

§ 178.709

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performance, may be used but must be external to the inner liner.

(iv) The load-bearing surfaces of IBCs intended for stacking must be designed to distribute loads in a stable manner.

[Amdt. 178–103, 59 FR 38068, July 26, 1994, as amended at 66 FR 45386, Aug. 28, 2001; 68 FR 75758, Dec. 31, 2003]

§ 178.709 Standards for wooden IBCs.

(a) The provisions in this section apply to wooden IBCs intended to contain solids that are loaded or discharged by gravity. Wooden IBC types are designated:

- (1) 11C Natural wood with inner liner.
- (2) 11D Plywood with inner liner.
- (3) 11F Reconstituted wood with inner liner.

(b) Definitions for wooden IBCs:

(1) *Wooden IBCs* consist of a rigid or collapsible wooden body together with an inner liner (but no inner packaging) and appropriate service and structural equipment.

(2) *Liner* means a separate tube or bag, including the closures of its openings, inserted in the body but not forming an integral part of it.

(c) Construction requirements for wooden IBCs are as follows:

(1) Top lifting devices are prohibited in wooden IBCs.

(2) The strength of the materials used and the method of construction must be appropriate to the capacity and intended use of the IBC.

(i) Natural wood used in the construction of an IBC must be well-seasoned, commercially dry, and free from defects that would materially lessen the strength of any part of the IBC. Each IBC part must consist of uncut wood or a piece equivalent in strength and integrity. IBC parts are equivalent to one piece when a suitable method of glued assembly is used (i.e., a Lindermann joint, tongue and groove joint, ship lap or rabbet joint, or butt joint with at least two corrugated metal fasteners at each joint, or when other methods at least equally effective are used). Materials other than natural wood may be used for the construction of structural equipment of the outer packaging.

(ii) Plywood used in construction of bodies must be at least 3-ply. Plywood must be made of well-seasoned, rotary-

cut, sliced or sawn veneer, commercially dry, and free from defects that would materially lessen the strength of the body. All adjacent plies must be glued with water-resistant adhesive. Materials other than plywood may be used for the construction of structural equipment of the outer packaging.

(iii) Reconstituted wood used in construction of bodies must be water resistant reconstituted wood such as hardboard or particle board. Materials other than reconstituted wood may be used for the construction of structural equipment of the outer packaging.

(iv) Wooden IBCs must be firmly nailed or secured to corner posts or ends or be assembled by similar devices.

(3) The strength of the material used and the construction of the liner must be appropriate to the capacity of the IBC and its intended use. Joints and closures must be sift-proof and capable of withstanding pressures and impacts liable to occur under normal conditions of handling and transportation.

(4) Any integral pallet base forming part of an IBC, or any detachable pallet, must be suitable for the mechanical handling of an IBC filled to its maximum permissible gross mass.

(i) The pallet or integral base must be designed to avoid protrusions that may cause damage to the IBC in handling.

(ii) The outer packaging must be secured to any detachable pallet to ensure stability in handling and transportation. Where a detachable pallet is used, its top surface must be free from sharp protrusions that might damage the IBC.

(iii) Strengthening devices, such as timber supports to increase stacking performance, may be used but must be external to the inner liner.

(iv) The load-bearing surfaces of IBCs intended for stacking must be designed to distribute loads in a stable manner.

[Amdt. 178–103, 59 FR 38068, July 26, 1994, as amended at 66 FR 45386, Aug. 28, 2001]

§ 178.710 Standards for flexible IBCs.

(a) The provisions of this section apply to flexible IBCs intended to contain solid hazardous materials. Flexible IBC types are designated: