

ATA compliant, Cases exceed ATA Spec 300 Category 1, long life reusable..

Optional Military Specs Available:

• MIL-STD-648	• MIL-T-21200
• MIL-STD-3010	• MIL-PRF-28800
• MIL-STD-130	• MIL-HDBK-454
• MIL-STD-1472	• MIL-I-45208
• MIL-C-4150J	• ASTM D 3951
• MIL-HDBK-304	• SAE-ARP-1967

Testing:

Hardigg cases are tested beyond the limits of ordinary shipping containers. Our on-site, state-of-the-art environmental test laboratory includes a walk-in environmental chamber for extreme temperature testing, a computerized vibration table and computerized drop test equipment. The test laboratory enables our technicians to qualify container systems for compliance to your specifications. Our in-house lab is a DLA Authorized Testing Facility and maintains current calibrations on all test equipment.

Hardigg containers have been procured and / or tested under numerous MIL-SPEC testing and certification procedures. Those below are among the most popular used for evaluating reusable containers manufactured for worldwide shipping, handling and storage.

The following tests should be performed on a fully loaded container, with payload, and cushion or custom shock isolation system. Doing so evaluates not only the container shell, but also the ability of the system to protect the payload to the desired fragility level. If no specific load is known, we recommend a payload density of twenty (20) pounds per cubic foot.

Drop Test:

Drop Tests, of a fully loaded container, shall be conducted in accordance with Federal Test Method Standard 101, Method 5007, Procedure A, or ASTM-D-4169, Distribution Cycle (DC) 18. Alternative test procedure: MIL-STD-810F, Method 516.5, Procedure IV, Transit drop test (freefall drops onto concrete with drop heights up to 48").

Shock Test:

Testing per MIL-STD-810 Method 516, Procedure II is available, but is much less severe than the drop tests listed above.

Vibration Test:

Loose Load Vibration (i.e. Loose Cargo Bounce, Repetitive Shock) test of a loaded container shall be conducted in accordance with ASTM D 4169, Schedule F, Assurance Level 1, per Distribution Cycle (DC) 18, in three (3) axes. Alternative Test: MIL-STD-810E, Method 514.4 (composite inputs). This

test covers the inputs from Ground, Air, and Sea transport (procedures as specified; random on random).

Water Leak Test:

Spray-tight test shall be performed in accordance with ASTM D 951, High Intensity Level. Note that this test is more demanding than the simple rain test MIL-STD-810 Method 509. ASTM D 951 includes high-pressure water spray from all directions, as would be seen on an open flatbed truck during a heavy rainstorm.

Airtight Test:

Air tightness shall be verified in accordance with Federal Test Method Standard 101, Procedure 5009, Pneumatic Pressure Technique. Air pressure in test container shall be 0.50 PSIG.

Temperature and Humidity Test:

Containers shall tolerate without damage, storage and operation at temperatures from -54 to 74 degrees Celsius (-65F to +165F) and relative humidity ranging from 0 to 100% over the temperature extremes. We recommend performing an air pressure test to verify that no cracks or other damage occurred as a result of temperature exposure.

Altitude:

Containers shall tolerate without damage, storage and operations at elevations up to 40,000 feet (12192 meters) above sea level. Ref: MIL-STD-810E, Method 500.3. To control pressure differentials, properly sized, automatic / manual Pressure Relief Valves (PRV's) are installed.

UV Radiation:

Resin complies with ASTM D 4976-00b, PE223 (integrally-blended UV stabilizers to minimize loss of desirable mechanical properties after long-term exposure to sunlight / UV radiation). All other components of container shall tolerate similar conditions without damage.

Static Loading:

Concentrated Load Test IAW FTMS 101, Method 5016. Hardigg has conducted stacked loading tests on a container size 58"x34"x29" high at 4,153 lbs. (265 lbs / sq ft) for 24 hours. The test was conducted and the container passed IAW DOT 49CFR 178.350 for Hazardous materials shipping and transport. We believe this test to be equal to or greater than that required by FTMS 101.

Handling Test:

Suspend case by one handle, IAW FTMS 101, Method 5011. Hardigg container for the Advance Cruise Missile engine was tested at Wright Patterson AFB. Container size was 43" x 31" x 24" high and weighed 313 pounds gross. Both metal type hand lift and hoisting rings were tested and passed.

Size / Weight: See Appendix 1, Hardigg Standard Single Lid Case Sizes.

The Hardigg part number indicates the nominal inside dimensions of the case. The first four digits are the left to right, and front to back dimensions. The second four digits are the base top to bottom and the lid top to bottom dimensions.

For example: the AL2624-0813 is 26" left to right, 24" front to back; the base is 8" deep, and the lid is 13" deep.

Cushion Requirements:

Protect against shock and vibration with a cushioning system customized to your specific equipment. We offer polyethylene and polyurethane shipping foam, custom-cut to immobilize your equipment within the case. Antistatic and fire retardant foams are available on request. Also available: partitions and Velcro straps, instruction labels, etc.

Optional Features:

OPTIONS	BENEFITS
All-Catch Lids	Hinges replaced by wing/turn catch-strike pairs, so the lid can be completely removed.
Automatic / manual breather valves	Minimize air exchange when container is subjected to changes in temperature and altitude.
Humidity Indicators, bagged desiccant, desiccant storage provisions	Indicate level of dryness. Protect your gear from moisture.
Metal Card Holder	Displays shipping card, container contents.
Custom I.D. Plates with bar codes and UID as required / Labeling Options to include standard marking labels as well as permanent, Epoxy, markings.	Identify cases and content belonging to you or your organization.
Forklift provisions or skid runners	For easier transport and handling.
Extra handles	Makes it easier to handle larger cases.
Castors: removable, fixed, and/or edge-mounted	For greater manageability.
Locking cable / hasps	Secure anywhere.
Colors (as listed in Appendix 1)	Coordinate with agency color schemes.
Lift/Tie-down rings	For lifting larger and heavier containers and transport tie-down

Military Specifications:

Meets container applications in the following specifications:

MIL-STD-810, "Test Method Standard for Environmental Engineering Considerations and Laboratory Tests"

MIL-STD-2073, "Standard Practice for Military Packaging"

MIL-T-28800.

ASTM 4169, "Standard Practice for Performance Testing of Shipping Containers and Systems"

Additional Testing:

Our containers have been tested for fungus resistance, salt fog (measure of corrosion resistance), submersion, Water Vapor, etc. All tests can be customized to suit the mission of the container.

Certification:

Hardigg can certify deliverable items to the performance requirements of this specification by similarity or testing as ordered.

Inspection:

Quality Assurance:

Vendor shall maintain a Quality Management System in accordance with ISO 9001:2000