

TESTING OF UN STANDARD NON-BULK PACKAGINGS

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ACRONYMS

49 CFR	Title 49 of the Code of Regulations
DOT	U.S. Department of Transportation
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
LOI	Letter of Interpretations
NCT	Normal Conditions of Transportation
PR	Performance Requirements
QA	Quality Assurance
QC	Quality Control
SF	Safety Feature
UN	United Nations

1 INTRODUCTION

Prior to using this document, the organization that will be certifying the non-bulk packaging conforming to a United Nations (UN) standard should be determined. That certifying organization will mark the packaging with their "name and address or symbol of the manufacturer or the approval agency certifying compliance with Subpart L and Subpart M." The marking per 49 CFR 178.503(a)(8) indicates the responsible party certifying the packaging was manufactured to a successfully tested design type and complies with all applicable requirements of Part 178. Under 49 CFR 178.2, "manufacturer" is defined as "the person whose name and address or symbol appears as part of the specification markings required by Part 178. Therefore, as per 49 CFR 178.503(a)(8) a DOE contractor may mark and certify the non-bulk packaging as the manufacturer, as defined in 49 CFR 178.2. The fabricator or actual manufacturer (i.e., Myers, Skolnik, Greif) may also mark the non-bulk packaging. Also, a DOT-recognized, UN Third-Party Packaging Certification Agency may mark and certify the non-bulk packaging as the approval agency using its unique symbol.

The organization certifying the non-bulk packaging meets the applicable requirements in 49 CFR 178 Subpart L and Subpart M as per 49 CFR 178.503(a)(8), is also required to meet all applicable training requirements in 49 CFR 172 Subpart H, Training.

As part of the packaging selection process, the DOE contractor determines the organization that will be certifying the non-bulk packaging. The contractor can then decide whether to use the guidance in Attachment A as a verification tool or a compliance tool. When a DOE contractor is procuring a non-bulk packaging where the fabricator or an approved DOT Third-Party Testing agency is certifying the non-bulk packaging, Attachment A should be used as a verification tool. In this case the DOE Contractor's auditor is only verifying the tests performed in 49 CFR 178 Subpart M are performed correctly. The DOE Contractor's auditor is not making a regulatory decision since they are not certifying the non-bulk packaging meets the requirements in 49 CFR 178 Subpart M.

When the DOE contractor is self-certifying the non-bulk packaging, Attachment A becomes a compliance tool the DOE Contractor's auditor uses to determine the tests are performed in compliance with 49 CFR 178 Subpart M. Thus, the auditor using Attachment A is (or should be) DOT trained as required in 49 CFR 172 Subpart H in order to make those decisions.

Attachment A is guidance based on the premise that UN standard package testing requires knowledgeable personnel with an understanding of regulatory packaging design and testing requirements. The requirements in 49 CFR Subpart M are intended to simulate events that can be encountered during normal conditions of transport (NCT), which includes rough handling and minor mishaps. UN standard packagings are intended to perform their containment functions under NCT - but not under the more severe accident conditions of transport.

The auditor using Attachment A is required to have a comprehensive and/or functional understanding of the specific packaging design to ensure specific tests challenge important and identified safety features. Therefore, as noted above the auditor witnessing the tests is trained and must understand the design, functional use, and testing requirements for the packaging.

The manufacturer controls the design of the packaging and takes the design input and develops the details of the packaging. This may include drawings, calculations, evaluations, and test

plans, where appropriate. The manufacturer ensures there is enough detail so the packaging can be fabricated and tested to ensure compliance with 49 CFR 178 Subpart L and Subpart M.

The checklist located in Attachment A can be used to review the test procedures of the testing organization prior to arrival for witnessing the testing. Attachment A is based on the current regulations and contains suggested information to look for during the procedural review and testing. Attachment A is designed as a tool that can be taken into the field and completed while witnessing the testing.

2 DEFINITIONS

Bottle means an inner packaging having a neck of relatively smaller cross section than the body and an opening capable of holding a closure for retention of the contents (49 CFR 171.8).

Box means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fiberboard, plastic, or other suitable material. Holes appropriate to the size and use of the packaging, for purposes such as ease of handling or opening, or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during transportation, and are not otherwise prohibited in this subchapter (49 CFR 171.8).

Bulk packaging means a packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment. A Large Packaging in which hazardous materials are loaded with an intermediate form of containment, such as one or more articles or inner packagings, is also a bulk packaging. Additionally, a bulk packaging has:

- (1) A maximum capacity greater than 450 L (119 gallons) as a receptacle for a liquid;
- (2) A maximum net mass greater than 400 kg (882 pounds) and a maximum capacity greater than 450 L (119 gallons) as a receptacle for a solid; or
- (3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas as defined in §173.115 of this subchapter (49 CFR 171.8).

Combination packaging means a combination of packaging, for transport purposes, consisting of one or more inner packagings secured in a non-bulk outer packaging. It does not include a composite packaging (49 CFR 171.8).

Composite packaging means a packaging consisting of an outer packaging and an inner receptacle, so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled it remains thereafter an integrated single unit; it is filled, stored, shipped and emptied as such (49 CFR 171.8).

Different packaging is one that differs (i.e., is not identical) from a previously produced packaging in structural design, size, material construction, wall thickness or manner of construction but does not include:

- (i) A packaging which differs only in surface treatment;
- (ii) A combination packaging which differs only in that the outer packaging has been successfully tested with different inner packagings. A variety of such inner packagings may be assembled in this outer packaging without further testing;

- (iii) A plastic packaging which differs only with regard to additives which conform to §178.509(b)(3) or §178.517(b) (4) or (5) of this part;
- (iv) A combination packaging with inner packagings conforming to the provisions of paragraph (g) of this section;
- (v) Packagings which differ from the design type only in their lesser design height; or
- (vi) For a steel drum, variations in design elements which do not constitute a different design type under the provisions of paragraph (g)(8) of this section (49 CFR 178.601(c)(4)).

Drum means a flat-ended or convex-ended cylindrical packaging made of metal, fiberboard, plastic, plywood, or other suitable materials. This definition also includes packagings of other shapes made of metal or plastic (e.g., round taper-necked packagings or pail-shaped packagings) but does not include cylinders, jerricans, wooden barrels or bulk packagings (49 CFR 171.8).

Freight container means a reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation (49 CFR 171.8).

Gross weight or *Gross mass* means the weight of a packaging plus the weight of its contents (49 CFR 171.8).

Inner packaging means a packaging for which an outer packaging is required for transport. It does not include the inner receptacle of a composite packaging (49 CFR 171.8).

Inner receptacle means a receptacle which requires an outer packaging in order to perform its containment function. The inner receptacle may be an inner packaging of a combination packaging or the inner receptacle of a composite packaging (49 CFR 171.8).

Intermediate packaging means a packaging which encloses an inner packaging or article and is itself enclosed in an outer packaging (49 CFR 171.8).

Manufacturer means the person whose name and address or symbol appears as part of the specification markings required by this part or, for a packaging marked with the symbol of an approval agency, the person on whose behalf the approval agency certifies the packaging (49 CFR 178.2).

Marking means a descriptive name, identification number, instructions, cautions, weight, specification, or UN marks, or combinations thereof, required by this subchapter on outer packagings of hazardous materials (49 CFR 171.8).

Non-bulk packaging means a packaging which has:

- (1) A maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid;
- (2) A maximum net mass of 400 kg (882 pounds) or less and a maximum capacity of 450 L (119 gallons) or less as a receptacle for a solid;
- (3) A water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas as defined in §173.115 of this subchapter; or
- (4) Regardless of the definition of bulk packaging, a maximum net mass of 400 kg (882 pounds) or less for a bag or a box conforming to the applicable requirements for

specification packagings, including the maximum net mass limitations, provided in subpart L of part 178 of this subchapter (49 CFR 171.8).

Outage or *ullage* means the amount by which a packaging falls short of being liquid full, usually expressed in percent by volume (49 CFR 171.8).

Outer packaging means the outermost enclosure of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings (49 CFR 171.8).

Package or *Outside Package* means a packaging plus its contents (49 CFR 171.8).

Packaging means a receptacle and any other components or materials necessary for the receptacle to perform its containment function in conformance with the minimum packing requirements of this subchapter (49 CFR 171.8).

Packing group means a grouping according to the degree of danger presented by hazardous materials. Packing Group I indicates great danger; Packing Group II, medium danger; and Packing Group III, minor danger. See §172.101(f) of this subchapter (49 CFR 171.8).

Person means an individual, corporation, company, association, firm, partnership, society, joint stock company; or a government, Indian Tribe, or authority of a government or Tribe, that offers a hazardous material for transportation in commerce, transports a hazardous material to support a commercial enterprise, or designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce. This term does not include the United States Postal Service or, for purposes of 49 U.S.C. 5123 and 5124, a Department, agency, or instrumentality of the government (49 CFR 171.8).

Person who offers or offeror means:

- (1) Any person who does either or both of the following:
 - (i) Performs, or is responsible for performing, any pre-transportation function required under this subchapter for transportation of the hazardous material in commerce.
 - (ii) Tenders or makes the hazardous material available to a carrier for transportation in commerce (49 CFR 171.8).

Pre-transportation function means a function specified in the HMR that is required to assure the safe transportation of a hazardous material in commerce, including—

- (1) Determining the hazard class of a hazardous material.
- (2) Selecting a hazardous materials packaging.
- (3) Filling a hazardous materials packaging, including a bulk packaging.
- (4) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.
- (5) Marking a package to indicate that it contains a hazardous material.
- (6) Labeling a package to indicate that it contains a hazardous material.

- (7) Preparing a shipping paper.
- (8) Providing and maintaining emergency response information.
- (9) Reviewing a shipping paper to verify compliance with the HMR or international equivalents.
- (10) For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.
- (11) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.
- (12) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.
- (13) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.
- (14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material (49 CFR 171.8).

Single packaging means a non-bulk packaging other than a combination packaging (49 CFR 171.8).

Specification markings mean the packaging identification markings required by this part including, where applicable, the name and address or symbol of the packaging manufacturer or approval agency (49 CFR 178.503(a)).

Strong outer packaging means the outermost enclosure that provides protection against the unintentional release of its contents. It is a packaging that is sturdy, durable, and constructed so that it will retain its contents under normal conditions of transportation. In addition, a strong outer packaging must meet the general packaging requirements of subpart B of part 173 of this subchapter but need not comply with the specification packaging requirements in part 178 of the subchapter. For transport by aircraft, a strong outer packaging is subject to §173.27 of this subchapter. The terms “strong outside container” and “strong outside packaging” are synonymous with “strong outer packaging (49 CFR 171.8).”

3 RECORDS AND TEST REPORTS

Following each design qualification test and each periodic retest on a packaging, a test report must be prepared.

- 1) The test report must be maintained at each location where the packaging is manufactured, certified, and a design qualification test or periodic retest is conducted as follows:

Responsible party	Duration to retain records
Person manufacturing the packaging	As long as manufactured and two years thereafter.
Person performing design testing	Design test maintained for a single or composite packaging for six years after the test is successfully performed and for a combination packaging or packaging intended for infectious substances for seven years after the test is successfully performed.
Person performing periodic retesting	Performance test maintained for a single or composite packaging for one year after the test is successfully performed and for a combination packaging or packaging intended for infectious substances for two years after the test is successfully performed.

- 2) The test report must be made available to a user of a packaging and contain, at a minimum, the following information:
- a) Name and address of test facility;
 - b) Name and address of applicant (where appropriate);
 - c) A unique test report identification;
 - d) Date of the test report;
 - e) Manufacturer of the packaging;
 - f) Description of the packaging design type (e.g., dimensions, materials, closures, thickness, *etc.*), including methods of manufacture (e.g., blow molding) which should include drawing(s) and/or photograph(s);
 - g) Maximum capacity;
 - h) Characteristics of test contents, e.g., viscosity and relative density for liquids and particle size for solids;
 - i) Test descriptions and results; and
 - j) Signed with the name and title of signatory.

ATTACHMENT A-1
UN NON-BULK PACKAGING TEST VERIFICATION CHECKLIST

Blue text indicates what you need to pay attention to or where problems have occurred in the past.

UN NON-BULK PACKAGING TEST VERIFICATION CHECKLIST

	REQUIREMENT	49 CFR REFERENCE	OBSERVATION <small>S = Satisfactory, U = Unsatisfactory, N/A = Not Applicable, NE = Not Evaluated</small>	STATUS
	The test procedures prescribed in this subpart are intended to ensure that packages containing hazardous materials can withstand normal conditions of transportation and are considered minimum requirements. Each packaging must be manufactured and assembled so as to be capable of successfully passing the prescribed tests and of conforming to the requirements of §173.24 of this subchapter at all times while in transportation.	§178.601(a)		
1.	Type of Container (e.g., 1A1, 1A2, 1H1, 4G etc.)			
2.	Packing Group – I, II, III			
	Preparation for testing	§178.602		
3.	Was each packaging and package prepared as if it were going to be shipped? (This includes the inner packaging for combination packages.)	§178.602(a)		
4.	For drop and stacking tests, containers must be filled to ≥ 95% of maximum capacity and the gross mass for which they may be used for solids. Filled to ≥ 98% of maximum capacity for liquids. (the gross weight of the test article must be ≥ the gross weight that will be certified)	§178.602(b)		
5.	If non-hazardous materials are used, do they have the same specific gravity and other physical properties (grain, size, viscosity)? Water may be used for liquids. Additives may be used, i.e., bags of lead shot, provided they do not affect the test results.	§178.602(c)		

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6.	Were paper or fiberboard packagings or packages conditioned for at least 24 hours before testing? (Check relative humidity and temp over the time of conditioning to determine if the requirements are met)	§178.602(d)		
7.	Were all closures installed using proper techniques and torque values? (Was it closed the same way as if it would be for shipment?)	§178.602(e)		
Solid payloads				
Drop Testing				
8.	Height based on packing group PG I: 1.8 m (5.9 feet) PG II: 1.2 m (3.9 feet) PG III: 0.8 m (2.6 feet) (Was the drop height measured from the lowest point on the packaging to the drop pad?)	§178.603 §178.603(e)(1) §178.603(e)		
9.	Were three drums used for each orientation (6 total)? (there are two orientations) Each container is tested individually	§178.603(a)		
	a) Was one test on the chime? (Was this a diagonal drop? If a diagonal drop, the test package should typically be dropped either directly on the locking lid ring mechanism or on the opposite side of the locking lid mechanism.)	§178.603(a)		

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	<p>b) Was the other orientation on the weakest point not tested (may be closure ring/bolt or flat on the welded seam)? (Ask how the weakest point was determined.)</p> <p>(Some type of engineering analysis should be performed to determine the weakest point. This could be based on similar containers and materials tested with finite element analysis (FEA). The contractor should ensure that the manufacturer's FEA program is supported by actual test results.)</p>	§178.603(a)		
10.	Were plastic drums, boxes, inner containers conditioned to ≤ -18 °C (0 °F), the liquid in these containers must not freeze. Was the Specific Gravity of the liquid at least 0.95?	§178.603(c)(1)		
11.	Is the target pad rigid, resilient, flat and a horizontal surface? (You can use a straight edge to determine the flatness. Ask to see the documentation on the pad as to how it was built.) (Facility as-builts and specs should be excellent written description)	§178.603(d)		

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12.	Passing criteria: <ul style="list-style-type: none"> - For a removable head drum, the contents are retained by an inner packaging even if the top head is no longer sift proof; - The packaging or outer packaging of a composite or combination packaging must not exhibit any damage likely to affect safety during transport. Inner receptacles, inner packagings, or articles must remain completely within the outer packaging and there must be no leakage of the filling substance from the inner receptacles or inner packagings; - Any discharge from a closure is slight and ceases immediately after impact with no further leakage. 	§178.603(f)		
	Stacking test	§178.606		
13.	Target packaging/package must contain a gross mass intended for the container and filled to ≥ 95% capacity for solids	§178.602(b)		
14.	Were three samples tested? Each container is tested individually	§178.606(b)		
15.	Was the minimum test force based on the total gross weight of the number of packages stacked on top of the package required to reach a minimum height of 3.0 m (10 feet), including the test package?"	§178.606(c)(1)		
16.	Was the duration 24 hours? If plastic drums, jerricans or composite packaging 6HH intended for liquids, then the duration is 28 days at a temperature of not less than 40 °C (104 °F).	§178.606(c)(1)		

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17.	Example: 1 m cube at 100 kg would have two more equivalent packages stacked on it to reach three meters. The gross mass of the two packages would be 200 kg.			
18.	Passing criteria: <ul style="list-style-type: none"> - No test sample may leak. - In composite packagings or combination packagings, there must be no leakage of the filling substance from the inner receptacle, or inner packaging. - No test sample may show any deterioration which could adversely affect transportation safety or any distortion likely to reduce its strength, cause instability in stacks of packages, or cause damage to inner packagings likely to reduce safety in transportation. 	§178.606(d)		
	Vibration	§178.608		
19.	Were three samples used? The three containers can be placed on the table at the same time, if they fit.	§178.608(b)(1)		
20.	Were they filled and closed as if for shipment?	§178.608(b)(1)		
21.	Does the vibrating platform have a peak-to-peak displacement of 1 inch?	§178.608(b)(2)		
22.	Were they constrained as to not fall off the platform but allowed to move?	§178.608(b)(2)		
23.	Were they tested for one hour?	§178.608(b)(3)		
24.	Immediately after testing, were they turned on their side and checked for leakage? (This is not always done.)	§178.608(b)(4)		

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25.	Passing criteria: - No rupture or leakage from any of the packages. - No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.	§178.608(c)		
Liquid payloads				
Drop Testing				
26.	Height based on packing group PG I: 1.8 m (5.9 feet) PG II: 1.2 m (3.9 feet) PG III: 0.8 m (2.6 feet) (Was the drop height measured from the lowest point on the packaging to the drop pad?)	§178.603 §178.603(e)(1) §178.603(e)		
27.	For liquids in single packagings and for inner packagings of combination packagings, if the test is conducted with water:	§178.603(e)(2)		
.	a) Where $SG \leq 1.2$: PG I: 1.8 m (5.9 feet) PG II: 1.2 m (3.9 feet) PG III: 0.8 m (2.6 feet)	§178.603(e)(2)(i)		
	b) Where $SG > 1.2$: PG I: $SG \times 1.5$ m (4.9 feet) PG II: $SG \times 1.0$ m (3.3 feet) PG III: $SG \times 0.67$ m (2.2 feet)	§178.603(e)(2)(ii)		
28.	Were three drums used for each orientation (6 total)? (there are two orientations) Each container is tested individually	§178.603(a)		

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	a) Was one test on the chime? (Was it a diagonal drop? If a diagonal drop, the test package should typically be dropped either directly on the locking lid ring mechanism or on the opposite side of the locking lid mechanism.)	§178.603(a)		
	b) Was the other orientation on the weakest point not tested (may be closure ring/bolt or flat on the welded seam)? (Ask how the weakest point was determined?) (Some type of engineering analysis should be performed to determine the weakest point. This could be based on similar containers and materials tested with finite element analysis.)	§178.603(a)		
29.	Were plastic drums, boxes, inner containers conditioned to $\leq -18\text{ }^{\circ}\text{C}$ ($0\text{ }^{\circ}\text{F}$), liquid in these containers must not freeze. Was the SG of the liquid at least 0.95?	§178.603(c)(1)		
30.	Is the target pad rigid, resilient, flat and a horizontal surface? (You can use a straight edge to determine the flatness. Ask to see the documentation on the pad as to how it was built.)	§178.603(d)		

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31.	Passing criteria: <ul style="list-style-type: none"> - For packagings containing liquid, each packaging does not leak when equilibrium has been reached between the internal and external pressures, except for inner packagings of combination packagings when it is not necessary that the pressures be equalized; - The packaging or outer packaging of a composite or combination packaging must not exhibit any damage likely to affect safety during transport. Inner receptacles, inner packagings, or articles must remain completely within the outer packaging and there must be no leakage of the filling substance from the inner receptacles or inner packagings; - Any discharge from a closure is slight and ceases immediately after impact with no further leakage. 	§178.603(f)		
	Leakproofness test	§178.604		
32.	Were the tests conducted with compressed air or other suitable gases? <i>(What gas was used? Make sure it is documented.)</i>	§178.604(a)		
33.	Were all packagings tested in production before first use and before reuse?	§178.604(b)(1)		
34.	Were three packagings tested during design qualification or periodic retest? Each container is tested individually	§178.604(b)(2)		
35.	For design qualification and periodic retest were all closures in place and the test a minimum of 5 minutes?	§178.604(c) and (d)		
36.	For production testing, closures need not be in place.	§178.604(c)(1)		

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37.	Were the vents replaced or sealed for testing when closures are in place? (How? A brief description of type of vent(s) or seal(s) installed)	§178.604(c)(2)		
38.	Was the container restrained under water for the test?	§178.604(d)		
39.	Was the alternative method per Appendix B of §178 used? (Make sure the process is documented.)	§178.604(d)		
40.	Was the following pressure applied? PG I: Minimum 30 kPa (4 psi) PG II: Minimum 20 kPa (3 psi) PG III: Minimum 20 kPa (3 psi)	§178.604(e)		
41.	Passing criteria: Was there any air leakage during the test?	§178.604(f)		
	Hydrostatic Pressure	§178.605		
42.	Were three test samples used? Each container is tested individually	§178.605(b)		
43.	Were vented closures replaced or sealed? (How? A brief description of type of vent(s) or seal(s) installed)	§178.605(c)		
44.	Were metal packagings and metal outer composite packagings and closures tested for 5 minutes?	§178.605(d)		
45.	Were plastic packagings and plastic outer composite packagings and closures tested for 30 minutes?	§178.605(d)		
46.	Was the test pressure the same as what will be marked on the container?	§178.605(d)		
47.	Was the test pressure applied, taken at the top of the container?	§178.605(d)		
48.	PG I must be tested at a minimum of 250 kPa (36 psig)	§178.605(d)(3)		

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49.	Passing Criteria: Was there any leakage of liquid from the container?	§178.605(e)		
	Stacking	§178.606		
50.	Target packaging/package must contain a gross mass intended for the container and filled to ≥ 98% capacity for liquids	§178.602(b)		
51.	Were three samples tested? Each container is tested individually	§178.606(b)		
52.	Was the minimum test force based on the total gross weight of the number of packages stacked on top of the package required to reach a minimum height of 3.0 m (10 feet), including the test package?"	§178.606(c)(1)		
53.	Was the duration 24 hours? If plastic drums, jerricans or composite packaging 6HH intended for liquids, then the duration is 28 days at a temperature of not less than 40 °C (104 °F).	§178.606(c)(1)		
54.	Example: 1 m cube at 100 kg would have two more equivalent packages stacked on it to reach three meters. The gross mass of the two packages would be 200 kg.			

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55.	Passing criteria: - No test sample may leak. - In composite packagings or combination packagings, there must be no leakage of the filling substance from the inner receptacle, or inner packaging. - No test sample may show any deterioration which could adversely affect transportation safety or any distortion likely to reduce its strength, cause instability in stacks of packages, or cause damage to inner packagings likely to reduce safety in transportation.	§178.606(d)		
	Vibration	§178.608		
56.	Were three samples used?	§178.608(b)(1)		
57.	Were they filled and closed as if for shipment?	§178.608(b)(1)		
58.	Does the vibrating platform have a peak-to-peak displacement of 1 inch?	§178.608(b)(2)		
59.	Were they constrained as to not fall off the platform but allowed to move?	§178.608(b)(2)		
60.	Were they tested for one hour?	§178.608(b)(3)		
61.	Immediately after testing, were they turned on their side and checked for leakage? <i>(This is not always done.)</i>	§178.608(b)(4)		
62.	Passing criteria: - No rupture or leakage from any of the packages. - No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.	§178.608(c)		