U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

JUN 8 2000

Mr. Bobby Roper
Packaging Solutions
P.O. Box 4587
Mission Viejo, CA 92690-4587

Ref. No: 99-0233

Dear Mr. Roper:

This is in response to your letter of August 24, 1999 submitting several questions on packaging issues under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). I apologize for the delay in response.

Your questions have been paraphrased and answered in the enclosed Questions and Answers Regarding Testing and Certification of Packagings issued by our Office on June 6, 2000.

I hope this information is helpful.

Sincerely,

Delmer F. Billings
Chief, Standards Development
Office of Hazardous Materials Standards

Enclosure

990233

178.601

U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

JUN 6 2000

Questions and Answers Regarding
Testing and Certification of Packagings

These questions and answers were compiled from questions posed to the Research and Special Programs Administration by third party certification agencies.

1. Does the maximum one-inch deflection that is cited in § 178.606(c) only apply to the dynamic compression test which is authorized in lieu of conducting the actual stacking simulation as part of the periodic retest, or does it also pertain to design qualification testing?

Answer: The maximum one inch deflection applies to the dynamic compression test only which may not be used for design qualification testing.

2. May I take advantage of the selective testing provisions of § 178.601(g)(8) when testing taper-sided pails or drums which differ from the original tested packaging because the height is up to 25% less?

Answer: Yes. Taper-sided pails and drums are not excluded from the selective testing provisions.

3. May the specification markings addressed in § 178.503 be inkjet printed, pad printed, and/or hot stamped on plastic drums and jerricans?

Answer: Yes, if the markings provide adequate accessibility, permanency, contrast, and legibility so as to be readily apparent and understood (see § 178.3(a)(3)).

4. Is the height of the lower-case letters in the UN symbol required to meet the height requirement specified in § 178.3(a)(4), or may the diameter of the circle around the "u" and "n" be used to meet the height requirement? Furthermore, must the double-digit numerical designations that indicate the month of manufacture on plastic packagings meet the height requirements of § 178.3(a)(4)?

Answer: The UN symbol with the circle around it is required to meet the height requirements of § 178.3(a)(4). The double-digit numerical designation indicating the month of manufacture must also meet these height requirements.

5. Should the month and year of manufacture be marked on both the cover and the body of a removable-head plastic drum to meet the requirements of §178.503(a)(6)? If the removable head is required to be marked, must the numerals in the month and year of manufacture meet the size requirements of § 178.3(a)(4)?

Answer: A removable head may be marked as provided by § 178.503(a). However, § 178.503(b) states that for a packaging with a removable head, the markings may not be applied only to the removable head. Therefore, a removable head drum marked on the head must have another marking on the side or bottom of the drum. If the removable head is marked, the marks must meet the size requirements of § 178.3(a)(4).

6. The provisions of § 173.24a(b)(3) authorize solid hazardous materials to be transported in a drum that is tested and marked for liquid hazardous materials. However, some shippers and fillers are reluctant to apply these provisions. May a drum that is marked and certified for liquid hazardous materials also be certified for solid hazardous materials without first conducting the drop and stacking tests with solid materials?

Answer: No. A packaging may not be certified for solid materials unless it has been tested with solid materials in it. (See § 178.602.)

7. When performing the hydrostatic pressure test in § 178.605, does pass/fail criteria end after the specified 5 minute or 30 minute test duration or after the container has been depressurized?

Answer: It may be determined whether a packaging passes or fails the hydrostatic pressure test after the specified 5 minute or 30 minute test duration.

8. In the past, DOT interpretations on what constitutes a different packaging have often included the word "identical." Does DOT recognize tolerances in a manufacturer's specification and the fact that there will be variances in material thickness, tare weight, capacity, basis weight, etc. due to fluctuations that are inherent in the manufacturing process?

Answer: As set forth in § 178.601(c)(4), a change in structural design, size, material of construction, wall thickness or manner of construction is a different packaging. The only variances allowed are those set forth in § 178.601(c)(4)(i) through (vi) and § 178.601(g).

We have encouraged industry associations to further refine design type definitions, as has been done for steel drums in § 178.601(g)(8), to ensure that minor variations in production processes do not result in different packagings.

9. In the preamble of Docket HM-181, DOT clarified that a third party mark for a design qualification test may continue to be applied by the manufacturer when self certifying for periodic retest. There is no current authority for continued use of this marking if a periodic retest is conducted by a third party laboratory other than the laboratory issuing the design qualification marking. We would like this issue discussed because there are many considerations with having two third-party laboratories that employ the same agency identification code, including: tracking, liability, different laboratory procedures and DOT's own recordkeeping requirements.

Answer: When a packaging has its periodic requalification performed by a laboratory other than the laboratory performing the original design qualification tests it, either the original laboratory's mark or the second laboratory's mark may be applied to the packaging providing any contractual arrangements made do not preclude such marking. In either case, the retester must ensure that the packaging is the same as originally tested.

10. Does a fiberboard container with a perforated side panel for display/opening purposes meet the definition of a box and can the 4G mark be applied, providing it passes all the required tests?

Answer: The answer is yes.

11. For drop testing single, composite and IBC packaging are allowed momentary leakage by spurt on impact. Why is this provision not extended to inner packaging of combination packages? Will the agency consider a change that would include combination packaging under this provision?

Answer: A revision to § 178.603 was proposed under Docket HM-218 [64 FR 53166; 9/30/99] to allow for momentary leakage (spurt) from inner packagings of a combination packaging if the discharge is slight and ceases immediately after impact.

Issued by the Office of Hazardous Materials Standards, June 7, 2000.

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LaValle
§178.601
99-0233

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August 24, 1999

VIA FACSIMILE

Ms. Diane LaValle
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Dear Ms. LaValle:

I submitted all six of the attached questions to the Office of Hazardous Materials Standards prior to the DOT third-party package testing lab meeting that was held in November of 1997.

Please respond to each of these questions, in writing, as soon as you can.

Thank you for your assistance. I look forward to your reply.

Sincerely,

ROPER INDUSTRIES, INC.

Robert R. Roper
President

cc: Mr. Richard Tarr, Engineer
Ms. Eileen Mack, Transportation Regulations Specialist
Ms. Christine Whitney, Transportation Regulations Specialist

Attachment

1. Does the maximum one inch deflection that is cited in 49 CFR 178.606(f) (i.e., "in no case may the maximum deflection exceed one inch") only apply to the dynamic compression test which is authorized in lieu of conducting the actual stacking simulation as part of the periodic retest, or does it also pertain to design qualification stacking test?

2. Do the selective testing provisions that are discussed in 49 CFR 178.601(c)(4)(v) apply to tapered-sided pails or drums which differ from the original tested packaging design type by their lesser design height (as much as a 25% height reduction is allowed)?

3. With regard to the specification markings that discussed in 49 CFR 178.503 which are applied on UN standard packagings, would RSPA allow the markings to be inkjet printed, pad printed, and/or hot stamped on plastic drums and jerricans?

4. Is the height of the lower-case letters comprising the UN symbol required to be the same height as specified in 49 CFR 178.3(a)(4), or can the diameter of the circle which circumscribes the letters "u" and "n" be the same height as the other letters and numerals that make up the remainder of the specification markings? Similarly, are the double-digit numerical designations that indicate the month of manufacture on plastic packagings required to be the same height as specified in 49 CFR 178.3(a)(4), or can they be somewhat smaller than the height as the other letters and numerals that make up the remainder of the specification markings?

5. With respect to UN standard removable head plastic drums, should the month and year of manufacture be marked on both the cover and the body of the drum in order to comply with the marking requirements that are discussed in 49 CFR 178.503(a)(6)? If so, does the date code (i.e., the month and year of manufacture that is marked on the drum covers) have to be the same height as specified in 49 CFR 178.3(a)(4); or can they be somewhat smaller than the height as the other letters and numerals that make up the remainder of the specification markings?

6. Could the manufacturer of a UN standard plastic or metal drum which was tested and qualified for use in transporting liquids simply mark the corresponding sequence of markings for solids without having to test the drum separately for solids (i.e., without having to subject the drum to the drop and stacking tests for solids), provided that the drum is capable of meeting such performance levels in accordance with the provisions of 49 CFR 178.601? For instance, could the manufacturer of a 20-liter capacity UN standard 1H2/Y1.5/30-marked plastic open head drum also mark the drum "1H2/Y30/S" without actually conducting the drop and stacking tests for solids? 49 CFR 173.24a(b)(3) allows one to use a packaging that was tested for liquids to transport solid materials. However, some fillers and shippers are reluctant to apply the provisions of 49 CFR 173.24a(b)(3) and to use a liquid-marked packaging for purposes of transporting a solid material.