

# Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #489 (F)- June 2010

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[Introduction to the Containerboard Program](#)

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

[Instrument Manufacturer Contacts](#)

Analysis	Sample Lot	Analysis Name
<a href="#"><u>201</u></a>	<a href="#"><u>BOX4</u></a>	<a href="#"><u>Box Compression Strength, Corrugated Boxes</u></a>
<a href="#"><u>202</u></a>	<a href="#"><u>ECT4</u></a>	<a href="#"><u>Edgewise Compressive Strength, Wax (T811), Corrugated board</u></a>
<a href="#"><u>203</u></a>	<a href="#"><u>ECT4</u></a>	<a href="#"><u>Edgewise Compressive Strength by Clamp (T839), Corrugated board</u></a>
<a href="#"><u>205</u></a>	<a href="#"><u>42X2</u></a>	<a href="#"><u>Mullen Burst of Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>207</u></a>	<a href="#"><u>36U3</u></a>	<a href="#"><u>Mullen Burst of Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>215</u></a>	<a href="#"><u>42X2</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</u></a>
<a href="#"><u>217</u></a>	<a href="#"><u>36U3</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard</u></a>
<a href="#"><u>223</u></a>	<a href="#"><u>42X2</u></a>	<a href="#"><u>STFI of Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>225</u></a>	<a href="#"><u>36U3</u></a>	<a href="#"><u>STFI of Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>228</u></a>	<a href="#"><u>69Y</u></a>	<a href="#"><u>Roughness - Stylus Method, 69 lb Linerboard</u></a>
<a href="#"><u>231</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Internal Bond Strength, Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>234</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Coefficient of Static Friction - Inclined Plane, 42 lb Linerboard</u></a>
<a href="#"><u>237</u></a>	<a href="#"><u>42X</u></a>	<a href="#"><u>Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>240</u></a>	<a href="#"><u>CM72</u></a>	<a href="#"><u>Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>250</u></a>	<a href="#"><u>CM72</u></a>	<a href="#"><u>Fluted Crush of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>255</u></a>	<a href="#"><u>CM72</u></a>	<a href="#"><u>Ring Crush of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>261</u></a>	<a href="#"><u>CM72</u></a>	<a href="#"><u>STFI of Medium, 26 lb Corrugating Medium</u></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 50 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	36U3	May 2008 -
42# Linerboard	42X1 42X2	March 2008 - May 2009 June 2009 -
69# Linerboard 69# Linerboard	69Y1 69Y2	July 2008 - March 2009 May 2009 -
Corrugating Medium	CM71 CM72	October 2009 - February 2010 March 2010 -

## 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 analysis 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 Incl - The number of laboratory Means included in the Wk Mean for that week.

Labs Excl - 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 - For each laboratory, the average of all the weekly Means reported for this month.

CPV - **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 Wks - 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 Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks') for all the participants.

Labs Incl - The number of laboratory Means included in the Month Mean.

continued on next page

## Cumulative Results

### Laboratory Data

- Mean - For each lab, the average of all the monthly Means reported for the weeks shown.
- CPV - **Comparative Performance Value**, 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 Wks- 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.

### 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 Wks - For the cumulative period, the average of the laboratory between week standard deviations for all the participants.
- Labs Incl - The number of laboratory Means included in the Grand Mean.

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:

#### Flag

#### Explanation

- 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 required.
- \*** 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).

## INSTRUMENT MANUFACTURER CONTACTS

If your data results have been flagged with an "X" and you believe that the problem may be with your instrument (and not your testing procedures), then CTS urges you to contact the appropriate instrument manufacturer. Where possible, CTS has asked the manufacturer to supply a contact person who is familiar with the Containerboard Collaborative Reference Program, and who can thus work with you on evaluating your results to better determine the cause of the problem. Additional contact names will be added as they become available.

Emerson Apparatus  
Connie Upson  
59 Sanford St., #12  
Gorham Maine, ME 04038  
Phone: (207) 856-0055, Ext. 24  
FAX #: (207) 856-1117  
connie@emersonapparatus.com

Lorentzen & Wettre USA Inc.  
Bill Crain, Technical Manager  
1055 Windward Ridge Pkwy  
Suite 160  
Alpharetta, GA 30202  
Phone: (770) 442-8015  
FAX #: (770) 442-6792

Testing Machines Inc.  
2910 Expressway Drive South  
Islandia, NY 11722  
Phone: (631) 439-5400  
FAX #: (631) 439-5420  
info@testingmachines.com

Containerboard Interlaboratory Testing Program  
 Analysis 201  
**Top to Bottom Box Compression Strength, Corrugated Boxes - BOX4**  
 TAPPI Official Test Method T804

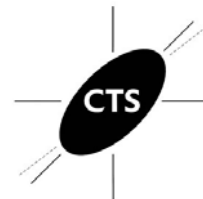


WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
6Z7NP2	926.1	1.44	11.0	901.8	1.45	51.7	3	TR
736ZVZ	733.4	-0.18	28.9	758.2	-0.04	24.3	4	LM
7R78KN	700.2	-0.46	36.7	698.8	-0.66	34.9	2	LL
8ZQAL3	932.0	1.49	35.9	922.8	1.67	30.7	4	XX
9B6G79	732.7	-0.18	37.0	729.5	-0.34	40.1	4	LG
9DHE2E	916.0	1.35	30.2	892.5	1.36	59.2	4	XX
ALZWLC	729.3	-0.21	61.1	727.9	-0.36	62.6	4	LH
CCX8BU	726.4	-0.24	34.5	733.2	-0.31	37.7	4	LG
CF47VJ	962.4	1.74	55.9	935.9	1.81	58.6	4	TB
EAV4WU	534.0	-1.85	32.7	686.0	-0.80	36.2	4	ES
EFK8GQ	732.0	-0.19	55.8	782.4	0.21	45.5	4	MC
F9LZHG	705.8	-0.41	41.2	706.4	-0.58	37.8	2	LG
GU2XA7	721.3	-0.28	50.1	710.2	-0.55	61.5	4	LO
H2Q3CP	972.1	1.82	47.1	961.9	2.08*	55.4	4	LN
JMAD4E	811.0	0.47	24.8	870.8	1.13	41.3	4	LH
JPVAP2	706.2	-0.41	23.3	720.7	-0.44	34.3	4	LL
P3X2AU	558.0	-1.65	20.8	600.3	-1.69	27.6	4	EX
PPCA8P	687.1	-0.57	38.7	703.4	-0.62	32.3	4	RP
RUIJWHW	857.9	0.86	57.0	781.4	0.20	39.6	4	ER
UWHRCJ	823.2	0.57	57.7	761.5	-0.01	46.4	4	TC
VLCG6A	667.7	-0.73	20.2	685.3	-0.80	24.7	4	XX
VNZT4E	668.2	-0.72	24.2	703.2	-0.62	43.6	4	ER
WTAGCL	590.6	-1.37	27.1	652.4	-1.15	36.8	4	TB
Y2UD7X	732.4	-0.19	39.0	704.6	-0.60	37.6	4	LO
Z7XPHD	740.2	-0.12	59.4	730.2	-0.34	51.6	3	LL

**Consensus (All Labs) Results**

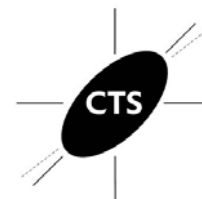
<b>Month Mean</b>	754.65	<b>Grand Mean</b>	762.44
<b>Avg SDr</b>	40.48	<b>Avg SDr</b>	43.51
<b>SD btwn Labs</b>	119.39	<b>SD btwn Labs</b>	95.92
<b>Labs Incd</b>	25	<b>Labs Incd</b>	25

Containerboard Interlaboratory Testing Program  
Analysis 201  
**Top to Bottom Box Compression Strength, Corrugated Boxes - BOX4**  
TAPPI Official Test Method T804



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

- |  |  |
|--|--|
| (ER) - Emerson 6200 Series                         | (ES) - Emerson 8510                                |
| (EX) - Emerson Apparatus (Model not specified)     | (LG) - TLS / L.A.B. Validator Series               |
| (LH) - L.A.B. Compression Tester Model #10610      | (LL) - Lansmont 76-5K                              |
| (LM) - Lansmont 122-15k                            | (LN) - Lansmont 152-50k                            |
| (LO) - Lansmont 152-30k                            | (MC) - MTI Lab Model 10240                         |
| (RP) - Regmed P4000M                               | (TB) - TMI Monitor/Compression Tester, Model 17-70 |
| (TC) - TMI Monitor/Compression Tester, Model 17-37 | (TR) - Toyo Seiki Model RCT-5TU                    |
| (XX) - Instrument make/model not specified by lab  |  |



WebCode	Monthly Results			Cumulative Results				Inst
	Mean	CPV	SDr	Mean	CPV	SDr	Months	
3RAVZA	37.4	-0.31	1.0	36.0	-0.69	0.9	3	TC
6RRNZQ	38.5	0.00	1.4	38.5	-0.06	1.4	1	EM
742LHY	41.3	0.72	1.8	42.1	0.83	1.7	3	LC
KBABTH	43.9	1.42	1.0	44.3	1.38	1.1	3	TD
MXV2GC	39.3	0.21	1.2	39.1	0.08	1.3	3	LC
TUEQNF	31.7	-1.81	2.3	31.9	-1.71	1.9	3	WK
V6J89W	37.7	-0.22	0.9	39.4	0.16	1.0	3	LZ

Consensus (All Labs) Results			
<b>Month Mean</b>	38.53	<b>Grand Mean</b>	38.75
<b>Avg SDr</b>	1.46	<b>Avg SDr</b>	1.35
<b>SD btwn Labs</b>	3.77	<b>SD btwn Labs</b>	4.00
<b>Labs Incd</b>	7	<b>Labs Incd</b>	7

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

(EM) - Emerson 1200 Series

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

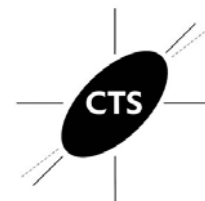
(TD) - TMI Digital Crush Tester, Model 17-09

(LC) - L&W Crush Tester 48

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

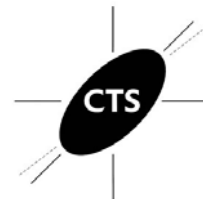
(WK) - Zwick Z005 Crush Tester

Containerboard Interlaboratory Testing Program  
Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated board - ECT4**  
TAPPI T839



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3AGBKV	43.5	1.10	1.2	42.8	0.90	1.3	3	LC
6GZC86	38.7	-1.10	1.2	42.2	0.55	1.1	3	TD
84GRAG	40.9	-0.09	1.3	39.4	-1.08	1.4	3	EN
A3DR76	42.6	0.72	1.4	42.5	0.74	1.2	3	LC
BQJPL7	39.1	-0.92	1.7	39.2	-1.19	1.7	3	TC
BXRJ84	41.0	-0.04	1.2	41.4	0.09	1.2	3	EN
BXXJH7	36.9	-1.92	2.8	35.1	-3.52X	2.1	3	TK
CPGE6T	41.3	0.08	1.0	40.7	-0.28	1.3	2	LD
EGE3VL	40.8	-0.15	2.1	40.9	-0.17	1.5	3	TD
FCWRX4	42.5	0.66	5.2	42.7	0.87	4.0	3	EM
FPKG2K	40.8	-0.14	1.6	40.6	-0.33	2.1	3	LC
GQ8T8Y	38.3	-1.30	3.0	39.3	-1.11	2.3	3	EM
GTGD7V	39.2	-0.85	2.6	39.5	-0.98	2.5	3	EN
H3J67K	37.7	-1.57	1.5	38.0	-1.87	1.4	3	LC
H6A7C8	40.8	-0.11	1.1	39.4	-1.08	1.0	3	TC
HA7VRE	40.3	-0.38	1.3	40.7	-0.29	1.4	3	EM
HP24V3	38.8	-1.05	1.2	41.1	-0.05	1.5	3	EX
HVYDWZ	40.7	-0.17	1.1	41.3	0.05	0.9	3	TL
JPP6QQ	41.5	0.20	0.4	41.9	0.40	1.6	2	LC
KN9RVR	41.1	-0.01	0.9	40.6	-0.33	0.7	3	XX
LUXBHD	40.6	-0.22	0.7	41.6	0.22	0.6	2	TC
MRQGP9	42.6	0.69	1.4	42.6	0.79	1.4	1	LZ
NC36WH	46.6	2.53 *	1.0	45.0	2.18*	1.6	3	LC
NQM4U7	38.5	-1.18	1.4	40.3	-0.54	1.5	3	TA
NY83QG	41.4	0.16	1.1	40.2	-0.60	1.1	3	TC
PCBNT8	39.7	-0.65	0.9	39.4	-1.06	1.1	3	TB
RXZ7MN	40.2	-0.38	1.4	40.8	-0.24	1.5	3	EM
T2X3R9	45.1	1.85	1.9	43.7	1.42	1.3	3	LC
UWEWT8	43.2	0.98	1.0	43.3	1.18	2.1	3	LC
WQ3VMP	43.5	1.11	1.6	44.3	1.80	1.4	3	LC
WQMPEX	43.6	1.14	1.9	41.1	-0.05	1.8	3	LD
WYV9JH	40.6	-0.24	0.9	40.6	-0.39	1.5	3	TM
XCKUUA	45.1	1.83	0.7	45.0	2.17*	1.5	3	EM
XE2HGE	41.5	0.18	1.1	40.4	-0.50	1.0	3	TC
XN96NU	39.4	-0.76	0.7	39.1	-1.23	1.1	3	LZ

Containerboard Interlaboratory Testing Program  
 Analysis 203  
**Edgewise Compressive Strength by T839**, Corrugated board - ECT4  
 TAPPI T839



Consensus (All Labs) Results			
<b>Month Mean</b>	41.08	<b>Grand Mean</b>	41.22
<b>Avg SDr</b>	1.70	<b>Avg SDr</b>	1.60
<b>SD btwn Labs</b>	2.18	<b>SD btwn Labs</b>	1.73
<b>Labs Incd</b>	35	<b>Labs Incd</b>	34

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

- |  |  |
|--|--|
| (EM) - Emerson 1200 Series                         | (EN) - Emerson 2200                                |
| (EX) - Emerson (model not specified)               | (LC) - L&W Crush Tester 48                         |
| (LD) - L&W Crush Tester 248                        | (LZ) - L&W Crush Tester (model not specified)      |
| (TA) - Thwing-Albert (model not specified)         | (TB) - TMI Monitor/Compression Tester, Model 17-70 |
| (TC) - TMI Monitor/Compression Tester, Model 17-37 | (TD) - TMI Digital Crush Tester, Model 17-09       |
| (TK) - TLS Compression Tester, Model 5184          | (TL) - Tech-Lab Systems Compression                |
| (TM) - TMI/Hinde & Dausch                          | (XX) - Instrument make/model not specified by lab  |

Containerboard Interlaboratory Testing Program  
Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42X2

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 Wk	Mean	CPV	SDr	SD Wk	Wks	
2YZ67A	107.3	108.1	106.5	No Data	107.3	0.25	10.2	0.8	110.2	0.79	10.3	4.5	13	AH
4Q8K8F	100.9	104.7	103.0	102.6	102.8	-0.89	8.2	1.6	102.0	-1.27	9.1	2.7	16	AH
64JNLR	113.7	115.9	116.3	112.0	114.5	2.05*	10.0	2.0	110.6	0.89	11.3	4.1	16	LJ
6A8GMM	101.1	101.6	110.1	109.0	105.5	-0.22	10.2	4.8	105.1	-0.49	10.6	3.4	16	AH
6GNXCM	104.1	103.2	104.6	94.8*	101.7	-1.17	9.4	4.6	103.9	-0.80	11.2	8.8H	12	TC
6GPRWH	106.2	99.6	93.3*	96.2*	98.8	-1.88	9.6	5.6	100.8	-1.57	9.8	4.4	16	LC
6LZPL2	114.0	111.0	108.3	108.0	110.3	1.00	12.0	2.8	109.6	0.66	10.9	3.8	16	AA
7NGJQZ	108.0	106.7	107.9	105.5	107.0	0.18	10.2	1.2	106.8	-0.06	9.8	1.7	16	TB
8PCGLG	113.6	109.2	105.3	105.0	108.3	0.49	10.4	4.0	109.6	0.64	10.2	3.6	12	AH
96LMD3	106.0	104.9	100.4	108.5	105.0	-0.34	8.2	3.4	106.1	-0.23	8.5	3.3	16	LJ
9R3T86	107.7	105.4	106.4	107.1	106.7	0.08	10.0	1.0	106.7	-0.09	10.6	3.4	16	XX
9YZMD8	102.6	107.4	106.0	106.6	105.7	-0.16	6.8	2.1	105.3	-0.44	8.0	1.5	15	TB
BPMFER	111.2	112.6	113.3	111.6	112.2	1.48	12.4	0.9	114.0	1.76	11.3	3.0	14	LA
CAXD39	103.6	106.2	102.6	104.2	104.2	-0.54	5.9	1.5	104.6	-0.61	5.6	1.6	8	AH
CD3F7W	107.1	105.4	107.4	104.3	106.1	-0.07	10.3	1.5	104.3	-0.69	9.3	2.3	16	LC
CUBKHF	105.4	112.1	111.6	113.4	110.6	1.07	11.9	3.5	108.8	0.43	10.9	3.3	16	LZ
CYHX9G	112.1	113.6	109.9	108.4	111.0	1.18	11.1	2.3	109.9	0.72	10.8	2.8	16	LA
DBC3Q	115.6*	115.3	121.8*	107.1	115.0	2.17*	10.2	6.0	116.0	2.27*	11.1	6.0	16	LA
DEY2NV	109.7	108.4	109.1	112.5	109.9	0.91	9.9	1.8	108.8	0.43	9.3	3.4	16	AH
E4MMEU	106.4	105.9	105.1	106.6	106.0	-0.08	7.6	0.7	110.2	0.79	10.3	3.5	16	LA
E8QGEJ	105.8	105.9	106.1	105.8	105.9	-0.10	6.0	0.1 L	104.9	-0.55	6.0	2.1	16	LZ
EVXULV	103.5	110.6	102.4	108.6	106.3	-0.01	9.0	4.0	107.0	-0.01	10.0	3.9	16	LZ
F36CBK	101.8	98.1*H	96.1	109.0	101.2	-1.27	12.0	5.7	101.6	-1.38	10.2	4.0	12	LC
FDXGVL	104.5	111.7	111.9	105.5	108.4	0.52	7.9	4.0	108.6	0.40	9.5	2.7	16	LZ
FP6LLE	101.6	No Data	No Data	No Data	101.6	-1.19	13.3	0.0 L	107.6	0.13	12.1	3.9	7	AX
GLNGP6	104.7	107.1	103.7	No Data	105.1	-0.30	10.2	1.8	108.6	0.38	10.9	3.0	15	LC
J6TXNY	106.3	110.6	111.8	107.5	109.0	0.68	9.0	2.6	104.6	-0.63	9.2	4.3	16	TB
J8NDQA	112.8	No Data	113.4	105.8	110.7	1.09	12.2	4.2	109.0	0.50	11.2	4.1	14	LA
K3CLCD	101.9	106.0	101.6	99.0	102.1	-1.05	10.9	2.9	105.7	-0.34	11.2	4.9	16	AH
LT3ZJY	103.3L	104.4	108.7	107.5L	106.0	-0.09	5.1	2.5	105.9	-0.28	5.1	1.8	8	TB
LT4GNJ	98.0	109.6	106.0	102.5	104.0	-0.57	9.1	4.9	105.9	-0.29	9.6	4.5	16	LA
M48Q9F	115.9*H	107.9	111.0	108.1	110.7	1.11	11.1	3.7	112.6	1.41	10.5	4.8	16	LA
MM2MK3	108.0	104.9	103.3	108.5	106.2	-0.04	9.3	2.5	108.1	0.27	10.5	3.2	13	LA
NUBBKU	103.4	109.3	94.0*	103.7	102.6	-0.93	10.6	6.3	105.5	-0.40	10.6	4.0	16	LA



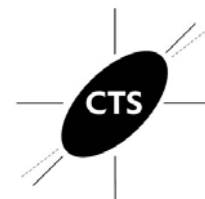
WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
NWJ3V2	107.4	108.0	101.8	103.4	105.1	-0.30	6.0	3.0	107.3	0.06	9.3	3.9	16	LC
PCNGHW	102.5	105.6	103.4	103.1 H	103.7	-0.66	12.0	1.3	100.0	-1.78	10.5	3.9	16	AX
Q2WHRP	101.5	100.9	100.5	98.0	100.2	-1.53	9.0	1.6	101.2	-1.46	10.6	4.1	16	LA
Q4AZ4E	110.6	110.7 L	109.5	111.2 L	110.5	1.05	4.8	0.7	109.7	0.66	5.4	1.0	16	XX
QYRVBE	105.5	106.6	106.2	102.0	105.1	-0.31	8.2	2.1	109.6	0.66	10.7	4.0	16	TX
RAP3LZ	113.2	107.9	111.3	109.2	110.4	1.02	12.2	2.3	112.8	1.44	11.1	3.5	16	AA
RMB9YR	105.5	109.1	109.6	110.7	108.7	0.60	10.6	2.3	108.4	0.35	10.8	4.5	16	AH
RZNHLT	No Data	No Data	104.5 H	107.0	105.8	-0.14	14.2	1.8	107.0	-0.02	11.8	5.5	10	XX
TJN9Y3	99.6 H	104.6	103.3	No Data	102.5	-0.96	12.7	2.6	104.4	-0.67	11.2	3.2	14	LC
TLNFTM	104.3	102.0	103.0	103.0	103.1	-0.82	11.4	0.9	103.7	-0.84	10.5	2.9	16	AH
TT7EGT	97.6	98.1 *	No Data	No Data	97.9	-2.12 *	6.5	0.4 L	102.9	-1.05	8.7	3.8	14	AH
WGXW6F	109.7 L	112.1 L	112.7	110.7 L	111.3	1.25	4.1	1.4	113.3	1.58	5.6	3.0	16	LB
WHN8MV	107.5	107.4	111.7	99.4	106.5	0.05	11.9	5.1	109.6	0.65	11.0	4.2	16	LA
WR4KAY	107.6	114.0	115.8	104.2	110.4	1.02	11.0	5.4	108.8	0.46	11.2	3.9	15	TB
WZAN2P	102.1	99.6	101.5	105.1	102.0	-1.07	10.3	2.3	98.9	-2.05 *	10.0	5.5	15	LP
XDNYP6	99.1	103.6	98.4	105.3	101.6	-1.18	10.1	3.4	102.9	-1.05	9.6	4.4	16	LC
Y2UCBG	100.7	107.6	103.2	99.2	102.7	-0.92	5.6	3.7	100.7	-1.61	8.0	3.6	16	LA
Y3N8PC	110.1	116.7 *	113.1	112.1	113.0	1.68	12.2	2.8	116.3	2.35 *	11.7	5.5	16	TB

**Consensus (All Labs) Results**

<b>Wk Mean</b>	106.12	107.30	106.56	105.92	<b>Month Mean</b>	106.32	<b>Grand Mean</b>	107.04
<b>Avg SDr</b>	9.94	9.42	9.88	10.06	<b>Avg SDr</b>	9.94	<b>Avg SDr</b>	10.01
<b>SD btwn Labs</b>	4.63	4.44	5.67	4.30	<b>SD btwn Labs</b>	3.98	<b>SD btwn Labs</b>	3.95
<b>Labs Includ</b>	51	49	50	47	<b>SD btwn Wks</b>	3.18	<b>SD btwn Wks</b>	3.92
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	52	<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	1	3	2	5				

**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
- (LZ) - L & W (model not specified)
- (TC) - TMI Monitor/Burst (Model 13-71)
- (XX) - Instrument make/model not specified by lab
- (AH) - Perkins Model AH
- (LA) - L & W Bursting Strength Tester
- (LC) - L & W Autoline
- (LP) - L & W Bursting Strength Tester P-Type
- (TB) - TMI Monitor/Burst 1000
- (TX) - TMI Monitor/Burst (model not specified)



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
2F6DYN	98.8 <sup>H</sup>	89.8	92.6	88.3	92.4	0.30	10.6	4.6	94.3	0.80	10.2	3.0	12	LC
3AU6UX	91.9	92.6	94.5	98.4	94.4	0.82	9.2	2.9	94.1	0.75	9.7	2.9	12	LA
3RF669	91.8	90.6	90.8	91.0	91.0	-0.05	10.4	0.5 <sup>L</sup>	92.6	0.31	11.6	1.8	12	AH
4PTNMN	85.9	No Data	No Data	No Data	85.9	-1.39	8.4	0.0 <sup>L</sup>	91.0	-0.17	9.7	3.1	6	AX
6DLWDE	87.2	86.3	85.2	86.6	86.3	-1.28	9.0	0.8	87.5	-1.17	9.8	2.3	12	LC
6KP3QW	86.4	84.8	83.9	91.7	86.7	-1.18	8.9	3.5	86.1	-1.57	9.4	3.6	12	LA
7VYFCV	90.4	87.8	87.6	91.4	89.3	-0.51	10.7	1.9	88.8	-0.80	9.1	3.1	12	LC
83L8MH	90.8	87.9	89.4	99.2	91.8	0.16	9.9	5.1	92.9	0.39	10.0	3.7	9	LA
8CYPVR	91.3	89.6	82.8	86.7	87.6	-0.95	7.8	3.7	86.9	-1.36	9.7	3.4	12	LC
9BL4MC	100.0	101.7 <sup>*</sup>	95.0	92.5	97.3	1.59	9.6	4.3	93.8	0.65	9.9	4.8	8	AH
9X3D7U	97.1	89.2	94.0	101.8	95.5	1.13	11.4	5.3	96.7	1.50	10.0	3.3	12	LA
A9KMDU	96.0	92.4	92.3	94.1	93.7	0.65	9.9	1.7	93.1	0.46	10.0	2.1	12	LZ
BMF822	89.9	90.0	88.9	89.3	89.5	-0.44	5.2	0.5 <sup>L</sup>	90.9	-0.20	4.5	1.2	12	XX
BTH4VN	91.1	90.8	91.1	91.4	91.1	-0.03	6.4	0.2 <sup>L</sup>	91.3	-0.07	6.3	0.3 <sup>L</sup>	12	LZ
DJNN8W	91.3	89.5 <sup>L</sup>	88.8 <sup>L</sup>	91.0	90.1	-0.29	4.5	1.2	92.9	0.40	6.4	2.9	12	LB
ED24RM	97.3	92.8	97.8	95.7	95.9	1.23	9.9	2.3	96.5	1.47	9.5	2.2	12	LA
EHATVY	91.3	89.5	89.4	85.7	89.0	-0.59	10.6	2.3	92.1	0.18	10.2	2.9	12	LA
EM89FX	85.1	86.3	92.3	104.9 <sup>*</sup>	92.1	0.24	8.8	9.1 <sup>H</sup>	92.3	0.22	10.1	4.9	12	LZ
EVEWBQ	94.7	94.2	95.2	94.4	94.6	0.89	6.3	0.4 <sup>L</sup>	93.1	0.45	8.6	2.0	12	TX
EXLAYV	97.1	98.9	90.1	97.0	95.8	1.19	9.3	3.9	94.8	0.94	10.1	2.6	12	AH
FPTMQ7	86.2	88.6 <sup>L</sup>	92.9	84.5	88.0	-0.83	5.3	3.6	85.0	-1.90	6.0	3.5	12	TB
FVWNTK	99.4	98.4	102.5 <sup>*</sup>	94.1	98.6	1.93	10.5	3.5	98.6	2.05 <sup>*</sup>	10.7	2.1	12	LA
J7MZPM	95.3	94.3	93.0	91.5	93.5	0.60	8.8	1.6	94.7	0.92	8.9	1.9	12	AA
JXKLFZ	92.7	91.5	89.6	91.7	91.4	0.04	5.6	1.3	91.4	-0.04	5.6	1.3	4	TB
LMZGQ7	87.6	89.8	86.8	85.7	87.5	-0.98	9.5	1.7	87.5	-1.19	9.3	2.1	8	TC
LXP2BZ	87.3	85.1	No Data	No Data	86.2	-1.32	7.2	1.6	87.8	-1.09	8.3	1.8	10	AH
LZ4TVK	93.3	93.2	91.5	91.5	92.3	0.29	10.3	1.0	91.8	0.08	10.1	1.6	12	TB
M7APJ8	95.0	96.5	96.6	99.2	96.8	1.47	9.7	1.8	94.4	0.85	9.8	3.9	8	TB
MK3KF7	94.2	No Data	94.1	92.1	93.5	0.59	10.7	1.2	93.6	0.60	10.8	1.8	11	LA
MXVYLV	89.4	87.5	89.5 <sup>L</sup>	85.8 <sup>L</sup>	88.0	-0.84	4.6	1.8	86.5	-1.46	6.0	2.5	10	LA
N93DV8	94.5	87.7	83.4	No Data	88.5	-0.70	11.5	5.6	89.7	-0.53	11.9	3.2	11	LC
NVAKTP	87.0	88.0	84.3	88.5	87.0	-1.12	9.6	1.9	88.6	-0.85	9.1	2.3	12	LA
P2QG7R	89.8	97.5	91.1	96.2	93.6	0.64	7.8	3.8	92.7	0.35	9.1	3.6	11	TB
PCZAZR	85.4	84.0	83.7	90.4	85.9	-1.40	8.9	3.1	88.0	-1.03	9.3	2.6	12	LA



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
QL46MV	91.0	91.0	93.3	91.9	91.8	0.15	6.0	1.1	91.8	0.08	6.0	1.1	4	AH
QT9HKR	91.0	83.1	81.7 L	81.0*	84.2	-1.85	7.4	4.6	84.3	-2.13*	7.9	5.7 H	12	LP
QYW8BG	79.3*	84.8	80.5*	88.1	83.2	-2.11*	7.8	4.1	84.5	-2.05*	8.7	4.3	12	AX
T39PM2	87.5	94.5	99.0	99.9	95.2	1.05	10.7	5.7	92.2	0.20	10.3	4.2	12	LJ
TK69EH	84.9	91.8	95.0	87.1	89.7	-0.40	9.2	4.6	90.8	-0.20	8.3	3.0	12	LJ
UBEYBA	90.8	89.9	89.9	88.5	89.8	-0.38	9.3	0.9	90.9	-0.18	9.9	2.3	10	LA
VKK7PK	92.1	93.1	94.7	96.0	94.0	0.73	9.5	1.7	92.5	0.28	10.2	2.9	12	LZ
VQTJLX	96.8	97.8	89.8	101.1	96.4	1.35	10.9	4.8	96.2	1.37	10.6	2.7	12	AA
WDBJWW	85.1	90.9	93.3	86.5	89.0	-0.59	9.6	3.8	89.9	-0.46	10.6	2.8	12	AH
WJ4JDD	98.0	97.6	95.5	No Data	97.0	1.52	9.3	1.3	93.3	0.52	9.3	3.3	9	AH
WUE4L9	93.9	94.2	94.4	94.1	94.2	0.77	6.5	0.2 L	95.2	1.07	8.8	2.6	12	LA
WYGU9X	90.0	88.8	85.6	84.3	87.2	-1.06	9.7	2.7	89.1	-0.71	9.7	4.8	12	AH
XNBAJB	88.9	91.1	91.8	90.7	90.6	-0.16	8.6	1.2	92.8	0.38	9.2	6.7 H	12	LC
XRUJC9	No Data	No Data	90.2	87.9	89.1	-0.57	10.6	1.6	89.7	-0.55	10.6	2.5	10	XX
YDRT3N	95.7	89.0	90.6	No Data	91.7	0.14	9.3	3.5	93.9	0.70	9.8	2.7	11	LC
Z8NHJY	89.3	90.1 L	92.0	89.0 L	90.1	-0.30	5.1	1.3	90.0	-0.43	5.4	1.7	12	AH
ZQL7QD	101.2*	101.1*	97.7	95.5	98.9	2.00*	11.5	2.8	99.9	2.44*	11.6	3.0	12	TB
ZZCYVH	88.1	94.6	89.2	90.4	90.6	-0.17	11.5	2.8	90.7	-0.26	10.5	2.6	12	AH

**Consensus (All Labs) Results**

<b>Wk Mean</b>	91.49	91.22	90.89	91.79	<b>Month Mean</b>	91.22	<b>Grand Mean</b>	91.53
<b>Avg SDr</b>	9.21	8.80	8.82	9.24	<b>Avg SDr</b>	9.03	<b>Avg SDr</b>	9.33
<b>SD btwn Labs</b>	4.63	4.38	4.65	5.14	<b>SD btwn Labs</b>	3.82	<b>SD btwn Labs</b>	3.42
<b>Labs Includ</b>	51	49	50	47	<b>SD btwn Wks</b>	3.21	<b>SD btwn Wks</b>	3.09
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	52	<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	1	3	2	5				

**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
- (LZ) - L & W (model not specified)
- (TC) - TMI Monitor/Burst (Model 13-71)
- (XX) - Instrument make/model not specified by lab
- (AH) - Perkins Model AH
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- (TB) - TMI Monitor/Burst 1000
- (TX) - TMI Monitor/Burst (model not specified)

Containerboard Interlaboratory Testing Program  
Analysis 215

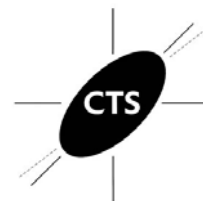
Ring Crush, 42 lb Linerboard - 42X2  
TAPPI Official Test Method T822



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
227YGZ	85.0	85.9	83.7	87.1	85.4	-1.68	3.9	1.4	85.1	-1.79	4.0	1.5	16	LX
26N2KY	94.6	94.6	95.8	93.4	94.6	0.51	3.0	1.0	94.2	0.37	2.6	1.6	16	EM
2GVMF4	96.8	94.6	97.2	95.2	95.9	0.83	4.1	1.2	94.2	0.37	4.2	1.7	16	EM
2MZHJC	96.9	100.3	91.9	97.9	96.7	1.03	4.3	3.5	96.5	0.92	4.7	2.9	16	MB
2WQAC7	93.7	92.8	93.4	95.2	93.8	0.32	4.1	1.0	92.7	0.01	4.5	2.4	16	LC
2X9D6P	94.2	96.4 L	94.3	94.3	94.8	0.57	3.4	1.1	95.5	0.68	3.9	1.8	13	LD
3AC2DK	92.6	90.5	90.1	No Data	91.0	-0.34	5.0	1.3	91.2	-0.33	5.1	3.1	12	MZ
3AC46B	85.3	85.5	84.2	82.3	84.3	-1.94	4.4	1.5	89.5	-0.75	4.3	5.7 H	16	LC
3AH9QE	97.1	97.0	96.5	97.5	97.0	1.10	3.2	0.4 L	99.5	1.64	4.0	2.7	16	LC
4K9L32	83.9	85.1	88.0	86.0	85.8	-1.60	4.1	1.7	86.0	-1.59	3.9	1.7	16	TM
4YWGQE	93.9	90.5	87.5	90.3	90.6	-0.45	4.3	2.6	89.4	-0.77	4.0	2.2	16	MB
6DCHTX	90.3	84.9	85.6	87.8	87.2	-1.27	5.4	2.4	86.7	-1.42	5.5	2.7	16	LC
6GRBVP	94.6	95.3	96.0	92.5	94.6	0.52	3.6	1.5	94.7	0.48	3.9	1.5	16	LC
6Q8DX7	85.7	85.3	83.2 *	79.6 *	83.5	-2.15 *	3.9	2.8	83.6	-2.17 *	3.7	2.1	16	XX
6YGK96	93.5	95.9	97.5	98.4	96.3	0.93	3.2	2.1	92.4	-0.06	3.5	4.7	16	XX
9PA289	90.1	89.3	91.5	92.0	90.7	-0.41	2.8	1.3	90.9	-0.43	2.9	1.2	15	TC
B43M4X	97.0	89.1	97.3	99.2	95.7	0.77	5.0	4.5	96.3	0.88	4.6	4.2	15	LC
C8U3DU	96.0	94.6	95.7	93.6	95.0	0.61	4.5	1.1	93.4	0.18	4.1	2.4	16	LC
CVBCUK	89.1	98.3	96.0	97.0	95.1	0.64	4.7	4.1	85.6	-1.68	5.1	7.3 H	15	LZ
CWCXZ9	87.7	88.3	90.7	86.8	88.4	-0.97	4.0	1.7	87.8	-1.15	4.3	2.0	8	TB
DCJ3N8	85.1	85.7	90.6	91.4	88.2	-1.01	3.3	3.2	95.5	0.67	4.1	5.8 H	12	LC
DVHNUD	86.7	No Data	No Data	No Data	86.7	-1.37	6.3	0.0 L	91.3	-0.32	4.5	2.7	7	EM
DVLL4E	86.9	87.2	89.5	86.1 L	87.4	-1.20	3.1	1.4	85.0	-1.82	3.0	2.1	16	LD
E3DLMT	98.2	95.6	98.4	97.3	97.4	1.18	3.6	1.3	99.9	1.73	3.9	2.2	16	LC
E7WZM2	101.3 *	101.9 *	No Data	No Data	101.6	2.18 *	5.5	0.4	101.6	2.13 *	5.5	0.4 L	2	MB
EYDGVD	93.1	92.7	90.1	90.8	91.7	-0.18	4.3	1.4	90.1	-0.61	4.0	2.2	16	TX
EZTEQX	100.2	93.3	96.4	96.7	96.7	1.01	4.2	2.8	96.6	0.95	3.9	4.1	16	XX
F48VPN	95.8	93.6	95.3	92.4	94.3	0.44	2.3	1.6	94.9	0.53	3.0	1.8	16	LC
FR9Y82	96.3 L	97.2	97.2	94.6	96.3	0.93	3.3	1.2	96.5	0.93	3.7	1.2	13	LC
HBZGNR	96.3	98.4	92.6	93.7	95.2	0.67	3.3	2.6	97.9	1.26	3.7	3.2	16	TC
HFRWPJ	90.0	91.5	88.2	90.4	90.0	-0.58	3.8	1.4	91.5	-0.28	3.6	1.8	16	TD
HLGFYH	94.1	92.7	92.8	92.2	93.0	0.12	3.5	0.8	94.1	0.36	3.5	2.0	16	LC
HRJ692	92.8 L	90.2	96.2	95.8	93.7	0.31	3.1	2.8	93.1	0.10	3.6	2.4	16	EM
JAJV94	93.8	92.6	87.7	93.7	92.0	-0.12	4.1	2.9	94.0	0.33	4.9	2.4	16	LC



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
JUBPFT	92.5	93.1	88.7	91.2	91.4	-0.26	4.7	1.9	92.8	0.04	4.8	2.6	16	LC
JYLY72	86.1	86.9	84.9	87.3	86.3	-1.47	3.1	1.1	89.6	-0.74	4.1	2.9	16	EM
MGTEXP	93.3	94.3	93.7	89.0	92.6	0.03	3.0	2.4	94.7	0.48	3.3	3.6	16	LC
MUEVJ3	91.2	93.7	94.0	95.5	93.6	0.28	4.1	1.8	90.7	-0.47	5.1	8.5 H	16	LD
N6T449	90.9	87.1	89.2	88.9	89.0	-0.82	3.9	1.6	90.1	-0.62	3.5	1.4	16	EM
NMPK2Q	92.5	93.3	93.1	91.2	92.5	0.02	3.5	1.0	92.0	-0.16	3.6	1.3	16	EN
NMU2BB	98.7	95.3	96.6	97.8	97.1	1.12	4.4	1.5	97.7	1.21	4.0	2.0	16	LC
NV4AQF	83.8	88.1	83.9	81.7 *	84.4	-1.93	4.0	2.7	84.6	-1.93	3.9	2.1	13	IM
PZT8YE	96.6	96.4	87.6 H	93.6	93.5	0.26	6.0	4.2	93.2	0.13	5.0	3.7	14	LD
QLTL9R	97.5	100.5	101.6 *	99.3	99.7	1.74	4.0	1.7	99.0	1.52	4.3	1.8	16	EM
QXMZCV	95.5	94.1	No Data	No Data	94.8	0.57	3.7	1.0	90.5	-0.51	4.2	6.0 H	14	EM
RV9XNA	91.7	91.5	91.5	91.8	91.6	-0.19	5.6	0.2 L	91.6	-0.26	5.6	0.4 L	16	LC
T449FJ	91.9	94.6	92.2	No Data	92.9	0.11	3.8	1.5	93.8	0.27	4.0	2.1	13	LC
TH4Q9A	90.5	87.1 H	88.7	98.8 H	91.3	-0.28	6.5	5.2 H	87.9	-1.12	5.8	4.9	16	LC
TMFXTG	96.3	93.6	94.7	93.7	94.6	0.51	3.4	1.3	94.1	0.34	3.4	1.2	16	LD
UJAYU9	92.3	94.9	91.2	90.9	92.3	-0.03	4.4	1.8	94.7	0.50	4.1	2.4	16	LC
UNGBB8	94.6	95.3	90.8	92.2	93.2	0.19	4.8	2.1	97.6	1.18	4.4	3.8	16	LZ
UZBYJN	86.1	99.3	95.4	92.3	93.3	0.20	3.7	5.6 H	92.5	-0.04	4.9	4.0	15	LC
V9ZC77	96.4	96.9	96.3	90.3	95.0	0.61	4.6	3.1	95.1	0.58	3.9	3.1	12	LD
VDY7CH	89.1	88.8	90.1	90.0	89.5	-0.71	4.5	0.7	89.4	-0.77	4.0	2.4	16	EN
W488YH	101.2	107.4 X	100.8	104.8 *	103.6	2.66 *	3.6	3.1	102.8	2.43 *	4.1	2.1	16	LD
WNZP9N	94.0 H	97.1	97.4	100.0	97.1	1.12	5.3	2.5	96.5	0.91	5.0	2.2	16	LX
WRJGJQ	86.8	90.0	92.5	No Data	89.8	-0.64	4.2	2.9	92.1	-0.14	3.5	3.1	15	LC
X7VZHA	89.3	85.9	89.5	86.0	87.7	-1.14	2.8	2.0	87.6	-1.20	3.1	2.1	16	TD
XFGAWV	72.2 X	73.6 X	74.1 X	83.9	75.9	-3.95 X	3.9	5.3 H	78.6	-3.35 X	3.8	6.5 H	12	TB
XKT36A	94.9	97.3	94.8	96.6	95.9	0.83	4.7	1.2	95.2	0.62	4.4	3.5	15	LC
XRYMC9	No Data	No Data	89.5	No Data	89.5	-0.70	3.8	0.0 L	91.2	-0.35	3.9	1.6	8	LD
YMJFNA	90.9	93.3	91.5	91.3	91.7	-0.17	3.8	1.1	91.9	-0.18	4.1	1.3	16	LX
Z78TLB	92.8	91.2	92.0	92.6	92.2	-0.07	4.0	0.7	91.9	-0.17	3.8	0.6	16	LC
ZC34YE	88.4	92.2	84.4	83.9	87.2	-1.25	3.8	3.9	88.9	-0.90	4.2	2.9	16	EM



**Consensus (All Labs) Results**

<b>Wk Mean</b>	92.49	92.64	92.12	92.20	<b>Month Mean</b>	92.44	<b>Grand Mean</b>	92.64
<b>Avg SDr</b>	4.17	4.17	4.01	4.12	<b>Avg SDr</b>	4.16	<b>Avg SDr</b>	4.18
<b>SD btwn Labs</b>	4.38	4.32	4.38	5.02	<b>SD btwn Labs</b>	4.18	<b>SD btwn Labs</b>	4.18
<b>Labs Includ</b>	62	60	60	57	<b>SD btwn Wks</b>	2.30	<b>SD btwn Wks</b>	3.10
<b>Labs Exclud</b>	1	2	1	0	<b>Labs Includ</b>	63	<b>Labs Includ</b>	63
<b>Labs not rcvd</b>	1	2	3	7				

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

(EM) - Emerson 1200

(IM) - Instron 4486

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(TM) - TMI/Hinde & Dauch

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

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

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

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

(TX) - TMI Digital Crush Tester (model not specified)

Containerboard Interlaboratory Testing Program  
Analysis 217

Ring Crush, 36 lb Linerboard - 36U3  
TAPPI Official Test Method T822



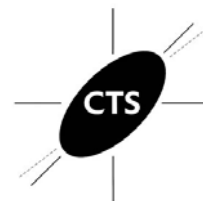
WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
23JARL	78.3	80.3	77.2	78.7	78.6	0.12	2.8	1.3	77.7	-0.19	2.8	2.6	12	EM
2PZJBW	78.0	79.1	78.5	78.7	78.6	0.11	3.8	0.5	78.9	0.17	4.3	1.2	12	LC
2QMG7G	80.2	79.3	82.8	81.9	81.0	0.81	4.4	1.6	80.1	0.49	4.2	2.3	11	LC
37QJVZ	76.3	75.2	73.0	75.1	74.9	-0.95	4.0	1.4	76.0	-0.67	4.1	1.8	11	IM
4PYDEJ	78.0	79.0	80.4	76.3	78.4	0.06	3.8	1.7	78.9	0.16	3.5	1.4	12	EN
78Q8UE	68.8*	74.9	66.6*	65.6 X	69.0	-2.64*	4.5	4.2	71.9	-1.83	4.2	3.4	12	EM
7JDYYW	81.9	80.6	80.6	78.1	80.3	0.59	3.9	1.6	79.9	0.44	3.6	1.8	12	LC
7WVGK2L	73.9	No Data	No Data	No Data	73.9	-1.24	2.5	0.0 L	78.4	0.01	4.1	3.5	7	EM
8N3C84	79.6	74.4	75.9	78.5	77.1	-0.32	4.0	2.4	81.6	0.92	4.4	4.1	11	LC
8RWGKX	79.6	79.9	81.9	78.1	79.9	0.47	5.0	1.6	79.1	0.20	3.8	1.8	11	LC
97863W	79.7	79.4	78.9	79.5	79.4	0.33	3.3	0.3 L	80.6	0.63	3.9	1.4	12	EM
9BMDQV	84.4	77.9	72.8	74.0	77.3	-0.27	3.5	5.2 H	79.9	0.43	4.2	4.6	8	LZ
A2J24Z	72.1	75.4	69.8	77.1	73.6	-1.33	4.4	3.3	76.9	-0.40	5.0	3.8	12	LC
AF2R7K	63.6 X	67.1 X	65.4*	72.5	67.2	-3.16 X	3.4	3.9	69.3	-2.57*	3.3	4.0	8	LZ
AKMMAQ	79.6	84.7	77.4	78.1	79.9	0.49	3.5	3.3	81.4	0.85	4.5	2.9	12	LD
AM6RF4	72.8	No Data	No Data	No Data	72.8	-1.56	4.5	0.0 L	74.4	-1.13	4.7	1.4	5	LD
AW9FF9	85.4	80.5	No Data	No Data	82.9	1.35	5.5	3.4	82.9	1.30	5.5	3.4	2	MB
AZJYCB	75.7	75.5	77.4	No Data	76.2	-0.58	4.1	1.0	74.4	-1.11	4.4	3.0	9	MZ
BBFLQW	75.8 L	76.6	73.8	74.7	75.2	-0.86	2.7	1.2	74.3	-1.16	2.9	1.7	12	TM
C77PRV	75.5	77.1	74.1	74.0	75.2	-0.87	3.7	1.4	77.1	-0.34	4.0	2.3	11	LX
C7GRZM	78.2	78.5	78.1	78.8	78.4	0.05	5.4	0.3 L	77.3	-0.29	5.9	1.3	12	LC
CBE48R	76.2	78.1	79.2	77.3	77.7	-0.15	3.9	1.2	78.0	-0.11	3.9	1.5	12	TD
CGZF89	72.1	70.7*	70.9	79.0	73.2	-1.45	4.1	3.9	74.9	-0.99	4.6	3.6	12	LC
CPYJ9Y	78.0	82.1	80.4	No Data	80.2	0.56	4.6	2.1	79.6	0.35	4.0	2.5	9	LC
CXCG86	75.0	75.9	75.4	74.5	75.2	-0.86	2.9	0.6	75.4	-0.85	3.1	0.9	11	TC
DN7Y98	83.7	84.9	87.1	84.3	85.0	1.94	4.5	1.5	85.3	1.99	4.3	1.6	12	EM
DV6UFY	77.9	77.4	78.2	76.6	77.5	-0.21	4.9	0.7	77.5	-0.25	4.2	0.9	12	LC
EWPNCK	77.7	77.2	76.7	75.8	76.9	-0.39	4.3	0.8	78.5	0.04	3.9	1.7	12	LC
FDNB7Q	78.9	79.8	79.7	80.4	79.7	0.42	3.4	0.6	77.8	-0.16	4.6	1.8	12	LC
FJ2HZM	79.5	77.6 H	81.6 H	83.4	80.5	0.66	6.3	2.5	79.5	0.33	5.8	3.4	12	LC
FLPG8D	79.1	80.8	No Data	No Data	80.0	0.50	3.8	1.2	76.6	-0.50	4.3	5.9 H	10	EM
FP3FAC	76.5	76.1	75.5	76.4	76.1	-0.60	3.8	0.4	75.0	-0.96	4.0	1.6	12	TX
GMCNKG	69.9*	71.9	71.7	73.8	71.8	-1.83	3.2	1.6	70.1	-2.34*	3.4	3.1	12	XX
H68MDZ	81.6	81.2	90.8*	83.8	84.4	1.75	3.5	4.4	83.8	1.54	3.8	3.0	9	LC

Containerboard Interlaboratory Testing Program  
Analysis 217

Ring Crush, 36 lb Linerboard - 36U3  
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 Wk	Mean	CPV	SDr	SD Wk	Wks	
HPA3EP	79.4	81.6	81.8	80.2	80.8	0.72	3.8	1.1	77.0	-0.37	3.2	3.6	12	XX
K2ZTMU	87.2*	87.2*	89.1*	86.3*	87.5	2.64*	4.3	1.2	87.8	2.69*	4.5	1.3	12	LD
KDWXCXY	78.6	77.1	76.6	80.4	78.2	-0.02	3.2	1.7	77.3	-0.29	3.7	1.5	12	EM
KKXP4A	75.9	76.0	76.3	No Data	76.1	-0.62	4.7	0.2 L	78.3	-0.02	3.9	2.8	11	LC
KPTUWJ	81.7	82.0	81.7	83.0	82.1	1.11	4.5	0.6	82.7	1.25	4.3	2.0	11	LC
KVFM2R	76.8	75.6	79.8	79.5	77.9	-0.08	4.7	2.1	81.0	0.76	4.4	3.8	12	XX
L2LNTD	84.6	81.7	79.9	78.8	81.3	0.87	3.0	2.5	80.9	0.73	3.6	2.1	12	LC
L8LD26	75.3	74.4	75.8	74.9 L	75.1	-0.90	2.7	0.6	73.1	-1.48	2.7	1.8	12	LD
LFH82N	80.4	78.4	78.7	77.1	78.7	0.13	4.0	1.3	78.3	-0.01	3.7	1.9	12	LD
LJXKYQ	76.5	77.2	78.2	77.7	77.4	-0.24	3.5	0.7	79.7	0.39	3.7	2.8	12	LC
MCU3QL	81.9	81.8	83.8	79.1	81.6	0.98	3.8	1.9	81.5	0.91	3.7	1.6	12	LD
MD8EXA	76.0	77.0	76.7	78.0	76.9	-0.37	3.6	0.8	77.1	-0.37	4.0	1.3	12	LC
MMRV8Y	77.1	76.0	76.8	75.3	76.3	-0.55	3.6	0.8	79.7	0.37	6.0	4.2	8	LC
MRRZ9K	87.3*	82.4	85.0	87.5*	85.6	2.10*	2.9	2.4	84.9	1.86	3.4	1.7	12	LC
N7MPYL	82.7	79.8	79.1	79.4	80.3	0.58	4.5	1.7	80.5	0.62	4.3	1.6	12	TC
NPJ4D8	72.8 H	84.0	85.2	84.0	81.5	0.94	5.5	5.8 H	75.1	-0.92	5.6	7.9 H	8	LZ
PC4TYY	80.2	78.9	79.9	79.1	79.5	0.37	4.5	0.6	78.3	-0.01	4.7	6.0 H	12	LD
PU98HV	72.5	73.3	74.3	74.4	73.6	-1.31	4.8	0.9	76.7	-0.46	4.1	2.9	12	EM
QKHEUH	78.9	71.7	71.7	82.0	76.1	-0.61	4.9	5.2 H	78.3	-0.01	5.2	6.6 H	12	LC
QPDGV4	75.0 L	77.0	77.7	75.8	76.4	-0.53	3.2	1.2	75.8	-0.73	3.5	1.3	12	EM
RFB4Q9	73.1	73.2	74.1	77.4	74.5	-1.08	4.4	2.0	72.6	-1.63	4.3	2.3	12	LX
V8RUZH	80.3	77.5	77.4	80.5	78.9	0.20	3.4	1.7	81.6	0.93	3.8	3.1	10	LC
WWM7J6	75.6	78.9	75.9	76.0	76.6	-0.46	4.5	1.5	78.6	0.06	4.2	2.3	12	LC
X2CQQJ	73.2	74.6	74.8	72.7	73.8	-1.26	3.2	1.0	73.8	-1.29	3.2	1.0	4	TB
X4GEAF	82.1	80.2	79.7	80.5	80.6	0.69	4.5	1.1	81.2	0.82	4.4	1.4	12	MB
XQDD2E	75.9	75.3	75.9	75.2	75.6	-0.75	3.6	0.4 L	75.9	-0.71	4.1	1.4	11	EN
Y8PMML	83.7	81.1	82.8	86.4*	83.5	1.51	5.1	2.2	81.6	0.92	4.9	2.4	12	LX
YGM2BJ	79.4	82.3	89.6*	81.3	83.1	1.41	3.5	4.5	83.8	1.54	4.3	3.6	9	LD
YKN68J	77.0	80.3	78.3	80.7	79.1	0.25	3.7	1.7	76.3	-0.59	3.6	2.7	12	MB
YL76CN	84.0	82.5	74.1	79.9	80.1	0.55	4.3	4.4	81.9	1.01	4.6	2.7	12	LC
ZNKXW8	76.6	78.4	75.9	76.7	76.9	-0.37	3.3	1.1	78.4	0.02	3.4	1.4	12	TD



**Consensus (All Labs) Results**

<b>Wk Mean</b>	78.15	78.37	78.00	78.58	<b>Month Mean</b>	78.22	<b>Grand Mean</b>	78.35
<b>Avg SDr</b>	4.10	4.11	4.01	3.95	<b>Avg SDr</b>	4.07	<b>Avg SDr</b>	4.18
<b>SD btwn Labs</b>	3.97	3.37	4.92	3.46	<b>SD btwn Labs</b>	3.49	<b>SD btwn Labs</b>	3.52
<b>Labs Includ</b>	64	62	61	57	<b>SD btwn Wks</b>	2.25	<b>SD btwn Wks</b>	2.93
<b>Labs Exclud</b>	1	1	0	1	<b>Labs Includ</b>	64	<b>Labs Includ</b>	65
<b>Labs not rcvd</b>	0	2	4	7				

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

(EM) - Emerson 1200

(IM) - Instron 4486

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(TM) - TMI/Hinde & Dauch

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

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

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

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

(TX) - TMI Digital Crush Tester (model not specified)

Containerboard Interlaboratory Testing Program  
Analysis 223

STFI, 42 lb Linerboard - 42X2  
TAPPI Provisional Test Method T826



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
28Z7KN	24.1	24.6	23.6	23.8	24.0	-0.26	2.2	0.4	24.5	0.22	2.1	0.7	16	LW
2RWCME	24.6	24.4	23.3	23.9	24.1	-0.22	2.1	0.6	24.3	-0.05	2.1	0.5	16	LW
2WXBQJ	25.9	26.7	No Data	No Data	26.3	1.73	2.2	0.6	25.2	0.90	2.2	1.0	14	LW
2YXRA2	25.3	24.8	25.3	No Data	25.1	0.69	2.0	0.3	24.5	0.19	2.3	1.0	14	LA
3AWPUQ	24.9	25.2	25.5	24.6	25.1	0.63	2.0	0.4	25.3	1.04	2.1	0.8	16	LU
3X3JN4	26.8*	26.6	26.7	26.2	26.6	1.97	2.2	0.3	25.9	1.62	2.4	0.7	16	XX
6QM9DC	23.3	24.6	23.2	24.0	23.8	-0.50	1.7	0.6	23.7	-0.60	1.7	0.7	8	BK
6RA7WA	22.8	24.6	24.5	24.0	24.0	-0.31	2.2	0.8	23.5	-0.89	2.2	1.1	16	LZ
7WF9AP	25.6	25.8	25.5	23.8	25.2	0.75	2.2	0.9	25.2	0.89	2.2	0.5	16	LU
8EZ2ZV	24.0	23.9	24.7	23.9	24.1	-0.18	1.9	0.4	24.0	-0.35	2.0	0.6	15	LZ
9XZPJD	25.7	23.2	22.9	24.9	24.1	-0.16	2.4	1.3	24.3	0.00	2.2	1.0	12	LW
A8ZWJV	24.8	24.8	No Data	No Data	24.8	0.42	2.0	0.0 L	24.6	0.29	2.0	0.5	14	LW
BE6QPV	23.5 L	23.3 L	22.5 L	22.8 L	23.0	-1.16	0.4	0.5	22.9	-1.50	0.4	0.5	16	XX
EGTJXV	23.9	23.0	24.3	24.0	23.8	-0.44	2.1	0.6	23.9	-0.40	2.1	0.7	16	XX
EQFVVU	23.9	22.8	24.0	25.2	24.0	-0.32	2.1	1.0	24.1	-0.17	2.1	0.8	16	LU
F2VHDY	25.5 L	26.2 L	26.0 L	24.6 L	25.6	1.07	0.1	0.7	25.3	1.09	0.1	0.8	16	TS
FHNGRN	23.7	23.5	21.6	24.7	23.4	-0.83	1.5	1.3	24.2	-0.09	2.1	1.7	16	LU
FQGUMG	23.6	22.6	22.5	23.0	22.9	-1.24	2.0	0.5	22.5	-1.91	2.0	0.5	16	XX
H6GA3V	No Data	No Data	23.2	23.8	23.5	-0.75	2.0	0.4	23.4	-0.96	2.0	0.7	9	LW
HFZG46	23.5	24.8	22.7	25.7	24.2	-0.12	1.9	1.3	24.0	-0.31	2.1	0.9	16	LW
HT2J3B	23.2	22.7	22.3	22.6 L	22.7	-1.44	1.8	0.4	22.7	-1.65	2.3	0.6	12	LU
J997CY	25.8 L	26.3	No Data	No Data	26.1	1.51	2.8	0.3	26.1	1.84	2.8	0.3	2	BK
JXR93E	24.2	24.7	24.0	23.6	24.1	-0.18	1.4	0.5	24.3	-0.02	1.5	0.7	16	XX
KYVGF4	25.3	25.8	24.5	25.3	25.2	0.79	2.4	0.5	25.1	0.82	2.2	0.5	16	LW
M8GCEY	25.3	25.6	25.2	25.3	25.3	0.88	1.5	0.2	24.8	0.50	1.6	0.5	16	LU
N2MP6C	24.0	23.4	24.1	24.9	24.1	-0.21	1.9	0.6	24.1	-0.19	2.1	0.5	16	XX
N8CA77	36.7 X	No Data	24.3	23.2	28.1	3.26 X	2.4	7.5 H	24.3	0.02	1.9	3.8 H	13	LW
NFFTAA	24.6	24.3	23.8	24.7 L	24.4	0.05	1.1	0.4	24.7	0.40	1.7	0.8	16	LU
NTXDBP	25.0	25.4	25.5	25.2	25.3	0.83	1.6	0.2	25.2	0.90	1.7	0.1 L	16	LW
NTYBLK	21.8* L	21.1* L	22.5 L	22.7 L	22.0	-2.03*	0.4	0.7	22.3	-2.15*	0.4	0.6	16	XX
PC4R6H	24.9	No Data	No Data	No Data	24.9	0.49	1.7	0.0 L	24.9	0.66	2.3	0.8	11	LU
PWB7FG	25.7	23.6	23.0	25.3 L	24.4	0.06	1.0	1.3	24.5	0.22	1.3	1.0	16	LZ
QAC2A4	27.0* L	27.1 L	25.2 L	26.0 L	26.3	1.76	0.0	0.9	25.9	1.71	0.0	0.9	16	LU
RPX68J	25.0	26.0	26.7	23.9	25.4	0.92	2.1	1.2	25.1	0.79	3.5	1.2	16	LW

Containerboard Interlaboratory Testing Program  
Analysis 223

STFI, 42 lb Linerboard - 42X2  
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 Wk	Mean	CPV	SDr	SD Wk	Wks	
TEGX29	23.4	23.9	23.7	22.0*	23.2	-0.96	1.8	0.9	24.9	0.59	2.0	4.0 H	12	LZ
UG7827	23.1	23.7	23.7	23.7	23.6	-0.68	1.3	0.3	24.2	-0.10	1.5	0.9	16	LU
UR47JU	24.3	24.4	No Data	No Data	24.4	0.03	2.0	0.1 L	24.6	0.29	1.7	0.4	13	BK
UWW44Q	25.3	25.5	25.8	24.1	25.1	0.70	2.0	0.8	27.7	3.51 X	2.3	6.1 H	15	LU
VVY7BA	21.6 *L	No Data	No Data	No Data	21.6	-2.38*	0.4	0.0 L	22.2	-2.17*	0.4	0.6	3	XX
W948HQ	24.9	24.1	25.8	24.5	24.8	0.42	2.1	0.7	24.9	0.64	2.3	0.7	16	LA
YK72PE	23.2	22.6	23.2	22.2	22.8	-1.33	1.7	0.5	22.9	-1.51	1.7	0.7	16	LZ
ZQCY6X	25.3	25.5	25.9	25.4	25.5	1.04	2.1	0.3	27.4	3.24 X	2.2	4.9 H	16	LW
ZXPBKH	22.9 L	24.2 L	22.2 L	23.3 L	23.1	-1.04	0.4	0.9	23.7	-0.61	0.5	0.8	16	LA

Consensus (All Labs) Results									
<b>Wk Mean</b>	24.42	24.49	24.14	24.19	<b>Month Mean</b>	24.33		<b>Grand Mean</b>	24.31
<b>Avg SDr</b>	1.78	1.85	1.81	1.71	<b>Avg SDr</b>	1.81		<b>Avg SDr</b>	1.94
<b>SD btwn Labs</b>	1.20	1.33	1.35	1.05	<b>SD btwn Labs</b>	1.14		<b>SD btwn Labs</b>	0.95
<b>Labs Incd</b>	41	39	37	36	<b>SD btwn Wks</b>	0.70		<b>SD btwn Wks</b>	1.15
<b>Labs Excl'd</b>	1	0	0	0	<b>Labs Incd</b>	42		<b>Labs Incd</b>	41
<b>Labs not rcvd</b>	1	4	6	7					

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)

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

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

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

Containerboard Interlaboratory Testing Program  
Analysis 225

STFI, 36 lb Linerboard - 36U3  
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 Wk	Mean	CPV	SDr	SD Wk	Wks	
2EWCFE	20.3	19.4	20.6	20.5	20.2	-0.83	1.7	0.6	20.2	-0.94	1.6	0.7	12	LZ
3CKCAN	20.9	21.2	No Data	No Data	21.0	0.14	1.3	0.1	21.1	0.11	1.7	0.3	8	LW
6AL7XT	19.2	19.7	21.6	19.1	19.9	-1.18	1.7	1.2	22.0	1.07	1.7	3.8 H	12	LZ
74CPKA	19.5	20.1	20.2	21.0	20.2	-0.86	1.7	0.6	19.5	-1.82	1.8	1.1	12	LU
77KY63	19.5	20.5	20.1	19.9	20.0	-1.07	1.7	0.4	20.0	-1.19	1.6	0.7	10	LU
7XX627	No Data	No Data	20.6	20.2	20.4	-0.62	1.6	0.3	20.2	-0.94	1.6	0.2	6	LW
8LV36Y	20.3 L	20.8	20.9	20.3	20.6	-0.41	0.9	0.3	20.7	-0.43	1.3	0.5	12	XX
AVDY3C	21.6	21.9	22.0	21.7	21.8	0.99	1.9	0.2	21.3	0.25	1.8	0.6	12	LA
AWPYFT	21.0	21.4	21.4	21.1	21.2	0.34	1.6	0.2	21.0	-0.09	1.7	0.4	8	LZ
BBXH8R	21.0	19.8	21.0	No Data	20.6	-0.36	1.6	0.7	20.6	-0.52	1.7	0.6	11	LA
CBNMLD	21.3	21.3	19.0*	20.9	20.6	-0.36	1.8	1.1	21.0	-0.07	1.7	0.7	12	LW
CKYWK3	20.8 L	22.8 L	20.8 L	20.8 L	21.3	0.44	0.1	1.0	21.0	0.00	0.1	1.0	12	TS
CRQWBW	19.0* L	19.1 L	20.2 L	20.2 L	19.6	-1.54	0.3	0.7	19.8	-1.52	0.3	0.6	12	XX
CRX347	20.9 L	20.9 L	17.9 XL	19.1 L	19.7	-1.43	0.3	1.5 H	20.5	-0.58	0.4	1.0	12	LA
CWHUTF	23.8 X	22.5	No Data	No Data	23.2	2.58*	2.1	1.0	21.9	1.03	1.8	1.0	10	LW
D29X4C	20.8	22.1	21.2	21.2	21.3	0.44	1.7	0.5	21.3	0.33	1.8	0.5	12	LW
DZ7YJW	22.2	21.7 H	22.3	21.0	21.8	1.02	2.9	0.6	21.7	0.73	2.9	0.7	12	LW
FZ3XUG	20.6 L	20.8 L	21.6 L	21.3 L	21.1	0.20	0.0	0.5	21.6	0.60	0.0	0.8	12	LU
G4F8BN	20.2 L	19.6 L	19.3 L	18.7* L	19.4	-1.74	0.3	0.6	19.5	-1.84	0.3	0.5	12	XX
HXVFUM	21.3 L	20.4	21.1	20.8	20.9	-0.06	1.3	0.4	21.2	0.21	1.2	0.7	12	LU
J2TMUK	22.1 L	22.9	No Data	No Data	22.5	1.81	1.5	0.6	22.5	1.69	1.5	0.6	2	BK
JKMU3G	20.3	20.1	19.7	19.1 L	19.8	-1.32	1.5	0.5	19.8	-1.47	1.5	0.5	8	LU
JXK8T2	20.0	20.5	20.8	21.5	20.7	-0.27	2.0	0.6	20.8	-0.26	1.9	0.5	8	LW
KDDA4B	22.0	22.6	21.1	21.4	21.8	0.99	1.6	0.7	21.7	0.83	1.7	0.5	12	BK
KLQ4CE	21.2	20.6	20.5	20.0	20.6	-0.42	1.8	0.5	20.8	-0.25	1.8	0.6	12	XX
KYVFLM	22.2	No Data	No Data	No Data	22.2	1.48	2.0	0.0 L	21.5	0.49	2.0	0.6	6	LU
L2YJ42	21.1	21.5	No Data	No Data	21.3	0.39	1.1	0.3	21.7	0.79	1.4	0.5	9	BK
MXD27N	20.9	21.5	21.1	20.1	20.9	0.00	1.7	0.6	21.7	0.73	1.9	0.9	12	XX
N68GET	35.5 X	No Data	20.3	21.0	25.6	5.43 X	2.4	8.6 H	22.0	1.16	1.8	4.6 H	11	LW
P6QNEJ	22.3	21.0	22.3	22.7*	22.1	1.36	1.9	0.7	22.2	1.36	2.0	0.5	12	XX
PFRXXX	21.0	22.1	20.6	21.1	21.2	0.31	1.7	0.6	21.6	0.64	1.8	0.9	12	LU
QBNRKT	22.1	22.2	21.6	21.2	21.8	0.97	1.6	0.5	23.0	2.30*	1.9	4.4 H	12	LU
R8CKZK	21.4	21.3	21.2	21.2	21.3	0.40	1.2	0.1 L	21.2	0.20	1.5	0.1 L	12	LW
RF4PP7	21.1	20.8	20.8	21.5	21.0	0.14	1.4	0.3	21.1	0.07	1.3	0.3	12	LU

Containerboard Interlaboratory Testing Program  
Analysis 225

STFI, 36 lb Linerboard - 36U3  
TAPPI Provisional Test Method T826



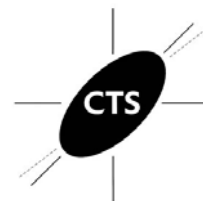
WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
RMFZNY	21.7	21.6	21.6	20.7	21.4	0.54	1.9	0.5	21.5	0.54	1.9	0.5	12	LW
T7MC3V	20.6	20.3	21.0	20.5	20.6	-0.39	1.3	0.3	20.5	-0.61	1.4	0.4	12	LU
UYLHL9	20.7	20.1	20.3	22.0	20.8	-0.20	1.7	0.8	20.9	-0.12	1.7	0.7	12	LU
W2HLWK	20.6	21.5	22.2	20.9	21.3	0.43	1.2	0.7	21.3	0.30	1.2	0.7	4	BK
W64LLZ	20.8	23.4*	22.0	21.6	22.0	1.20	2.8	1.1	22.2	1.33	2.2	0.8	12	LW
WLLN2B	20.4	22.7	23.1*	19.4	21.4	0.54	1.4	1.8 H	21.0	-0.09	1.2	1.4	12	LZ
X7NZ4G	20.9	20.8	20.8	19.8	20.6	-0.40	1.7	0.5	20.8	-0.34	1.7	0.3	12	LW
XKQH6G	20.2	18.6*	19.7	19.3	19.4	-1.73	1.2	0.6	19.4	-1.93	1.2	0.7	10	LZ
XMVXP2	19.6	19.3	19.7	19.8	19.6	-1.53	1.5	0.2	19.5	-1.77	1.5	0.3	12	XX
ZYLEL7	23.8 XL	No Data	No Data	No Data	23.8	3.28 X	0.5	0.0 L	23.8	3.19 X	0.5	0.0 L	1	XX

Consensus (All Labs) Results													
<b>Wk Mean</b>	20.83	21.03	20.92	20.61	<b>Month Mean</b>	20.92			<b>Grand Mean</b>	21.04			
<b>Avg SDr</b>	1.71	1.59	1.59	1.49	<b>Avg SDr</b>	1.60			<b>Avg SDr</b>	1.61			
<b>SD btwn Labs</b>	0.83	1.14	0.90	0.91	<b>SD btwn Labs</b>	0.86			<b>SD btwn Labs</b>	0.85			
<b>Labs Includ</b>	40	40	37	37	<b>SD btwn Wks</b>	0.70			<b>SD btwn Wks</b>	1.30			
<b>Labs Exclud</b>	3	0	1	0	<b>Labs Includ</b>	42			<b>Labs Includ</b>	43			
<b>Labs not rcvd</b>	1	4	6	7									

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

- (BK) - Buchel Strip Compression Tester BK-155
- (LU) - L & W 52 without moisture correction (was 53)
- (LZ) - L & W (model not specified)
- (XX) - Instrument make/model not specified by lab

- (LA) - L & W Autoline
- (LW) - L & W 53 with moisture correction (was 53M)
- (TS) - TMI Monitor/STFI Compression Tester, 17-33



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2RB2N7	102.1	-0.90	13.3	103.0	-1.48	12.8	3	EV
3YYVJW	201.9	3.97 X	73.3	193.5	5.57X	73.1	2	EV
43RDAD	132.8	0.60	12.0	136.9	1.16	15.5	4	EV
874AD7	243.7	6.02 X	17.1	247.8	9.80X	20.1	4	EV
8KD96D	139.7	0.93	14.6	138.5	1.29	16.0	4	EV
CRQJHG	119.2	-0.07	15.4	115.4	-0.51	14.1	4	EV
CRXMKJ	142.7	1.08	11.4	133.1	0.86	7.7	3	LA
DGV248	116.5	-0.20	24.7	125.9	0.30	29.1	4	LA
DTW22Q	115.7	-0.24	7.2	115.7	-0.49	7.2	1	EV
HTGWFL	97.5	-1.13	14.5	111.3	-0.83	11.6	4	EV
JK48HV	160.5	1.95	21.2	142.7	1.61	16.8	4	EV
JRHW4T	134.0	0.65	8.4	132.2	0.79	9.6	3	EV
JTY694	118.7	-0.09	10.0	112.7	-0.72	11.7	4	EV
NF8N4Q	95.5	-1.23	9.6	107.1	-1.16	11.2	4	EV
NK2794	146.1	1.25	17.9	139.7	1.38	17.6	4	XX
NK9PFL	102.2	-0.90	1.4	101.9	-1.57	1.4	3	XX
NVG2LH	122.8	0.11	3.3	124.5	0.19	2.7	4	EV
PG7HQ9	137.1	0.81	11.9	135.0	1.01	16.8	2	EV
QAXMYJ	69.7	-2.49 *	6.9	64.5	-4.48X	7.3	4	EV
QKA3L8	118.5	-0.10	10.7	118.5	-0.27	10.7	1	EV
YUXMR3	129.9	0.45	10.5	120.0	-0.15	14.5	4	EV
ZJVL4	120.2	-0.02	11.8	116.6	-0.42	11.4	4	EV
ZY3MG3	111.0	-0.47	14.5	109.3	-0.99	13.4	4	LA

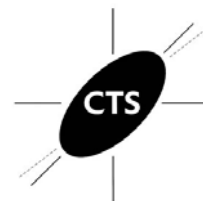
Consensus (All Labs) Results			
Month Mean	120.59	Grand Mean	122.00
Avg SDr	13.06	Avg SDr	13.83
SD btwn Labs	20.45	SD btwn Labs	12.84
Labs Incd	21	Labs Incd	20

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

(EV) - Emveco Microgag Model 210-R

(LA) - L & W Autoline

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
27GGZ9	129.6	2.23 *	17.6	119.7	1.40	13.4	3	SC
33KJ8Z	99.2	-0.73	3.6	102.9	-0.41	4.7	4	TM
7C9LZ9	102.3	-0.43	2.7	108.9	0.23	7.2	4	SC
7LGBNB	115.8	0.88	3.7	110.3	0.39	3.2	4	HY
BFFT8D	98.0	-0.85	6.2	99.9	-0.74	7.6	4	TM
FZKYJ4	101.4	-0.52	4.4	101.9	-0.52	3.8	4	TM
M4HW88	116.0	0.90	4.4	113.7	0.75	4.9	4	SC
MCU6K3	109.6	0.28	6.8	114.7	0.86	5.2	4	TM
NYJDGN	89.6	-1.67	7.5	89.2	-1.88	5.9	4	TM
PYMHXX	99.2	-0.74	10.2	99.8	-0.74	5.8	4	SC
T6HM2J	106.2	-0.05	7.5	107.2	0.05	6.3	3	HY
TJBMLQ	114.4	0.75	11.6	111.8	0.54	10.2	4	HZ
V4WV3H	96.2	-1.03	8.9	90.4	-1.76	7.8	4	TM
V8NEKW	108.5	0.17	8.9	119.3	1.35	7.9	4	HY
Y2XUF8	115.0	0.81	11.4	111.3	0.49	7.3	3	SC

Consensus (All Labs) Results			
<b>Month Mean</b>	106.73	<b>Grand Mean</b>	106.72
<b>Avg SDr</b>	8.58	<b>Avg SDr</b>	7.19
<b>SD btwn Labs</b>	10.26	<b>SD btwn Labs</b>	9.30
<b>Labs Incd</b>	15	<b>Labs Incd</b>	15

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

(HY) - Huygen Digitized Scott Internal Bond Tester

(HZ) - Huygen Internal Bond Tester with AccuPress

(SC) - Scott Internal Bond Tester (Manual)

(TM) - TMI Monitor/Internal Bond Tester

Containerboard Interlaboratory Testing Program  
 Analysis 234  
**COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42X**  
 TAPPI Official Test Method T815



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
Z99Y6F	28.6	-0.02	1.1	27.9	-0.03	0.9	4	ZZ
ZHAAL8	27.1	-0.46	1.2	27.6	-0.11	1.6	4	ZZ
DTEGCC	32.6	1.18	3.6	31.0	0.88	2.8	4	ZZ
GE6PEW	32.8	1.24	1.8	33.2	1.56	2.5	4	ZZ
JNLBEB	28.4	-0.08	1.8	29.4	0.42	2.6	4	ZZ
K2894M	27.6	-0.32	6.7	23.3	-1.39	4.6	3	ZZ
KWPY74	44.2	4.65 X	1.5	40.0	3.58 X	2.2	4	ZZ
MPYD6V	26.6	-0.62	3.0	23.1	-1.47	2.4	4	ZZ
QJ8YJW	28.4	-0.08	1.8	28.8	0.24	2.5	4	ZZ
QPTTGH	29.3	0.18	2.1	27.2	-0.24	2.9	4	ZZ
VA2RN4	26.2	-0.74	1.5	27.2	-0.24	1.4	3	ZZ
YD9EWP	31.2	0.76	2.2	30.6	0.78	2.6	4	ZZ
YP7F9U	32.0	1.00	0.7	32.1	1.22	0.7	3	ZZ
YQPDFZ	31.6	0.88	2.1	29.7	0.50	2.8	4	ZZ
Z2NG6F	32.2	1.06	1.6	30.9	0.87	1.6	4	ZZ
Z2NJZW	28.8	0.04	2.9	28.4	0.11	4.0	4	ZZ
Z67NJG	21.0	-2.29 *	2.3	24.3	-1.10	4.9	4	ZZ
ZBNNHV	22.8	-1.75	3.0	21.3	-2.01 *	2.1	3	ZZ

Consensus (All Labs) Results			
<b>Month Mean</b>	28.66	<b>Grand Mean</b>	27.99
<b>Avg SDr</b>	2.68	<b>Avg SDr</b>	2.77
<b>SD btwn Labs</b>	3.34	<b>SD btwn Labs</b>	3.35
<b>Labs Incd</b>	17	<b>Labs Incd</b>	17

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

(ZZ) - Instruments No Longer Tracked

Containerboard Interlaboratory Testing Program  
Analysis 237

Air Resistance, 36 lb Linerboard - 42X  
TAPPI Official Test Method T460



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3L6MJF	17.0	-0.09	3.7	16.7	-0.44	2.9	4	LP
4VAWKE	17.9	0.54	2.4	18.2	0.50	2.4	4	LA
6XGH4X	19.0	1.29	1.6	18.1	0.46	2.3	3	LP
7FNC3H	15.6	-1.04	3.1	16.7	-0.45	2.7	4	HG
8RYZLQ	15.5	-1.07	1.3	18.1	0.46	3.9	4	HG
ANDDDX	29.7	8.57 X	3.3	20.9	2.23*	3.7	3	LW
FJY9WU	19.8	1.81	5.0	18.2	0.49	3.9	4	GG
HBYTXZ	19.2	1.46	2.0	18.2	0.52	3.5	4	HG
K2EJAJ	17.1	0.00	1.7	17.0	-0.25	1.4	4	LW
KJMGRU	16.9	-0.12	3.1	19.2	1.17	3.5	4	XX
KWJ98X	17.9	0.56	1.9	17.2	-0.15	2.1	2	HG
MUKRK2	16.1	-0.66	1.0	15.0	-1.54	1.6	4	XX
R2HDDW	14.1	-2.01 *	1.6	14.2	-2.06*	3.2	4	XX
RT83V6	17.2	0.09	4.2	18.2	0.48	3.0	3	LP
T36E8D	17.7	0.40	2.5	17.0	-0.28	2.4	4	XX
T6HC7A	17.4	0.19	4.6	17.4	-0.03	4.6	1	XX
TMCKX9	17.5	0.28	1.9	18.9	0.92	2.0	4	GA
ZBW2MQ	16.9	-0.11	3.1	16.4	-0.69	2.2	4	XX
ZV8PFL	14.9	-1.52	1.7	15.4	-1.32	1.9	4	LA

Consensus (All Labs) Results			
Month Mean	17.10	Grand Mean	17.43
Avg SDr	2.82	Avg SDr	2.92
SD btwn Labs	1.47	SD btwn Labs	1.56
Labs Incd	18	Labs Incd	19

Instrument Code List as Reported by the Labs

(GA) - Gurley Precision #4340 Automatic Densometer  
 (HG) - Technidyne - Hagerty Model #1  
 (LP) - L & W Air Permeance Tester SE 166  
 (XX) - Instrument make/model not specified by lab

(GG) - Gurley Precision #4320 Densometer  
 (LA) - L & W Autoline  
 (LW) - L & W Gurley Densometer, Oil Flotation

Containerboard Interlaboratory Testing Program  
Analysis 240

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM72  
TAPPI Official Test Method T809



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
28VDNQ	56.0	55.7	56.0 H	60.5	57.1	-1.65	4.2	2.3	61.8	-0.17	3.6	5.3 H	12	LC
3ETZVR	63.3	63.6	66.7	No Data	64.5	0.85	3.5	1.9	63.9	0.60	3.2	1.6	15	TM
3LWAG7	58.7	58.1	56.6	57.7	57.8	-1.42	2.5	0.9	58.5	-1.38	2.6	1.3	16	LX
42LW3P	61.6	63.8	No Data	No Data	62.7	0.23	2.7	1.5	64.1	0.69	2.7	1.7	14	EM
4L8MBE	62.7	63.3	61.8	65.0	63.2	0.41	3.6	1.4	63.4	0.42	3.1	1.1	16	LC
63BV2Z	63.4	63.0	No Data	No Data	63.2	0.41	2.2	0.2 L	63.2	0.36	2.2	0.2 L	2	MB
6BCMTM	59.5	58.8	59.8	60.1	59.6	-0.81	2.3	0.6	61.3	-0.34	2.6	1.4	16	XX
6LVMFH	63.6	64.0	62.3	60.9	62.7	0.24	2.7	1.4	63.4	0.44	2.9	1.4	16	LC
7XWKLB	70.3 *H	67.7 H	70.2 *	67.2	68.9	2.30 *	5.3	1.6	67.1	1.78	5.6	2.5	16	LD
8RZYR9	62.0	62.5	62.0	62.3	62.2	0.08	2.4	0.3 L	62.5	0.10	2.3	1.1	16	LD
8WFB2W	61.4	59.8	59.1	No Data	60.1	-0.63	3.5	1.2	58.1	-1.53	5.5	3.4	13	TM
92G3CD	63.0	63.0	62.6	62.3	62.7	0.25	2.6	0.3	64.1	0.69	3.3	2.3	16	LC
ANEQRJ	58.0	57.2	58.3	60.8	58.6	-1.14	3.5	1.6	60.3	-0.71	3.1	1.6	12	LD
AQBXT2	59.8	60.7	61.1	60.2 H	60.4	-0.52	3.6	0.6	60.5	-0.65	3.7	1.2	16	MB
AU2JRE	60.8	68.5	66.1	60.6	64.0	0.68	3.5	3.9 H	59.5	-1.01	3.5	3.8	14	LC
B8JVGT	68.6	68.0	67.4	69.3 X	68.3	2.13 *	2.8	0.8	68.2	2.20 *	2.6	0.9	16	XX
BA6K27	63.7	No Data	59.8	59.7	61.1	-0.31	1.9	2.3	60.2	-0.74	2.1	1.4	14	LC
DX6T7C	60.3	59.8	60.3	60.0	60.1	-0.64	2.4	0.2 L	60.8	-0.53	2.3	1.0	16	EM
FQYNM3	70.1 *	71.2 *	69.3 *H	62.2	68.2	2.08 *	3.8	4.1 H	64.0	0.64	3.5	4.4 H	16	MB
FWCHPE	65.4	66.6	65.9	65.7	65.9	1.31	2.3	0.5	61.2	-0.40	2.5	3.1	16	LC
GADCR6	62.7	63.2	62.3	62.0	62.6	0.19	2.9	0.6	65.2	1.10	2.8	3.5	16	LZ
H6PY3Y	69.6 *	65.6	66.8	67.8 *	67.4	1.82	3.1	1.7	67.4	1.88	3.2	3.1	16	LC
HVL9MN	62.5	63.5	63.8	59.5	62.3	0.11	2.7	1.9	61.7	-0.19	2.6	1.2	16	TB
K93T9H	63.0	65.3	60.1	62.6	62.8	0.26	3.2	2.1	61.3	-0.36	2.8	1.9	15	LC
KP7TK2	57.5 L	59.2	59.0	62.0	59.4	-0.87	3.3	1.9	62.8	0.21	3.1	3.0	16	LZ
KTQKUH	59.5	59.9	59.5	59.0 L	59.5	-0.85	2.0	0.4	60.0	-0.84	2.3	1.6	16	TD
LGUPFN	54.9	58.4	59.7	58.9	58.0	-1.34	3.5	2.1	61.6	-0.24	2.8	3.0	16	LC
LVBP42	59.2 H	63.9	62.9	60.7	61.7	-0.10	4.2	2.1	62.1	-0.04	3.6	1.5	16	LC
MY8QR2	59.7	61.4	62.4 L	62.3	61.4	-0.18	1.8	1.2	61.4	-0.32	2.6	1.5	16	LD
NCBDBH	60.5	61.5	60.1	59.0	60.3	-0.57	2.0	1.0	63.1	0.31	2.7	2.2	16	LC
ND7WF6	65.5	62.5	61.0	62.2	62.8	0.27	3.3	1.9	63.8	0.58	3.6	1.4	16	LC
NNRHRP	60.7	59.6	58.3 L	60.0	59.7	-0.77	1.8	1.0	60.3	-0.71	2.1	0.8	16	LC
NU9TEJ	61.4	62.4	60.8	61.3	61.5	-0.17	2.6	0.6	61.6	-0.23	2.8	1.0	16	LC
P7TRHQ	61.1	61.2 L	60.4 L	61.1	61.0	-0.35	1.9	0.4	61.5	-0.27	2.3	0.8	16	TA



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
PHEQTU	65.8	66.2	64.5	65.5	65.5	1.18	3.0	0.7	65.9	1.36	3.3	1.3	16	EM
PUBNVE	61.5	63.1	61.0	61.4	61.8	-0.08	2.1	0.9	60.6	-0.60	2.6	1.4	16	LC
T3TLTA	60.9 <sup>H</sup>	60.8	63.4 <sup>H</sup>	60.5 <sup>H</sup>	61.4	-0.19	5.4	1.4	62.0	-0.10	4.3	2.2	15	LC
TJWZA4	61.9	59.0	61.6	61.4	61.0	-0.34	3.1	1.3	59.8	-0.89	3.0	1.3	12	LX
TW42RF	55.0 <sup>H</sup>	54.5 <sup>*H</sup>	62.5	49.8 <sup>XH</sup>	55.4	-2.19 <sup>*</sup>	9.6	5.2 <sup>H</sup>	56.0	-2.29 <sup>*</sup>	7.8	3.2	12	XX
UPCQM4	66.7	66.0	64.8	65.1	65.7	1.23	2.9	0.9	65.0	1.03	2.9	1.2	12	LC
UVYZ4N	62.9	63.0	60.9	65.1	63.0	0.33	3.0	1.7	63.3	0.37	3.2	7.0 <sup>H</sup>	16	LC
W8LUNF	62.6	61.8	61.9	62.0	62.1	0.03	2.1	0.4	59.9	-0.86	2.8	4.1 <sup>H</sup>	16	LC
WM49VR	65.3	65.8	66.1	65.5	65.7	1.23	2.3	0.4	65.3	1.12	2.5	1.0	16	LC
X228CF	No Data	No Data	60.7	No Data	60.7	-0.42	2.6	0.0 <sup>L</sup>	59.1	-1.16	2.7	1.3	8	LD
XL2BUP	No Data	59.7	59.3	56.5 <sup>*</sup>	58.5	-1.17	3.4	1.7	60.5	-0.65	2.6	1.6	15	LD
XLGA2K	55.8	58.1	58.0	53.3 <sup>X</sup>	56.3	-1.90	2.3	2.3	55.6	-2.45 <sup>*</sup>	2.3	2.2	8	TB
XNFVZ7	64.0	61.8	65.0	61.9	63.2	0.40	3.7	1.6	64.4	0.80	3.2	3.0	16	LZ
YKAJT6	61.0	61.2	62.1	61.6	61.5	-0.17	2.8	0.5	62.1	-0.06	2.7	0.8	16	LD
YL2TCK	67.4	59.5	58.2	No Data	61.7	-0.09	3.5	5.0 <sup>H</sup>	67.1	1.79	3.3	4.2 <sup>H</sup>	12	LZ
Z3K3RF	65.3	65.2	63.2 <sup>H</sup>	64.6	64.6	0.87	4.4	1.0	65.6	1.23	3.9	2.0	16	LD

Consensus (All Labs) Results									
<b>Wk Mean</b>	62.22	62.26	61.99	62.00	<b>Month Mean</b>	61.99	<b>Grand Mean</b>	62.25	
<b>Avg SDr</b>	3.24	3.27	3.20	3.05	<b>Avg SDr</b>	3.34	<b>Avg SDr</b>	3.25	
<b>SD btwn Labs</b>	3.65	3.41	3.14	2.73	<b>SD btwn Labs</b>	2.99	<b>SD btwn Labs</b>	2.71	
<b>Labs Includ</b>	48	48	48	42	<b>SD btwn Wks</b>	1.84	<b>SD btwn Wks</b>	2.48	
<b>Labs Exclud</b>	0	0	0	3	<b>Labs Includ</b>	50	<b>Labs Includ</b>	50	
<b>Labs not rcvd</b>	2	2	2	6					

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

- (EM) - Emerson 1200 Series
- (LD) - L&W Crush Tester 248
- (LZ) - L & W Crush Tester (model not specified)
- (TA) - Thwing-Albert Model QC II-XDS
- (TD) - TMI Digital Crush Tester, Model 17-09
- (XX) - Instrument make/model not specified by lab
- (LC) - L & W Crush Tester 48
- (LX) - L & W 506
- (MB) - Messmer Buchel K440
- (TB) - TMI Monitor/Compression Tester, 17-70
- (TM) - TMI/Hinde & Dauch



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
4BQPRJ	69.5	68.9	69.7	69.1	69.3	-1.45	2.0	0.4 L	69.2	-1.27	2.5	1.0	16	EM
7L2Y99	No Data	No Data	72.9	No Data	72.9	-0.28	3.0	0.0 L	72.0	-0.40	2.3	0.6	8	LD
8LEZ9Y	78.8	78.5	78.6	80.3	79.1	1.74	2.1	0.8	77.9	1.43	2.5	1.2	16	LC
BATXGG	74.3	73.0	75.2	77.8	75.1	0.44	2.8	2.0	75.3	0.64	2.7	1.7	12	XX
C8274T	76.6	73.8	79.4	72.6	75.6	0.61	2.6	3.1	73.7	0.13	3.8	2.8	16	LZ
DHWMDC	70.0	71.5	71.8	71.3	71.1	-0.84	1.7	0.8	70.2	-0.94	2.0	1.3	16	LD
GAWVJA	76.4	76.9	75.3	74.8	75.8	0.69	2.2	1.0	74.9	0.51	2.1	1.0	16	LC
H4A676	No Data	77.1	76.7	76.0	76.6	0.94	2.4	0.6	77.1	1.18	2.6	1.2	15	LD
JX6UQV	76.4	76.7	76.0	77.2	76.6	0.93	2.0	0.5	75.1	0.56	2.8	1.1	16	MB
MLZMHZ	72.5	71.0	70.3	71.6	71.4	-0.77	2.5	0.9	71.7	-0.48	2.9	1.3	16	LC
NKPIGW	68.4 L	69.7	69.8 L	70.3	69.6	-1.36	1.5	0.8	69.8	-1.06	1.6	2.6	16	LC
PFLJZH	71.1	76.8	77.1	75.5	75.1	0.46	2.5	2.7	70.0	-1.00	2.3	4.3 H	16	XX
PGHGKG	71.6	74.4	71.7	70.5	72.0	-0.54	2.7	1.7	74.4	0.36	2.7	2.1	16	TB
V8VC49	74.8	77.4	74.4	74.2	75.2	0.48	2.8	1.5	75.4	0.66	2.9	1.8	15	LZ
YALBUF	76.6	79.9	78.0	79.9 L	78.6	1.59	2.1	1.6	80.1	2.12*	2.5	1.4	16	XX
YEFNMQ	62.4 XH	74.3	69.7	75.3	70.4	-1.08	4.1	5.9 H	68.9	-1.37	4.2	5.2 H	14	LC
Z82694	70.9	69.6	70.5	70.2	70.3	-1.12	2.1	0.6	71.7	-0.47	2.4	2.0	16	TD
ZRHNRE	73.4	67.2	75.8	73.2 H	72.4	-0.43	3.1	3.7	71.2	-0.63	2.9	6.8 H	16	XX

Consensus (All Labs) Results													
<b>Wk Mean</b>	73.42	73.91	74.03	74.10	<b>Month Mean</b>	73.72				<b>Grand Mean</b>	73.25		
<b>Avg SDr</b>	2.29	2.66	2.45	2.29	<b>Avg SDr</b>	2.53				<b>Avg SDr</b>	2.71		
<b>SD btwn Labs</b>	3.14	3.77	3.31	3.42	<b>SD btwn Labs</b>	3.07				<b>SD btwn Labs</b>	3.21		
<b>Labs Includ</b>	15	17	18	17	<b>SD btwn Wks</b>	2.19				<b>SD btwn Wks</b>	2.71		
<b>Labs Exclud</b>	1	0	0	0	<b>Labs Includ</b>	18				<b>Labs Includ</b>	18		
<b>Labs not rcvd</b>	2	1	0	1									

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200 Series

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

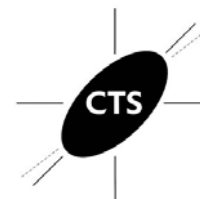
(TD) - TMI Digital Crush Tester, Model 17-09

(LC) - L & W Crush Tester 48

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

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

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



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
86KH93	40.3	39.0	38.6	38.8	39.2	-1.08	1.3	0.8	39.7	-1.62	1.8	0.8	16	WK
9Z9U6E	42.9	42.8	42.8	43.8	43.1	0.29	2.1	0.5	43.0	0.64	2.1	1.2	16	LC
AX4LQF	44.9	44.0	No Data	No Data	44.4	0.77	2.3	0.6	42.8	0.53	2.0	3.5	14	EM
B6VCQZ	44.5	40.5	59.6 X	42.8	46.8	1.61	3.2	8.7 H	44.8	1.89	2.7	4.8 H	16	LC
CDHMGA	42.4	41.0 H	41.2	No Data	41.5	-0.26	4.1	0.8	42.2	0.10	3.7	1.5	12	MZ
DGFPL2	37.2	40.7	43.7	41.3	40.7	-0.54	2.3	2.7	42.3	0.17	2.8	4.8 H	16	LC
E8KKYK	43.9	45.0	44.2	42.5	43.9	0.57	2.0	1.0	44.1	1.41	2.2	0.9	12	LD
GD6HKD	40.2	41.1	41.0	39.7	40.5	-0.62	2.2	0.7	40.6	-1.01	1.9	0.7	16	EN
KJH2FT	43.0	43.1	44.5	42.8	43.4	0.38	2.3	0.8	41.0	-0.70	2.1	2.4	16	MB
L484ZU	46.8	46.3	45.4	47.5 *	46.5	1.49	2.5	0.9	42.7	0.41	2.4	2.5	16	LZ
QP7E2N	44.5	43.5	44.2	45.1	44.3	0.73	2.8	0.7	44.4	1.58	2.8	0.9	16	LC
T4JPKV	46.5	47.1	48.4 *	47.4 *	47.4	1.79	2.1	0.8	40.1	-1.35	2.3	5.5 H	12	XX
U77QZ4	35.1 *	35.4 *	35.2 *	39.2	36.2	-2.12 *	1.8	2.0	36.6	-3.74 X	2.0	2.4	12	TB
UM43CE	40.5	41.2	41.6	39.9	40.8	-0.51	3.0	0.8	41.2	-0.60	3.1	0.8	16	LD
V2QGK9	39.6	40.2	40.5	41.0	40.3	-0.68	2.3	0.6	40.3	-1.22	2.1	0.8	16	LD
VBCLEC	41.3	41.7	42.5	41.6	41.8	-0.17	1.9	0.5	41.3	-0.48	1.8	0.8	16	TD
VRWGJ2	41.9	42.8	40.9	41.7	41.8	-0.15	2.5	0.8	42.3	0.15	2.1	1.4	16	LC
Z6T8G8	40.8	40.7	37.7	40.1	39.8	-0.85	2.0	1.5	42.2	0.11	2.4	1.8	16	LC
ZN7GR7	39.9	40.4	41.4	39.9	40.4	-0.65	2.5	0.7	42.0	-0.02	2.5	1.4	16	TB

**Consensus (All Labs) Results**

<b>Wk Mean</b>	41.90	41.92	41.98	42.06	<b>Month Mean</b>	42.25	<b>Grand Mean</b>	42.06
<b>Avg SDr</b>	2.50	2.44	2.43	2.30	<b>Avg SDr</b>	2.45	<b>Avg SDr</b>	2.43
<b>SD btwn Labs</b>	2.99	2.68	3.11	2.64	<b>SD btwn Labs</b>	2.85	<b>SD btwn Labs</b>	1.46
<b>Labs Includ</b>	19	19	17	17	<b>SD btwn Wks</b>	2.26	<b>SD btwn Wks</b>	2.53
<b>Labs Exclud</b>	0	0	1	0	<b>Labs Includ</b>	19	<b>Labs Includ</b>	18
<b>Labs not rcvd</b>	0	0	1	2				

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

(EM) - Emerson 1200 Series

(LC) - L & W Crush Tester 48

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

(MZ) - Messmer Buchel (model not specified)

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

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

(EN) - Emerson 2200 Series

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

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

(WK) - Zwick Z005 Crush Tester

Containerboard Interlaboratory Testing Program  
Analysis 261

STFI, 26 lb Corrugating Medium - CM72  
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 Wk	Mean	CPV	SDr	SD Wk	Wks	
3MKWNL	12.4*	12.5	11.7X	12.7	12.3	-2.25*	1.1	0.4	12.9	-2.37*	1.1	0.6	16	LW
6CVMG4	13.8	13.0	14.6	15.2	14.2	-0.28	0.8	0.9	14.9	0.53	0.9	1.9	5	XX
7TZTFZ	15.5L	15.8	No Data	No Data	15.6	1.26	1.4	0.2	15.6	1.54	1.4	0.2L	2	BK
87W8KG	14.0	13.7	14.7	14.7	14.3	-0.21	1.2	0.5	14.7	0.24	1.2	0.5	16	LW
DN2HZM	14.5	14.3	14.4	14.4	14.4	-0.09	1.1	0.1L	14.4	-0.19	1.0	0.6	16	XX
H3ZU4Z	14.0	13.9	15.2	14.6	14.4	-0.04	0.8	0.6	14.1	-0.69	0.8	0.7	8	BK
JYMKZF	14.7	14.0	14.0	13.8L	14.1	-0.36	0.9	0.4	14.0	-0.78	1.0	0.4	12	LU
KMAR8G	14.0	14.8	13.7	No Data	14.2	-0.30	1.1	0.6	13.7	-1.17	1.2	0.7	13	LZ
M4G7U2	No Data	13.3	14.2	13.9	13.8	-0.70	1.4	0.5	14.1	-0.64	1.2	0.7	15	LZ
M6DCKU	20.8X	No Data	14.1	14.5	16.5	2.15*	1.2	3.7H	15.2	0.97	1.2	3.2H	14	LW
NN8FYK	15.1	15.4	14.8	15.8	15.3	0.88	1.2	0.4	15.0	0.60	1.2	0.6	14	XX
QHQQGJ	14.8	14.6	13.9	13.7	14.3	-0.20	1.1	0.5	14.6	0.03	1.2	0.4	16	XX
TNHLT6	13.9	14.3	14.2	13.2	13.9	-0.61	1.1	0.5	15.1	0.76	1.1	2.9H	12	LW
WCKRKD	15.0	14.7	14.1	13.7	14.4	-0.07	1.0	0.6	14.7	0.25	1.1	0.4	16	XX
XFHWNH	15.8	14.7	15.0	15.4	15.2	0.83	1.2	0.5	15.2	0.93	1.2	0.4	16	LU

Consensus (All Labs) Results									
<b>Wk Mean</b>	14.42	14.19	14.37	14.28	<b>Month Mean</b>	14.44	<b>Grand Mean</b>	14.57	
<b>Avg SDr</b>	1.07	1.19	1.20	0.88	<b>Avg SDr</b>	1.12	<b>Avg SDr</b>	1.13	
<b>SD btwn Labs</b>	0.89	0.90	0.45	0.90	<b>SD btwn Labs</b>	0.95	<b>SD btwn Labs</b>	0.70	
<b>Labs Includ</b>	13	14	13	13	<b>SD btwn Wks</b>	1.09	<b>SD btwn Wks</b>	1.29	
<b>Labs Exclud</b>	1	0	1	0	<b>Labs Includ</b>	15	<b>Labs Includ</b>	15	
<b>Labs not rcvd</b>	1	1	1	2					

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

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

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

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

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