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Agricultural Pallet Bins

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Agricultural Pallet Bins

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1 Purpose and Scope

1.1 The purpose of this Standard is to provide uniform design and performance specifications for agricultural pallet bins (also known as, bulk bins, bin boxes, bulk crates, totes, field boxes and pallet boxes). This Standard is intended to help suppliers and users specify pallet bins that will facilitate handling, interchanging, storing, and transporting.

1.2 The scope of this Standard encompasses outside dimensions, capacity, materials, design features, performance tests, and specifications of pallet bins.

1.3 This Standard covers the general description of pallet bins for use in the agricultural industry. Additional recommendations may be required for specific applications. Detailed pallet bin design specifications are not included in order to permit alternate design concepts.

1.4 These guidelines are arranged in a manner that allows selection of those paragraphs applicable to specific cases. The purchaser or other user specifies applicable paragraphs and requirements. This Standard also functions as a checklist of characteristics that a user may wish to consider when purchasing pallet bins.

1.5 Terminology of construction is the same as defined in American National Standard MH 1.1.2, Pallet Bins and Terminology. Sizes specified in ANSI Standard MH 1.2.2, Pallet Sizes, are used when appropriate.

2 Dimensions

2.1 Only overall outside dimensions are specified for length, width, and height. These dimensions shall not be exceeded by bulge or deflection from bin loading or by overfill.

2.2 One square cross section bin and one rectangular cross section bin are specified that give a projected area (footprint) with the dimensions shown. Two overall heights are specified. A separate stacking height may also be specified to give the distance measured from the base plane to the plane where the next pallet bin could rest.

2.2.1 The square bin shall be 120 ±1 cm × 120 ±1 cm (47.25 ±0.39 in. × 47.25 ±0.39 in.).

2.2.2 The rectangular bin shall be 120 ±1 cm × 100 ±1 cm (47.25 ±0.39 in. × 39.37 ±0.39 in.).

2.2.3 The overall height shall be 72 ±1 cm (28.35 ±0.39 in.) or 133 ±1 cm (52.36 ±0.39 in.).

2.3 Fork clearances shall be a minimum of 8.9 cm (3.5 in.) in opening height and a minimum of 22.90 cm (9.0 in.) in opening width, and shall be on 45.7 to 61.0 cm (18 to 24 in.) center spacings.

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3 Capacity

3.1 Since overall outside dimensions are specified, inside dimensions (and thus volume capacity) will vary with construction materials, bin design and inside depth.

3.2 Where volume capacity is required for measuring contents, quality control, piece work payments or other reasons, calibration marks shall be placed inside the bin.

3.3 To facilitate stacking and airflow for refrigerating and degreening, the bins should be loaded to provide a minimum of 5 cm (2 in.) of headspace. A mark (painted, stamped, etc.) shall be placed 5 cm (2 in.) below the top edge to provide a guide for loading.

4 Materials

4.1 Pallet bins may be constructed from any materials that have been shown to be suitable for the intended application. Common materials include wood, plastic, metal and fibreboard. The materials selected shall comply with the paragraphs in this section when they are specified.

4.2 Food safety. Materials in contact with the product shall be approved by the U.S. Food and Drug Administration and/or the U.S. Department of Agriculture. Preservatives and other special treatment chemicals also must be approved.

4.3 Temperature range. The material shall withstand exposure to specified minimum and maximum temperatures without appreciable loss in strength or change in other characteristics.

4.4 Radiation. The material shall pass specified performance tests after specified exposure to sunlight (ultra-violet radiation).

4.5 Moisture. The material shall pass specified performance tests after specified exposures to high humidity or free moisture, e.g., hydrocooling.

4.6 Cleaning/sanitizing. The material shall be capable of being cleaned and/or sanitized by hot water, steam, chemical applications or other specified methods.

4.7 General requirements. Pallet bins shall be constructed from new materials that are free of harmful imperfections such as knots, bark, blow holes or other undesirable characteristics.

5 Design Features

5.1 The following paragraphs describe bin characteristics which may be specified for specific applications.

5.1.1 Food safety. Design features shall be incorporated that prevent accumulations of mildew, bacteria and fungi. Surfaces in contact with food shall be free of rust, cracks, small radii, porosity and other conditions that prevent adequate cleaning and sanitation.

5.1.2 Handling safety. Pallet bin safety shall be enhanced by using designs that are without sharp edges, are resistant to splintering, are free of protruding parts and have other features that minimize the chance of injury.

5.2 General design features. The following design characteristics shall be specified when applicable.

5.2.1 Collapsible or knock down (KD). The design shall enable the pallet bin to be changed from a set-up configuration to a geometrically reduced configuration after use to promote efficient use of space while in storage or on back haul routes.

5.2.2 Expendable. The pallet bin shall have a five expectancy of one trip.

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