

REVIEW MATTER Y

Re: Item (Rule) 222

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Present Classification Provisions

ITEM 222

SPECIFICATIONS FOR FIBREBOARD BOXES CORRUGATED OR SOLID

(Also applies in connection with Items 222-1, 222-2, 222-3, 222-4, 222-5 and 222-6)

Secs. 1-2—Not Involved.

Sec. 3. Maximum Size and Weight—Minimum Fibreboard Requirements:

Boxes must comply with the burst or puncture test and other requirements of Table A; or alternatively, must comply with the edge crush test and other requirements of Table B (see Notes 2 and 4).

TABLE A			
Maximum Weight of Box and Contents (lbs.)	Maximum Outside Dimensions, Length, Width and Depth Added (inches) (see Note 3)	Minimum Bursting Test, Singlewall, Doublewall or Solid Fibreboard (psi) (see Note 1, para. (a) or Minimum Puncture Test Triplewall Board) (inch oz. per inch of tear) (see Note 1, para. (b))	Minimum Combined Weight of Facings, Including Center Facing(s) of Doublewall and Triplewall Board or Minimum Combined Weight of Plies Solid Fibreboard, Excluding Adhesives (lbs. per 1,000 sq. ft.)
SINGLEWALL CORRUGATED FIBREBOARD BOXES			
20	40	125	52
35	50	150	66
50	60	175	75
65	75	200	84
80	85	250	111
95	95	275	138
120	105	350	180
DOUBLEWALL CORRUGATED FIBREBOARD BOXES			
80	85	200	92
100	95	275	110
120	105	350	126
140	110	400	180
160	115	500	222
180	120	600	270

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Present Classification Provisions: — Continued

TRIPLEWALL CORRUGATED FIBREBOARD BOXES			
240	110	700	168
260	115	900	222
280	120	1100	264
300	125	1300	360
SOLID FIBREBOARD BOXES			
20	40	125	114
40	60	175	149
65	75	200	190
90	90	275	237
120	100	350	283

TABLE B		
Maximum Weight of Box and Contents (lbs.)	Maximum Outside Dimensions, Length, Width and Depth Added (inches) (see Note 3)	Minimum Edge Crush Test (ECT) (lbs. per inch width) (see Note 1, para. (c))
SINGLEWALL CORRUGATED FIBREBOARD BOXES		
20	40	23
35	50	26
50	60	29
65	75	32
80	85	40
95	95	44
120	105	55
DOUBLEWALL CORRUGATED FIBREBOARD BOXES		
80	85	42
100	95	48
120	105	51
140	110	61
160	115	71
180	120	82
TRIPLEWALL CORRUGATED FIBREBOARD BOXES		
240	110	67
260	115	80
280	120	90
300	125	112

NOTES 1-2—Not Involved.

NOTE 3—SIZE EXTENSION FORMULA:

If weight of box and contents is less than the maximum weights shown in Tables A and B, the maximum outside dimensions for the box may be increased half the percentage that the actual weight is less than the maximum weight allowed by the Table. For boxes made to comply with this Note the words 'Size Extension Formula' must be printed below the certificate required in Item 222-1(a).

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Present Classification Provisions: — Concluded

NOTE 4—Not Involved.

Secs. 4-7—Not Involved.

Analysis

The staff has received a number of interpretation requests on what strength of corrugated fibreboard should be used when the packaged product exceeds the maximum outside dimensions described in Tables A and B of Item (Rule) 222. The Size Extension Formula, as described in Sec. 3, Note 3, allows the maximum outside dimensions to be increased as long as the maximum weight of packaging and contents is not exceeded. However, the wording of this Note may be unclear and users of the *Classification* may misuse this information.

Essentially the Size Extension Formula allows the total outside dimensions of a box to be increased by one-half the percentage of the difference between the actual and maximum weights. This formula is utilized when packages are large, but the products are relatively light and the provisions of Tables A and B can not be complied with. A mathematical formula along with examples could assist in clarifying how the Size Extension Formula is to be used.

Relationship to NCC Policies and Guidelines

NCC policies state that the rules in the *NMFC* should be clear as to intent. However, based on interpretation requests, the Size Extension Formula as currently described in Item (Rule) 222 is confusing. Therefore, the addition of a mathematical formula and examples on how to apply the formula would be consistent with NCC policies and precedent.

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Possible Classification Provisions

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Secs. 1-2—No Change.

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TABLE A			
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Possible Classification Provisions — Continued

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TABLE B		
Maximum Weight of Box and Contents (lbs.)	Maximum Outside Dimensions, Length, Width and Depth Added (inches) (see Note 3)	Minimum Edge Crush Test (ECT) (lbs. per inch width) (see Note 1, para. (c))
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NOTES 1-2—No Change.

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Possible Classification Provisions — Concluded

$1 - (\text{Actual Weight} / \text{Maximum Weight})$	=	Percentage Difference in Weight
Percentage Difference in Weight x 0.5	=	Half the Percentage Difference in Weight
Half the Percentage Difference in Weight x Maximum Outside Dimensions	=	Increase in Outside Dimensions Allowed
Maximum Outside Dimensions + Increase in Outside Dimensions Allowed	=	Total Extended Outside Dimensions

⇒Examples:

⇒Table A

*Assuming Doublewall 275 psi;
actual weight of 68 lbs*
 $1 - (68 \text{ lbs} / 100 \text{ lbs}) = 0.32$
 $0.32 \times 0.5 = 0.16$
 $95 \text{ in} \times 0.16 = 15.20 \text{ in}$
 $95 \text{ in} + 15.20 \text{ in} = \mathbf{110.20 \text{ in}}$

⇒Table B

*Assuming Singlewall 55 ECT;
actual weight of 75 lbs*
 $1 - (75 \text{ lbs} / 120 \text{ lbs}) = 0.38$
 $0.38 \times 0.5 = 0.19$
 $105 \text{ in} \times 0.19 = 19.95 \text{ in}$
 $105 \text{ in} + 19.95 \text{ in} = \mathbf{124.95 \text{ in}}$

NOTE 4—No Change.
Secs. 4-7—No Change.