

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 Code. 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.

[Amdt. 178-35, 39 FR 45250, Dec. 31, 1974, as amended by Amdt. 178-56, 44 FR 49459, Aug. 23, 1979; Amdt. 178-90, 53 FR 36551, Sept. 20, 1988. Redesignated by Amdt. 178-97, 55 FR 52716, Dec. 21, 1990; 66 FR 45387, Aug. 28, 2001]

§ 178.358-3 Modification of Specification 21PF-1 overpacks.

(a) Each Specification 21PF-1 overpack for which construction began or was completed before April 1, 1989, in conformance with drawing E-S-31536-J, Revision 11, of CAPE-1662 must be modified in conformance with drawing S1E-31536-J1-D of CAPE-1662, Revision 1, Supplement 1, before April 1, 1991.

(b) Each such existing Specification 21PF-1 overpack must be dried and weighed in accordance with the following procedures:

(1) Drill out or otherwise clean the plug material from the vent holes originally provided for foam expansion. See drawing S1E-31536-J1-D of CAPE-1662, Revision 1, Supplement 1, for locations.

(2) Weigh each packaging element (top and bottom halves) separately to an accuracy of ± 2.3 kg (± 5 pounds) and record the weights. If this measured weight exceeds the initially measured weight at the time of fabrication by 11.3 kg (25 pounds) (indicating a significant retained water content), the packaging element must be dried.

(3) Place overpack element in drying oven; maintain temperature between 87.8-98.9 °C (190° and 210 °F) for a minimum of 72 hours. The oven should have a provision for air exchange or other means of removing moisture driven from the foam structure.

(4) Drying may be discontinued after 72 hours if the weight of the packaging element does not exceed the initially measured tare weight of that element at the time of fabrication by more than 11.3 kg (25 pounds). If the weight of the packaging element exceeds the initial fabricated weight (indicating a significant remaining water content) by more than 11.3 kg (25 pounds), drying must be continued until the weight differential is not higher than 11.3 kg (25 pounds), or until the rate of weight loss is less than 1.1 kg (2.5 pounds) per day.

(5) As an alternate moisture measurement, a calibrated moisture meter reading for 20 percent maximum water content may be used to indicate an end point in the drying cycle (see details in report "Renovation of DOT Specification 21PF-1 Protective Shipping Packages," Report No. K-2057, Revision 1, November 21, 1986, available from the USDOE and part of USDOE Report No. K/SS-471).

(6) Following drying, each overpack element (top and bottom halves) must be weighed and the weight in both pounds and kilograms must be engraved on the identification plate required by § 178.358-5(c).

(c) After modification as provided for herein, each Specification 21PF-1 overpack must be marked "USA-DOT-21PF-1A". See the marking requirements of § 178.358-5.

[Amdt. 178-90, 53 FR 36551, Sept. 20, 1988. Redesignated by Amdt. 178-97, 55 FR 52716, Dec. 21, 1990; Amdt. 178-110, 60 FR 49111, Sept. 21, 1995; 63 FR 37462, July 10, 1998; 66 FR 45389, Aug. 28, 2001]

§ 178.358-4 Construction of Specification 21PF-1B overpacks.

(a) Each Specification 21PF-1 overpack for which construction began after March 31, 1989, must meet the requirements of Specification 21PF-1B, in conformance with drawings E-S-31536-J-P, and S1E-31536-J2-B of CAPE-1662, Revision 1, Supplement 1.