

Buildings and structures for agriculture —

Part 75: Code of practice for the design and construction of forage stores

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Technical Sector Board for Building and Civil Engineering (B/-) to Technical Committee B/549, upon which the following bodies were represented:

- British Cement Association
- British Commercial Glasshouse Manufacturers' Association
- British Precast Concrete Federation Ltd.
- British Veterinary Association
- Department of Agriculture Northern Ireland
- Health and Safety Executive
- Institution of Civil Engineers
- Local Authority Organizations
- Ministry of Agriculture, Fisheries and Food
- National Farmers' Union
- National Rivers Authority
- Royal Institute of British Architects
- Royal Institution of Chartered Surveyors
- Scottish Office (Agriculture and Fisheries Department)
- Silsoe Research Institute
- Steel Construction Institute
- Transport and General Workers' Union
- Water Services Association of England and Wales

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Amendments issued since publication

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Foreword

This Part of BS 5502, including amendment A1, has been prepared under the direction of the Technical Sector Board for Building and Civil Engineering and comprises a new Part of BS 5502.

BS 5502 has been restructured into the following broad subject areas:

- *Part 0: Introduction and consolidated index;*
- *Parts 10 to 19: Reference information and legislation;*
- *Parts 20 to 39: General design;*
- *Parts 40 to 59: Livestock buildings;*
- *Parts 60 to 79: Crop buildings;*
- *Parts 80 to 99: Ancillary buildings.*

More specifically, the crop building series will comprise:

- *Part 60: Code of practice for the design and construction of production buildings for mushrooms;*
- *Part 65: Code of practice for the design and construction of buildings for processing and packaging horticultural produce;*
- *Part 66: Code of practice for the design and construction of buildings for chitting potatoes;*
- *Part 70: Code of practice for the design and construction of ventilated stores on floor for the storage of combinable crops;*
- *Part 71: Code of practice for the design and construction of ventilated stores for potatoes and onions;*
- *Part 72: Code of practice for the design and construction of controlled environment stores for vegetables, fruit and flowers;*
- *Part 74: Code of practice for the design and construction of bins and silos for combinable crops.*

A more detailed description of the structure of BS 5502 is given in Part 0.

The object of introducing the new structure is to allow subject areas to be broadly characterized, and related subject matter, whether in the form of recommendations, guidance or supporting data, to be rationalized and brought together. It will also allow sufficient flexibility to enable BS 5502 to be expanded and developed in a logical way in the future.

It has been assumed in the drafting of this Part of BS 5502 that the execution of its provisions is entrusted to appropriately qualified and experienced people, for whose guidance it has been prepared.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 9 and a back cover.

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Sidelining in this document indicates the most recent changes by amendment.

1 Scope

This Part of BS 5502 gives recommendations for the design and construction of forage stores. It does not include recommendations for the design of forage tower silos, which are covered in BS 5061.

2 References

2.1 Normative references

This Part of BS 5502 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on page 8. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 5502 only when incorporated in it by updating or revision.

2.2 Informative references

This Part of BS 5502 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on page 9, but reference should be made to the latest editions.

3 Definitions

For the purposes of this British Standard, the definitions given in BS 6100 apply, together with the following.

3.1

forage store

a building or structure used to store herbage feed for stock

3.2

silage store

a building or structure for storing and ensiling a green crop which is fermented by the exclusion of air

NOTE Ensiling is an alternative method to drying for preserving green forage crops for future consumption. The crop most commonly ensiled is grass, but maize, kale, root tops, oats, rye or pea haulm can also be ensiled. The crop is preferably wilted and chopped, loaded into the store, compressed, and as far as possible sealed against ingress of moisture and outside air. In the absence of oxygen, fermentation takes place and the resultant product does not deteriorate rapidly, is palatable to stock, and retains much of the nutrient value of the original fodder.

3.3

controlled waters

waters that are covered by the Water Resources Act 1991 and which include underground waters, ponds, lakes, ditches, streams, rivers, coastal waters and land drains

4 General

NOTE The functions of forage storage structures are maintenance of feed material free from contamination in a sound condition and the control of pollution caused by liquid run-off; in addition, for silage, the creation of an environment where controlled fermentation can take place. Quality is maintained by storage methods and subsequent protection of the fodder. Mechanical environmental controls are not usually required.

4.1 Type of storage

NOTE 1 Forage can be stored in heaps on the floor, in bunkers with retaining walls, or in tower silos.

The type of store should be determined by the following factors:

- a) the type of produce to be stored;
- b) the method of loading and unloading;
- c) the method, if any, of mechanical compaction;
- d) the feeding system used (i.e. self-feed or transported to stock).

NOTE 2 The store can be located in the open or under a roof. A roof will protect the forage and reduce the amount of rainwater being added to effluent run-off.

Bunker walls should be designed and constructed to retain the crop and provide restraint during compaction or unloading. Floors should be provided unless the forage is baled or bagged within an impermeable membrane.