

## § 178.358-2 Materials of construction and other requirements.

(a) Phenolic foam insulation must be fire resistant and fabricated in accordance with USDOE Material and Equipment Specification SP-9, Rev. 1 and Supplement (IBR, see §171.7 of this subchapter), which is a part of this specification. (Note: Packagings manufactured under USAEC Specification SP-9, and Rev. 1 thereto are authorized for continued manufacture and use.) A 14 cm (5.5-inch) minimum thickness of foam must be provided over the entire liner except where:

(1) Wood spacers replace the foam material; or

(2) At protrusions of liner or shell, such as flanges, baffles, etc., where the minimum thickness of foam, wood, or a combination of these is 10 cm (4 inches).

(3) Solid wood or laminated wood solidly glued may be used to replace the foam between liner and shell (i.e., in ends of overpack). In this case, minimum wood thickness is 10 cm (4 inches). Average density of insulation must be 0.1g/cc (6.75 pounds per cubic foot (pcf)) minimum, except that 0.13 g/cc (8 pcf) is required in the removable end cap of the specification 21PF-2, which must have a minimum foam thickness of 12.7 cm (5 inches).

(b) Gaskets for inner liner, outer shell, or where otherwise specified in DOE CAPE-1662, Rev. 1 (IBR, see §171.7 of this subchapter), must be as specified in DOE CAPE-1662, Rev. 1.

(c) Support and pressure pads for the inner liner must be of neoprene, sponge rubber, or equivalent.

(d) Fire-retardant (intumescent) paint must be applied to any wood blocking which is located at any joint in the shell.

(e) Vent holes 5 mm (0.2-inch) diameter must be drilled in the outer shell to provide pressure relief during the insulation foaming and in the event of a fire. These holes, which must be drilled in all areas of the shell which made with the foam insulation, must be spaced in accordance with CAPE-1662.

(f) Welding must be by a fusion process in accordance with the American Welding Society Codes B-3.0 and D-1.0 (IBR, see §171.7 of this subchapter). Body seams and joints for the liner and shell must be continuous welds.

(g) *Waterproofing*. Each screw hole in the outer shell must be sealed with appropriate resin-type sealing material, or equivalent, during installation of the screw. All exposed foam surfaces, including any vent hole, must be sealed with either:

(1) Waterproofing material as prescribed in USDOE Material and Equipment Specification SP-9, Rev. 1 and Supplement, or

(2) As specified in CAPE-1662, Revision 1.

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