



# Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

## Participant Summary Report #553 (L) - October 2015

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[Introduction to the Containerboard Program](#)

[Explanation of Tables and Definitions of Terms](#)

Analysis	Sample Lot	Analysis Name
<a href="#">201</a>	<a href="#">BOX9</a>	<a href="#">Box Compression Strength, Corrugated Boxes</a>
<a href="#">202</a>	<a href="#">ECT8</a>	<a href="#">Edgewise Compressive Strength, Wax (T811), Corrugated board</a>
<a href="#">203</a>	<a href="#">ECT8</a>	<a href="#">Edgewise Compressive Strength by Clamp (T839), Corrugated board</a>
<a href="#">205</a>	<a href="#">42D1</a>	<a href="#">Mullen Burst of Linerboard, 42 lb Linerboard</a>
<a href="#">207</a>	<a href="#">36Z3</a>	<a href="#">Mullen Burst of Linerboard, 36 lb Linerboard</a>
<a href="#">215</a>	<a href="#">42D1</a>	<a href="#">Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</a>
<a href="#">217</a>	<a href="#">36Z3</a>	<a href="#">Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard</a>
<a href="#">223</a>	<a href="#">42D1</a>	<a href="#">STFI of Linerboard, 42 lb Linerboard</a>
<a href="#">225</a>	<a href="#">36Z3</a>	<a href="#">STFI of Linerboard, 36 lb Linerboard</a>
<a href="#">228</a>	<a href="#">69C</a>	<a href="#">Roughness - Stylus Method, 69 lb Linerboard</a>
<a href="#">231</a>	<a href="#">36Z</a>	<a href="#">Internal Bond Strength, Linerboard, 36 lb Linerboard</a>
<a href="#">234</a>	<a href="#">36Z</a>	<a href="#">Coefficient of Static Friction - Inclined Plane, 36 lb Linerboard</a>
<a href="#">237</a>	<a href="#">36Z</a>	<a href="#">Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard</a>
<a href="#">240</a>	<a href="#">CM81</a>	<a href="#">Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</a>
<a href="#">250</a>	<a href="#">CM81</a>	<a href="#">Fluted Crush of Medium, 26 lb Corrugating Medium</a>
<a href="#">255</a>	<a href="#">CM81</a>	<a href="#">Ring Crush of Medium, 26 lb Corrugating Medium</a>
<a href="#">261</a>	<a href="#">CM81</a>	<a href="#">STFI of Medium, 26 lb Corrugating Medium</a>

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### ABOUT CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

For further information, contact:  
Collaborative Testing Services, Inc  
21331 Gentry Drive  
Sterling, VA 20166 USA  
Voice: 571-434-1925  
Fax: 571-434-1937  
containerboard@cts-interlab.com

Collaborative Testing Services, Inc.  
CONTAINERBOARD INTERLABORATORY TESTING PROGRAM

**INTRODUCTION**

The Interlaboratory Testing Program for Containerboard is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance provided by the Containerboard Group of the American Forest & Paper Association. The tests are conducted on a monthly basis.

For these tests samples of linerboard and corrugating medium, that each have been separately randomized from narrow rolls, are distributed for testing weekly. One weight of medium (26 lb.) is used for Concora Flat Crush Strength, Corrugated Fluted Crush Strength, Ring Crush Strength, and STFI Compression. Two weights of linerboard are tested each month for Mullen Burst, Ring Crush, and STFI Compression: 42 lb. - every month; 36 lb. and 69 lb. - alternate months. The participants return their test results for analysis and receive a monthly report.

Please refer to the section, "EXPLANATION OF TABLES", for definitions of terms and guidelines to interpreting the results.

USE OF AVERAGE MEAN AS A COLLABORATIVE REFERENCE VALUE

The samples of linerboard and corrugating medium, which have been randomized and placed in sealed packages for distribution in this program, may be used as collaborative reference materials. The values most representative of each material are the Cumulative Grand Means in the latest reports, given at the bottom right of each table. Comparisons can only be made within one lot of material; therefore check your measurements against the Cumulative Grand Means with the same lot code as on the packages being tested.

<b>Material</b>	<b>Lot Code</b>	<b>Dates in Use</b>
36# Linerboard	36Z1	June 2010 - December 2011
	36Z2	February 2012 - Current
42# Linerboard	42B2	June 2012 - April 2013
	42B3	May 2013 - Current
69# Linerboard	69A2	January 2013 - September 2013
	69C1	November 2013 - Current
26# Corrugating Medium	CM73	December 2012 - Current

## EXPLANATION OF TABLES

Each analysis is divided into three time spans. On the left side of the table are the individual laboratory results for each week of the month; in the center are each lab's statistical data for the month; and on the right are each lab's cumulative data for up to 16 weeks. At the bottom of the table are the consensus statistics for all the participants for each of the three time spans.

### Definitions of Terms Used

#### Weekly Results

##### Laboratory Data

- WebCode - A six character laboratory identifier used to maintain information on a confidential basis. The WebCode is unique for each cycle and will change for each report. Your WebCode can be found in your Individual Report (Current Month Performance Report) and your datasheet.
- Weekly Means - The average of the test results obtained by the participant for each week that data were reported.

##### Consensus Data

- Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.
- Avg SDr - For each week, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SDr is an indication of the variation of measurements within an average laboratory.
- SD btwn Labs - For each week, the standard deviation of the laboratory Means about the Wk Mean, excluding those laboratories flagged with an 'X'. The SD LABS is an indication of the precision of measurement between the laboratories.
- Labs Includ - The number of laboratory Means included in the Wk Mean for that week.
- Labs Exclud - The number of laboratory Means reported but excluded from the Wk Mean for that week because of outlying results ('X' following Mean).
- Labs not rcvd - The number of laboratories failing to report for that week.

#### Monthly Results

##### Laboratory Data

- Mean CPV - For each laboratory, the average of all the weekly Means reported for this month.
- **Comparative Performance Value**, an indication of how well a laboratory's Mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean). The closer a laboratory's CPV is to zero, the more consistent its results are with the other participants' data.
- SDr - For each laboratory, the average of the weekly within-lab standard deviations (SDr's) for all reported Weekly Means this month.
- SD Wk - The standard deviation among the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

##### Consensus Data

- Month Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for this month.
- Avg SDr - For the current month, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'.
- SD btwn Labs - For the current month, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Group - For the current month, the standard deviation of the laboratory Means within the group about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks) for all

## Cumulative Results

### Laboratory Data

Mean	- For each lab, the average of all the monthly Means reported for the weeks shown.
CPV	- <b>Comparative Performance Value</b> , an indication of how well a laboratory's cumulative mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean).
SDr	- For each laboratory, the average of the weekly within-lab standard deviations (SDr's) for the weeks shown.
SD Wk	- The standard deviation among the laboratory's weekly Means for the weeks shown, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.
Wks	- The number of weeks included in the cumulative period.
Inst	- The two letter instrument code. Codes are summarized at the bottom of the last analysis page.

### Consensus Data

Grand Mean	- The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for the number of weeks included in the cumulative period.
Avg SDr	- For the cumulative period, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'.
SD btwn Labs	- For the cumulative period, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
SD btwn Wks	- For the cumulative period, the average of the laboratory between week standard deviations for all the participants.

**Any laboratory that receives a 'flag' following a mean or standard deviation should refer to the chart below for an explanation of the data flag symbol:**

<u>Flag</u>	<u>Explanation</u>
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Data Flags "X" and "\*" indicate a laboratory's performance on an average value differed from the consensus.

Data Flags "H" and "L" indicate a laboratory's performance on a standard deviation differed from the consensus.

Flags assigned to Weekly Means, Monthly Mean and Cumulative Mean:

- |   |  |
|---|--|
| X | Excluded from the weekly means, monthly means and/or the cumulative mean. Immediate review of data and/or testing procedure is recommended.      |
| * | Included in the weekly means, monthly means and/or the cumulative mean; however, lab should review testing procedure and monitor future results. |

Flags assigned to Weekly Means:

- |   |   |
|---|---|
| H | Indicates high within-laboratory standard deviation. The laboratory SDr for each week is not shown, but laboratory average SDr and consensus average SDr values are shown.        |
| L | Indicates low within-laboratory standard deviation. The laboratory SDr for each week is not shown, but laboratory monthly average SDr and consensus average SDr values are shown. |

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

- |   |  |
|---|--|
| H | Indicates high variability between weekly means (high week-to-week variation). |
| L | Indicates low variability between weekly means (low week-to-week variation).   |

Containerboard Interlaboratory Testing Program  
Analysis 201

Top to Bottom Box Compression Strength, Corrugated Boxes - BOX9

TAPPI Official Test Method T804



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2J62LJ	947.1	1.55	33.6	822.3	-0.07	57.2	3	LL
3KY7FJ	935.5	1.40	24.8	937.1	1.63	28.5	4	TE
3XM2ZP	778.0	-0.67	63.7	808.2	-0.28	68.1	4	LG
4EATEV	657.2	-2.26 *	36.1	695.1	-1.96	39.3	4	LL
4RCEGK	840.7	0.15	58.4	847.8	0.31	58.4	4	EX
4ZNDBV	740.6	-1.16	51.3	750.5	-1.13	68.9	4	LG
7LZD9L	856.4	0.36	44.5	835.2	0.12	51.0	4	LM
A4NXFG	919.0	1.18	75.7	945.1	1.75	68.2	4	EX
AB82MJ	913.0	1.10	41.0	852.8	0.38	51.7	4	LH
AMK49G	835.1	0.08	50.5	854.1	0.40	62.1	4	ER
B82XC9	769.4	-0.78	107.8	698.2	-1.91	84.7	2	LL
BDT6UG	823.6	-0.07	31.3	823.6	-0.05	31.3	1	ES
DZDUHB	885.3	0.74	78.2	762.8	-0.95	45.8	4	LH
GM3D8B	820.2	-0.12	63.0	793.9	-0.49	43.4	4	LM
H6WFEE	897.2	0.90	27.1	914.1	1.29	33.1	4	ER
HA399A	816.1	-0.17	51.7	889.7	0.93	40.5	3	ER
HQTEEH	814.2	-0.20	49.8	850.0	0.34	65.4	4	ES
QX6Z6Y	746.8	-1.08	25.6	821.3	-0.08	58.9	4	LS
RP6Z6W	825.6	-0.05	49.5	825.4	-0.02	39.2	4	LG
T3MA68	762.6	-0.87	16.4	775.0	-0.77	36.2	4	ER
VHU94P	920.4	1.20	34.3	902.6	1.12	37.3	4	TB
XE7DE2	735.4	-1.23	27.3	788.4	-0.57	64.9	4	ER

Consensus (All Labs) Results

Month Mean	829.06	Grand Mean	826.96
Avg SDr	51.77	Avg SDr	53.63
SD btwn Labs	76.05	SD btwn Labs	67.41
Labs Incd	22	Labs Incd	22

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	792.27	76.90	36.79	5
Clip sealing	821.65	69.34	7.41	14
Tape sealing	924.96	9.15	95.90	3

**Report #553**

**Containerboard Interlaboratory Testing Program**  
**Analysis 201**  
**Top to Bottom Box Compression Strength, Corrugated Boxes - BOX9**  
TAPPI Official Test Method T804



**Instrument Code List as Reported by the Labs**

(ER) - Emerson 6200 Series

(EX) - Emerson Apparatus (Model not specified)

(LH) - L.A.B. Compression Tester Model #10610

(LM) - Lansmont 122-15k

(TB) - TMI Monitor/Compression Tester, Model 17-70

(ES) - Emerson 8510

(LG) - TLS / L.A.B. Validator Series

(LL) - Lansmont 76-5K

(LS) - Lansmont Squeezer

(TE) - Testometric M500 - 25 KN

Containerboard Interlaboratory Testing Program  
 Analysis 202  
**Edgewise Compressive Strength, by T811, Corrugated board - ECT8**  
 TAPPI T811



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3XM2ZP	59.1	0.97	3.1	58.6	0.78	2.9	4	WK
4RXVWM	58.8	0.91	1.3	59.2	0.98	1.1	4	WK
AB82MJ	56.6	0.30	2.2	56.9	0.16	2.1	4	TC
AMK49G	57.6	0.59	1.9	58.9	0.90	2.0	4	EN
B82XC9	51.0	-1.16	1.3	52.1	-1.60	1.3	2	EM
ELR27A	48.7	-1.78	2.8	55.3	-0.42	2.1	4	LC
QX6Z6Y	57.1	0.45	2.1	57.8	0.47	2.4	4	LC
XD93KK	54.4	-0.27	3.1	53.0	-1.27	3.0	4	XX

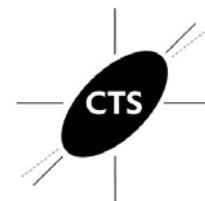
Consensus (All Labs) Results			
Month Mean	55.42	Grand Mean	56.47
Avg SDr	2.35	Avg SDr	2.21
SD btwn Labs	3.76	SD btwn Labs	2.73
Labs Incd	8	Labs Incd	8

**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200 Series  
 (LC) - L&W Crush Tester 48  
 (WK) - Zwick Z005 Crush Tester

(EN) - Emerson 2200  
 (TC) - TMI Monitor/Compression Tester, Model 17-37  
 (XX) - Instrument make/model not specified by lab

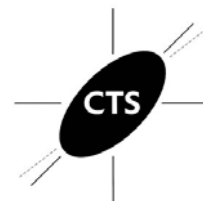
Containerboard Interlaboratory Testing Program  
Analysis 203  
Edgewise Compressive Strength by T839, Corrugated board - ECT8  
TAPPI T839



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2J62LJ	56.9	-1.05	1.7	56.7	-1.21	1.4	3	BU
3XM2ZP	62.4	0.88	3.4	62.5	1.43	4.5	4	WK
4EATEV	57.7	-0.77	2.1	57.7	-0.76	2.3	4	LC
4RCEGK	63.3	1.19	2.7	59.8	0.18	2.0	4	TL
66DD3W	121.5	21.50 X	6.8	71.8	5.66 X	4.0	4	LC
6UVVAP	56.9	-1.04	2.1	59.0	-0.16	3.4	4	LC
7LZD9L	60.1	0.06	1.1	57.7	-0.76	1.9	4	TC
A4NXFG	61.2	0.46	2.3	60.5	0.52	2.2	4	CT
AB82MJ	64.4	1.58	1.1	62.3	1.32	1.2	4	TC
ALNK7F	57.6	-0.79	1.7	58.1	-0.58	2.0	4	EX
AMK49G	63.2	1.17	1.5	61.4	0.91	2.0	4	EN
ARUGQF	59.2	-0.23	2.6	58.2	-0.54	2.7	3	LD
B82XC9	61.8	0.66	0.7	60.1	0.34	1.6	2	EM
DHWTKM	62.8	1.01	3.0	61.3	0.90	2.8	4	LD
DZDUHB	64.5	1.61	4.5	59.0	-0.16	3.7	4	EM
E9266B	56.8	-1.06	1.7	58.3	-0.46	1.5	4	TG
ELR27A	62.6	0.96	1.3	62.4	1.40	1.7	4	LC
GDRBLB	61.0	0.40	2.8	60.7	0.61	3.1	4	LD
GM3D8B	61.5	0.55	1.7	59.2	-0.09	1.8	4	EM
H6WFEE	54.4	-1.93	1.1	57.0	-1.05	1.7	4	EM
HA399A	58.1	-0.62	1.6	58.2	-0.52	1.9	4	TB
HQTEEH	62.9	1.06	3.3	61.6	1.04	2.2	4	LD
JFCR83	61.7	0.64	1.5	61.3	0.89	1.4	4	LC
JV2Y3F	58.6	-0.45	2.0	59.0	-0.17	2.3	4	TM
MNANJV	63.9	1.40	1.6	63.2	1.75	2.3	4	LD
QX6Z6Y	61.0	0.39	1.7	61.4	0.92	2.3	4	LC
RP6Z6W	57.4	-0.86	2.6	54.4	-2.25 *	4.4	4	EM
RQGWB2	58.2	-0.57	2.1	58.2	-0.50	2.1	1	LC
T3MA68	60.1	0.08	2.7	60.5	0.53	2.9	4	LD
V4V4ZX	60.7	0.27	1.9	60.1	0.36	2.0	4	LC
VHU94P	58.6	-0.44	0.5	60.8	0.67	1.0	4	LC
WGDBCP	55.4	-1.56	1.2	57.1	-1.03	1.8	4	TB
XAV3NT	56.6	-1.14	2.3	56.4	-1.33	1.9	4	TD
XD93KK	54.4	-1.92	3.1	54.4	-2.26 *	3.1	1	XX
XE7DE2	60.1	0.07	2.0	59.5	0.06	2.6	4	EN



**Containerboard Interlaboratory Testing Program**  
 Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated board - ECT8**  
 TAPPI T839



**Consensus (All Labs) Results**

Month Mean	59.88	Grand Mean	59.35
Avg SDR	2.20	Avg SDR	2.41
SD btwn Labs	2.87	SD btwn Labs	2.20
Labs Incl	34	Labs Incl	34

**Instrument Code List as Reported by the Labs**

(BU) - Buchel Digital Crush Tester	(CT) - Con-Ten
(EM) - Emerson 1200 Series	(EN) - Emerson 2200
(EX) - Emerson (model not specified)	(LC) - L&W Crush Tester 48
(LD) - L&W Crush Tester 248	(TB) - TMI Monitor/Compression Tester, Model 17-70
(TC) - TMI Monitor/Compression Tester, Model 17-37	(TD) - TMI Digital Crush Tester, Model 17-09
(TG) - TMI Digital Crush Tester, 17-76	(TL) - Tech-Lab Systems Compression
(TM) - TMI/Hinde & Dausch	(WK) - Zwick Z005 Crush Tester
(XX) - Instrument make/model not specified by lab	

Containerboard Interlaboratory Testing Program  
 Analysis 205  
 Bursting Strength (Mullen), 42 lb Linerboard - 42D1  
 TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
34RPTQ	94.4 XH	108.1	109.1	109.1	105.2	-0.96	17.1	7.2 H	109.5	0.13	12.2	5.2	16	LC
3XM2ZP	114.9	116.0	115.7	NO DATA	115.5	1.57	13.1	0.6 L	113.3	1.23	12.0	2.5	15	LZ
4ZND8V	115.5	112.8	112.0	108.2	112.1	0.74	10.0	3.0	109.9	0.26	9.8	3.6	12	AH
66DD3W	105.1 L	105.3	108.9	104.6	106.0	-0.76	10.2	2.0	103.5	-1.60	11.2	2.4	16	LC
6QWHNK	110.1	114.1	110.5	110.5	111.3	0.54	14.4	1.9	112.3	0.96	14.9	5.5	16	LC
6UVVAP	105.5	113.6	112.0	110.4	110.3	0.31	12.5	3.5	110.4	0.41	11.1	4.1	16	LA
7296BQ	105.3	108.9	109.2	106.2	107.4	-0.41	11.9	1.9	109.9	0.25	10.9	2.8	16	LA
7HZ2CL	118.8 *	116.4	114.7	118.1	117.0	1.93	11.2	1.8	116.9	2.27 *	9.1	2.0	8	LA
7LJWFE	105.0	104.7	102.0	105.8	104.4	-1.15	12.2	1.7	106.3	-0.79	10.7	5.1	12	LC
96KQZF	100.3	101.5	99.9 *	102.2	101.0	-1.97	11.8	1.1	101.8	-2.09 *	12.2	1.3	8	XX
9LQVMT	110.8	106.9	111.1	105.9	108.7	-0.11	12.1	2.6	107.9	-0.32	11.5	2.5	15	TB
9ZN67R	100.2	107.1	103.4	NO DATA	103.6	-1.35	9.0	3.5	104.2	-1.38	10.6	2.8	15	AH
A4NXFG	112.1	108.4 H	114.1 H	112.7	111.8	0.67	16.8	2.4	112.9	1.13	16.0	3.3	16	XX
AB82MJ	111.5	116.0	115.5	114.0	114.3	1.26	12.4	2.0	113.2	1.22	13.2	2.6	16	AA
ARUGQF	110.0	117.0	111.3	111.5	112.5	0.82	10.6	3.1	111.1	0.60	10.2	3.5	12	AA
B2BKBK	115.0	115.0	110.0	111.4	112.8	0.91	10.4	2.6	112.0	0.87	11.7	3.3	16	LZ
B82XC9	102.0	99.0	104.2	99.9 *	101.3	-1.90	8.2	2.3	99.7	-2.70 *	9.2	3.1	8	RE
B8Y87Q	108.3	110.7	109.3	111.1	109.9	0.19	12.8	1.3	112.8	1.08	12.1	11.7 H	16	TB
BNQ68K	111.6	114.8	105.8	109.6	110.5	0.33	11.4	3.8	109.4	0.11	12.6	4.0	16	LA
CX7CJF	105.6	109.0	109.8	109.8	108.5	-0.14	11.1	2.0	108.2	-0.24	11.1	1.9	16	LJ
DRKLWK	108.9	107.5	105.7	112.1	108.6	-0.13	11.0	2.7	107.4	-0.46	10.6	2.3	16	LC
DU99DE	108.8	102.3	108.4	103.6	105.8	-0.81	13.2	3.3	109.4	0.12	11.5	3.9	16	AX
GCGAZC	103.7	109.7	103.3	102.4	104.8	-1.05	10.0	3.3	108.0	-0.29	10.6	2.9	16	LA
GDRBLB	102.7 L	105.8	104.8	107.4	105.2	-0.95	7.0	2.0	104.0	-1.46	8.6	2.6	16	LA
GM3D8B	109.1	106.4	107.5	106.7	107.4	-0.41	7.3	1.2	108.7	-0.10	9.2	1.8	16	AH
HA399A	102.7	103.7	104.0	107.7	104.6	-1.11	12.8	2.2	106.3	-0.79	10.9	3.1	16	LA
HB2EP4	106.2	105.7	112.8	111.9	109.2	0.01	8.6	3.7	108.1	-0.27	9.2	2.6	16	AH
HKNDFA	108.8 L	100.3 H	110.3 L	110.2	107.4	-0.41	17.5	4.8	109.5	0.13	9.9	2.9	15	XX
HPV4HF	119.3 *	111.4	118.0	114.8	115.9	1.66	9.0	3.6	114.9	1.71	9.6	3.0	16	LC
HQTEEH	111.1	110.0	109.6	107.6	109.6	0.12	13.9	1.5	109.8	0.23	11.5	3.0	16	LA
JGLRCA	105.7	101.7	111.8	110.0	107.3	-0.44	10.3	4.5	108.2	-0.25	11.9	6.8 H	16	LA
JJB333	103.2	102.6	108.8	104.6 L	104.8	-1.05	7.0	2.8	109.0	-0.02	7.1	7.4 H	16	RE
JNHT69	109.4	109.3	109.2	109.3	109.3	0.05	6.0	0.1 L	108.7	-0.10	5.6	0.6 L	16	LJ
KGYM7F	111.1	115.6	119.7 *	119.1 *	116.4	1.77	8.2	4.0	114.8	1.68	10.4	2.9	16	LA
MFHD7E	113.6	109.9	107.4	108.9	109.9	0.21	9.1	2.6	110.8	0.51	25.1	7.9 H	16	LC

Containerboard Interlaboratory Testing Program  
 Analysis 205  
 Bursting Strength (Mullen), 42 lb Linerboard - 42D1  
 TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
MK9MGC	109.4	111.4	107.8	103.4	108.0	-0.27	9.6	3.4	109.0	-0.01	10.9	3.5	16	AH
NFE88V	110.1	113.1	109.0	114.0	111.6	0.60	10.3	2.4	111.1	0.59	12.8	3.5	16	TP
QBQDG9	110.3	104.9	102.1	No DATA	105.8	-0.81	10.8	4.2	107.6	-0.41	11.1	3.1	15	LC
QX6Z6Y	102.3	105.7	106.8	104.9	104.9	-1.02	8.9	1.9	104.9	-1.19	9.2	2.8	16	AH
R2ZE39	106.9 L	106.3 L	107.8	109.6	107.7	-0.35	7.8	1.5	107.7	-0.40	7.7	1.3	16	LA
RC2RAZ	108.0	113.7	104.9	106.8	108.4	-0.18	8.3	3.8	110.1	0.31	10.3	2.3	16	LB
T3MA68	108.8	118.6	114.7	119.0 *	115.3	1.51	11.6	4.7	111.9	0.82	12.2	3.5	16	AH
UGLGY3	115.8	106.9	112.5	112.2	111.8	0.66	10.9	3.7	111.5	0.71	11.8	2.8	16	LC
V2NL23	116.2	118.6	111.2	110.8	114.2	1.25	13.9	3.8	113.3	1.23	12.3	3.3	16	LA
W8PKPW	106.8	118.4	114.0	108.7	112.0	0.70	11.8	5.3	110.7	0.48	12.2	3.9	16	LJ
WDEXQK	117.3 L	119.1 L	118.9 *L	120.8 *L	119.0	2.42 *	4.2	1.4	122.3	3.84 X	5.8	5.5	16	AH
WFHTAN	113.0	102.2	106.1	114.3	108.9	-0.05	7.9	5.7	108.5	-0.16	8.1	7.0 H	16	AX
Y2ZLCU	109.0	100.6	108.2	111.8	107.4	-0.41	8.6	4.8	103.3	-1.64	9.7	7.4 H	13	LA
Y3CAVU	107.4	114.4	109.6	114.4	111.4	0.57	9.0	3.5	109.6	0.17	9.1	3.6	16	TB
Z324MU	106.9	113.2	106.2	106.3	108.2	-0.23	10.5	3.4	108.3	-0.21	11.2	2.8	16	LC
ZLZ6YZ	108.7	106.9	99.0 *	107.0	105.4	-0.90	10.8	4.3	106.2	-0.82	10.8	4.4	16	LC
ZP26ZX	103.2	100.4	104.1	104.8	103.1	-1.46	8.7	1.9	103.9	-1.49	11.4	2.3	16	LA

Consensus (All Labs) Results									
Wk Mean	108.86	109.27	109.09	109.51	Month Mean	109.09		Grand Mean	109.02
Avg SDr	10.47	11.68	10.76	10.17	Avg SDr	10.97		Avg SDr	11.38
SD btwn Labs	4.66	5.55	4.58	4.54	SD btwn Labs	4.10		SD btwn Labs	3.46
Labs Includ	51	52	52	49	SD btwn Wks	3.23		SD btwn Wks	4.10
Labs Exclud	1	0	0	0	Labs Includ	52		Labs Includ	51
Labs not rcvd	0	0	0	3					

Instrument Code List as Reported by the Labs

- (AA) - Perkins Model A
- (AX) - Perkins Mullen Tester (model not specified)
- (LB) - L & W Burst-O-Matic
- (LJ) - L & W Bursting Strength Tester J-Type
- (RE) - Regmed/Mullen Tester
- (TP) - Technidyne PROFILE/Plus
- (AH) - Perkins Model AH
- (LA) - L & W Bursting Strength Tester
- (LC) - L & W Autoline
- (LZ) - L & W (model not specified)
- (TB) - TMI Monitor/Burst 1000
- (XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
 Analysis 207  
**Bursting Strength (Mullen), 36 lb Linerboard - 36Z3**  
 TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
34RPTQ	83.6	84.2	84.2	85.9	84.4	1.88	3.9	1.0	84.5	1.85	4.2	1.7	12	LC
3XM2ZP	81.9	83.2	85.6	NO DATA	83.6	1.61	5.7	1.9	82.0	1.08	5.7	2.6	11	LZ
4ZNDVB	79.8	76.7	77.7	80.6 H	78.7	0.09	6.2	1.8	82.4	1.20	6.1	9.0 H	10	AH
66DD3W	75.8	NO DATA	79.0	NO DATA	77.4	-0.31	5.5	2.3	74.1	-1.27	5.2	2.3	10	LA
6QWHNK	76.4	77.1	78.4	77.6	77.4	-0.32	5.1	0.8	78.7	0.10	6.6	3.7	12	LC
6UVVAP	79.2	82.0	74.6	76.5	78.1	-0.11	5.7	3.2	78.9	0.17	5.9	2.5	8	LA
7296BQ	78.1	78.5	77.8	76.2	77.6	-0.24	6.0	1.0	79.7	0.40	5.6	1.9	12	LA
7HZ2CL	84.8	79.2	84.8	83.6	83.1	1.47	4.2	2.7	84.2	1.75	4.1	2.8	8	LA
7LJWFE	77.3	77.6	70.5 *	73.3	74.7	-1.17	5.3	3.4	75.8	-0.75	5.2	2.3	12	LC
96KQZF	72.3	72.9	70.5 *	68.9 *	71.1	-2.28 *	5.7	1.8	71.1	-2.15 *	5.7	1.8	4	XX
9LQVMT	75.3	76.2	76.1	74.9	75.6	-0.87	6.1	0.6	76.1	-0.66	5.9	1.3	12	TB
9ZN67R	76.0	74.2	76.2 H	NO DATA	75.5	-0.92	7.5	1.1	74.0	-1.30	6.0	2.8	11	AH
A4NXFG	72.5	69.3 *	73.2	70.4 *	71.4	-2.21 *	6.3	1.8	69.4	-2.67 *	6.8	3.1	12	XX
AB82MJ	84.5	81.3	85.3	80.8	82.9	1.42	4.7	2.3	81.3	0.89	5.4	2.0	12	AA
ARUGQF	82.4	78.5	84.0	81.5	81.6	1.00	6.1	2.3	80.6	0.66	5.8	2.2	8	AA
B2BKBK	77.5	80.0	79.4	77.4	78.6	0.05	6.0	1.3	78.6	0.07	5.8	1.6	12	LZ
B82XC9	72.6	71.9	72.9	73.5	72.7	-1.78	4.3	0.7	72.7	-1.68	4.3	0.7	4	RE
B8Y87Q	78.5	77.0	76.5	78.3	77.6	-0.26	4.8	1.0	79.7	0.41	5.0	2.9	8	TB
BNQ68K	80.3	78.5	76.1	80.0	78.7	0.10	5.6	1.9	77.8	-0.17	5.2	2.3	8	LA
CX7CJF	75.4	77.3	79.3	79.0	77.8	-0.20	4.8	1.8	78.5	0.06	5.2	1.7	12	LJ
DRKLWK	79.2	78.6	75.2	77.2	77.6	-0.27	4.8	1.8	76.0	-0.71	5.3	2.1	12	LC
DU99DE	74.7	75.0	76.5	75.7	75.5	-0.92	5.0	0.8	75.6	-0.83	4.9	1.8	12	AX
GCGAZC	77.7	77.4	77.1	76.6	77.2	-0.38	5.1	0.5	78.1	-0.07	5.7	1.6	12	LA
GDRBLB	76.2	74.3	77.2	75.4	75.8	-0.82	4.3	1.3	75.1	-0.97	4.0	1.9	12	LA
GM3D8B	79.3	78.4	76.6	76.8	77.8	-0.20	4.1	1.3	77.3	-0.30	4.2	1.9	12	AH
HA399A	73.2	78.4	76.6	75.7	75.9	-0.77	5.0	2.2	75.5	-0.85	4.9	1.7	12	LA
HB2EP4	80.6	79.0	80.1	80.9	80.2	0.54	4.0	0.8	79.8	0.44	4.3	1.3	12	AH
HKNDFA	82.7	82.3	84.1	83.3	83.1	1.47	4.0	0.8	82.4	1.23	4.2	1.3	8	XX
HPV4HF	81.3	79.3	77.9	81.1	79.9	0.48	5.5	1.6	77.1	-0.37	5.4	2.6	12	LC
HQTEEH	77.1	79.3	78.3	81.6	79.1	0.21	5.7	1.9	79.2	0.25	5.6	1.6	12	LA
JGLRCA	79.2	80.1	79.6	82.1	80.3	0.58	6.3	1.3	78.6	0.07	5.6	2.1	12	LA
JJB333	76.8	80.6	80.6	80.8	79.7	0.40	3.1	1.9	80.6	0.66	4.0	1.7	12	RE
JNHT69	78.6	78.4	78.5	78.4	78.5	0.02	4.1	0.1 L	79.0	0.20	3.9	0.7	12	LJ
KGYM7F	79.2	84.4	83.1	87.3 *	83.5	1.59	3.8	3.4	81.7	0.99	5.2	2.6	12	LA
MFHD7E	81.9	79.3	79.0	81.5	80.4	0.63	4.7	1.5	80.0	0.50	4.6	2.3	12	LC

Containerboard Interlaboratory Testing Program  
 Analysis 207  
**Bursting Strength (Mullen), 36 lb Linerboard - 36Z3**  
 TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
MK9MGC	77.6	80.4	77.0	77.6	78.2	-0.08	4.9	1.5	78.7	0.09	4.7	1.7	12	AH
NFE88V	75.7	78.5	74.4	76.3	76.2	-0.68	4.0	1.7	76.2	-0.62	4.3	1.4	12	TP
QBQDG9	75.8	76.9	72.4	No DATA	75.0	-1.05	5.1	2.4	76.7	-0.49	5.3	2.5	11	LC
QX6Z6Y	74.1	76.4	75.2	L 75.6	75.3	-0.96	4.5	1.0	75.4	-0.89	5.2	1.7	12	AH
R2ZE39	80.7 L	80.1	77.3	79.6	79.4	0.32	3.4	1.5	79.6	0.37	4.2	1.5	12	LA
RC2RAZ	78.9	78.8	78.1	75.6	77.8	-0.18	3.6	1.6	76.6	-0.53	3.7	2.1	12	LB
T3MA68	80.3	78.6	81.5	82.1	80.6	0.69	5.1	1.5	81.0	0.79	4.6	1.4	12	AH
UGLGY3	78.7	77.3	79.8	80.4	79.1	0.20	5.2	1.4	78.9	0.17	4.9	1.2	8	XX
V2NL23	80.0	86.3 *	84.8	80.4	82.9	1.40	6.0	3.2	82.1	1.13	6.3	2.5	12	LA
W8PKPW	78.0	76.2	76.2	75.7	76.5	-0.59	5.0	1.0	76.6	-0.50	4.7	0.8	12	LJ
WDEXQK	85.0	80.2	80.6	76.7	80.6	0.69	4.9	3.4	84.7	1.91	4.1	3.7	12	AH
WFHTAN	81.8	74.8	80.9	82.3	79.9	0.48	4.0	3.5	80.4	0.61	4.6	2.6	12	AX
Y2ZLCU	81.0	69.1 *	79.1	76.4	76.4	-0.63	6.2	5.2 H	76.8	-0.46	6.3	10.9 H	12	LA
Y3CAVU	87.4 *	86.6 *	86.4 *	86.9 *	86.8	2.63 *	4.6	0.4	85.9	2.25 *	5.0	2.2	12	TB
Z324MU	75.8	79.9	76.8	76.5	77.3	-0.36	4.9	1.8	76.7	-0.49	5.4	1.4	12	LC
ZLZ6YZ	75.1	76.5	74.3	78.7	76.1	-0.71	5.1	2.0	74.9	-1.02	5.6	2.3	12	LC
ZP26ZX	76.7	76.9	74.7	76.7	76.3	-0.67	5.2	1.0	76.6	-0.53	4.9	1.5	12	LA

Consensus (All Labs) Results									
Wk Mean	78.54	78.31	78.31	78.55	Month Mean	78.41	Grand Mean	78.33	
Avg SDr	5.03	4.95	5.23	5.02	Avg SDr	5.08	Avg SDr	5.16	
SD btwn Labs	3.39	3.52	3.81	3.78	SD btwn Labs	3.20	SD btwn Labs	3.35	
Labs Includ	52	51	52	48	SD btwn Wks	1.97	SD btwn Wks	2.84	
Labs Exclud	0	0	0	0	Labs Includ	52	Labs Includ	52	
Labs not rcvd	0	1	0	4					

**Instrument Code List as Reported by the Labs**

- (AA) - Perkins Model A
- (AX) - Perkins Mullen Tester (model not specified)
- (LB) - L & W Burst-O-Matic
- (LJ) - L & W Bursting Strength Tester J-Type
- (RE) - Regmed/Mullen Tester
- (TP) - Technidyne PROFILE/Plus
- (AH) - Perkins Model AH
- (LA) - L & W Bursting Strength Tester
- (LC) - L & W Autoline
- (LZ) - L & W (model not specified)
- (TB) - TMI Monitor/Burst 1000
- (XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
 Analysis 215  
 Ring Crush, 42 lb Linerboard - 42D1  
 TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results					Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks		
34RPTQ	93.6	93.9	94.4	94.6	94.1	2.03	* 3.8	0.5 L	94.4	2.35 *	4.1	3.5	16	TC	
3KY7FJ	86.6	89.2	88.9	83.8	87.1	0.14	2.5	2.5	86.8	0.10	3.3	1.8	16	LD	
3XM2ZP	86.8	84.7	87.3	No DATA	86.3	-0.09	3.4	1.4	86.9	0.15	3.2	2.7	15	LC	
4P6YAE	85.8	89.3	88.0	88.0	87.8	0.31	3.8	1.4	87.3	0.27	3.5	2.1	12	TH	
66DD3W	87.8	82.4	87.0	89.4	86.6	0.01	3.6	3.0	86.9	0.15	3.8	3.4	16	LC	
6UVVAP	91.8	89.1	83.6	89.5	88.5	0.51	5.8	3.5	90.6	1.21	5.3	3.9	16	LC	
7296BQ	90.6	90.7	89.0	89.3	89.9	0.89	4.0	0.9	90.3	1.12	3.7	1.2	16	LD	
7HZ2CL	87.4	87.6	87.9	93.7	89.2	0.69	4.4	3.0	89.5	0.91	4.0	2.1	8	LD	
7LJWFE	92.5 L	95.8 *	89.2	91.7	92.3	1.54	3.7	2.7	89.5	0.89	3.6	3.0	12	LD	
96KQZF	89.6	86.9	90.7	89.8	89.2	0.71	4.5	1.7	89.4	0.88	4.5	1.7	8	LC	
9LQVMT	84.7	69.4 X	86.8	82.9	81.0	-1.51	3.4	7.9 H	80.3	-1.78	3.9	7.5 H	15	LZ	
ARUGQF	84.0	87.0	83.0	84.8	84.7	-0.51	3.5	1.7	83.9	-0.73	3.2	1.8	12	LD	
B82XC9	81.7	80.5	82.0	81.8	81.5	-1.38	3.7	0.7	86.5	0.01	3.7	5.4	8	EM	
B8Y87Q	84.4	83.4	83.0	83.2	83.5	-0.83	4.9	0.6	83.7	-0.79	4.6	2.8	16	LC	
CX7CJF	83.8	87.3	76.7 *	74.4 XH	80.6	-1.62	5.0	6.0	82.4	-1.18	4.4	3.5	12	LD	
DRKLWK	85.8	86.2	87.6	86.0	86.4	-0.05	4.0	0.8	86.5	0.03	3.8	1.0	16	LD	
DU99DE	76.9 *H	82.3	86.2	79.7	81.3	-1.43	5.6	4.0	81.2	-1.54	6.5	4.4	16	LC	
DZDUHB	89.5	91.7	89.5	87.8 H	89.6	0.82	5.1	1.6	83.1	-0.96	4.1	6.2	16	EM	
E9266B	91.1	90.4	90.9 L	90.7	90.8	1.12	3.2	0.3 L	91.3	1.43	3.1	3.0	16	TH	
F9HKXJ	84.4	83.4	85.5	82.1	83.8	-0.74	3.4	1.4	81.9	-1.32	4.6	2.6	16	LD	
GCGAZC	82.9	86.4	88.5	86.2	86.0	-0.16	2.4	2.3	86.0	-0.11	3.3	3.2	16	LC	
GDRBLB	87.9	88.8	87.5	86.0	87.5	0.25	2.5	1.2	88.0	0.47	3.1	1.5	16	LD	
GJV6UK	88.5	88.2	87.2	90.5	88.6	0.54	3.4	1.4	88.6	0.63	3.6	1.4	16	LD	
GJXU23	80.7	83.8	83.4	85.4	83.3	-0.88	4.4	2.0	84.1	-0.67	4.5	3.4	16	TH	
GM3D8B	85.9 L	84.6	85.1	85.6	85.3	-0.35	2.7	0.6 L	84.1	-0.68	3.1	3.5	16	EM	
H6WFEE	80.2	80.0	78.5 *	78.9 *	79.4	-1.93	2.6	0.9	81.8	-1.34	2.5	2.4	16	EX	
HKNDFA	81.4 H	89.4	86.0	91.9	87.2	0.16	4.7	4.5	88.9	0.73	4.6	3.2	15	XX	
HPV4HF	86.2	87.5	87.8	84.6	86.5	-0.02	3.5	1.5	87.6	0.34	3.8	1.5	16	LC	
JGLRCA	90.3	98.5 X	73.5 XH	89.1	87.9	0.34	5.5	10.4 H	85.4	-0.30	6.0	13.4 H	15	LC	
JJB333	88.5	93.3	91.2	92.3	91.3	1.27	4.0	2.1	84.8	-0.47	3.5	4.7	16	LZ	
JNHT69	86.3	86.2	86.4	86.4	86.3	-0.07	3.1	0.1 L	86.7	0.08	3.7	0.4 L	16	LD	
KGYM7F	81.1	90.8	90.2	90.1	88.1	0.39	4.0	4.6	86.7	0.09	3.9	2.9	16	LZ	
MFHD7E	92.3	89.4	93.0	91.3	91.5	1.32	3.6	1.6	91.9	1.61	3.9	1.3	16	LC	
MK9MGC	89.3	94.2	91.5	89.7	91.2	1.23	4.4	2.2	84.3	-0.62	5.6	8.2 H	16	LC	
NFE88V	87.5	86.1	91.3	89.4	88.6	0.53	3.6	2.3	86.9	0.14	3.6	1.8	16	TH	



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
NPHD64	83.0	83.7	84.2	H 81.1	83.0	-0.96	5.9	1.3	84.7	-0.50	6.9	3.8	15	MB
QBQDG9	77.9 *H	82.0 H	84.4 H	NO DATA	81.4	-1.40	10.0	3.3	69.5	-4.97 X	8.4	25.3 H	15	LA
QX6Z6Y	87.4	89.0	88.0	87.8	88.1	0.39	3.9	0.7	87.4	0.29	3.7	1.5	16	LC
R2ZE39	84.3	82.8	82.5	82.4	83.0	-0.97	3.1	0.9	83.2	-0.95	3.1	1.2	16	LD
R6HCXQ	89.9	87.8	84.4	91.3	88.4	0.48	3.6	3.0	88.5	0.60	3.6	2.7	12	XX
RC2RAZ	85.5	85.2	88.4	89.6	87.1	0.15	4.1	2.2	90.1	1.08	4.3	2.7	16	LC
RP6Z6W	81.7	82.1	80.1	L 83.9	81.9	-1.25	3.2	1.5	78.2	-2.40 *	3.2	3.4	16	EM
RXZ389	85.7 L	85.2	83.3	84.7	84.7	-0.50	2.5	1.0	84.2	-0.65	3.3	1.0	16	LD
T3MA68	83.9	83.2	85.5	85.4	84.5	-0.56	3.6	1.1	84.2	-0.64	3.6	2.4	16	LD
T3P32U	87.0	NO DATA	67.7 XH	89.5	81.4	-1.39	6.5	11.9H	86.7	0.08	5.9	6.5	13	MB
W8PKPW	82.6	84.0	77.6 *	80.1	81.1	-1.49	3.7	2.8	80.4	-1.75	3.1	1.8	16	LC
WDEXQK	107.1XH	104.0 X	104.5 X	105.6 X	105.3	5.03 X	5.7	1.4	98.3	3.49 X	4.3	12.4 H	16	LD
WFHTAN	87.1	90.3	93.3	95.1	91.5	1.31	4.9	3.5	90.6	1.22	4.7	3.5	16	LZ
XAV3NT	91.7 L	90.3 L	90.9 L	90.9 L	91.0	1.18	1.2	0.6 L	92.3	1.72	1.9	2.1	16	TD
XE7DE2	81.0	82.5	82.6	81.7	82.0	-1.25	2.9	0.8	84.3	-0.62	3.3	2.8	16	EN
Y2ZLCU	90.9	91.2	92.5	93.9	92.1	1.48	4.0	1.4	88.2	0.53	5.2	9.5 H	13	LC
Y3CAVU	92.1	89.4	94.8	92.7	92.2	1.52	5.0	2.2	91.6	1.51	4.5	1.7	16	LX
ZLZ6YZ	91.7	88.6	86.0	90.0	89.1	0.67	3.7	2.4	86.2	-0.07	5.2	7.1 H	16	LC
ZP26ZX	83.3	84.2	84.2 L	84.2	84.0	-0.70	3.0	0.5 L	84.5	-0.56	3.7	1.2	16	LC

## Consensus (All Labs) Results

Wk Mean	86.30	87.03	86.81	87.41	Month Mean	86.59	Grand Mean	86.42
Avg SDr	3.88	4.14	4.16	3.89	Avg SDr	4.19	Avg SDr	4.13
SD btwn Labs	3.97	3.73	4.12	4.18	SD btwn Labs	3.72	SD btwn Labs	3.42
Labs Includ	53	50	51	50	SD btwn Wks	3.27	SD btwn Wks	4.07
Labs Exclud	1	3	3	2	Labs Includ	53	Labs Includ	52
Labs not rcvd	0	1	0	2				

## Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(EX) - Emerson (model not specified)

(LC) - L &amp; W Crush Tester 48

(LX) - L &amp; W 506

(MB) - Messmer Buchel K440

(TD) - TMI Digital Crush Tester, Model 17-09

(XX) - Instrument make/model not specified by lab

(EN) - Emerson 2200

(LA) - L&amp;W Autoline

(LD) - L&amp;W Crush Tester 248

(LZ) - L &amp; W Crush Tester (model not specified)

(TC) - TMI Monitor/Compression Tester, Model 17-37

(TH) - TMI Compression Tester, Model 17-76

Containerboard Interlaboratory Testing Program  
 Analysis 217  
 Ring Crush, 36 lb Linerboard - 36Z3  
 TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
34RPTQ	89.4 *	86.8	84.7	87.1	87.0	1.93	3.0	1.9	85.9	2.05 *	4.1	2.3	12	TC
3KY7FJ	83.2	82.3	83.2	L 79.8	82.1	0.57	2.3	1.6	81.6	0.67	2.2	1.2	12	LD
3XM2ZP	84.5	79.9	82.3	No DATA	82.3	0.61	2.7	2.3	81.9	0.76	2.4	2.1	11	LC
4P6YAE	75.8	78.0	78.0	79.3	77.7	-0.65	2.8	1.5	78.1	-0.48	3.1	1.3	12	TH
66DD3W	78.4	78.1	76.6	76.4	77.4	-0.75	3.3	1.0	77.3	-0.74	4.2	1.7	12	LC
6UVVAP	79.9 H	80.3	72.9	76.5	77.4	-0.75	4.4	3.5	77.9	-0.54	4.8	4.0	8	LC
7296BQ	81.0	82.1	84.2	80.6	82.0	0.53	3.2	1.6	83.5	1.27	3.0	1.6	12	LD
7HZ2CL	84.4	83.7	85.2	85.9	84.8	1.32	2.9	1.0	85.0	1.77	3.3	0.8	8	LD
7LJWFE	85.7	88.6	81.4	L 82.8	84.6	1.27	2.7	3.2	81.6	0.66	2.9	3.5	12	LD
96KQZF	83.4	86.0	84.9	83.9	84.6	1.25	3.5	1.2	84.6	1.61	3.5	1.2	4	LC
9LQVMT	65.8 XH	64.3 X	80.6	80.3	72.7	-2.05 *	6.1	8.9 H	73.3	-2.03 *	4.6	8.0 H	11	LZ
ARUGQF	78.9	79.3	78.1	L 78.1	78.6	-0.41	2.3	0.6 L	77.8	-0.57	2.2	1.2	8	LD
B82XC9	78.0	79.7	L 78.7	79.0 L	78.9	-0.34	2.0	0.7	78.9	-0.23	2.0	0.7	4	EM
B8Y87Q	76.5	79.2	74.4	75.6	76.4	-1.03	3.6	2.0	76.5	-1.00	3.6	2.2	12	LC
CX7CJF	76.0 H	70.7 *H	74.1	68.2 XH	72.2	-2.19 *	8.0	3.5	74.9	-1.50	5.4	3.0	12	LD
DRKLWK	80.2	83.3	83.7	83.0	82.6	0.70	3.2	1.6	83.4	1.23	3.1	1.2	12	LD
DU99DE	74.4 H	75.0 H	82.1	71.9 *H	75.9	-1.18	6.2	4.4	75.2	-1.40	6.5	4.5	12	LC
DZDUHB	83.6	84.5	84.7	86.9	84.9	1.35	3.9	1.4	77.8	-0.56	3.2	7.7 H	8	EM
E9266B	79.5	79.8	81.1	80.6	80.2	0.05	2.8	0.7	81.1	0.49	2.6	1.2	12	TH
F9HKXJ	80.1	78.2	81.4	L 77.6	79.3	-0.21	2.3	1.7	78.6	-0.30	2.3	1.4	12	LD
GCGAZC	78.0	77.5	80.3	L 78.7	78.6	-0.41	2.3	1.2	79.9	0.09	2.7	3.0	12	LC
GDRBLB	81.5	80.8	81.1	80.3	80.9	0.23	3.0	0.5 L	80.4	0.26	2.8	0.9	12	LD
GJV6UK	82.2	81.1	81.9	79.2	81.1	0.28	2.9	1.4	80.7	0.38	2.9	1.7	12	LD
GJXU23	77.3	70.6 *	77.3	79.5	76.2	-1.09	3.6	3.9	77.3	-0.73	4.3	2.4	12	TH
GM3D8B	83.1	82.4	81.3	L 82.4	82.3	0.62	2.1	0.7	78.1	-0.48	2.2	3.6	12	EM
H6WFEE	73.8	74.5	76.3	75.5	75.0	-1.41	2.2	1.1	75.2	-1.40	2.6	0.8	12	EX
HKNDFA	79.3	83.8	77.3	82.2	80.7	0.16	2.9	2.9	80.8	0.41	2.8	2.8	8	XX
HPV4HF	80.0	80.0	80.5	80.1	80.2	0.02	2.6	0.2 L	80.5	0.30	2.9	2.2	12	LC
JGLRCA	82.0	89.4 *	61.7 X	96.4 XH	82.4	0.64	5.3	15.0 H	78.0	-0.52	5.8	12.8 H	12	LC
JJB333	82.1	84.6	83.0	83.9	83.4	0.93	3.0	1.1	79.5	-0.01	2.7	3.2	12	LZ
JNHT69	79.4	79.8	79.7	79.7	79.7	-0.12	3.0	0.2 L	81.3	0.57	2.4	1.7	12	LD
KGYM7F	75.8	85.3	86.8	85.2	83.3	0.89	3.1	5.0	82.7	1.00	3.3	3.0	12	LZ
MFHD7E	84.4	85.9	86.6	L 86.2	85.8	1.59	2.5	1.0	85.0	1.75	2.9	1.2	12	LC
MK9MGC	75.5	79.5 H	76.9	79.2	77.8	-0.65	5.2	1.9	74.4	-1.67	7.2	6.6 H	10	LC
NFE88V	81.6	79.2	82.4	85.3	82.1	0.57	2.9	2.5	80.6	0.34	2.7	2.3	12	TH



Containerboard Interlaboratory Testing Program  
 Analysis 217  
 Ring Crush, 36 lb Linerboard - 36Z3  
 TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
NPHD64	74.4 H	74.8 H	75.4	80.6	76.3	-1.05	6.1	2.9	64.8	-4.76 X	5.9	16.7 H	12	MB
QBQDG9	78.7	77.2 H	78.6 L	No DATA	78.2	-0.53	5.3	0.8	79.8	0.08	5.9	4.3	11	LA
QX6Z6Y	80.3	82.1	83.9 L	79.6	81.5	0.40	3.1	1.9	81.9	0.75	2.8	2.2	12	LC
R2ZE39	76.9	78.2	83.3	76.6	78.7	-0.38	2.6	3.1	77.0	-0.82	2.8	2.1	12	LD
R6HCXQ	87.6	85.3	57.3 XH	83.5	78.4	-0.47	5.5	14.2 H	79.7	0.04	4.2	8.8 H	11	XX
RC2RAZ	77.6	78.7	79.7	83.5	79.9	-0.06	4.1	2.6	80.5	0.32	4.1	1.8	12	LC
RP6Z6W	80.2	77.6	78.6	81.4	79.5	-0.17	3.0	1.7	74.9	-1.52	4.3	4.7	12	EM
RXZ389	79.2	79.5 L	77.9	76.8	78.3	-0.48	2.3	1.2	77.5	-0.68	2.9	1.2	12	LD
T3MA68	78.1	77.2 L	80.3	78.2	78.5	-0.45	2.5	1.3	79.0	-0.17	2.8	1.3	12	LD
T3P32U	82.8	No DATA	82.4	88.1 *	84.4	1.22	2.4	3.2	81.1	0.51	3.9	4.5	10	MB
W8PKPW	78.5	76.4 L	75.7	76.0	76.7	-0.96	2.5	1.3	76.1	-1.13	2.3	1.8	12	LC
WDEXQK	75.8	76.0	75.3	75.1	75.5	-1.27	2.7	0.4 L	76.5	-0.99	3.3	1.5	12	LD
WFHTAN	86.8	90.4 *	85.3	79.7	85.6	1.53	4.7	4.4	83.9	1.42	3.7	3.6	12	LZ
XAV3NT	71.6 *	71.9 L	74.2 L	73.5 L	72.8	-2.04 *	1.5	1.3	74.3	-1.70	2.5	1.8	12	TD
XE7DE2	77.7	78.8	77.9	77.8 L	78.1	-0.56	2.6	0.5 L	79.4	-0.05	2.5	1.2	12	EN
Y2ZLCU	83.7	85.1	86.6	84.8	85.0	1.38	3.5	1.2	80.5	0.29	4.9	8.9 H	12	LC
Y3CAVU	86.2	85.1	86.9	85.5 H	85.9	1.63	4.7	0.8	85.4	1.88	4.7	1.3	12	LX
ZLZ6YZ	81.3	77.8	86.0	83.5	82.1	0.57	3.7	3.5	80.4	0.27	3.9	6.1	12	LC
ZP26ZX	79.3	79.2	72.5 *H	80.7	77.9	-0.60	11.6	3.7	79.6	0.02	7.0	2.5	12	LC

Consensus (All Labs) Results									
Wk Mean	80.10	80.40	80.47	80.55	Month Mean	80.08	Grand Mean	79.56	
Avg SDr	3.34	3.90	4.53	3.10	Avg SDr	3.94	Avg SDr	3.75	
SD btwn Labs	3.76	4.42	3.91	3.74	SD btwn Labs	3.58	SD btwn Labs	3.09	
Labs Includ	53	52	52	50	SD btwn Wks	3.74	SD btwn Wks	3.87	
Labs Exclud	1	1	2	2	Labs Includ	54	Labs Includ	53	
Labs not rcvd	0	1	0	2					

Instrument Code List as Reported by the Labs

- (EM) - Emerson 1200
- (EX) - Emerson (model not specified)
- (LC) - L & W Crush Tester 48
- (LX) - L & W 506
- (MB) - Messmer Buchel K440
- (TD) - TMI Digital Crush Tester, Model 17-09
- (XX) - Instrument make/model not specified by lab
- (EN) - Emerson 2200
- (LA) - L&W Autoline
- (LD) - L&W Crush Tester 248
- (LZ) - L & W Crush Tester (model not specified)
- (TC) - TMI Monitor/Compression Tester, Model 17-37
- (TH) - TMI Compression Tester, Model 17-76

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D1

TAPPI Provisional Test Method T826



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
34RPTQ	22.6 L	22.0 L	21.9 L	24.5 L	22.7	0.47	0.3	1.2	22.7	0.59	0.4	0.7	16	LA
3KY7FJ	21.1	21.7	21.9	22.7	21.9	-0.30	1.9	0.7	21.6	-0.53	1.8	0.5	16	LY
3XM2ZP	21.4	21.3	22.5	No DATA	21.7	-0.43	1.5	0.7	21.5	-0.62	1.6	0.5	15	LW
4P6YAE	26.3 X	25.5 X	23.2	23.1	24.5	2.03 *	2.0	1.6 H	23.8	1.63	1.8	1.3	12	TT
4ZNDBV	24.5 *	23.6	23.1	23.2	23.6	1.21	1.9	0.6	23.3	1.11	2.4	1.0	12	LU
66DD3W	22.4	22.5	24.5	21.1	22.7	0.38	1.7	1.4	22.6	0.50	2.1	0.9	16	LA
6QWHNK	20.3 L	19.9 *L	20.1 L	19.9 L	20.1	-1.88	0.3	0.2	20.6	-1.48	0.3	0.5	16	LA
6UVVAP	23.1	22.7	23.8	24.7	23.6	1.18	1.3	0.9	22.7	0.58	1.4	0.9	16	LU
7296BQ	23.5	22.6	22.2	23.2	22.9	0.58	1.9	0.6	22.9	0.71	2.0	0.6	16	XX
7LJWFE	22.5	24.2	22.6	21.3	22.6	0.37	1.7	1.2	21.8	-0.26	1.8	1.1	12	LZ
96KQZF	22.6	20.8	21.9	21.6	21.7	-0.44	2.0	0.7	21.5	-0.54	1.8	0.6	8	LU
9LQVMT	21.4	21.6	21.3	21.8	21.5	-0.59	1.7	0.2	21.4	-0.72	1.8	0.5	15	LZ
9ZN67R	23.5	24.1	No DATA	No DATA	23.8	1.37	2.1	0.4	23.1	0.98	2.0	1.1	14	LU
ARUGQF	20.5	21.5	21.2	20.5	20.9	-1.12	1.9	0.5	20.7	-1.36	1.8	0.5	12	LW
B2BKBK	23.1	23.7	24.9 *	23.9	23.9	1.47	1.8	0.7	23.6	1.41	2.1	1.0	16	LZ
B82XC9	22.1	23.3	23.9	23.9	23.3	0.95	1.3	0.8	23.3	1.11	1.6	0.7	8	XX
B8Y87Q	23.2	23.4	23.6	22.8	23.2	0.90	1.7	0.3	23.0	0.87	1.9	0.6	16	LW
BNQ68K	22.5	23.1	23.7	22.8	23.0	0.71	1.4	0.5	23.0	0.87	1.3	0.7	16	LU
CX7CJF	22.4 L	22.5 L	21.9 L	22.5 L	22.3	0.10	0.0	0.3	22.3	0.14	0.1	0.9	16	LU
DHXKGA	21.7 L	21.4 L	22.2 L	22.2 L	21.9	-0.27	0.0	0.4	22.0	-0.08	0.0	0.5	16	TT
DRKLWK	24.2	23.2	23.3	22.2	23.2	0.87	2.2	0.8	22.8	0.61	1.9	0.7	16	LA
DU99DE	18.8 X	18.5 X	20.0	20.3	19.4	-2.45 *	2.1	0.9	19.7	-2.31 *	1.9	0.8	16	XX
F9HKXJ	21.3	21.4	21.5	20.2	21.1	-0.96	2.0	0.6	21.3	-0.80	1.9	0.4	16	LY
GCGAZC	21.6	22.0	21.0	21.1	21.4	-0.68	1.8	0.5	21.4	-0.68	1.9	0.6	16	LA
GDRBLB	22.1	22.3	20.9	21.7	21.8	-0.39	1.5	0.6	21.9	-0.17	1.6	0.6	16	BK
GEHJLD	22.2 L	22.0 L	22.3 L	22.3 L	22.2	-0.02	0.0	0.1 L	21.9	-0.20	0.0	0.5	16	LU
GJV6UK	23.8	23.0	23.6	24.6	23.7	1.32	1.8	0.6	22.4	0.27	2.0	2.2 H	16	LY
HA399A	23.0	21.7	22.3	22.0	22.2	0.03	1.9	0.5	21.7	-0.41	1.8	0.5	16	LY
HB2EP4	22.4	22.6	22.6	22.9	22.6	0.34	0.8	0.2	22.5	0.42	1.0	0.2 L	16	TT
HPV4HF	23.2 L	21.7 L	22.8 L	22.5 L	22.5	0.29	0.3	0.6	22.2	0.10	0.4	0.8	16	LA
JGLRCA	22.2 L	20.6 L	18.7 *L	6.1 XL	16.9	-4.63 X	0.5	7.3 H	20.4	-1.62	0.7	5.3 H	15	LW
KGYM7F	20.3	20.8	22.2	21.2	21.1	-0.95	1.7	0.8	21.2	-0.86	1.8	0.4	16	LW
MFHD7E	22.7 L	22.5 L	23.0 L	23.8 L	23.0	0.70	0.0	0.6	23.4	1.23	0.0	1.3	16	LA
MK9MGC	22.4	22.8	22.6	22.3	22.5	0.28	0.9	0.2	23.0	0.86	1.1	0.8	16	LY
NFE88V	22.3	22.1	21.7	22.3	22.1	-0.12	1.0	0.3	22.1	-0.01	1.0	0.3	16	TT



WebCode	Weekly Means				Monthly Results				Cumulative Results				Inst	
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks		Wks
NPHD64	22.5 L	22.5 L	21.6 L	22.4 L	22.3	0.06	0.4	0.4	23.1	0.96	0.5	1.3	15	BK
Q7WJJ8	21.7	21.2	21.5	21.2	21.4	-0.71	1.6	0.3	21.0	-1.02	1.7	0.5	16	LW
QBQDG9	19.6 *L	18.7 XL	No DATA	No DATA	19.1	-2.67 *	0.3	0.6	20.4	-1.66	0.3	1.1	14	LA
QX6Z6Y	22.4	21.5	20.8	21.5	21.6	-0.57	1.9	0.7	21.7	-0.36	1.9	0.5	16	LU
R6HCXQ	22.4 L	21.9 L	22.7 L	23.2 L	22.6	0.30	0.1	0.6	30.6	8.13 X	0.1	10.7 H	12	XX
RC2RAZ	22.8	22.4	22.6	22.0	22.5	0.23	1.7	0.3	22.9	0.78	1.6	0.4	16	LU
T3MA68	20.6	21.3	21.7	21.4	21.2	-0.85	1.9	0.4	21.1	-0.95	2.0	0.6	16	LU
T3P32U	20.0 *L	No DATA	21.7 L	21.7 L	21.1	-0.94	0.1	1.0	21.2	-0.90	0.1	0.9	14	LA
UGLGY3	22.5	23.0	21.3	23.5	22.6	0.31	1.3	0.9	22.6	0.46	1.5	1.0	16	XX
V2NL23	23.7	24.2	24.0	24.5	24.1	1.64	2.2	0.3	24.1	1.87	2.2	0.9	16	LW
XT83GU	21.6 L	No DATA	18.8 *L	21.3	20.5	-1.45	0.5	1.5 H	20.1	-1.92	0.5	1.3	14	LW
Z324MU	22.7	22.8	23.5	22.9	23.0	0.67	2.0	0.4	23.8	1.63	2.1	1.1	16	LA
ZLZ6YZ	21.6 L	21.6 L	22.3 L	22.2 L	21.9	-0.26	0.4	0.4	22.3	0.22	0.9	0.5	16	LA
ZP26ZX	21.8	21.5	21.5	21.0	21.4	-0.68	1.7	0.3	21.7	-0.43	1.7	0.6	16	LW

Consensus (All Labs) Results

Wk Mean	22.21	22.24	22.19	22.31	Month Mean	22.21	Grand Mean	22.11
Avg SDr	1.55	1.56	1.52	1.37	Avg SDr	1.51	Avg SDr	1.56
SD btwn Labs	1.07	0.98	1.30	1.21	SD btwn Labs	1.15	SD btwn Labs	1.04
Labs Includ	47	44	47	45	SD btwn Wks	0.71	SD btwn Wks	1.14
Labs Exclud	2	3	0	1	Labs Includ	48	Labs Includ	48
Labs not rcvd	0	2	2	3				

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

(LU) - L & W 52 without moisture correction(was 53)

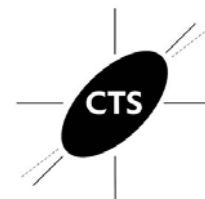
(LW) - L & W 53 with moisture correction (was 53M)

(LY) - L & W 152 without moisture correction

(LZ) - L & W (model not specified)

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results				Inst	
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks		Wks
34RPTQ	22.4 L	22.5 L	23.4	22.5 L	22.7	1.23	0.4	0.5	21.8	0.48	0.3	0.8	12	LA
3KY7FJ	21.0	21.4	21.0	20.8	21.0	-0.52	1.5	0.2	21.0	-0.71	1.4	0.5	12	LY
3XM2ZP	21.9	21.7	21.8	No DATA	21.8	0.27	1.3	0.1 L	21.5	-0.01	1.1	0.4	11	LW
4P6YAE	23.9 *	22.9	22.8	23.0	23.2	1.69	1.5	0.5	22.5	1.53	1.4	0.6	12	TT
4ZNDBV	21.2	21.7	22.0	21.1	21.5	-0.07	1.3	0.4	22.0	0.73	1.3	0.7	10	LU
66DD3W	22.1	23.4	23.4	23.4	23.1	1.58	1.2	0.6	21.7	0.36	1.3	1.2	12	LA
6QWHNK	19.9 L	20.0 L	20.2 L	20.4 L	20.1	-1.45	0.2	0.2	20.1	-2.06 *	0.2	0.4	12	LA
6UVVAP	22.1	21.9	22.5	22.6	22.2	0.73	1.0	0.3	21.8	0.52	0.9	0.6	8	LU
7296BQ	22.3	23.0	22.7	22.5 L	22.6	1.12	1.1	0.3	22.3	1.18	1.2	0.4	12	XX
7LJWFE	22.0	22.0	21.5	20.6	21.5	-0.01	1.2	0.7	21.4	-0.06	1.4	0.6	12	LZ
96KQZF	20.9	21.8	21.2	21.3	21.3	-0.27	1.4	0.4	21.3	-0.31	1.4	0.4	4	LU
9LQVMT	20.7	21.4	21.5	21.1	21.2	-0.38	1.1	0.3	21.0	-0.70	1.2	0.3	12	LZ
9ZN67R	22.6	23.6 *	No DATA	No DATA	23.1	1.65	1.1	0.7	22.3	1.19	1.5	0.7	10	LU
ARUGQF	20.5	21.1	20.9	20.2	20.7	-0.91	1.2	0.4	20.4	-1.62	1.2	0.5	8	LW
B2BKBK	22.9	22.1	22.1	22.1	22.3	0.80	1.3	0.4	22.2	1.09	1.4	0.4	12	LZ
B82XC9	22.3	21.2	21.3	21.8	21.7	0.12	1.0	0.5	21.7	0.25	1.0	0.5	4	XX
B8Y87Q	23.2	22.4	21.8	22.8	22.5	1.05	1.5	0.6	22.3	1.17	1.5	0.4	12	LW
BNQ68K	21.2	21.7	21.2	22.3	21.6	0.05	1.4	0.5	21.9	0.65	1.2	0.7	8	LU
CX7CJF	20.9 L	20.8 L	21.6 L	20.9 L	21.0	-0.52	0.0	0.4	21.3	-0.31	0.0	0.4	12	LU
DHXKGA	22.6 L	21.1 L	21.0 L	22.1 L	21.7	0.19	0.0	0.8	21.7	0.29	0.0	0.5	12	TT
DRKLWK	21.6	21.5	21.8	22.3	21.8	0.27	1.2	0.4	21.8	0.41	1.2	0.4	12	LA
DU99DE	18.6 X	19.0 *	19.9	19.3 *	19.2	-2.42 *	1.3	0.5	19.4	-3.05 X	1.2	0.5	12	XX
F9HKXJ	20.0	21.2	21.2	20.5	20.7	-0.85	1.1	0.6	20.7	-1.09	1.3	0.4	12	LY
GCGAZC	21.3	21.2	21.6	21.4	21.4	-0.17	1.2	0.2	21.0	-0.76	1.3	0.4	12	LA
GDRBLB	21.0	20.5	20.9	21.2	20.9	-0.64	1.0	0.3	20.9	-0.83	1.0	0.2	12	BK
GEHJLD	21.2 L	21.4 L	21.8 L	21.4 L	21.4	-0.11	0.0	0.2	21.7	0.29	0.0	0.4	12	LU
GJV6UK	23.0	22.7	23.3	22.9	22.9	1.46	1.1	0.2	21.3	-0.32	1.3	2.1 H	12	LY
HA399A	21.7	21.3	20.9	21.3	21.3	-0.28	1.3	0.3	21.2	-0.47	1.3	0.3	12	LY
HB2EP4	21.5	21.7	22.0	22.1	21.8	0.31	0.8	0.3	21.7	0.26	0.8	0.3	12	TT
HPV4HF	21.8 L	21.4 L	21.8 L	22.2 L	21.8	0.25	0.2	0.3	21.7	0.37	0.3	1.0	11	LA
JGLRCA	21.8	20.0 L	19.6 *	6.8 XL	17.0	-4.66 X	0.6	6.9 H	18.3	-4.66 X	0.7	4.7 H	8	LW
KGYM7F	20.2	20.7	21.6	20.3	20.7	-0.89	1.1	0.6	20.8	-0.96	1.1	0.4	12	LW
MFHD7E	20.4 L	21.0 L	22.2 L	20.9 L	21.1	-0.43	0.0	0.7	21.4	-0.19	0.0	0.9	12	LA
MK9MGC	22.5 L	22.2 L	22.7	23.2	22.6	1.14	0.6	0.4	22.0	0.83	0.7	0.7	12	LY
NFE88V	21.5	21.3	21.7	21.4	21.5	-0.09	0.9	0.2	21.3	-0.28	0.8	0.3	12	TT



WebCode	Weekly Means				Monthly Results				Cumulative Results				Inst	
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks		Wks
NPHD64	22.1 L	21.9 L	21.6 L	21.8 L	21.9	0.35	0.3	0.2	21.9	0.59	0.3	0.3	12	BK
Q7WJJ8	21.2	20.5 H	20.7	21.2	20.9	-0.66	3.6	0.3	21.0	-0.67	2.3	0.3	12	LW
QBQDG9	19.5 *L	19.3 *L	No DATA	No DATA	19.4	-2.22 *	0.2	0.2	19.9	-2.35 *	0.2	0.8	10	LA
QX6Z6Y	20.9	20.5	21.5	21.1	21.0	-0.57	1.1	0.4	21.3	-0.25	1.1	0.4	12	LU
R6HCXQ	21.0 L	21.0 L	20.5 L	20.3 L	20.7	-0.88	0.0	0.3	25.4	5.74 X	0.1	5.3 H	11	XX
RC2RAZ	21.9	21.6	21.7	21.4	21.7	0.12	1.4	0.2	22.0	0.75	1.3	0.5	12	LU
T3MA68	21.1	21.5	21.5	21.4	21.4	-0.16	1.2	0.2	21.1	-0.58	1.2	0.5	12	LU
T3P32U	21.1 L	No DATA	20.6 L	20.6 L	20.7	-0.82	0.0	0.3	20.5	-1.43	0.0	0.4	10	LA
UGLGY3	22.3	22.7	22.9	22.6	22.6	1.11	1.0	0.3	22.1	0.84	1.0	0.7	8	XX
V2NL23	23.0	23.5	23.8 *	23.2	23.4	1.89	1.4	0.4	23.0	2.23 *	1.5	0.4	12	LW
XT83GU	21.0 L	No DATA	16.5 XL	21.1	19.5	-2.09 *	0.5	2.6 H	20.5	-1.49	0.8	3.5 H	11	LW
Z324MU	23.1	23.4	21.8	22.2	22.6	1.10	1.5	0.8	23.0	2.20 *	1.6	0.8	12	LA
ZLZ6YZ	21.0 L	21.2 L	20.6 L	21.4 L	21.0	-0.52	0.2	0.4	21.4	-0.11	0.2	0.4	12	LA
ZP26ZX	21.2	21.0	20.7	21.1	21.0	-0.55	1.0	0.2	21.1	-0.64	1.2	0.2	12	LW

Consensus (All Labs) Results

Wk Mean	21.59	21.54	21.62	21.58	Month Mean	21.54	Grand Mean	21.48
Avg SDr	1.05	1.46	1.04	1.05	Avg SDr	1.16	Avg SDr	1.12
SD btwn Labs	0.94	1.01	0.92	0.94	SD btwn Labs	0.96	SD btwn Labs	0.67
Labs Includ	48	47	46	45	SD btwn Wks	0.57	SD btwn Wks	0.81
Labs Exclud	1	0	1	1	Labs Includ	48	Labs Includ	46
Labs not rcvd	0	2	2	3				

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

(LU) - L & W 52 without moisture correction (was 53)

(LW) - L & W 53 with moisture correction (was 53M)

(LY) - L & W 152 (was 52M)

(LZ) - L & W (model not specified)

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
 Analysis 228  
**Roughness - Stylus Method, 69 lb Linerboard - 69C**  
 TAPPI Provisional Test Method T575



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
6QWHNK	121.2	-0.77	9.7	125.0	-0.85	9.6	4	EV
7HZ2CL	126.6	-0.52	12.6	127.1	-0.70	12.3	2	EV
7LJWFE	165.4	1.24	20.0	143.0	0.40	16.2	3	LA
B2BKBK	123.6	-0.66	8.1	123.9	-0.92	11.2	4	LA
BNQ68K	139.1	0.04	12.6	131.5	-0.39	12.3	4	EV
HA399A	146.3	0.37	13.0	147.7	0.73	11.9	4	EV
HPV4HF	159.2	0.96	9.7	152.3	1.05	16.4	4	LA
JGLRCA	143.5	0.24	16.5	143.6	0.44	12.0	4	EV
KGYM7F	140.9	0.13	15.5	147.4	0.71	12.0	4	EV
MFHD7E	119.5	-0.85	10.4	126.0	-0.78	11.8	4	LA
MK9MGC	82.3	-2.53 *	8.7	102.1	-2.43 *	8.1	4	EV
MTHCUB	132.6	-0.25	9.9	129.0	-0.56	11.1	3	EV
NPHD64	146.3	0.37	7.1	139.4	0.16	11.3	4	EV
QBQDG9	421.0	12.84 X	32.8	210.5	5.09 X	20.4	4	EV
R6HCXQ	189.7	2.34 *	9.3	163.1	1.80	8.6	3	EV
T3MA68	138.0	-0.01	12.3	140.8	0.25	12.6	4	EV
T3P32U	128.0	-0.46	9.8	135.8	-0.09	16.8	4	LA
XE7DE2	157.5	0.88	13.1	155.7	1.29	12.0	4	EV
Z324MU	115.3	-1.04	10.0	118.3	-1.31	11.2	4	LA
ZLZ6YZ	140.9	0.13	24.0	147.5	0.72	23.8	4	LA
ZP26ZX	146.8	0.39	16.2	144.0	0.47	12.9	4	EV

Consensus (All Labs) Results

Month Mean	138.13	Grand Mean	137.14
Avg SDr	13.10	Avg SDr	13.14
SD btwn Labs	22.03	SD btwn Labs	14.41
Labs Incd	20	Labs Incd	20

Instrument Code List as Reported by the Labs

(EV) - Emvoco Microgauge Model 210-R

(LA) - L & W Autoline

Containerboard Interlaboratory Testing Program  
 Analysis 231  
**Internal Bond, 36 lb Linerboard - 36Z**  
 TAPPI Provisional Test Method T569



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
34RPTQ	133.6	-1.37	5.4	135.4	-1.28	14.0	4	SC
6UVVAP	149.0	-0.60	4.2	148.9	-0.63	9.3	4	TM
6XXUKH	160.0	-0.05	2.9	162.1	0.00	3.6	4	TM
7HZ2CL	174.4	0.68	9.0	170.0	0.37	7.0	2	HY
ARUGQF	165.8	0.25	5.1	171.1	0.42	5.9	3	TM
B2BKBK	154.8	-0.31	19.3	145.1	-0.81	14.3	4	TM
BNQ68K	139.2	-1.09	9.0	130.4	-1.51	9.6	4	TM
DRKLWK	61.7	-4.99 X	1.6	63.8	-4.68 X	2.1	4	LZ
DU99DE	134.1	-1.35	12.0	133.6	-1.36	17.8	4	SC
GCGAZC	191.2	1.52	5.2	188.3	1.24	8.8	4	HY
HPV4HF	157.0	-0.20	13.8	170.9	0.41	13.4	4	HY
JGLRCA	248.0	4.38 X	4.5	239.8	3.69 X	11.0	4	SC
QBQDG9	153.2	-0.39	5.3	169.9	0.36	6.3	4	TM
QX6Z6Y	176.8	0.80	4.2	174.8	0.60	4.9	4	HY
R2ZE39	176.5	0.79	6.9	182.0	0.94	8.4	4	SC
T3MA68	147.8	-0.66	3.7	149.9	-0.59	4.5	4	TM
ZP26ZX	200.2	1.98	8.2	201.2	1.85	14.9	4	HY

**Consensus (All Labs) Results**

Month Mean	160.91	Grand Mean	162.23
Avg SDr	8.76	Avg SDr	10.40
SD btwn Labs	19.87	SD btwn Labs	21.03
Labs Incd	15	Labs Incd	15

**Instrument Code List as Reported by the Labs**

(HY) - Huygen Digitized Scott Internal Bond Tester  
 (SC) - Scott Internal Bond Tester (Manual)

(LZ) - L & W (model not specified)  
 (TM) - TMI Monitor/Internal Bond Tester

**Containerboard Interlaboratory Testing Program**  
 Analysis 234  
**COF Inclined Plane (Slide Angle), 36 lb Linerboard - 36Z**  
 TAPPI Official Test Method T815



WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SDr	Mean	CPV	SDr	Months
34RPTQ	30.0	0.75	0.7	29.6	0.85	1.2	4
4ZNDBV	27.6	0.10	2.7	28.9	0.58	2.5	4
6UVVAP	28.2	0.26	1.3	27.1	-0.18	1.3	4
ARUGQF	23.4	-1.04	2.3	29.1	0.65	8.6	3
B2BKBK	23.4	-1.04	0.5	25.2	-0.97	1.8	4
B82XC9	21.4	-1.59	2.1	21.9	-2.33 *	2.0	2
B8Y87Q	26.2	-0.28	3.8	27.3	-0.10	3.5	4
BNQ68K	30.6	0.91	1.1	28.0	0.19	1.1	4
CZF39J	28.1	0.23	2.3	28.6	0.44	2.7	4
DRKLWK	30.6	0.91	1.1	29.2	0.71	1.1	4
HA399A	31.1	1.05	2.9	29.8	0.97	2.8	4
HPV4HF	26.2	-0.29	1.8	28.2	0.28	2.6	4
JGLRCA	22.4	-1.32	1.8	25.2	-0.97	1.6	4
QBQDG9	35.8	2.33 *	0.8	31.7	1.73	2.0	4
QX6Z6Y	24.8	-0.66	0.8	25.0	-1.06	1.2	4
T3MA68	28.8	0.42	2.2	29.2	0.71	2.4	4
UGLGY3	28.5	0.34	1.2	27.9	0.17	1.5	4
XE7DE2	21.7	-1.50	0.8	23.0	-1.85	1.1	4
Y2ZLCU	29.8	0.70	2.9	28.7	0.50	2.2	4
ZP26ZX	26.2	-0.28	0.8	26.8	-0.31	1.9	4

**Consensus (All Labs) Results**

Month Mean	27.24	Grand Mean	27.49
Avg SDr	1.93	Avg SDr	2.76
SD btwn Labs	3.68	SD btwn Labs	2.41
Labs Incd	20	Labs Incd	20

**Instrument Code List as Reported by the Labs**

(ZZ) - Instruments No Longer Tracked



Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 36 lb Linerboard - 36Z

TAPPI Official Test Method T460



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3KY7FJ	49.8	-1.14	1.0	49.9	-1.09	1.3	4	LP
6UVVAP	51.8	0.13	1.8	50.5	-0.65	1.9	4	LA
ARUGQF	50.9	-0.45	3.5	51.0	-0.29	2.5	3	HG
B2BKBK	51.6	-0.02	3.7	46.1	-3.78 X	3.2	4	XX
B8Y87Q	50.9	-0.46	1.3	50.7	-0.47	1.5	3	LP
BNQ68K	45.7	-3.71 X	2.2	44.7	-4.81 X	2.0	4	XX
CD62ZL	48.6	-1.88	1.4	48.0	-2.43 *	1.4	4	LA
CZF39J	55.1	2.16 *	2.4	52.9	1.10	2.7	4	GA
DRKLWK	52.7	0.69	1.2	53.0	1.16	2.0	4	LA
HA399A	50.9	-0.43	2.7	51.3	-0.08	2.0	4	LP
HKNDFA	51.1	-0.33	3.2	50.7	-0.52	2.9	4	GG
HPV4HF	48.6	-1.93	2.2	50.1	-0.94	2.1	4	LA
JGLRCA	51.4	-0.14	3.6	52.2	0.61	2.7	4	HG
MFHD7E	53.7	1.32	2.7	52.6	0.85	2.2	4	TL
NPHD64	54.0	1.47	0.8	54.3	2.13 *	1.4	4	XX
QBQDG9	51.1	-0.33	2.3	50.7	-0.50	3.3	4	LP
QX6Z6Y	50.7	-0.60	2.1	51.7	0.23	2.2	4	TP
R2ZE39	51.7	0.02	1.6	51.1	-0.19	1.3	4	LP
R6HCXQ	52.9	0.78	3.5	50.7	-0.46	5.2	3	LW
U3J634	52.4	0.51	1.6	52.3	0.68	1.7	4	XX
UGLGY3	41.5	-6.37 X	1.9	41.8	-6.82 X	2.2	4	XX
ZLZ6YZ	51.7	0.05	1.9	51.3	-0.05	2.0	4	LA
ZP26ZX	52.5	0.55	1.6	52.6	0.91	1.9	4	LP

Consensus (All Labs) Results

Month Mean	51.63	Grand Mean	51.37
Avg SDr	2.36	Avg SDr	2.37
SD btwn Labs	1.60	SD btwn Labs	1.40
Labs Incd	21	Labs Incd	20

**Containerboard Interlaboratory Testing Program**  
**Analysis 237**  
**Air Resistance, 36 lb Linerboard - 36Z**  
TAPPI Official Test Method T460



**Instrument Code List as Reported by the Labs**

(GA) - Gurley Precision #4340 Automatic Densometer

(HG) - Technidyne - Hagerty Model #1 and Profile System

(LP) - L & W Air Permeance Tester SE 166

(TL) - Teledyne Gurley Densometer #4110, Oil Flotation

(XX) - Instrument make/model not specified by lab

(GG) - Gurley Precision #4320 Densometer

(LA) - L & W Autoline

(LW) - L & W Gurley Densometer, Oil Flotation

(TP) - Technidyne Profile/ plus Roughness & Porosity

Containerboard Interlaboratory Testing Program  
 Analysis 240  
**Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM81**  
 TAPPI Official Test Method T809



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
3EPQ7U	59.6	61.9	60.6	60.7	60.7	1.08	2.6	0.9	60.7	1.08	2.6	0.9	4	LD
3XM2ZP	61.9	60.1	60.0	No DATA	60.7	1.07	1.9	1.1	60.7	1.07	1.9	1.1	3	LC
4P6YAE	55.3	54.4 *	55.2	53.1 X	54.5	-2.48 *	2.5	1.0	54.5	-2.48 *	2.5	1.0	4	TH
4ZNDBV	58.9	57.6	58.8	58.3	58.4	-0.24	1.9	0.6	58.4	-0.24	1.9	0.6	4	LZ
6B6KMQ	41.6 XH	40.6 XH	37.8 XH	No DATA	40.0	-10.88 X	6.7	2.0	40.0	-10.88X	6.7	2.0 H	3	TX
6UVVAP	63.0 *	57.2	55.9	61.3	59.4	0.31	3.4	3.3 H	59.4	0.31	3.4	3.3 H	4	LC
6VQCLL	61.8	61.2	61.6	61.7	61.6	1.60	1.8	0.3	61.6	1.60	1.8	0.3	4	LC
7LJWFE	No DATA	59.8	No DATA	58.8 L	59.3	0.28	2.4	0.7	59.3	0.28	2.4	0.7	2	LD
96KQZF	31.1 XL	31.9 XL	33.3 XL	33.3 X	32.4	-15.29 X	1.0	1.1	32.4	-15.29X	1.0	1.1	4	LC
B82XC9	56.3	57.6	57.6 L	56.8	57.1	-1.01	1.6	0.6	57.1	-1.01	1.6	0.6	4	EM
B8Y87Q	57.4	58.5	58.3	59.9	58.5	-0.16	1.9	1.0	58.5	-0.16	1.9	1.0	4	LC
CD62ZL	58.8	62.4	59.9	60.6	60.4	0.93	2.9	1.5	60.4	0.93	2.9	1.5	4	LC
CX7CJF	33.6 X	28.9 X	30.7 X	30.5 X	30.9	-16.13 X	2.5	2.0	30.9	-16.13X	2.5	2.0 H	4	LC
D69LNM	57.4	57.0	58.0	56.9	57.3	-0.86	2.4	0.5	57.3	-0.86	2.4	0.5	4	LC
DRKLWK	57.1	54.5	56.1	55.8 L	55.9	-1.69	1.9	1.1	55.9	-1.69	1.9	1.1	4	LD
DU99DE	60.3	57.2	55.7	56.4 H	57.4	-0.81	3.2	2.1	57.4	-0.81	3.2	2.1 H	4	LC
GCGAZC	58.4	57.7	57.6	57.0	57.7	-0.66	2.2	0.6	57.7	-0.66	2.2	0.6	4	LC
GJV6UK	57.8	58.5	58.9	59.1	58.6	-0.15	2.5	0.6	58.6	-0.15	2.5	0.6	4	LD
GJXU23	59.7	58.2	60.3	60.0	59.5	0.41	1.9	0.9	59.5	0.41	1.9	0.9	4	TD
GM3D8B	58.4	59.5	61.9	60.1	60.0	0.66	2.6	1.4	60.0	0.66	2.6	1.4	4	EM
HA399A	58.7	59.9	58.3	58.7	58.9	0.04	2.6	0.7	58.9	0.04	2.6	0.7	4	LZ
HB2EP4	58.0	60.5 H	59.8	59.6	59.5	0.39	3.5	1.1	59.5	0.39	3.5	1.1	4	TG
JJB333	68.4 X	68.0 X	70.0 X	69.9 X	69.1	5.94 X	2.9	1.0	69.1	5.94 X	2.9	1.0	4	XX
JNHT69	60.6	60.5	60.5	60.5	60.5	0.99	2.4	0.0 L	60.5	0.99	2.4	0.0 L	4	LD
KFHT77	No DATA	61.8	61.1	60.5	61.1	1.34	2.2	0.7	61.1	1.34	2.2	0.7	3	LZ
LUIP3D	57.8	58.1	58.3	58.4	58.2	-0.38	2.1	0.3	58.2	-0.38	2.1	0.3	4	LD
MEK3DW	31.8 XL	32.6 X	36.8 XL	39.4 X	35.1	-13.70 X	1.1	3.6 H	35.1	-13.70X	1.1	3.6 H	4	TG
MNANJV	56.9	58.5	59.1	58.8	58.3	-0.28	2.8	1.0	58.3	-0.28	2.8	1.0	4	LD
NFE88V	59.2	61.2	62.1	59.6	60.5	0.99	2.2	1.4	60.5	0.99	2.2	1.4	4	TH
NPHD64	60.4	59.2	61.1	59.4	60.0	0.70	3.0	0.9	60.0	0.70	3.0	0.9	4	MB
P7GZYA	59.3	60.9	62.6	59.9	60.7	1.08	2.5	1.4	60.7	1.08	2.5	1.4	4	LC
QX6Z6Y	61.1	60.0	60.6	59.0	60.2	0.79	2.6	0.9	60.2	0.79	2.6	0.9	4	LC
RC2RAZ	61.6	60.8	60.9	61.1	61.1	1.31	1.8	0.4	61.1	1.31	1.8	0.4	4	LD
T3MA68	56.8	55.8	55.9	54.8 *	55.8	-1.73	2.8	0.8	55.8	-1.73	2.8	0.8	4	LD
T3P32U	28.7 XL	No DATA	57.4	56.7	47.6	-6.49 X	1.9	16.3 H	47.6	-6.49 X	1.9	16.3 H	3	MB

Containerboard Interlaboratory Testing Program  
 Analysis 240  
**Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM81**  
 TAPPI Official Test Method T809



WebCode	Weekly Means				Monthly Results				Cumulative Results				Inst			
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks		Wks		
TWLVLR	60.5	59.1	61.0	60.3	60.2	0.82	2.1	0.8	60.2	0.82	2.1	0.8	4	TM		
U3J634	59.2	59.5	59.8	60.3	L	59.7	0.50	1.8	0.4	59.7	0.50	1.8	0.4	4	LD	
V2NL23	No DATA	54.2	*	56.9	57.2	H	56.1	-1.56	3.8	1.6	56.1	-1.56	3.8	1.6	3	LC
W8PKPW	54.2	*	57.9	58.1	57.5	56.9	-1.09	2.2	1.8	56.9	-1.09	2.2	1.8	4	LC	
WTT7P4	57.9	56.9	58.1	57.2	57.5	-0.75	2.3	0.6	57.5	-0.75	2.3	0.6	4	LD		
Y3CAVU	57.8	56.3	57.6	58.7	57.6	-0.71	2.1	1.0	57.6	-0.71	2.1	1.0	4	LD		
YUXAFW	57.9	57.5	57.9	55.8	57.3	-0.89	2.7	1.0	57.3	-0.89	2.7	1.0	4	XX		
ZP26ZX	58.8	H	57.2	H	59.7	60.8	59.1	0.18	3.8	1.5	59.1	0.18	3.8	1.5	4	LD

Consensus (All Labs) Results									
Wk Mean	58.79	58.62	59.01	58.84	Month Mean	58.81	Grand Mean	58.81	
Avg SDr	2.49	2.47	2.53	2.55	Avg SDr	2.51	Avg SDr	2.51	
SD btwn Labs	1.92	2.09	1.96	1.77	SD btwn Labs	1.73	SD btwn Labs	1.73	
Labs Includ	34	37	37	36	SD btwn Wks	1.15	SD btwn Wks	1.15	
Labs Exclcd	6	5	5	5	Labs Includ	37	Labs Includ	37	
Labs not rcvd	3	1	1	2					

**Instrument Code List as Reported by the Labs**

- |   |   |
|---|---|
| (EM) - Emerson 1200 Series                        | (LC) - L & W Crush Tester 48                    |
| (LD) - L&W Crush Tester 248                       | (LZ) - L & W Crush Tester (model not specified) |
| (MB) - Messmer Buchel K440                        | (TD) - TMI Digital Crush Tester, Model 17-09    |
| (TG) - TMI Compression Tester, Model 17-10        | (TH) - TMI Compression Tester, Model 17-76      |
| (TM) - TMI/Hinde & Dauch                          | (TX) - TMI Crush Tester (model not specified)   |
| (XX) - Instrument make/model not specified by lab |   |

Containerboard Interlaboratory Testing Program  
 Analysis 250  
**Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM81**  
 TAPPI Official Method T824



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
3XM2ZP	64.1	64.2	65.7	No DATA	64.6	-0.43	2.8	0.9	64.6	-0.43	2.8	0.9	3	LC
B8Y87Q	64.8	67.4	69.7	68.5	67.6	0.26	2.6	2.1	67.6	0.26	2.6	2.1	4	XX
DRKLWK	68.7	70.3	68.9	L 69.1 L	69.2	0.64	1.4	0.7	69.2	0.64	1.4	0.7	4	LD
LUJP3D	58.2	58.5	59.0	58.9	58.6	-1.82	2.9	0.4	58.6	-1.82	2.9	0.4	4	LD
P7GZYA	65.9 H	64.8 H	66.0 H	70.6 H	66.8	0.08	5.4	2.6	66.8	0.08	5.4	2.6 H	4	LC
QX6Z6Y	72.5	72.2	74.2	71.4	72.6	1.42	1.6	1.1	72.6	1.42	1.6	1.1	4	LC
RC2RAZ	66.5	65.4 L	66.1	65.7 L	65.9	-0.14	1.4	0.5	65.9	-0.14	1.4	0.5	4	LD

Consensus (All Labs) Results											
Wk Mean	65.81	66.10	67.07	67.35	Month Mean	66.49				Grand Mean	66.49
Avg SDr	2.92	2.97	2.91	2.80	Avg SDr	2.90				Avg SDr	2.90
SD btwn Labs	4.39	4.49	4.65	4.61	SD btwn Labs	4.31				SD btwn Labs	4.31
Labs Includ	7	7	7	6	SD btwn Wks	1.41				SD btwn Wks	1.41
Labs Exclud	0	0	0	0	Labs Includ	7				Labs Includ	7
Labs not rcvd	0	0	0	1							

**Instrument Code List as Reported by the Labs**

(LC) - L & W Crush Tester 48

(LD) - L&W Crush Tester 248

(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
 Analysis 255  
 Ring Crush (RCT), 26 lb Corrugating Medium - CM81  
 TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results				Cumulative Results				Inst	
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks		Wks
3EPQ7U	38.6	38.4	39.2	39.9	39.0	0.27	2.0	0.7	39.0	0.27	2.0	0.7	4	LD
64KK8D	35.4	28.7 *	37.0 L	34.6	33.9	-1.89	2.4	3.6 H	33.9	-1.89	2.4	3.6 H	4	LZ
6B6KMQ	26.0 XH	28.7 *	24.2 X	26.2 XH	26.3	-5.15 X	3.5	1.8	26.3	-5.15 X	3.5	1.8	4	TX
6VQCLL	38.0	37.6	38.2	39.2 L	38.3	-0.05	1.1	0.7	38.3	-0.05	1.1	0.7	4	LC
7LJWFE	No DATA	41.6	No DATA	38.7 L	40.1	0.74	1.7	2.0	40.1	0.74	1.7	2.0	2	LD
B82XC9	36.9	37.0	37.7 L	38.1 L	37.4	-0.41	1.4	0.6	37.4	-0.41	1.4	0.6	4	EM
B8Y87Q	34.7	34.1 L	32.8 *	36.6	34.5	-1.62	1.4	1.6	34.5	-1.62	1.4	1.6	4	LC
CD62ZL	42.1 L	41.5 L	40.7	40.0	41.1	1.15	1.2	0.9	41.1	1.15	1.2	0.9	4	LD
CX7CJF	45.4 *	40.8 H	40.8 H	41.3 H	42.1	1.58	6.0	2.2	42.1	1.58	6.0	2.2	4	LD
DRKLWK	40.3	40.3	40.6	39.4	40.2	0.76	1.4	0.5	40.2	0.76	1.4	0.5	4	LD
E9266B	41.2	40.6	40.9	39.8	40.6	0.95	1.8	0.6	40.6	0.95	1.8	0.6	4	TH
JNHT69	37.4	37.5	37.4	37.3	37.4	-0.42	1.6	0.1 L	37.4	-0.42	1.6	0.1 L	4	LD
MEK3DW	44.0	37.6	40.1	39.7	40.3	0.84	1.9	2.7	40.3	0.84	1.9	2.7 H	4	TH
MNANJV	37.3	37.1	38.0	37.0	37.3	-0.44	1.4	0.5	37.3	-0.44	1.4	0.5	4	LD
QX6Z6Y	40.1	40.9	40.0	40.6	40.4	0.86	1.4	0.4	40.4	0.86	1.4	0.4	4	LC
TWLVLRL	35.5	34.1 L	35.3	35.8 L	35.2	-1.36	1.3	0.7	35.2	-1.36	1.3	0.7	4	LD
U3J634	37.1	36.7	36.6	36.7	36.8	-0.67	1.9	0.2 L	36.8	-0.67	1.9	0.2 L	4	LD
W8PKPW	37.8	37.2	36.7	35.6	36.8	-0.65	1.8	0.9	36.8	-0.65	1.8	0.9	4	LC
Y3CAVU	37.8	38.0	39.5	41.6	39.2	0.36	2.3	1.8	39.2	0.36	2.3	1.8	4	LZ

Consensus (All Labs) Results									
Wk Mean	38.78	37.28	38.32	38.44	Month Mean	38.37	Grand Mean	38.37	
Avg SDr	1.78	2.49	1.99	2.39	Avg SDr	2.17	Avg SDr	2.17	
SD btwn Labs	3.00	3.76	2.24	2.05	SD btwn Labs	2.35	SD btwn Labs	2.35	
Labs Incl	17	19	17	18	SD btwn Wks	1.48	SD btwn Wks	1.48	
Labs Excl	1	0	1	1	Labs Incl	18	Labs Incl	18	
Labs not rcvd	1	0	1	0					

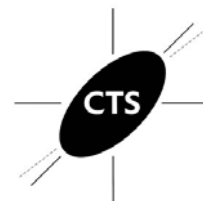
**Instrument Code List as Reported by the Labs**

- (EM) - Emerson 1200 Series
- (LD) - L&W Crush Tester 248
- (TH) - TMI Compression Tester, Model 17-76
- (LC) - L & W Crush Tester 48
- (LZ) - L & W Crush Tester (model not specified)
- (TX) - TMI Digital Crush Tester (model not specified)



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	
4P6YAE	13.5	14.4	13.7	13.9	13.9	1.28	0.9	0.4	13.9	1.28	0.9	0.4	4	TT
4ZNDBV	12.7	12.4	11.7	11.5 L	12.1	-1.00	0.5	0.6	12.1	-1.00	0.5	0.6	4	LU
64KK8D	12.1	11.0	11.3	11.8	11.6	-1.62	0.8	0.5	11.6	-1.62	0.8	0.5	4	LA
6B6KMQ	23.5 XL	23.3 XL	23.8 XL	24.0 XL	23.7	13.61 X	0.0	0.3	23.7	13.61 X	0.0	0.3	4	TS
6VQCCL	13.8	15.2 *	13.3	14.1	14.1	1.59	0.7	0.8	14.1	1.59	0.7	0.8 H	4	XX
7LJWFE	No DATA	13.8	12.6	12.2	12.9	-0.01	0.7	0.8	12.9	-0.01	0.7	0.8 H	3	LZ
B82XC9	13.3	13.1	13.1	12.8	13.1	0.28	0.5	0.2	13.1	0.28	0.5	0.2	4	LZ
CD62ZL	13.9	13.9	13.7	13.7	13.8	1.18	0.7	0.1	13.8	1.18	0.7	0.1	4	LA
D69LNM	12.6	12.8	12.9	12.7	12.7	-0.17	0.8	0.1	12.7	-0.17	0.8	0.1	4	LB
DRKLWK	13.5	13.0	13.5	13.3 L	13.3	0.57	0.6	0.3	13.3	0.57	0.6	0.3	4	LA
HA399A	12.3	12.4	12.4	13.0	12.5	-0.43	0.7	0.3	12.5	-0.43	0.7	0.3	4	LB
KFHT77	No DATA	12.6	12.6	12.9	12.7	-0.20	0.8	0.2	12.7	-0.20	0.8	0.2	3	LW
LUJP3D	14.3	14.5	14.2	14.1	14.3	1.77	0.6	0.2	14.3	1.77	0.6	0.2	4	LA
MNANJV	11.3	11.6	11.9	11.9	11.7	-1.51	0.6	0.3	11.7	-1.51	0.6	0.3	4	LA
NFE88V	11.8	12.4	11.8	12.8	12.2	-0.86	0.8	0.5	12.2	-0.86	0.8	0.5	4	TT
NPHD64	13.3 L	13.3 L	13.2 L	13.1 L	13.2	0.46	0.1	0.1	13.2	0.46	0.1	0.1	4	BK
QX6Z6Y	12.3	12.2	12.7	12.5	12.4	-0.55	0.8	0.2	12.4	-0.55	0.8	0.2	4	LU
R6HCXQ	11.7 L	12.2 L	11.7 L	12.1 L	11.9	-1.18	0.0	0.2	11.9	-1.18	0.0	0.2	4	XX
T3P32U	22.3 XL	No DATA	22.3 XL	21.7 XL	22.1	11.63 X	0.0	0.3	22.1	11.63 X	0.0	0.3	3	LA
TWLVLRL	13.4	14.1	11.9	12.7	13.0	0.21	0.8	0.9 H	13.0	0.21	0.8	0.9 H	4	LA
V2NL23	No DATA	14.0	13.8	13.5	13.8	1.17	0.9	0.2	13.8	1.17	0.9	0.2	3	LW
WTT7P4	12.7	12.9	12.7	12.6	12.7	-0.16	0.9	0.1	12.7	-0.16	0.9	0.1	4	LB
YUXAFW	11.7	12.9	12.5	11.7	12.2	-0.82	0.7	0.6	12.2	-0.82	0.7	0.6	4	XX

Consensus (All Labs) Results									
Wk Mean	12.79	13.07	12.71	12.80	Month Mean	12.85	Grand Mean	12.85	
Avg SDr	0.70	0.69	0.69	0.70	Avg SDr	0.70	Avg SDr	0.70	
SD btwn Labs	0.88	1.02	0.81	0.78	SD btwn Labs	0.79	SD btwn Labs	0.79	
Labs Includ	18	21	21	21	SD btwn Wks	0.44	SD btwn Wks	0.44	
Labs Exclud	2	1	2	2	Labs Includ	21	Labs Includ	21	
Labs not rcvd	3	1	0	0					



**Instrument Code List as Reported by the Labs**

(BK) - Buchel Strip Compression Tester BK-155

(LB) - L & W Model 152

(LW) - L & W 53 with moisture correction (was 53M)

(TS) - TMI Monitor/STFI Compression Tester, 17-33

(XX) - Instrument make/model not specified by lab

(LA) - L & W Autoline

(LU) - L & W 52 without moisture correction (was 53)

(LZ) - L & W (model not specified)

(TT) - TMI Short Span Compression, 17-34 (MB K455)