

AS 2867—1986

Australian Standard[®]

**FARM STRUCTURES—
GENERAL REQUIREMENTS FOR
STRUCTURAL DESIGN**

This Australian standard was prepared by Committee BD/5, General Requirements for Structural Design. It was approved on behalf of the Council of the Standards Association of Australia on 7 March 1986 and published on 2 June 1986.

The following interests are represented on Committee BD/5:

Association of Consulting Engineers, Australia
Australian Federation of Construction Contractors
Australian Institute of Steel Construction
Australian Road Research Board
Brick Development Research Institute
CSIRO, Division of Building Research
Department of Housing and Construction
Experimental Building Station
Monash University
National Association of Australian State Road Authorities
Public Works Department, W.A.
The Broken Hill Proprietary Company Limited
University of Adelaide
University of Melbourne
University of Sydney
University of Western Australia

Representatives of the following interest also participated in the drafting of this standard:

Department of Agriculture, Vic.

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 84116.

AS 2867—1986

Australian Standard[®]

**FARM STRUCTURES—
GENERAL REQUIREMENTS FOR
STRUCTURAL DESIGN**

First published 1986

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



Documents

Document Sharing Hub

PREFACE

This standard was prepared by the Association's Committee on General Requirements for Structural Design to provide guidance in the structural design of farm structures and their approval by Regulatory Authorities.

The standard was prepared in response to a request received from the Institution of Engineers National Committee on Agricultural Engineering. It is based on the rationale that special requirements for farm structures (as distinct from other structures) are justified and that these requirements should be based on the low occupancy load of the structures, their remoteness of location and the nature of the occupancies involved. For the purpose of this standard, low occupancy refers to an occupant load of not more than 1 person for each 30 m² of area. Dwelling units located on a farm area, however, are required to comply with applicable building regulations.

This standard covers only minimum requirements for structural design of farm structures and does not include other requirements such as fire safety and health.

This standard is based on the Canadian Farm Building Code, 1983 (sixth edition), issued by the Associate Committee on the National Building Code of Canada, National Research Council of Canada, Ottawa. (This code has been widely used in Canada since it was first issued in 1964.) In addition, BS 5502-1978, Code of Practice for Design of Buildings and Structures for Agriculture, was also used in the preparation of this standard and acknowledgement is made of the assistance received from both these sources.

CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 SCOPE	3
1.2 NEW MATERIALS OR METHODS	3
1.3 REFERENCED DOCUMENTS	3
1.4 RESPONSIBILITY FOR DESIGN	3
1.5 DEFINITIONS	3
SECTION 2. GENERAL DESIGN REQUIREMENTS	
2.1 LOADS	4
2.2 DESIGN PROCEDURES	5
APPENDICES	
A CALCULATION OF LOADS ON THE WALLS OF ABOVE-GROUND SILAGE BUNKERS	6
B PRESSURES IN GRAIN, GROUND FEED, FRUIT AND VEGETABLE STORAGE	7

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

FARM STRUCTURES — GENERAL REQUIREMENTS FOR STRUCTURAL DESIGN

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for the structural design of farm structures with low human occupancy.

This standard does not include requirements for the structural design of liquid retaining structures used on farms. Health and fire safety requirements are also not included.

NOTES:

1. Reference should be made to the statutory regulations relating to health and safety applicable to the design of farm structures.
2. For requirements of design of farm silos and bins to control insect infestation in grain, see SAA MP46.

1.2 NEW MATERIALS OR METHODS. This standard shall not be interpreted as excluding the use of materials or methods of design or construction not specifically referred to herein. If it is desired to seek the opinion of the SAA committee on General Requirements for Structural Design as to whether materials other than those specified, or methods of design not covered herein, are deemed to comply with the intention of this standard, details of such materials or methods including relevant test results, shall be submitted to the committee.

NOTE: It will be necessary to seek approval from the Regulatory Authority for the use of new materials or methods.

1.3 REFERENCED DOCUMENTS. The following documents are referred to in this standard:

AS 1170	SAA Loading Code Part 1 — Dead and Live Loads* Part 2 — Wind Forces
AS 1250	SAA Steel Structures Code
AS 1562	Design and Installation of Metal Roofing
AS XXXX	Method for Determination of Storage Capacity of Farm Silos†
SAA MP46	Recommendations for Design of Farm Silos, Field Bins and Truck Bodies to Control Insect Infestation in Grain
SAA MPXX	Guidelines for Load Testing of Structures†

Guidelines for the Assessment of Loads in Bulk Solids Containers, Institution of Engineers Australia†

1.4 RESPONSIBILITY FOR DESIGN. The design of a structure or the part of a structure to which this standard is applied shall be the responsibility of an engineer experienced in the design of such structures.

1.5 DEFINITIONS. For the purpose of this standard, the definitions in AS 1250 and the following apply:

1.5.1 Approval—according to the context, approval either by the engineer or the Regulatory Authority.

1.5.2 Engineer—a person qualified for Corporate Membership of the Institution of Engineers, Australia.

NOTE: The definition of 'engineer' does not require that an engineer be a corporate Member of the Institution of Engineers, Australia.

1.5.3 Farm structure — a structure which has low human occupancy and which is —

- (a) associated with and located on land devoted to the practice of farming; and
- (b) used essentially for the housing of equipment or livestock, or for the production, storage or processing of agricultural and horticultural produce or feeds, such as for haysheds, implement sheds, grain and fertilizer stores, coolstores for vegetables and fruit, piggeries, poultry sheds, shearing sheds, farm dairies (milking sheds), grain silos and silage bunkers, greenhouses, farm workshops, fruit packing sheds, egg grading rooms, tobacco curing sheds and garages not attached to the farm residence.

1.5.4 Low human occupancy (as applying to farm structures) —non-residential occupancy of not more than one person per 30 m² during normal use.

1.5.5 Regulatory Authority — a body having statutory powers to control the design and erection of buildings or structures in the area in which the building or structure concerned is to be erected.

* A limit state revision of this standard, including a section on combinations of loads, is in course of preparation and will be included in a future edition of AS 1170, Part 1. A section on snow loads will also be included.

† In course of preparation.