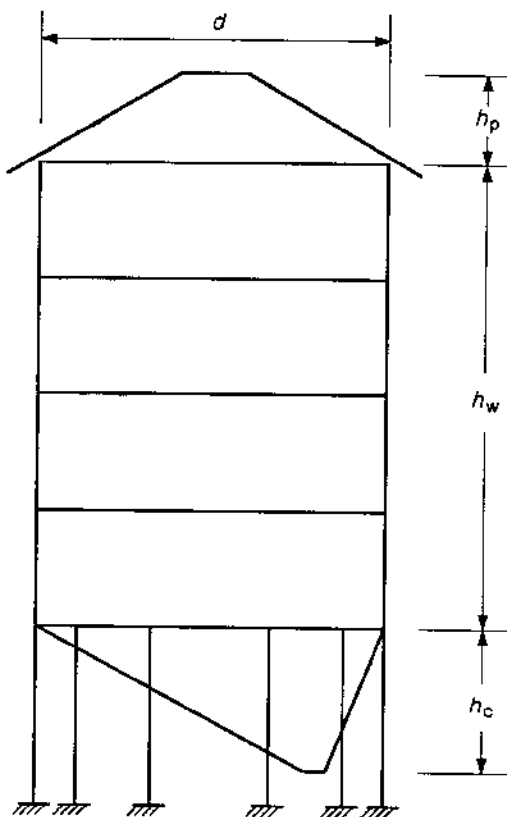


FIGURE 1 OPEN-EAVE SILO

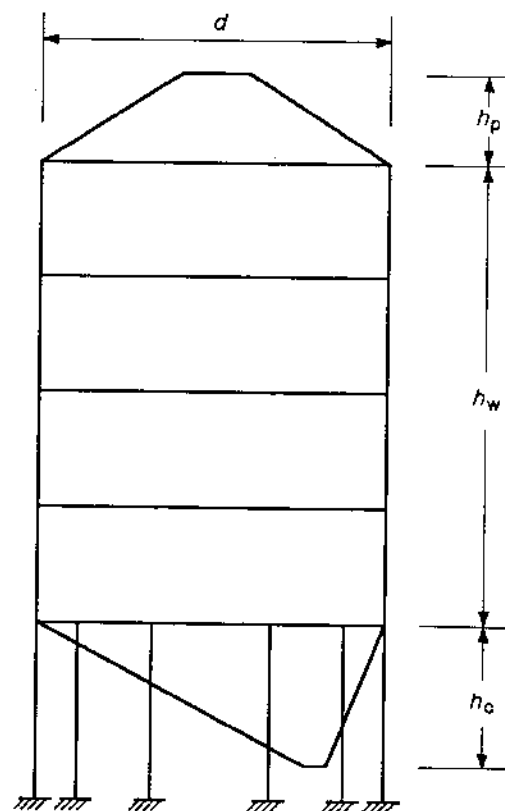


FIGURE 2 TIGHT-EAVE SILO