This report contains the test results performed on the M722 White Phosphorus (WP) Filled Body Assemblies for 60mm mortar packed 208 per wood pallet container.
I. Report Number: DOD POP HM TR/AYD 92-004

II. Title: Performance Oriented Packaging (POP) testing of M722 White Phosphorus (WP) Filled Body Assemblies for 60mm Mortar (208) Packed in a Wood Pallet Container

Drawing Number: 12937963

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Performing Activity: ARDEC

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Distribution Statement A.
Approved for public release; distribution is unlimited.
1. Data:

Container:

Type: Container, Pallet, Wood  
UN Code: 4C1  
Specification: MIL-P-15011  
Drawing Number: 12937963  
Material: Wood  
Maximum net mass: 298 kg (656 lbs)  
Dimensions: 121.9 X 101.6 X 36.2 cm$^3$  
(48 X 40 X 14.1/4 in$^3$)  
Gross Weight: 386 kg (850 lbs)

Product:

Name: WP Filled Body Assembly, M722, 60mm  
Drawing Number: 15-12-344  
Cage Code: 81361  
United Nations Proper Shipping Name: PHOSPHORUS, WHITE  
United Nations Identification Number: 1381  
United Nations Packaging Group: I  
Physical State: Solid  
Number of Body Assemblies per Container: 208  
National Stock Number (NSN): 1310-01-260-8728

2. Reference Material:

   a. Federal Register, "49 CFR Part 107-179"  

3. Background:

   This report details Performance Oriented Packaging (POP) tests done on 208 60mm M722 WP Filled Body Assemblies packed in a wood container configuration supported by a standard 48 X 40 4-way entry wood pallet in accordance with drawing 12937963. Each body assembly weighs approximately 2.91 lbs. The weight of the packed out tested container was 850 lbs (386 kg). Tests were performed according to POP test regulations.

4. Test:

   The following POP tests were performed at ambient temperature:
a. Vibration Test (178.608)

Procedure:

Two pallet containers were vibrated on a vibrating platform unrestrained for a two hour time period each. The double-amplitude (peak-to-peak displacement) was one inch and the frequency was 220 cycles per minute. The frequency was sufficient to allow the package to become completely airborne and enable a 1/16" piece of strapping material to be slid underneath the package during vibration.

Results:

After the tests, the pallet containers experienced no structural damage; there was no spillage of contents; the passing criteria was met.

b. Drop Test (178.603)

Procedure:

Three pallet containers were tested. The first one was dropped in three orientations: flat on the bottom, flat on the top, and flat on the long side. The second pallet container was dropped flat on the short side, and the third one on the corner. The height for all five drops was 5.9 ft (1.8 m)

Results:

There was no significant structural damage on the first four drops. On the fifth drop (on the corner) one steel banding strap, placed around the pallet container along the longitudinal direction, broke, and the impact corner received minor damage. However, all contents remained inside the container and the package was capable of being handled without danger of spillage. The passing criteria was met.

c. Stacking Test (178.606)

Procedure:

The pallet container that had been previously dropped on the corner was reused for the stacking test. A well-distributed dead load of 10,500 lbs was applied to the top of the pallet container for a 48 hour period. This simulates a stack height of 16 ft (13 layers) of identical packages.

Results:

Neither deformation nor damage was observed on the pallet container after the test. The passing criteria was exceeded.
5. Based on the above POP testing, the following POP symbol has been applied to pallet containers in accordance with drawing 12937963.

Insert the last two digits of year packed.

\[\text{4C1/X386/S/**} \]

\[\text{USA/DOD/AYD}\]