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Performance Oriented Packaging Testing M218, M219, M220 Prop charge Container (672) Per Fiberboard Box. Dwg. 9313721

12. PERSONAL AUTHOR(S)
Dmitry Kirshteyn

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17. COSATI CODES	18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Performance Oriented Packaging Testing M218, M219, M220 Prop Charge Container, (672 Per Fiberboard Box)
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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report contains the testing and test results performed on the M218, M219, M220 Prop Charge Containers Packed 672 per fiberboard box.

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I. Report Number: DOD POP HM TR/AYD 91-019

II. Title: Performance Oriented Packaging Testing for M218, M219, M220
Prop Charge Containers.
Packed 672 per fiberboard box in accordance with
DWG. 9313721.

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Performing Activity: ARDEC

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1. Data:

Container:

Type: Box, Fiberboard
UN Code: 4G
Specification Number: PPP-B-636
Material: Fiberboard
Capacity: 154.5 Liters
Dimensions: 70 cm x 55.4 cm x 39.84 cm
(27 9/16" x 21 13/16" x 15 11/16")
Gross Weight: 29. kg (63 lbs.)

Product:

Name: M219
Drawing Number: 9378134
United Nations Number: 0242
United Nations Packaging Group: II
United Nations Nomenclature: Charges, Propelling, for Cannon
Physical State: Solid
Amount Per Container: 672 Prop Charge Containers
NSN: 1315-01-290-1597

Name: M218
Drawing Number: 9300234
United Nations Number: 0242
United Nations Packaging Group: II
United Nations Nomenclature: Charges, Propelling, for Cannon
Physical State: Solid
Amount Per Container: 672 Prop Charge Containers
NSN: 1315-01-290-1598

Name: M220
Drawing Number: 9381510
United Nations Number: 0242
United Nations Packaging Group: II
United Nations Nomenclature: Charges, Propelling, for Cannon
Physical State: Solid
Amount Per Container: 672 Prop Charge Containers
NSN: 1315-01-329-2575

2. Background:

This report contains the testing and test results performed on propelling charges packed in a fiberboard box, manufactured in accordance with PPP-B-636, Style CSSC, Type CF, Class Water-resistant, Grade V3C. 672 M218, M219, M220 Prop charge containers were utilized to simulate the proper content weights. The weight of the one packed out box was 63 lbs. The method of pack was consistent with DWG. 9313721.

Stacking, vibration and drop tests were conducted.

3. Testing:

Note: All testing was in accordance with the referenced sections of CFR 49, except that one complete pack was used in lieu of multiple packs for each test.

c. Drop Test (178.603):

Procedure-

One container was dropped in the following orientations: flat on bottom, flat on top, flat on long-side, flat on short-side, and the top-right-rear corner. The height for all five drops was 1.2 meters.

Results- were exceeded.

There was no visible damage on the first four drops. On the corner drop the side edge of the outer box (corresponding to the corner of impact) split. The contents remained inside the container and the package was capable of being handled without danger of spillage, satisfying the passing criteria. It should be noted that this exceeded the requirements of CFR 49, since one container experienced all the drops, as opposed to five separate containers experiencing one drop each.

a. Vibration Test (178.608):

Procedure-

One container was vibrated on a vibration table unrestrained for a one hour time period. The peak-to-peak displacement was one inch and the frequency was 210 cycles per minute. This frequency was sufficient to allow the pack to become completely airborne enabling a 1/16" piece of strapping material to be slid underneath the pack during testing.

Results-

from vibration tests

The outer box received minor abrasions on all faces (except the top) from repetitive impacts with the side walls and base of the vibration table. The container experienced no structural damage, and therefore there was no spillage of contents, satisfying the passing criteria.

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b. Stack Test (178.606):

Procedure-

A dead load of 490 lbs. was applied to the top of a single packed container for a 24 hour period. This simulates a stack height of 10 feet of identical packages.

Results-

(cont) → The container uniformly compressed a total of 1/16 of an inch and adequately supported the load, satisfying the passing criteria for stacking.

5. Referenced Material:

A. Federal Register, "49 CFR Part 107, 1991"

6. Based on the above equivalent POP Testing, the following POP symbol has been applied to containers IAW Drawing 9313721.

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4G/Y29/S/□□

USA/DOD/AYD

Insert last two digits of year packed