

Australian Standard®

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**Flexible intermediate bulk  
containers—Non-dangerous goods**

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This Australian Standard was prepared by Committee PK/11, Flexible Intermediate Bulk Containers. It was approved on behalf of the Council of Standards Australia on 10 January 1989 and published on 21 July 1989.

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The following interests are represented on Committee PK/11:

Department of Defence  
Department of Transport & Communications  
Railways of Australia Committee  
Association of Australian Port and Marine Authorities  
Australian Flexible Intermediate Bulk Containers Association  
Packaging Council of Australia

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## PREFACE

This Standard was prepared by Standards Australia's Committee on Flexible Intermediate Bulk Containers under the direction of the Packaging Standards Board.

This Standard, which deals with requirements and recommendations applicable to the complete flexible intermediate bulk container, takes no account of the particular requirements relating to materials, construction and performance that would need to be applied to intermediate bulk containers used for the conveyance and storage of substances deemed dangerous in legislation relating to dangerous goods.

In the preparation of this Standard reference was made to British Standard BS 6382 Part 1: 1983, *Specification for flexible intermediate bulk containers designed to be lifted from above by integral or detachable devices*, and acknowledgement is made of the assistance obtained therefrom.

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## STANDARDS AUSTRALIA

## Australian Standard

## Flexible intermediate bulk containers—Non-dangerous goods

**1 SCOPE.** This Standard specifies material, construction and design requirements, together with type tests and type test performance requirements for single-trip and multi-trip intermediate bulk containers manufactured from flexible materials to contain non-dangerous solid materials in powder or granular form, and designed to be lifted from above.

NOTE: Guidance to users on selection and use of containers is given in Appendix A.

**2 REFERENCED DOCUMENTS.** The following documents are referred to in this Standard:

AS	
2582	Complete, filled transport packages — Methods of test
2582.3	Method 3: Stacking, compression test
2582.4	Method 4: Vertical impact test by dropping

**3 DEFINITIONS.** For the purpose of this Standard the definitions below apply.

**3.1 Flexible intermediate bulk container (FIBC)** — a container manufactured from flexible materials having a capacity of not more than 3 m<sup>3</sup> or a gross mass when filled of not more than 3000 kg, and designed to be lifted from above.

**3.2 Single-trip FIBC**—FIBC to be used for one filling and one discharge only.

**3.3 Multi-trip FIBC**—FIBC designed to be used for more than one filling and discharge.

**3.4 FIBC type**—FIBCs of like design, manufactured using identical materials and methods of construction, to the same nominal cross-sectional dimensions.

NOTES:

1. Within a type, the design vertical dimension may vary and, where the FIBC contains a bag fitted discharge spout, a reduction of discharge spout diameter of the same design is permitted. The presence or absence of a liner does not constitute a change of type.
2. Change of ultraviolet inhibitor does not constitute a change of type.
3. The addition or change of pigment, to a maximum of 3% by mass, does not constitute a change of type.

**3.5 Safe working load (SWL)**—the maximum load which the FIBC may carry in service.

**3.6 Type test**—a test or series of tests conducted to determine whether the FIBC type meets the requirements of this Standard.

#### MATERIALS, DESIGN AND CONSTRUCTION REQUIREMENTS.

**4.1 Materials.** FIBCs may be manufactured from a considerable variety of sheet and woven materials. The properties of the selected materials may be further modified by suitable additives, e.g. to improve the exposure life and strength and to reduce the effect of static electricity.

All materials of construction shall, after complete immersion in water for not less than 24 h, retain at least 85 percent of the tensile strength measured after conditioning to equilibrium at 67 percent relative humidity or less. The tensile strength shall be measured by the Australian Standard method of test appropriate to the material used.

**4.2 Design.** The FIBC shall be designed so that the maximum design height of fill shall not exceed the minimum base width or diameter by more than the ratio of 2:1.

NOTE: Inner liners may be provided.

**4.3 Construction.** All stitched seams and joints shall be locked off, or back sewn, or a minimum 20 mm tail provided. All sewing threads shall be of manmade fibre.

**4.4 Ultraviolet protection.** Protection against ultraviolet radiation shall be provided by the addition of carbon black or other suitable inhibitors. These additives shall be compatible with the materials to be carried in the FIBC.

For polyolefins, the protection provided by a loading of 0.1 percent by mass of an appropriate benzophenone shall represent the minimum ultraviolet stabilization required. Other types of ultraviolet stabilizers such as benzotriazoles, hindered amines etc, may be employed, singly or in combinations, provided they exhibit similar protection to the benzophenone type stabilizers at the loading specified above.

For other materials sufficient ultraviolet stabilizers shall be added to the material to ensure ultraviolet resistance at least equal to that required for polyolefins.

#### 5 PERFORMANCE REQUIREMENTS.

NOTES:

1. A check should be made of the relevant Commonwealth and State legislation to determine if any such legislation lays down a more stringent requirement for any component part of the FIBC.
2. The purchaser or a Regulatory Authority may require that the manufacturer or supplier provide a statement that the FIBC complies with this Standard. Appendix B lists the information which should be shown on the statement of compliance.

**5.1 General.** The FIBC type shall be subjected to four type tests as follows:

- (a) Top lift test (see Appendix C).
- (b) Cyclic top lift test (see Appendix D).
- (c) Stacking test (see Appendix E).
- (d) Drop impact test (see Appendix F).

One specimen of the FIBC type shall be submitted for each test. Failure of any one of the above tests shall be deemed to constitute non-compliance with this Standard.