



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

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

NOV 16 1998

Mr. Stephen C. Powell  
Laboratory Manager  
Container-Quinn Testing Laboratories, Inc.  
170 Shepard Avenue  
Wheeling, IL 60090

Ref. No. 98-0043

Dear Mr. Powell:

This is in response to your letter dated April 30, 1998, requesting clarification on certifying packages using corrugated materials under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you are requesting clarification on whether to use the Edge Crush Test (ECT) or Mullen Burst Test to certify various grades of corrugated packaging materials used in industry, and whether changing liners makes a "different packaging" for testing purposes.

Under the HMR a "different packaging" is broadly defined. As specified in § 178.601(c)(4), a packaging which differs in construction such as bursting strength, fluting, basis weight, etc. is considered a different packaging under § 178.601(c)(4), and must be certified by undergoing design qualification testing. Packagings with different liner/medium combinations are differences in construction or design type and will require testing as a different packaging design. A packaging which differs only in surface treatment, e.g., color, is not considered to be a different design type under provisions of § 178.601(c)(4). The HMR does not require the use of the ECT in lieu of the Mullen Burst test for design qualification testing. Additional supporting information and statistical data on these tests must be provided to this office if you believe that one test in lieu of the other should be recommended for use in determining a "different packaging" or as a design qualification test. As provided in § 106.31, you may submit a petition for rulemaking on this matter.

I hope this answers your inquiry. If you need additional assistance, do not hesitate to contact me.

Sincerely,

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

 **CONTAINER-QUINN**  
**TESTING LABORATORIES, INC.**

Booke  
178.601

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30 April 1998

U.S. Department of Transportation  
Office of Hazardous Materials Standards  
US DOT / RSPA / OHMS DHM-10  
400 Seventh Street, S.W.  
Washington, D.C. 20590

Attn.: Ed Mazzullo, Director

Re: ECT vs Mullen Burst  
Kraft vs Bleached or Clay White

Dear Mr. Mazzullo;

Re: ECT vs Mullen Burst

According to current practices, when conducting a certification on a package, all corrugated materials are subjected to a Basis Weight Analysis to determine the make-up of the board. This make-up of the board is then suppose to be maintained through-out the life of that given certification. Thusly, if I do a Basis Weight on an ECT box and it comes out at (40-26-40), that box is suppose to be made-up of that combination through the life of the certification. With Mullen Burst Board, this is a straight forward procedure as your various board grades are always suppose to have the same values (ie: 200# test single-wall (42-26-42), 275# test single wall (69-26-69), 200# test DW (33-26-26-26-33), etc.). With ECT board this is a totally different senario. A 32# ECT board may have a dozen different combinations of liners and/or mediums. These values are determined by a Stifi Value and not Basis Weight. Thus it is more difficult for the mills and sheet plants to run the same board run-to-run. One of the ways of assisting in this matter would be to run an ECT test in conjunction with a Basis Weight Analysis. This way ECT board could be used more addequately with hazmat boxes with-out the need to match the liner/medium combinations. With the ever changing industry, more and more combinations of board for ECT are surfacing. The Basis Weight Analysis could be utilized as a base value for the ECT shipper but various liner/medium combinations would be allowed as long as that ECT test value is maintained.

With the above in mind, wouldn't it be easier to clarify the shippers by test rather than by board make-up. Bursting strength board (200, 275, etc.) would still be governed by the board grade (basis weight) while ECT board would be governed by the ECT test with the board grade utilized and documented as a reference.



Re: Kraft vs Bleached or Clay White

If we are to go on the assumption that 42 lb. liners are equivalent, then there are no differences between the various liner board that is made. Although the industry utilizes kraft, bleached, clay white board, etc., if we consider that a 200# test box has to have a board combination of (42-26-42) whether that liner is kraft or bleached shouldn't matter as long as the minimum requirements for Cobb Water Absorption are maintained in the board. This is the question that is coming up more often. Is there a difference. The regulations state nothing about these variables but they are in existence. If a manufacturer is running a bleached outer liner can he certify his shipper using a kraft outer liner or does he have to have bleached samples for the testing. Is the Basis Weight and Cobb Water Absorption the governing factors in this.

Your assistance in clarifying and verifying these matters, as always, is greatly appreciated. If you have any questions, or if I can be of further assistance, please call.

Sincerely;

Stephen C. Powell  
Laboratory Manager  
Container-Quinn Testing Laboratory  
SA-9009004; ID Code +AX

Memorandum for the Record

Meeting on Interp Letter 98-0043, per Recommendation By Don Burger for Policy Decision on Response to Letter from Mr. Powell at Container-Quinn Testing Laboratories, Inc.

October 1, 1998

Subject: RSPA response to use of Edge Crush Test (ECT) vs. Mullen Burst testing on corrugated packagings and Definition of a "Different Packaging"

Attendees:

Ed. Mazzullo, Del Billings, Deborah Boothe, Charlie Hochman, Don Burger

Meeting Results/Recommendations:

- He can use either ECT or Mullen Burst (RSPA doesn't tell them which one to use).
- Any change, incl. ECT and Burst strength, is a different package and must be retested.
- Any change, e.g., single wall or double wall, is a different package and must be retested.
- Provide Mr. Powell with a general response to his letter which should include:
  - What a "different packaging" is under the HMR.
  - RSPA has a broad definition of a design type under the HMR, and if he wants this criteria modified or changed, he must get an approval from RSPA.
  - He needs to provide RSPA with additional information and statistical data on testing for review if he wants one test in lieu of the other to be recommended for use.
- ECT is performed on raw material, not finished package.
- Stifi is a short span of the ECT.

Deborah Boothe  
DHM-11  
10-1-98