

AUTHORIZED TYPE A PACKAGES

49 CFR 173.415 Authorized Type A Packages

Each offeror of a Specification 7A Package must maintain on file for at least one year after the latest shipment, and shall provide to the DOT on request, complete documentation of tests and an engineering evaluation or comparative data showing that the construction methods, packaging design, and materials of construction comply with that specification.

49 CFR 173.462 Preparation of Specimens for Testing

Prior to testing, each specimen (package prototype) was examined and determined to have no faults or damage. The containment system (latches) and external handles were identified as having no deviation from specifications.

GAUGE MODEL	PACKAGE CONSTRUCTION	PACKAGE	PACKAGE DIMENSION IN (MM)	LOADED WEIGHT, LBS (KG)
MC Series (MC-1, MC-1DR, MC-2, MC-3)	Water resistant, high density, molded plastic	A	30 in W x 16 in D x 16.5 in H (76 x 41 x 42 cm)	92 lb (42 kg)
AC-2 and AC-2R	Water resistant, high density, molded plastic	B	20 in W x 20 in D x 20 in H (51 x 51 x 46 cm)	63 lb (29 kg)
MCM-2	Water resistant, high density, molded plastic	C	27 in W x 12 in D x 20 in H (69 x 31 x 31 cm)	35.5 lb (17 kg)
501 and 501DR	Water resistant, high density, molded plastic	D	30 in W x 16 in D x 16.5 in H (76 x 41 x 42 cm)	80 lb (36 kg)
MC-S-24	Plywood and plastic laminate	E	50 in W x 16.5 in D x 27.8 in H (127 x 42 x 71 cm)	180 lb (81 kg)
MC-M and MC-MDR	Water resistant, high density, molded plastic	F	24.5 in W x 13 in D x 10.5 in H (62 x 33 x 26 cm)	34 lb (15.4 kg)
MC Series (MC-1, MC-2) and 501 & 501DR	Water resistant, molded fiberglass	G	30 in W x 16 in D x 16.5 in H (76 x 41 x 42 cm)	92 lb (42 kg)
503, 503DR and MC-M	Water resistant, molded fiberglass	H	27 in W x 12 in D x 12 in H (69 x 31 x 46 cm)	35.5 lb (17 kg)
A, BR(C) Mark II	Aluminum	I	24 in W x 13 in D x 18 in H (60 x 33 x 46cm)	64 lb (29 kg)
MC Series	Rotational molding grade resin	J	30 in W x 15 in D x 16 in H (76 x 38 x 41 cm)	85 lb (39 kg)

Test Details and Results on Page 2



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*Authorized
Type A package*

49 CFR 173.465 Type A Packaging Tests**1. Water Spray Test**

The water spray test immediately preceded each other test prescribed by the requirements. The water spray test simulated exposure to rainfall of approximately 5 centimeters (2 inches) per hour for one hour.

Result: A nominal amount of water (causing an insignificant total weight increase) was observed to have entered the molded plastic and aluminum packages. Because these materials are non-hydroscopic, no weakening or loss of the package integrity was observed.

2. Free Drop Test

Each specimen was dropped from a height of 1.2 m (4ft.) onto a target on the right front corner of the lid so as to suffer maximum damage to the safety features. The target was a concrete slab meeting the requirements of the regulation.

Result: Hairline fractures formed at the corner of impact of the molded and fiberglass packages, and the aluminum package dented, but all packages, and the containment system remained intact.

3. Stacking Test

Each specimen was subjected for a period of 24 hours to a compressive load equivalent to 13 kilopascals (1.9 pounds per square inch) multiplied by the vertically projected area of the package, applied uniformly on two opposite sides of package, the top and base. Aluminum tooling plate was used for the compressive load to test each package. The total weight is as follows: Package A: 912 lbs; Package B: 760 lbs; Package C: 616 lbs; Package D: 912 lbs; Package E: 1568 lbs; Package F: 606 lbs; Package G: 912 lbs; Package H: 616 lbs; Package I: 593 lbs.

Result: No visible deformation was observed to any of the packages, locking mechanisms, or external handles.

4. Penetration Test

A brass bar 3.2 cm (1.25 inches) in diameter with a mass of 6 kg (13.2 lbs) was dropped from a height of 1 m (3.3 ft.) and directed to fall onto the center of the weakest part of the specimen. The bar was not deformed by the test.

Result: Package E cracked, but no significant deformation occurred to it or any of the packages.

5. Vibration Test

Past experience indicates that all loaded shipping containers withstand the effects of vibrations that arise under the normal conditions of transport without any loss of integrity.

Douglas Carter

March 22, 2002

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