

# Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #487 (D)- April 2010

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

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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, 42 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, 42 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.

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**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  
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Gorham Maine, ME 04038  
Phone: (207) 856-0055, Ext. 24  
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connie@emersonapparatus.com

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

Testing Machines Inc.  
2910 Expressway Drive South  
Islandia, NY 11722  
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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
22CXF3	734.4	-0.40	19.7	670.1	-1.03	37.9	4	ES
264W4R	750.0	-0.24	55.2	732.2	-0.37	43.5	4	LG
2EJZRW	760.0	-0.14	30.3	726.4	-0.43	36.3	4	LG
6BTK2F	926.1	1.52	49.1	870.9	1.11	56.6	4	XX
6KT276	875.0	1.01	58.7	920.0	1.64	48.7	4	LH
7UHL83	816.8	0.43	48.9	754.0	-0.13	36.8	4	LL
9XLRFY	953.2	1.79	58.1	784.1	0.19	52.1	4	MC
B7D7XG	776.8	0.03	20.6	780.4	0.15	53.1	4	LM
BCWMWJ	691.5	-0.82	60.3	686.3	-0.85	48.3	4	TB
C4GXG7	962.0	1.88	58.9	915.9	1.59	59.2	4	TL
D9YPVJ	697.4	-0.77	29.8	695.6	-0.76	25.6	4	XX
FX34AY	730.6	-0.43	42.1	731.2	-0.38	37.3	4	RP
K32P63	585.0	-1.89	25.7	597.5	-1.80	30.1	4	EX
KX4CZQ	704.7	-0.69	19.0	744.5	-0.23	36.5	4	ER
NPVJ8R	732.2	-0.42	59.8	766.1	0.00	73.8	4	LH
PG22KA	707.0	-0.67	34.0	699.4	-0.71	40.4	2	LG
RC7VA6	672.8	-1.01	29.4	678.2	-0.94	46.0	4	LO
RUZG9V	752.9	-0.21	70.5	791.8	0.27	57.4	4	TC
T36Q9U	908.0	1.34	37.8	916.8	1.60	36.0	4	XX
UENRVZ	712.6	-0.61	34.0	706.3	-0.64	35.7	4	ER
UEZHTJ	718.6	-0.55	29.9	710.7	-0.59	38.9	4	LL
W48VB8	924.3	1.50	48.7	961.1	2.08*	37.3	4	LN
XRAEXB	697.0	-0.77	16.8	704.2	-0.66	26.2	4	LO
YTM3Y3	789.0	0.15	66.7	851.0	0.90	68.2	3	TS

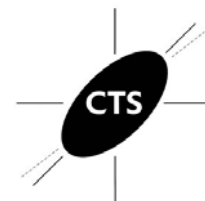
Consensus (All Labs) Results			
<b>Month Mean</b>	774.08	<b>Grand Mean</b>	766.44
<b>Avg SDr</b>	44.88	<b>Avg SDr</b>	45.88
<b>SD btwn Labs</b>	100.11	<b>SD btwn Labs</b>	93.81
<b>Labs Incd</b>	24	<b>Labs Incd</b>	24

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	(TL) - TMI Compression Tester Model 49001
(TS) - Tinus Olsen Model CTM	(XX) - Instrument make/model not specified by lab



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
67QHMT	35.7	-0.75	1.0	35.7	-0.75	1.0	1	TC
LHMDDJ	31.7	-1.46	1.8	31.7	-1.46	1.8	1	WK
TCAN9Q	44.9	0.91	0.7	44.9	0.91	0.7	1	LZ
UNEAKE	43.1	0.59	1.8	43.1	0.59	1.8	1	LC
XKRVPA	45.5	1.02	1.2	45.5	1.02	1.2	1	TD
YFA339	38.0	-0.32	1.0	38.0	-0.32	1.0	1	LC

Consensus (All Labs) Results					
<b>Month Mean</b>	39.81		<b>Grand Mean</b>	39.81	
<b>Avg SDr</b>	1.32		<b>Avg SDr</b>	1.32	
<b>SD btwn Labs</b>	5.55		<b>SD btwn Labs</b>	5.55	
<b>Labs Incd</b>	6		<b>Labs Incd</b>	6	

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

(LC) - L&W Crush Tester 48

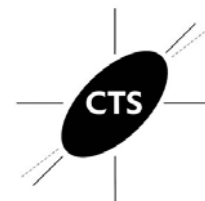
(LZ) - L&W Crush Tester (model not specified)

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

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

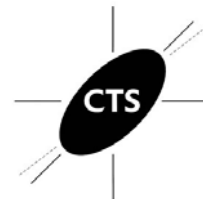
(WK) - Zwick Z005 Crush Tester

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



WebCode	Monthly Results			Cumulative Results				Inst
	Mean	CPV	SDr	Mean	CPV	SDr	Months	
2WV2QL	40.5	-0.29	2.1	40.5	-0.29	2.1	1	LC
2YZV2C	41.7	0.23	1.0	41.7	0.23	1.0	1	EM
3C77AJ	40.6	-0.27	0.8	40.6	-0.27	0.8	1	XX
3N2XU9	42.3	0.50	2.2	42.3	0.50	2.2	1	LC
68KNXX	37.7	-1.57	1.0	37.7	-1.57	1.0	1	TC
6HJ22X	42.3	0.49	1.2	42.3	0.49	1.2	1	EN
6UMFD3	42.2	0.43	2.0	42.2	0.43	2.0	1	EX
8GLYCQ	39.6	-0.71	1.5	39.6	-0.71	1.5	1	TC
8J4PCP	38.3	-1.29	1.3	38.3	-1.29	1.3	1	TC
AQ7UMQ	41.0	-0.09	0.7	41.0	-0.09	0.7	1	LC
AZPMY2	42.8	0.69	0.8	42.8	0.69	0.8	1	LC
CLHK86	43.9	1.20	2.6	43.9	1.20	2.6	1	EM
DTU9B6	39.7	-0.66	1.2	39.7	-0.66	1.2	1	LZ
H2F4L2	40.7	-0.22	1.8	40.7	-0.22	1.8	1	TA
H3TMVY	40.2	-0.44	1.5	40.2	-0.44	1.5	1	LD
HDMACU	40.8	-0.18	1.9	40.8	-0.18	1.9	1	TM
HKPCN8	45.3	1.81	2.0	45.3	1.81	2.0	1	EM
JG2P4T	38.4	-1.25	2.2	38.4	-1.25	2.2	1	LD
KNGQ33	45.0	1.68	1.1	45.0	1.68	1.1	1	TD
L64LXP	38.7	-1.12	1.6	38.7	-1.12	1.6	1	LC
LAAKH9	40.3	-0.42	1.6	40.3	-0.42	1.6	1	TC
LPMQHT	41.6	0.17	1.1	41.6	0.17	1.1	1	TD
MMJMGB	39.5	-0.75	0.7	39.5	-0.75	0.7	1	TB
N72NU6	40.2	-0.44	1.7	40.2	-0.44	1.7	1	EM
NFHNRK	44.1	1.29	1.2	44.1	1.29	1.2	1	LC
NZ2WR8	39.5	-0.74	3.0	39.5	-0.74	3.0	1	EN
QCCQF6	38.9	-1.04	1.5	38.9	-1.04	1.5	1	EN
QU7CEW	43.8	1.14	1.1	43.8	1.14	1.1	1	LC
TEJEBK	44.6	1.48	1.6	44.6	1.48	1.6	1	LC
U4JFAK	46.2	2.21 *	1.5	46.2	2.21 *	1.5	1	LC
U76R2G	41.0	-0.08	1.3	41.0	-0.08	1.3	1	EM
U9DGAE	42.1	0.39	1.3	42.1	0.39	1.3	1	LC
VFTFGX	42.3	0.49	0.8	42.3	0.49	0.8	1	TL
WNXFB3	41.4	0.09	0.8	41.4	0.09	0.8	1	LC
XRTX64	39.9	-0.60	1.6	39.9	-0.60	1.6	1	CT
Z9AXVP	36.4	-2.13 *	1.7	36.4	-2.13 *	1.7	1	TK

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



**Consensus (All Labs) Results**

<b>Month Mean</b>	41.20	<b>Grand Mean</b>	41.20
<b>Avg SDr</b>	1.56	<b>Avg SDr</b>	1.56
<b>SD btwn Labs</b>	2.26	<b>SD btwn Labs</b>	2.26
<b>Labs Incd</b>	36	<b>Labs Incd</b>	36

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

(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
(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



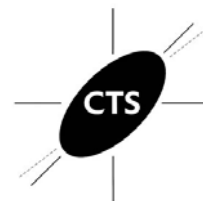
WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
28F4V6	105.3	103.3	103.1	102.2	103.5	-0.89	9.6	1.3	102.8	-1.16	9.5	2.8	16	AH
3FVWX2	108.2	112.9	108.9	112.6 H	110.6	0.73	12.7	2.4	110.5	0.95	11.9	2.9	16	LC
47U6G7	107.4	105.0	113.1	112.4	109.5	0.46	11.0	3.9	108.8	0.50	10.7	2.7	16	LZ
4HTP9Y	115.2	105.6	115.3	No Data	112.0	1.04	8.2	5.6	109.9	0.80	10.2	4.2	14	AH
4R4YV6	109.0	106.8	108.5	112.7	109.3	0.42	10.3	2.5	109.2	0.60	9.4	3.2	16	LZ
4WBL7M	104.2	93.3*	99.9	98.8	99.1	-1.89	10.6	4.5	104.5	-0.70	10.8	4.4	16	LC
69JTRY	107.2	106.3	No Data	No Data	106.8	-0.15	12.8	0.7 L	108.4	0.39	11.9	5.3	12	AX
6HAJ9Y	106.8	No Data	No Data	No Data	106.8	-0.15	11.4	0.0 L	110.9	1.07	11.0	2.6	13	LA
6HLA8H	97.9	113.6	109.2	114.5	108.8	0.31	10.5	7.6	107.4	0.10	11.5	4.7	16	AH
734BKB	113.0	104.6	105.9 L	101.9	106.4	-0.24	8.4	4.7	107.2	0.05	7.2	4.2	16	LJ
7GPX6M	119.1*	117.0	114.0	112.7	115.7	1.87	10.9	2.9	113.4	1.74	11.4	2.9	14	LA
7V6T3D	108.8	No Data	No Data	No Data	108.8	0.32	10.4	0.0 L	104.3	-0.74	10.2	4.4	9	LA
7W2469	104.3	105.4	103.5	102.0	103.8	-0.82	8.5	1.4	108.0	0.27	9.2	9.7 H	16	LC
8AN3TU	111.1	109.1	108.1 H	105.6	108.5	0.24	12.2	2.3	105.8	-0.32	11.1	3.4	16	LZ
A7ZATC	122.0*	116.1	117.0	107.4	115.6	1.86	11.4	6.1	111.5	1.22	9.2	4.6	16	LA
AJZNM9	119.7*	109.1	105.1	104.1	109.5	0.47	11.8	7.1	106.1	-0.24	11.3	4.4	16	AH
AUGDG8	105.1	104.3	100.2	99.6	102.3	-1.15	10.6	2.8	102.0	-1.38	9.3	2.7	12	LC
AUJLMR	109.0	107.7	113.8	107.0	109.4	0.44	8.5	3.1	108.5	0.41	9.9	4.7	14	AH
AV8UD2	109.5	111.3	116.5	112.7	112.5	1.15	9.8	3.0	111.8	1.32	10.4	3.4	16	AA
BKET9J	109.8	113.6	116.4	113.8	113.4	1.35	8.6	2.7	113.6	1.80	11.8	5.0	15	LA
DEDLA6	103.2	106.9	106.5	101.8	104.6	-0.64	11.6	2.5	107.6	0.17	11.8	5.1	15	LC
DG7F6N	106.8	110.6	111.6	112.8	110.5	0.69	11.9	2.6	105.9	-0.30	11.5	4.4	14	LA
DMBJR2	105.5	105.4	104.9	105.7	105.4	-0.46	6.1	0.3 L	103.5	-0.97	6.2	2.2	16	LZ
DMU3YU	111.8	102.5	107.9	103.9	106.5	-0.20	9.4	4.2	109.8	0.77	11.0	6.1	15	LA
EMVJLJ	100.1	101.6	106.0	107.2	103.7	-0.83	9.6	3.4	104.9	-0.58	7.9	4.7	16	TB
ERYZML	105.4	116.3	105.8	113.0	110.1	0.61	12.2	5.4	109.1	0.56	14.9	5.4	12	XX
GB6ECW	103.6	105.0	105.8	106.7	105.2	-0.49	10.2	1.3	106.0	-0.28	10.8	3.4	16	XX
H6TQWF	108.0	108.9	110.7 L	108.6	109.1	0.37	5.7	1.2	109.3	0.62	5.3	1.9	16	XX
HDAUCU	104.8	104.4	106.7	107.7	105.9	-0.34	8.6	1.6	106.0	-0.27	10.1	2.2	16	TB
HP27GX	110.4	108.2	110.8	110.5	110.0	0.58	10.5	1.2	110.4	0.94	10.9	2.8	16	LA
HX3CK2	106.8	94.3*	95.2*	97.5	98.4	-2.03*	10.0	5.7	103.6	-0.93	10.4	6.6	16	AX
HY7AMG	108.9	109.4	107.1	100.6	106.5	-0.21	9.8	4.1	107.0	0.00	11.0	4.4	16	AH
K4AEC2	111.4	108.7	111.9	105.3	109.3	0.43	10.5	3.0	109.7	0.72	11.6	2.9	16	LJ
KCJB8C	109.1	121.7*	105.7	106.7	110.8	0.76	8.6	7.4	108.2	0.32	10.3	6.0	10	TB

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					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
KKKGCFF	108.8	108.8	109.1	113.5	110.1	0.60	9.7	2.3	107.3	0.07	10.0	5.5	16	LA
LFMAD4	102.5	112.7	107.6	113.1	109.0	0.35	12.4	5.0	108.4	0.39	11.8	3.8	7	TB
MM39KM	118.9*	118.4	113.6	115.1	116.5	2.05*	7.1	2.5	112.9	1.62	6.4	3.8	16	LB
MP3CL4	101.5	99.5	102.0	103.1	101.5	-1.33	7.4	1.5	102.9	-1.12	8.4	3.1	8	RE
N2X8T2	103.7	112.6	100.3	102.2	104.7	-0.62	9.6	5.5	102.5	-1.22	10.9	2.9	16	AH
NQEUDT	97.9	104.4	108.6	101.1	103.0	-1.00	11.8	4.6	100.2	-1.86	11.0	4.1	16	LA
PZWU78	105.6	94.2*	99.9	98.5	99.6	-1.78	9.8	4.7	102.7	-1.18	10.6	4.9	9	TC
Q7P3KZ	99.8	105.4	105.6	105.5	104.0	-0.76	9.2	2.9	102.4	-1.26	9.2	2.4	16	AH
QVYJYE	101.0	99.7	93.2*	107.0	100.2	-1.63	9.9	5.7	98.9	-2.21*	9.6	4.6	12	LP
R97RFW	100.7	102.4	96.5	100.6	100.1	-1.66	7.8	2.5	98.1	-2.45*	9.8	2.7	11	TC
RHNKDK	108.0	110.5	109.8	115.2	110.8	0.77	10.8	3.1	110.7	1.01	10.0	3.3	16	LA
RHQH2H	115.8	105.5	104.8	109.0	108.8	0.30	11.1	5.0	109.6	0.71	11.3	4.2	16	AA
RQ39DE	106.9L	108.5L	115.1	107.5	109.5	0.47	4.9	3.8	109.4	0.66	5.1	3.4	16	AX
RWQ7NM	111.3	107.1	111.5	110.3	110.0	0.59	10.2	2.0	110.0	0.81	10.9	4.9	16	TX
UCZDFB	109.0	109.7	102.6	102.7	106.0	-0.33	10.8	3.9	110.1	0.83	10.2	4.2	16	TB
VLYHPQ	118.2	112.4	117.6	121.0*	117.3	2.23*	12.4	3.6	118.2	3.06X	11.6	4.9	16	TB
VTEBRA	103.9	106.3	103.6	109.3	105.8	-0.37	10.9	2.6	105.1	-0.52	11.0	3.1	16	LA
YQFCWY	104.0	104.3	107.4	No Data	105.2	-0.49	9.4	1.9	105.0	-0.54	8.4	2.3	15	TB
YYCHRF	99.5	105.6	96.2	111.1	103.1	-0.98	10.3	6.6	102.7	-1.19	9.2	4.1	16	LC

Consensus (All Labs) Results									
<b>Wk Mean</b>	107.65	107.39	107.20	107.37	<b>Month Mean</b>	107.42		<b>Grand Mean</b>	107.01
<b>Avg SDr</b>	10.63	10.06	10.10	9.38	<b>Avg SDr</b>	10.11		<b>Avg SDr</b>	10.25
<b>SD btwn Labs</b>	5.59	5.77	5.85	5.40	<b>SD btwn Labs</b>	4.42		<b>SD btwn Labs</b>	3.66
<b>Labs Includ</b>	53	51	50	48	<b>SD btwn Wks</b>	3.92		<b>SD btwn Wks</b>	4.22
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	53		<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	0	2	3	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)

(TB) - TMI Monitor/Burst 1000

(TX) - TMI Monitor/Burst (model not specified)

(AH) - Perkins Model AH

(LA) - L & W Bursting Strength Tester

(LC) - L & W Autoline

(LP) - L & W Bursting Strength Tester P-Type

(RE) - Regmed/Mullen Tester

(TC) - TMI Monitor/Burst (Model 13-71)

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

Containerboard Interlaboratory Testing Program  
Analysis 207

Bursting Strength (Mullen), 36 lb Linerboard - 36U3

TAPPI Official Test Method T807



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
26RJXN	88.2	86.0	84.5	85.1	86.0	-1.44	9.9	1.6	88.6	-0.79	10.2	2.7	12	LC
37EYRB	82.8*	88.3	92.2	90.4	88.4	-0.79	7.9	4.1	89.0	-0.69	8.7	3.3	12	LC
3JPRE3	90.0	90.1	90.5	86.9	89.4	-0.54	9.7	1.7	89.5	-0.53	9.7	2.1	12	LA
4QQD9B	92.3	No Data	No Data	No Data	92.3	0.23	12.0	0.0 L	92.5	0.32	9.5	2.3	9	LA
4YELZR	90.9	87.0	89.4	83.4	87.7	-0.99	8.3	3.3	86.9	-1.27	7.5	2.9	6	TB
6E7NPW	91.7	89.9	93.8	90.4	91.4	0.01	11.1	1.7	92.9	0.43	10.4	1.7	12	LZ
6FLU3Z	88.3	89.7	82.3	88.3	87.2	-1.12	8.6	3.3	84.3	-2.04*	8.2	6.5 H	8	LP
6W6WCA	91.2	91.8	90.8	91.3	91.3	-0.04	6.5	0.4 L	91.4	-0.01	6.1	0.4 L	12	LZ
787FPM	96.1	98.9	98.8	98.4	98.1	1.75	10.1	1.3	97.2	1.67	10.1	2.5	12	LA
79EWJM	94.2	97.7	97.1	99.3	97.1	1.49	10.0	2.2	96.3	1.41	10.0	2.2	12	LA
7AB8LG	92.6	87.7	92.5	85.7	89.6	-0.47	9.5	3.5	91.6	0.06	10.0	2.8	12	AH
7KP2YV	94.3	92.8	90.8	89.9	91.9	0.14	10.1	2.0	89.4	-0.57	10.6	3.8	10	LA
8G9A9E	95.2	103.1*	98.6	97.8	98.7	1.91	12.3	3.3	98.3	1.99	11.4	4.3	12	TB
8VHLGT	85.9	89.9	91.8	93.9	90.4	-0.28	11.0	3.4	91.1	-0.07	10.9	3.3	12	XX
A68DJU	95.4	96.1	95.5	91.4	94.6	0.83	9.5	2.2	94.2	0.81	10.6	2.0	12	LC
C6D9HZ	93.6	94.1	89.6	90.9	92.1	0.17	9.3	2.1	91.5	0.03	10.1	1.6	12	TB
CUAQRB	92.9	95.0	92.7	93.9	93.6	0.58	10.5	1.0	92.9	0.43	9.8	2.5	12	LA
D2B3PT	97.7 L	95.4	96.2 L	94.1	95.9	1.17	4.8	1.5	98.0	1.91	5.5	3.3	12	AX
E2NJA8	87.5	93.3	90.9	92.8	91.1	-0.07	10.3	2.6	92.2	0.25	9.6	3.3	12	LJ
E9RY37	94.3	97.9	99.6	95.5	96.8	1.43	9.4	2.4	96.3	1.42	9.9	2.8	12	LA
EWD6PT	88.8	90.5	90.7	87.1	89.3	-0.57	8.6	1.7	87.8	-1.02	8.4	1.6	12	AH
GLGGHA	86.7	83.4	83.8	84.0 L	84.5	-1.83	7.1	1.5	84.5	-1.99	7.1	1.5	4	RE
GVCVP8	83.9	88.1	81.6	88.0	85.4	-1.59	6.0	3.2	84.8	-1.88	6.8	2.6	8	TC
J27DNW	80.9*	93.0	89.0	85.7	87.1	-1.13	9.5	5.1	86.5	-1.39	10.6	3.5	8	LC
JR2BEX	94.7	90.0	92.8	92.0	92.4	0.25	8.9	1.9	90.7	-0.18	9.1	3.6	12	LJ
K8UTVL	92.1	94.4	94.4	94.6	93.9	0.65	10.0	1.2	93.0	0.46	10.9	2.5	12	LA
KWH84E	92.2	92.7	97.2	92.1	93.5	0.56	7.8	2.4	91.8	0.12	6.9	4.3	12	LB
L3CMJR	88.1	90.6	84.1	85.4	87.1	-1.15	6.2	2.9	93.2	0.53	9.1	6.9 H	12	LC
LGDRXB	87.1	88.3	84.1	90.4	87.5	-1.04	9.2	2.6	88.6	-0.79	9.3	2.9	8	TC
LKYAML	95.4	94.4	94.6	90.9	93.8	0.64	10.4	2.0	92.2	0.25	9.7	2.9	12	LZ
M2FCHW	97.6	No Data	No Data	No Data	97.6	1.64	11.3	0.0 L	87.8	-1.03	9.9	5.8 H	5	LA
NPHHBX	88.7	89.1	90.8	91.8	90.1	-0.35	9.1	1.5	89.7	-0.48	9.3	2.0	12	LA
PMDU8U	85.4	82.4*	77.8*	81.7*	81.8	-2.53*	9.1	3.1	90.6	-0.23	8.9	11.1 H	12	AX
PNPQCY	93.7	88.3	89.2	96.9	92.0	0.16	9.8	4.0	91.7	0.09	9.0	3.0	8	TB

Containerboard Interlaboratory Testing Program  
Analysis 207

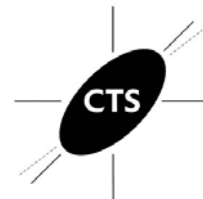
**Bursting Strength (Mullen), 36 lb Linerboard - 36U3**  
TAPPI Official Test Method T807



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
PQ8ETK	94.8	94.0	93.8	95.0	94.4	0.78	8.1	0.6	95.0	1.04	8.9	2.0	12	AA
PYZWF	96.1	95.3	94.8	93.4	94.9	0.92	10.3	1.1	95.9	1.30	10.0	2.0	11	TB
Q28RJP	89.9	91.6	90.8	92.0	91.1	-0.09	9.7	0.9	91.0	-0.10	9.2	2.5	12	TX
Q4BM3R	86.8	92.9	89.8	91.9	90.3	-0.28	12.6	2.7	92.3	0.26	10.8	4.2	12	LC
QJQPW3	90.0	94.6	No Data	No Data	92.3	0.23	10.0	3.3	90.6	-0.23	10.4	3.0	9	AX
RBBK9A	88.7	88.7	92.7	No Data	90.0	-0.37	9.9	2.3	92.7	0.37	9.1	2.9	10	AH
RDVZEQ	94.2	101.7*	86.9	89.0	93.0	0.40	9.6	6.6 H	89.7	-0.49	9.8	4.8	11	AH
RTQVRM	98.7	99.6	97.3	97.5	98.3	1.82	9.9	1.1	96.3	1.42	9.8	3.1	12	LA
TNE2ZW	88.5 L	89.6	87.0	91.6	89.2	-0.59	5.0	1.9	89.1	-0.66	5.5	4.0	12	AH
TWK896	88.6 H	93.4	89.7	90.6	90.6	-0.22	12.1	2.1	90.6	-0.22	10.7	2.0	12	AH
TYWM37	89.1	93.0	92.8	92.7	91.9	0.13	10.3	1.9	91.5	0.05	10.1	4.5	12	LA
UEFNPG	93.8	97.0	95.8	95.4	95.5	1.08	9.4	1.3	96.5	1.46	10.0	1.7	12	AA
UJJQ34	88.9	89.2	91.7	No Data	89.9	-0.40	9.1	1.5	92.2	0.24	9.8	3.6	7	TB
UXKF6V	93.9	96.0 H	95.3	94.0	94.8	0.89	13.6	1.0	92.7	0.38	11.7	1.7	12	AH
WBKAK	90.0	80.9*	88.5	88.8	87.1	-1.15	7.7	4.1	85.9	-1.58	9.1	3.3	12	LA
WTC8C4	95.9	97.5	93.0	92.7	94.8	0.89	10.1	2.3	95.1	1.06	10.3	1.9	12	AH
XBE4MZ	87.4	85.6	83.0	84.1	85.0	-1.69	7.0	1.9	84.5	-1.98	5.9	2.6	12	TB
XFFX9A	91.8	90.3	92.8 L	91.6 L	91.6	0.05	4.2	1.0	91.6	0.06	4.3	1.1	11	XX
ZKLT9	94.3	92.6	84.5	93.5	91.2	-0.05	10.8	4.5	92.7	0.38	10.3	3.1	12	LA

**Consensus (All Labs) Results**

<b>Wk Mean</b>	91.16	92.03	90.95	91.12	<b>Month Mean</b>	91.42	<b>Grand Mean</b>	91.37
<b>Avg SDr</b>	9.79	9.68	8.94	9.22	<b>Avg SDr</b>	9.50	<b>Avg SDr</b>	9.37
<b>SD btwn Labs</b>	3.97	4.63	4.87	4.12	<b>SD btwn Labs</b>	3.79	<b>SD btwn Labs</b>	3.47
<b>Labs Includ</b>	53	51	50	48	<b>SD btwn Wks</b>	2.62	<b>SD btwn Wks</b>	3.52
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	53	<b>Labs Includ</b>	53
<b>Labs not rcvd</b>	0	2	3	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)

(TB) - TMI Monitor/Burst 1000

(TX) - TMI Monitor/Burst (model not specified)

(AH) - Perkins Model AH

(LA) - L & W Bursting Strength Tester

(LC) - L & W Autoline

(LP) - L & W Bursting Strength Tester P-Type

(RE) - Regmed/Mullen Tester

(TC) - TMI Monitor/Burst (Model 13-71)

(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 Wk	Mean	CPV	SDr	SD Wk	Wks	
2QPYEB	82.1	86.3	84.2	82.4 *	83.8	-1.85	3.3	1.9	84.7	-1.74	3.5	2.1	16	LD
33LBEV	93.2	97.8	94.8	96.1	95.5	0.63	3.7	2.0	95.1	0.49	3.7	2.1	16	LC
48LTNM	97.4	93.4	93.7	92.3	94.2	0.36	3.8	2.2	94.8	0.43	3.2	3.6	16	LC
48QGJZ	104.3 *	104.4 *	102.1	100.5	102.8	2.18 *	4.2	1.9	103.4	2.29 *	4.2	1.7	16	LD
4HM2QE	86.8	92.0	90.2	90.9	90.0	-0.54	3.8	2.2	89.2	-0.77	4.1	2.2	16	EM
4UEB4R	96.3	89.4	99.5	95.5	95.2	0.56	3.4	4.2	98.4	1.20	3.8	4.5	10	LC
6JWP6B	93.6	96.8	93.1	93.1	94.1	0.34	3.5	1.8	92.7	-0.02	4.3	3.9	16	EM
6UW2XR	98.0	93.9	91.4	92.9	94.0	0.32	3.7	2.8	92.6	-0.04	3.6	2.2	16	EM
77VL4V	89.5	93.6	98.0	96.1	94.3	0.37	5.0	3.7	93.6	0.17	5.1	2.5	16	LC
7JBGQZ	97.2	No Data	95.9	94.3	95.8	0.69	4.8	1.5	97.3	0.97	5.2	3.0	15	LC
7PYWJD	101.8	No Data	No Data	No Data	101.8	1.95	4.0	0.0 L	104.5	2.53 *	4.9	2.0	4	LZ
82RETH	94.4	95.4	93.6	94.0	94.3	0.39	3.5	0.8	94.6	0.38	3.4	0.9	16	LD
8BHRWN	94.4	93.4	89.2	94.7	92.9	0.09	4.1	2.5	90.7	-0.46	4.3	2.4	16	EM
8H6LB9	No Data	90.8	No Data	92.5	91.7	-0.18	3.9	1.2	93.7	0.19	3.6	2.1	9	LD
8UBTTQ	100.6	100.8	100.0	103.1 *	101.1	1.81	4.3	1.4	100.0	1.55	4.1	2.5	16	LC
9LCH69	87.3	83.3	86.9	No Data	85.8	-1.41	3.8	2.2	84.8	-1.73	5.0	2.0	13	IM
9PN88C	83.4 H	88.6	97.3	85.6	88.7	-0.80	5.8	6.1	89.8	-0.65	5.0	5.5 H	12	TB
9VDNJ3	70.9 XH	96.0	95.5	93.5	89.0	-0.75	6.4	12.1 H	91.1	-0.37	4.4	5.8 H	16	LD
A2WA7E	95.4	92.8	94.4	98.7	95.3	0.59	4.7	2.5	95.5	0.58	4.5	2.9	16	MB
AU628N	89.8	92.5	88.9	No Data	90.4	-0.45	3.2	1.9	90.7	-0.46	3.1	1.1	15	TC
AWPGD6	96.9	99.0	99.1	99.0	98.5	1.26	4.4	1.1	101.0	1.77	4.3	2.6	12	LZ
BFYX3E	87.3	88.5	85.8 L	87.9	87.4	-1.08	4.1	1.2	88.0	-1.03	3.9	2.1	16	MB
BLN2ZP	97.8	92.9	90.9	87.8	92.4	-0.03	4.1	4.2	93.4	0.12	3.8	2.4	14	LC
CPZZHW	87.1	94.8	94.9	No Data	92.3	-0.05	4.5	4.4	95.7	0.61	4.3	3.7	15	LC
CWMV8L	95.8	96.2	95.3	96.2	95.9	0.71	4.7	0.4 L	96.2	0.74	4.5	2.0	16	LX
CYRRA2	98.7	No Data	No Data	No Data	98.7	1.31	5.8	0.0 L	96.3	0.75	4.0	1.3	13	LC
DA4J8A	101.3	101.3	100.5	100.3	100.9	1.76	4.6	0.5 L	101.0	1.76	4.2	1.7	11	LC
DWHYYA	88.0	85.3	89.4	77.7 X	85.1	-1.56	4.0	5.2	85.5	-1.57	4.6	4.0	9	LZ
DZZD92	94.1	96.2	91.9 H	94.3	94.1	0.34	5.5	1.8	91.4	-0.31	4.1	2.9	16	LC
EF8MUM	93.7	92.8	95.0	No Data	93.9	0.29	4.6	1.1	95.6	0.60	3.9	2.3	14	LC
EQPD7D	96.8 H	95.5	90.2	93.9	94.1	0.33	4.6	2.8	91.4	-0.30	4.3	3.1	14	LD
FAB9ZR	91.0	97.5	97.9	102.2 *	97.2	0.98	3.6	4.6	98.3	1.18	4.0	4.6	16	XX
FEDCEE	82.5	88.7	86.5	89.0 H	86.7	-1.23	5.7	3.0	89.5	-0.72	6.1	5.3 H	15	LC
GMDGBY	94.7	94.6 L	93.9 L	94.3	94.4	0.40	2.3	0.4 L	94.0	0.26	2.4	1.8	16	EM

Containerboard Interlaboratory Testing Program

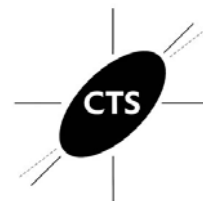
Analysis 215

Ring Crush, 42 lb Linerboard - 42X2

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	
GMWAF4	92.7	88.7	93.9	92.3	91.9	-0.13	4.4	2.2	93.9	0.23	4.3	5.7 H	16	LC
GW98R2	91.3	94.3	89.7	92.9	92.1	-0.10	4.5	2.0	91.7	-0.24	3.9	2.3	16	LX
H3J2NH	99.8	99.1	100.3	97.4	99.2	1.40	4.2	1.2	95.9	0.66	3.8	3.4	14	TC
H3MVKP	94.7	91.2	93.4	92.4	92.9	0.08	4.5	1.5	92.0	-0.18	3.9	3.1	16	TD
JX72TW	98.8	96.0	98.0	93.3	96.5	0.84	3.3	2.4	96.0	0.69	3.6	3.2	12	LD
KCPJF6	91.5	92.3	92.1	92.1	92.0	-0.11	4.2	0.4 L	92.5	-0.06	3.7	0.9	16	LC
LP97R4	92.0	92.8	88.0	89.5	90.6	-0.41	3.8	2.2	91.1	-0.38	4.0	2.7	8	TD
MU83MV	93.2	91.5	88.3	88.1	90.3	-0.47	3.2	2.5	93.7	0.19	3.2	3.0	16	LC
N2ULYG	88.7 L	88.6 L	88.7	73.2 X	84.8	-1.63	1.9	7.7 H	88.3	-0.98	1.9	4.1	16	LZ
NB7NG2	98.3	94.8	100.6	98.9	98.1	1.18	3.7	2.4	99.9	1.54	4.1	2.1	16	EM
PDNBK9	94.9	91.3	94.2	93.9	93.6	0.22	3.6	1.6	93.9	0.23	3.3	2.7	16	LC
PFPK9V	85.5	84.7	86.3	85.7	85.5	-1.47	3.6	0.7	81.3	-2.48*	3.7	2.8	16	XX
PYDGCH	95.2	94.7	98.5	94.6	95.7	0.68	2.6	1.9	95.8	0.65	3.4	1.8	16	LC
QNJYXN	100.1	No Data	No Data	No Data	100.1	1.60	3.5	0.0 L	95.8	0.65	3.8	1.5	13	LD
QRDFRN	86.8	86.4	87.3	84.6	86.3	-1.31	2.9	1.2	89.1	-0.81	3.4	1.9	16	TD
R66WKZ	89.2	90.5	No Data	No Data	89.8	-0.56	4.1	1.0	92.2	-0.14	4.5	2.0	13	LZ
RE7YBK	87.2	90.2	90.0	90.8	89.5	-0.63	4.2	1.6	87.7	-1.10	4.3	1.4	16	TX
TQCAJT	85.4	83.4	87.8	93.1	87.4	-1.07	4.0	4.2	91.3	-0.32	2.6	4.0	16	XX
UQ984M	93.0	93.9	95.2	93.9	94.0	0.31	4.7	0.9	93.7	0.19	4.0	1.7	16	LC
VRHYQE	89.6	90.3	92.1	91.7	90.9	-0.33	3.1	1.2	90.3	-0.54	3.2	1.3	16	EM
WD28YR	85.8	81.2*	77.4 X	76.7 X	80.3	-2.58*	5.2	4.2	82.0	-2.33*	5.2	4.2	7	LZ
WHCDEY	94.1	88.3	88.9	95.3	91.7	-0.18	4.1	3.6	89.6	-0.70	3.6	2.9	15	EN
WPUQDX	77.6*	92.4	84.1	91.2	86.3	-1.30	4.3	6.9 H	88.5	-0.92	5.1	5.1 H	15	LC
XQ8FFA	92.2	92.4	94.3	94.3	93.3	0.17	4.4	1.2	86.0	-1.47	4.0	6.8 H	16	EX
XT4HNNH	85.1	85.3	82.3*	84.5	84.3	-1.73	3.6	1.4	86.8	-1.30	4.2	2.4	16	LZ
XUMBUL	96.0	95.7	95.3	94.4	95.4	0.60	4.0	0.7	94.5	0.36	4.8	3.0	16	LC
Y39RPF	85.9	87.2 H	96.3	No Data	89.8	-0.57	5.9	5.7	92.8	-0.01	5.1	3.3	13	MZ
YV8HHM	95.3	97.0	96.4	96.7	96.4	0.81	3.6	0.7	95.8	0.64	4.7	3.0	16	LC
Z6ZYY6	87.9	92.1	90.6	86.5	89.3	-0.68	5.4	2.5	93.5	0.15	5.0	4.4	12	LC
ZALF94	91.1	93.1	91.8	91.1	91.8	-0.16	3.5	0.9	91.9	-0.20	3.4	1.6	16	EN
ZN9BJE	91.5	92.0	91.2	91.4	91.5	-0.21	5.8	0.3 L	90.9	-0.42	6.0	0.8	16	LC



**Consensus (All Labs) Results**

<b>Wk Mean</b>	92.40	92.39	92.80	93.04	<b>Month Mean</b>	92.51	<b>Grand Mean</b>	92.81
<b>Avg SDr</b>	4.24	4.28	4.03	4.15	<b>Avg SDr</b>	4.23	<b>Avg SDr</b>	4.15
<b>SD btwn Labs</b>	5.47	4.59	4.66	4.43	<b>SD btwn Labs</b>	4.74	<b>SD btwn Labs</b>	4.63
<b>Labs Includ</b>	63	61	59	53	<b>SD btwn Wks</b>	3.19	<b>SD btwn Wks</b>	3.11
<b>Labs Exclud</b>	1	0	1	3	<b>Labs Includ</b>	65	<b>Labs Includ</b>	65
<b>Labs not rcvd</b>	1	4	5	9				

**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

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

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

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

(EN) - Emerson 2200

(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

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

Containerboard Interlaboratory Testing Program  
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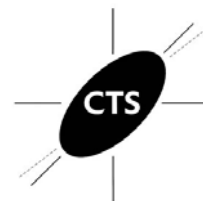
Ring Crush, 36 lb Linerboard - 36U3  
TAPPI Official Test Method T822



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
24V8VU	84.1	78.9	86.7*	79.9	82.4	1.06	4.8	3.7	83.2	1.18	4.7	3.1	6	LC
27KUXC	83.9	84.4	81.3	80.3	82.5	1.07	4.8	2.0	82.5	0.99	4.8	2.0	4	LZ
2H6MHQ	74.0	76.7	No Data	No Data	75.3	-0.77	3.0	2.0	78.9	0.09	4.3	2.4	10	EM
2QE7N4	75.8	80.0	78.8	78.4	78.2	-0.02	4.2	1.8	79.5	0.25	4.1	2.5	7	LC
2U8T2J	76.1	77.1	81.6	73.8	77.1	-0.31	4.9	3.2	70.5	-2.05*	5.2	7.9 H	12	TB
3H796P	76.9	79.7	80.5	81.0	79.6	0.32	2.9	1.8	76.9	-0.43	3.4	2.6	12	LD
4GH66V	86.4	85.8	86.9*	88.2*	86.8	2.20*	4.1	1.0	85.4	1.73	4.2	2.0	12	EM
4NE99M	75.8	77.4	72.1	73.0	74.6	-0.98	4.6	2.4	74.2	-1.10	5.0	2.5	8	TD
66HPM6	74.0	75.0	77.9	76.9	75.9	-0.62	3.3	1.8	74.6	-1.02	3.6	1.8	12	EM
6YBQ3L	80.8	78.7	84.6	75.9	80.0	0.44	3.8	3.7	81.2	0.67	4.1	2.3	12	LC
7TW4VF	69.8*	73.1	74.9	67.8*	71.4	-1.79	3.3	3.2	72.2	-1.62	3.3	2.3	8	LZ
9QKH97	78.5	78.8	78.8	79.7	79.0	0.17	3.1	0.5	79.7	0.28	3.5	1.2	12	TD
A2KVZB	72.6	72.1	73.2	69.7	71.9	-1.66	3.7	1.5	69.5	-2.30*	3.7	2.8	12	XX
ACYM7E	75.2	71.6	74.6	74.7	74.0	-1.11	3.8	1.6	74.9	-0.94	3.6	2.0	8	MB
B82A33	72.6	76.3 H	75.5	76.7	75.3	-0.79	4.5	1.9	75.3	-0.82	4.4	2.0	12	TX
BE3MZK	80.1	78.8	78.4	77.7	78.8	0.11	4.3	1.0	74.6	-1.02	4.6	3.8	12	LC
BNBLX8	79.4	80.5	78.8	79.0	79.4	0.29	4.5	0.8	78.3	-0.06	4.2	2.0	11	LX
DAYP6A	81.7	80.2	79.6	81.7	80.8	0.65	4.3	1.1	81.9	0.86	4.7	2.3	12	MB
DLXRXY	71.4	72.3 L	69.9* L	71.0	71.2	-1.85	2.1	1.0	73.3	-1.33	2.9	2.2	12	LD
E36C82	No Data	73.7	No Data	73.6	73.6	-1.21	5.0	0.1 L	75.6	-0.76	4.4	1.4	7	LD
EA4PCB	77.0	78.5	76.9	78.7	77.8	-0.14	4.5	1.0	77.9	-0.18	4.4	1.0	12	LC
EL8T4D	81.2	77.6	77.6	79.9	79.1	0.19	3.3	1.8	78.8	0.06	3.7	1.3	12	EN
EN73QM	81.4	77.5	79.3	79.9	79.5	0.31	4.1	1.6	79.2	0.16	4.9	1.2	12	LC
FVUE32	75.4	74.0 L	74.5	75.1	74.7	-0.93	2.5	0.6	77.2	-0.35	2.7	3.0	8	EM
FZUKNY	78.3	77.5	78.5	77.4	77.9	-0.10	6.2	0.6	76.6	-0.50	5.9	1.2	12	LC
G7MYKY	83.3	81.2	82.8	78.6	81.4	0.81	4.9	2.1	82.1	0.89	4.9	2.6	8	LD
GFDFFU	59.9 XH	81.8	81.9	78.4	75.5	-0.73	5.2	10.6 H	77.7	-0.22	4.8	7.4 H	8	LD
GJXYK4	79.7	77.9	78.5	76.9	78.2	-0.02	4.0	1.2	77.4	-0.30	4.8	4.1	12	LC
HMYCUE	78.9	79.7	79.3	78.8	79.2	0.22	5.4	0.4 L	80.6	0.52	4.6	1.7	12	LX
JC9N4Y	84.2	No Data	No Data	No Data	84.2	1.51	3.6	0.0 L	87.5	2.26*	4.3	2.4	4	LZ
JLGREA	73.6	77.7	80.6 H	78.0	77.5	-0.22	5.3	2.9	81.1	0.65	5.7	5.7 H	12	LC
JMNFPN	76.6	79.4	81.5	87.2*	81.2	0.74	4.7	4.5	82.3	0.94	4.6	3.5	11	XX
JZUQYV	83.6	81.0	81.4	81.8	82.0	0.94	4.0	1.2	79.6	0.26	4.6	2.7	12	EM
LBU9DA	75.1	77.4	74.9	76.5	76.0	-0.61	4.2	1.2	75.8	-0.71	4.4	2.6	11	EN



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	
LCHCHV	73.0	71.3	74.2	70.7	72.3	-1.57	4.7	1.6	74.1	-1.15	4.5	1.8	12	EM
LLDPX4	80.3	83.9	82.4	80.4	81.7	0.88	4.1	1.7	80.8	0.57	3.5	1.7	12	LD
MH6VGB	77.9	81.9	78.1	81.6	79.9	0.40	4.0	2.2	78.7	0.04	3.9	2.4	12	LC
MNQFGY	77.5	78.3	74.1	72.0	75.5	-0.74	3.4	2.9	75.7	-0.73	2.6	2.8	12	XX
MYBBJQ	81.1	No Data	No Data	No Data	81.1	0.72	5.0	0.0 L	84.3	1.45	4.5	2.3	9	LD
NAUUVA	81.3	78.5	80.0	81.4	80.3	0.51	4.1	1.4	78.9	0.07	3.6	1.4	12	LC
ND6VA8	78.7	79.0	76.9	77.0	77.9	-0.11	4.2	1.1	76.9	-0.42	3.9	1.3	8	EM
QBFEEB	75.4	79.7	83.1	No Data	79.4	0.27	3.3	3.9	79.2	0.16	3.6	2.7	10	LC
QCRAZ3	69.7*	78.5	74.3 H	79.1	75.4	-0.76	5.4	4.4	80.1	0.40	5.3	6.5 H	12	LC
QRYKF9	76.2	79.0 L	79.1	76.8	77.8	-0.14	3.2	1.5	78.6	0.02	3.4	1.4	11	LC
QY2KZW	84.1	84.0	80.1	86.0	83.6	1.36	3.7	2.5	84.1	1.40	3.8	2.4	8	LC
R8P4UQ	79.6	77.8	76.8	78.5	78.2	-0.03	3.9	1.2	77.1	-0.38	4.1	1.6	12	LC
RNZCY7	76.2	77.3	73.8	No Data	75.7	-0.67	3.7	1.8	74.9	-0.93	3.2	1.3	11	TC
T423BN	79.6	77.2	78.6	75.7	77.8	-0.14	3.2	1.7	77.8	-0.21	3.9	2.2	12	TD
T6JM66	82.6	85.4	85.1	83.9	84.2	1.54	3.2	1.3	83.6	1.27	3.4	2.0	12	LC
UFV76M	72.5	69.3*	71.7	69.6	70.8	-1.96	4.2	1.6	72.0	-1.66	4.2	1.8	12	LZ
VPF2FL	75.2	76.6 L	79.1	No Data	77.0	-0.35	2.9	2.0	73.3	-1.33	4.7	7.0 H	11	IM
VUZPNC	80.4 L	80.8	80.3	76.6	79.5	0.32	3.2	2.0	80.2	0.42	3.5	1.9	12	LC
WCB2FF	82.7	No Data	No Data	No Data	82.7	1.14	4.1	0.0 L	82.8	1.09	3.6	1.3	9	LC
WPTT94	82.3	82.8	80.2	81.6	81.7	0.88	4.0	1.1	79.7	0.29	4.0	2.1	12	TC
X32W4P	68.9*	69.2* H	67.3 X	69.4	68.7	-2.49*	5.7	1.0	71.9	-1.69	4.8	5.9 H	8	LZ
X4CUG8	79.6	79.8	76.4	73.7	77.4	-0.24	3.4	2.9	79.7	0.28	3.7	3.0	12	LC
X4K8JG	74.7	73.0	72.7	No Data	73.5	-1.26	5.0	1.0	76.4	-0.55	4.7	5.2 H	9	MZ
XDVCW8	74.4 L	74.5	74.2	73.2	74.1	-1.10	2.1	0.6	75.7	-0.74	2.0	2.5	12	LZ
XQMYXL	82.0	82.2	82.5	84.3	82.8	1.15	5.1	1.1	82.4	0.98	4.6	2.5	12	LC
XYUVP7	88.8*	88.1*	87.7*	86.3	87.7	2.44*	4.7	1.1	88.3	2.47*	4.4	1.2	12	LD
XZ9UUA	80.2	81.3 L	80.0	No Data	80.5	0.57	3.1	0.7	83.1	1.15	4.1	2.5	7	LC
YB98KF	77.5	77.8	78.7	76.1	77.5	-0.21	4.8	1.1	77.1	-0.37	4.8	1.1	12	LC
YR88MN	81.0	82.4	82.5	82.3	82.1	0.97	4.0	0.7	81.5	0.74	4.0	2.0	12	LC
Z4LM67	80.9	80.0	82.0	83.5	81.6	0.86	5.1	1.5	77.8	-0.20	4.6	6.0 H	12	EX
ZF2ERV	77.7	75.2	76.6	76.6	76.5	-0.47	3.5	1.0	78.9	0.07	3.7	2.1	12	EM
ZGPLM7	83.5	No Data	82.9	80.7	82.4	1.05	5.1	1.5	84.2	1.44	4.4	2.1	11	LC



**Consensus (All Labs) Results**

<b>Wk Mean</b>	78.32	78.34	78.76	77.95	<b>Month Mean</b>	78.32	<b>Grand Mean</b>	78.57
<b>Avg SDr</b>	4.11	4.22	4.19	4.12	<b>Avg SDr</b>	4.18	<b>Avg SDr</b>	4.21
<b>SD btwn Labs</b>	4.22	3.88	3.88	4.56	<b>SD btwn Labs</b>	3.86	<b>SD btwn Labs</b>	3.94
<b>Labs Includ</b>	64	62	60	57	<b>SD btwn Wks</b>	2.35	<b>SD btwn Wks</b>	3.08
<b>Labs Exclud</b>	1	0	1	0	<b>Labs Includ</b>	66	<b>Labs Includ</b>	66
<b>Labs not rcvd</b>	1	4	5	9				

**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

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

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

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

(EN) - Emerson 2200

(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

(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 Wk	Mean	CPV	SDr	SD Wk	Wks	
3GMXPX	26.4	25.8	24.6	26.3	25.8	1.57	2.4	0.8	26.6	2.26*	2.2	3.6 H	16	LW
3UMZRD	25.3	24.7	25.3	25.0	25.1	0.80	1.6	0.2	24.8	0.43	1.6	0.5	16	LU
66FKAB	24.0	23.6	24.1	37.4 X	27.3	3.15 X	2.3	6.8 H	25.4	1.01	2.1	3.9 H	12	LZ
6APJFF	23.5	24.5	24.5 L	23.0	23.9	-0.49	1.1	0.8	24.1	-0.34	1.6	0.8	16	XX
7QV8L9	23.8 L	23.0 L	22.9 L	23.1 L	23.2	-1.18	0.5	0.4	22.9	-1.51	0.4	0.7	16	XX
9LW6RX	25.4	24.7	25.0	23.8	24.7	0.44	2.1	0.7	24.7	0.24	2.1	0.8	16	LW
AFH6GP	25.2	24.6	24.5	24.0	24.6	0.27	1.8	0.5	24.2	-0.18	1.9	0.7	14	LW
AL7PK7	28.2 X	24.4	23.5	23.5	24.9	0.60	2.3	2.2 H	24.8	0.38	2.4	1.3	16	LU
AWBQ7Q	24.9	23.4	25.3	No Data	24.5	0.21	2.5	1.0	24.9	0.45	2.6	0.8	14	LW
B3EWKT	26.1	24.8	26.6*	23.7	25.3	1.06	2.0	1.3	29.9	5.58 X	2.7	7.4 H	12	LU
BFK63B	23.2	24.3	24.2	22.5	23.6	-0.81	1.8	0.9	22.4	-2.03*	1.7	1.1	11	LZ
BKBDHB	23.5	24.3	24.7	23.8	24.0	-0.29	1.4	0.5	25.0	0.54	1.6	0.8	16	LU
BKU868	23.9	26.2	24.0	23.1	24.3	-0.01	2.6	1.3	24.1	-0.35	2.2	1.2	15	LA
DAJUTV	24.8	22.8	21.7*	23.4	23.2	-1.24	2.6	1.3	23.5	-0.92	2.2	0.9	16	LZ
ERLP89	24.8	24.1	24.2	24.4	24.4	0.07	2.2	0.3	24.1	-0.33	2.3	0.4	16	LW
FJAVWP	24.5	24.3	24.1	24.6	24.4	0.06	2.2	0.2	25.1	0.69	2.5	1.0	16	LW
FNET2A	23.2 L	22.5 L	24.2 L	24.6 L	23.6	-0.72	0.5	0.9	23.8	-0.68	0.5	0.8	16	LA
FTETKF	25.9	22.5	25.2 H	24.8	24.6	0.28	3.5	1.5	25.2	0.76	3.8	1.2	16	LW
GKUALX	No Data	24.0	No Data	22.1	23.0	-1.37	1.8	1.4	23.9	-0.56	1.9	0.9	9	LW
GVWMKD	25.3	23.5	23.8	24.9	24.4	0.04	1.9	0.9	23.3	-1.15	1.8	1.2	14	LU
HMV86Y	24.9	25.6	25.4	25.5	25.3	1.07	2.0	0.3	25.1	0.70	2.2	0.5	16	LU
J4F9J2	24.7	24.9	26.3	26.9*	25.7	1.49	2.2	1.1	25.2	0.84	2.2	0.7	16	LU
JCVEL6	25.2	25.2	25.2	25.2	25.2	0.95	1.8	0.0 L	25.2	0.83	1.6	0.2 L	16	LW
JY3DUR	25.8	24.9	25.1	24.3	25.0	0.76	1.9	0.6	24.9	0.45	2.1	0.6	16	LW
KBU6PZ	22.9	22.5	23.2	22.6	22.8	-1.65	2.6	0.3	23.0	-1.44	2.5	0.8	9	LU
KZA8R4	24.5 L	26.2 L	25.5 L	24.7 L	25.2	0.97	0.1	0.8	24.8	0.38	0.1	1.0	16	TS
LA6TXK	24.5	23.8	24.7	23.5	24.1	-0.21	1.9	0.6	24.4	0.00	2.0	0.7	16	LW
LDZZWB	24.1	24.3	24.0	23.4	24.0	-0.39	2.1	0.4	24.1	-0.35	2.1	0.5	16	XX
MQJRBJ	24.5	24.6	23.3	22.6	23.8	-0.58	1.9	1.0	23.6	-0.84	1.9	0.6	15	LW
Q2J7PT	24.9	No Data	No Data	No Data	24.9	0.59	3.3	0.0 L	26.2	1.79	2.5	1.0	5	XX
QDFUHR	25.7 L	26.3 L	26.1 L	25.3 L	25.9	1.64	0.0	0.5	26.2	1.80	0.0	0.9	16	LU
RGHTTK	24.6	24.3	23.6	24.7	24.3	-0.01	1.8	0.5	24.7	0.30	2.1	0.8	16	XX
RU6BAV	23.8	24.0	24.0	23.9	23.9	-0.45	2.1	0.1 L	23.9	-0.50	2.0	0.1 L	7	LZ
RZTX62	22.5 L	22.0* L	21.1 XL	22.1 L	21.9	-2.58*	0.4	0.6	22.3	-2.13*	0.4	0.5	15	XX



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	
UDFMFQ	22.8	23.9	23.5	24.3	23.6	-0.75	2.1	0.7	24.0	-0.43	2.1	0.9	16	LW
V2EJN3	25.1	24.7	24.9	No Data	24.9	0.60	1.8	0.2	24.7	0.33	1.7	0.5	15	BK
VQXUU3	25.7	26.0	26.5	25.6	25.9	1.73	2.5	0.4	25.6	1.19	2.4	0.8	16	XX
W2N4EP	23.5	23.9	23.5	23.3 L	23.5	-0.86	1.6	0.2	24.1	-0.29	1.5	0.8	12	LU
XTPWEF	25.7	23.4	25.4 L	24.1	24.6	0.35	1.3	1.1	24.6	0.21	1.3	1.0	16	LZ
ZJEAJL	22.0*	22.8	22.6	22.3	22.4	-2.00*	1.9	0.4	22.8	-1.71	1.9	0.7	16	XX
ZTFBKQ	25.6 L	23.9 L	24.1 L	23.9 L	24.4	0.06	0.4	0.8	24.6	0.15	0.4	1.1	16	LA

Consensus (All Labs) Results										
<b>Wk Mean</b>	24.52	24.23	24.45	24.02	<b>Month Mean</b>	24.32		<b>Grand Mean</b>	24.42	
<b>Avg SDr</b>	2.02	1.80	2.08	1.82	<b>Avg SDr</b>	1.97		<b>Avg SDr</b>	1.95	
<b>SD btwn Labs</b>	1.07	1.08	1.08	1.15	<b>SD btwn Labs</b>	0.94		<b>SD btwn Labs</b>	0.98	
<b>Labs Includ</b>	39	40	38	37	<b>SD btwn Wks</b>	0.84		<b>SD btwn Wks</b>	1.17	
<b>Labs Exclud</b>	1	0	1	1	<b>Labs Includ</b>	40		<b>Labs Includ</b>	40	
<b>Labs not rcvd</b>	1	1	2	3						

**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

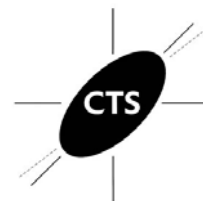
(LA) - L & W Autoline

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

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



WebCode	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	
29QENX	19.4	19.9	20.7	19.3	19.8	-1.30	1.6	0.6	20.1	-1.06	1.6	0.6	8	LU
2B2G3N	21.1	21.1	21.3	21.2	21.2	0.28	1.3	0.1 L	21.2	0.14	1.5	0.1 L	12	LW
2W2RZV	22.6	22.0	21.5	No Data	22.0	1.26	1.6	0.5	21.7	0.63	1.5	0.5	11	BK
3J3J8J	20.7	21.0	21.1	20.6	20.8	-0.10	1.7	0.3	20.9	-0.17	1.7	0.3	12	LW
3NWL7D	21.0	22.5	21.5	21.1	21.5	0.64	1.6	0.7	20.9	-0.18	1.6	0.8	12	LU
3Q8EAR	21.3	20.0	21.3	21.7	21.1	0.16	2.8	0.7	21.6	0.49	2.8	0.7	12	LW
43XKQT	22.6	21.9	22.5	22.2	22.3	1.56	2.0	0.3	22.6	1.57	2.0	0.9	12	XX
7RDMA2	21.7	21.1	21.6	21.9	21.6	0.77	1.7	0.3	21.4	0.36	1.7	0.5	12	LW
7V9KBE	21.2	20.3	21.3	20.1	20.7	-0.28	1.2	0.6	21.0	-0.11	1.4	0.6	12	XX
87QKEF	20.0	20.7	21.1	21.1	20.7	-0.25	1.8	0.5	21.2	0.15	1.6	0.7	8	LZ
882GVD	19.4	19.1	19.0*	19.3	19.2	-1.99	1.4	0.2	19.4	-1.77	1.5	0.4	12	XX
8V3Q4D	21.3	20.4	20.9	21.2	21.0	0.03	1.3	0.4	21.5	0.46	1.2	0.7	12	LU
9JJ9WL	19.5	20.1	20.7	19.8	20.0	-1.05	1.9	0.5	19.2	-1.98	1.8	1.0	11	LU
AJPALY	20.7	21.7	20.9	21.4	21.2	0.26	1.8	0.4	21.3	0.24	1.7	0.9	12	LW
B6GVWL	22.1	21.5	20.6	20.2	21.1	0.18	1.6	0.8	20.7	-0.44	1.7	0.7	12	XX
BDTYYE	20.6 L	21.3 L	20.5 L	21.2 L	20.9	0.00	0.3	0.4	20.7	-0.42	0.3	1.2	12	LA
C7A3GB	20.1	20.0	18.1 X	19.9	19.5	-1.63	1.4	1.0	19.5	-1.67	1.2	0.8	8	LZ
C8LX43	No Data	20.0	No Data	20.4	20.2	-0.83	1.5	0.3	20.5	-0.61	1.6	0.6	7	LW
CA6KBB	19.8 L	22.9* L	21.0 L	21.1 L	21.2	0.31	0.1	1.3 H	21.3	0.21	0.1	1.0	12	TS
CBJ7J7	20.7	21.4	20.4	20.4	20.7	-0.28	1.7	0.5	20.8	-0.31	1.8	0.7	12	LA
CJAD26	22.1	22.3	21.4	22.2	22.0	1.20	1.7	0.4	21.6	0.54	1.7	0.4	12	BK
EKU2BW	21.4	21.5	21.6	20.7	21.3	0.39	2.1	0.4	20.9	-0.24	1.9	1.1	12	LW
F2LYR3	21.6 L	22.7 L	23.1* L	22.3 L	22.4	1.70	0.0	0.6	28.0	7.24 X	0.0	9.3 H	12	LU
F83G24	20.8	20.7	21.3	20.7	20.9	-0.05	1.3	0.3	22.1	1.00	1.2	1.2	12	LU
HCEJAZ	21.3	No Data	No Data	No Data	21.3	0.42	1.9	0.0 L	22.3	1.29	1.7	0.6	5	XX
JD6Z6U	19.8 L	20.2 L	19.7 L	19.4 L	19.8	-1.31	0.3	0.3	19.3	-1.82	0.3	0.5	12	XX
KBY4JB	21.2	20.5	20.7	19.7	20.5	-0.44	1.6	0.6	19.8	-1.37	1.5	0.9	10	LU
KYZN3K	20.9	20.7	20.0	19.5	20.3	-0.75	1.6	0.7	20.6	-0.51	1.6	0.9	12	LW
MRVCC7	20.2 L	19.5 L	19.2 L	20.4 L	19.8	-1.28	0.3	0.6	20.1	-1.00	0.3	1.2	12	XX
MZM49X	22.5	22.0	21.4	22.8	22.2	1.39	2.0	0.6	22.0	0.98	1.9	0.7	8	XX
N3QW2C	20.9	21.3	20.7	21.8	21.2	0.28	1.8	0.5	21.2	0.09	1.7	0.3	10	LW
N6VU4R	19.8	20.8	21.0	20.6	20.5	-0.47	1.4	0.5	20.5	-0.63	1.4	0.4	8	LU
PLK2CB	22.2	22.4	22.6	23.3*	22.6	1.91	2.0	0.5	22.2	1.19	1.8	0.6	12	LW
QFNDLP	21.2	20.3	21.1	33.4 X	24.0	3.50 X	1.8	6.3 H	23.0	1.96	1.7	4.3 H	8	LZ



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
WAW8CV	19.1 L	20.0 L	20.2 L	18.9 L	19.5	-1.63	0.2	0.7	21.2	0.10	0.3	1.5	12	LA
WEYQ9	22.7	21.4	21.3	20.9	21.6	0.70	1.6	0.8	21.5	0.44	1.7	0.8	12	LW
XP4EUA	20.4	19.3	19.3	19.7	19.7	-1.45	1.6	0.5	20.3	-0.80	1.7	0.7	12	LZ
Y8TFX7	20.7	21.2	20.9	20.4	20.8	-0.14	1.6	0.4	21.0	-0.14	1.7	0.5	11	LW
Z3LBZK	21.3	21.6	23.4 *	23.3 *	22.4	1.63	2.0	1.1	21.6	0.51	1.8	0.9	12	LU
Z7344C	19.6	19.9	20.0 L	20.8	20.1	-0.98	0.9	0.5	20.8	-0.35	1.0	1.4	12	LZ
ZD74PZ	21.4	21.2	No Data	No Data	21.3	0.37	1.7	0.1	21.7	0.60	2.0	0.9	9	LW
ZPJ2U4	21.4	22.1	21.2	22.0	21.6	0.80	1.7	0.5	23.6	2.63 *	2.0	5.3 H	8	LU

Consensus (All Labs) Results									
<b>Wk Mean</b>	20.93	20.98	21.00	20.87	<b>Month Mean</b>	20.94	<b>Grand Mean</b>	21.09	
<b>Avg SDr</b>	1.55	1.58	1.66	1.46	<b>Avg SDr</b>	1.57	<b>Avg SDr</b>	1.59	
<b>SD btwn Labs</b>	0.96	0.96	0.94	1.11	<b>SD btwn Labs</b>	0.88	<b>SD btwn Labs</b>	0.96	
<b>Labs Incd</b>	41	41	38	38	<b>SD btwn Wks</b>	0.58	<b>SD btwn Wks</b>	1.33	
<b>Labs Excd</b>	0	0	1	1	<b>Labs Incd</b>	41	<b>Labs Incd</b>	41	
<b>Labs not rcvd</b>	1	1	3	3					

**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

Containerboard Interlaboratory Testing Program  
Analysis 228

**Roughness - Stylus Method, 42 lb Linerboard - 69Y**  
TAPPI Provisional Test Method T575



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2V82W3	116.7	-0.12	7.5	125.1	-0.04	10.3	2	EV
3AZ9RG	101.8	-0.89	15.3	118.0	-0.72	16.4	2	EV
3LE687	101.9	-0.88	12.2	109.5	-1.53	10.0	2	EV
3WQ3TV	132.9	0.71	20.5	132.9	0.71	20.5	1	EV
73PCF7	123.0	0.20	2.1	126.5	0.09	2.7	2	EV
7PJ94P	138.8	1.01	16.7	138.5	1.24	15.7	2	EV
828YHG	105.1	-0.72	10.0	113.5	-1.14	11.9	2	EV
CY77MC	157.1	1.95	48.1	139.0	1.29	35.7	2	LA
EXMMGR	69.9	-2.53 X	7.0	62.3	-6.02 X	6.7	2	EV
FXXAL4	113.6	-0.28	7.0	115.8	-0.93	9.9	2	EV
JJB3DL	117.1	-0.10	15.9	116.9	-0.82	13.9	2	EV
JTVM7W	117.0	-0.11	14.1	114.0	-1.10	13.4	2	LA
KNLK42	234.3	5.92 X	43.3	236.5	10.58 X	33.9	2	EV
PM69ZC	129.1	0.52	10.3	129.1	0.34	10.3	1	EV
Q28DVQ	136.4	0.89	18.4	138.5	1.24	17.0	2	EV
Q3FGRM	112.0	-0.36	12.3	120.6	-0.47	10.7	2	EV
RZ2KAM	115.4	-0.19	5.4	128.3	0.27	4.8	2	LA
UT3EM6	136.7	0.91	18.1	142.0	1.57	18.7	2	XX
YGTCAA	243.7	6.40 X	25.3	249.5	11.81 X	21.0	2	EV

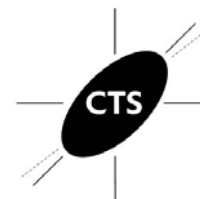
Consensus (All Labs) Results			
Month Mean	119.09	Grand Mean	125.51
Avg SDr	17.25	Avg SDr	15.65
SD btwn Labs	19.47	SD btwn Labs	10.50
Labs Incd	17	Labs Incd	16

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

(EV) - Emveco Microgage 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
268R3H	100.0	-0.74	7.0	104.0	-0.30	8.7	4	TM
2HDZJZ	111.4	0.41	3.6	107.1	0.01	5.6	3	HY
3F4AUW	120.0	1.27	7.1	113.1	0.62	5.9	3	SC
3LB9EG	109.2	0.18	9.9	112.0	0.51	9.3	4	HZ
47BVB6	117.8	1.05	1.3	120.0	1.31	4.5	4	TM
DBF6UQ	112.7	0.54	8.3	107.4	0.04	9.6	4	SC
DEQWNJ	85.4	-2.22 *	3.0	90.1	-1.71	4.6	4	TM
JJT2MD	116.0	0.87	5.7	113.2	0.62	5.8	4	TM
L3WR8C	120.0	1.27	5.8	121.3	1.45	8.8	3	HY
LC7WK3	102.2	-0.52	3.8	100.7	-0.64	3.9	4	TM
QZXV3R	102.1	-0.53	4.3	99.1	-0.79	5.0	4	SC
XKXHBA	97.8	-0.97	11.6	88.0	-1.92	7.8	4	TM
XL86RH	107.7	0.04	1.9	108.4	0.15	3.0	4	HY
ZEHUNJ	100.8	-0.66	4.0	113.4	0.65	6.8	4	TM

Consensus (All Labs) Results			
Month Mean	107.37	Grand Mean	106.96
Avg SDr	6.22	Avg SDr	6.71
SD btwn Labs	9.91	SD btwn Labs	9.92
Labs Incd	14	Labs Incd	14

**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

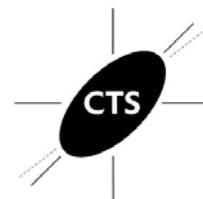


WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2JACLV	26.6	-0.40	5.0	28.1	-0.17	3.9	4	ZZ
3R4PBM	20.6	-1.91	1.3	20.5	-2.20*	1.5	4	ZZ
4WUEBQ	26.8	-0.36	4.5	27.2	-0.40	2.7	4	ZZ
8JNTYA	30.2	0.50	3.9	29.0	0.08	2.8	4	ZZ
8VLHAH	29.8	0.40	1.2	29.9	0.32	2.1	4	ZZ
AMHAPA	32.0	0.96	3.0	30.3	0.44	3.2	4	ZZ
BYCZTD	19.6	-2.16*	1.9	22.2	-1.75	2.9	4	ZZ
GUZ7DH	34.8	1.66	2.2	36.6	2.13*	2.5	3	ZZ
GZ4A2V	27.3	-0.22	0.8	28.0	-0.17	1.7	4	ZZ
JLVA2M	29.0	0.20	2.8	29.1	0.10	3.1	4	ZZ
LCEDAL	32.0	0.96	2.4	33.4	1.27	2.2	4	ZZ
MUVFCL	25.7	-0.63	3.3	26.1	-0.70	4.0	4	ZZ
P32HMH	23.4	-1.21	4.2	25.0	-0.99	4.0	4	ZZ
TQG2U3	30.4	0.56	5.4	32.3	0.97	3.6	4	ZZ
UPYME4	29.2	0.25	3.5	29.2	0.14	2.4	3	ZZ
W4P6G8	31.6	0.86	0.5	31.8	0.84	1.7	4	ZZ
WPUGY2	26.6	-0.40	1.5	29.2	0.14	2.5	2	ZZ
XFY4NK	32.4	1.06	2.1	30.0	0.34	2.6	4	ZZ
Z4W37F	27.7	-0.12	0.4	27.2	-0.41	0.7	4	ZZ

Consensus (All Labs) Results			
<b>Month Mean</b>	28.19	<b>Grand Mean</b>	28.67
<b>Avg SDr</b>	3.01	<b>Avg SDr</b>	2.78
<b>SD btwn Labs</b>	3.97	<b>SD btwn Labs</b>	3.72
<b>Labs Incd</b>	19	<b>Labs Incd</b>	19

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

(ZZ) - Instruments No Longer Tracked



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
7JTQWZ	15.4	-1.01	1.7	15.0	-1.41	1.7	4	XX
8D4NBF	18.5	0.71	1.8	18.6	0.75	2.2	4	LA
ATAP7T	17.3	0.01	3.1	19.4	1.24	2.3	3	HG
CZFR4K	19.1	1.05	1.9	16.7	-0.41	1.7	2	GS
F2YDDQ	15.1	-1.17	1.1	14.9	-1.48	3.7	4	XX
HQDT7Y	21.1	2.13 *	2.7	18.7	0.82	2.8	4	GA
HWGU9E	19.2	1.10	4.0	19.4	1.23	3.7	4	XX
LHA3Y7	17.9	0.37	2.2	17.4	0.04	3.1	4	XX
M2ZF6H	15.8	-0.80	0.8	15.9	-0.90	2.3	4	XX
PHBN2H	17.1	-0.08	3.2	18.5	0.66	4.2	4	GG
QP92RP	17.0	-0.11	1.8	17.3	-0.03	2.6	4	TN
R2XWCH	19.3	1.14	4.2	19.7	1.39	4.1	4	HG
TFFPCE	16.9	-0.17	3.6	18.0	0.37	4.0	4	LP
VGZDM7	16.4	-0.44	0.8	18.8	0.87	1.4	4	LW
VQNQNK	18.0	0.44	3.3	17.6	0.11	2.7	4	HG
W6LFH2	17.1	-0.08	1.5	16.5	-0.54	3.0	4	XX
WF42LB	14.5	-1.54	1.9	15.7	-0.98	1.9	4	LA
Y3W4HM	14.5	-1.54	2.3	14.5	-1.73	2.0	2	TL

Consensus (All Labs) Results			
<b>Month Mean</b>	17.23	<b>Grand Mean</b>	17.36
<b>Avg SDr</b>	2.54	<b>Avg SDr</b>	2.88
<b>SD btwn Labs</b>	1.79	<b>SD btwn Labs</b>	1.68
<b>Labs Incd</b>	18	<b>Labs Incd</b>	18

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

(GA) - Gurley Precision #4340 Automatic Densometer

(GS) - Gurley Hill S-P-S Tester #4190

(LA) - L & W Autoline

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

(TN) - Teledyne Gurley S-P-S Tester #4190

(GG) - Gurley Precision #4320 Densometer

(HG) - Technidyne - Hagerty Model #1

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

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

(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
2D2C8D	64.8	65.8	64.0 L	66.1	65.2	0.97	3.1	1.0	64.7	0.81	2.9	1.3	8	LC
2TVU6N	61.6	60.5	61.6	63.1	61.7	-0.09	2.8	1.1	62.0	-0.09	2.7	1.3	8	XX
3HUQDZ	67.9	64.0	61.3	63.1	64.1	0.64	3.1	2.8	64.1	0.60	3.2	2.4	8	LZ
662DH7	62.3	61.6	61.4	62.2	61.9	-0.04	2.9	0.4	62.4	0.04	2.6	0.8	8	LD
6847NJ	61.1	60.7	61.7	63.3	61.7	-0.10	3.1	1.2	62.4	0.05	3.1	1.2	8	TD
6FZDTP	64.9	62.7	64.1	63.9	63.9	0.59	2.8	0.9	67.3	1.66	3.1	3.8 H	8	LZ
9KFJXG	59.4	67.2	64.6	67.3	64.6	0.81	2.8	3.7 H	63.5	0.40	3.6	4.1 H	8	MB
9UR8U9	59.3	60.9	60.3	57.9	59.6	-0.73	2.9	1.3	58.9	-1.10	2.4	1.3	8	LX
9VFWPL	59.5	63.4 L	60.6	60.8	61.1	-0.28	1.7	1.7	61.3	-0.32	2.3	1.2	8	LD
9WRARW	58.8	58.4	59.0	58.5	58.7	-1.02	2.3	0.3 L	59.6	-0.89	2.2	1.2	7	LC
ABQXXG	60.2 L	62.7	61.7	62.3	61.7	-0.08	2.6	1.1	62.1	-0.05	2.6	1.1	8	LC
AWTQDM	64.0 H	68.3 H	64.2	70.1 *	66.6	1.42	6.9	3.0	65.6	1.10	5.6	2.7	8	LD
AYLLZV	62.1 L	65.1	65.7	64.6	64.4	0.73	3.1	1.6	63.5	0.40	3.0	1.7	8	TM
BQYCTK	60.3	62.0	60.9	60.8	61.0	-0.30	2.5	0.7	61.7	-0.19	2.5	1.0	8	TA
BUBHB8	64.5 L	64.0	64.2 L	65.8 L	64.6	0.81	1.9	0.8	64.8	0.82	1.8	0.7	8	TM
BXFPRJ	62.2	61.4	61.5	60.0	61.3	-0.22	2.5	0.9	61.5	-0.27	2.6	0.8	8	TB
CP3ZQP	53.8 *H	55.0 *H	55.6 *H	57.9 H	55.6	-1.96	7.3	1.7	55.6	-2.21 *	7.3	1.7	4	XX
CVQJ7R	No Data	60.2	No Data	59.2	59.7	-0.70	3.2	0.7	58.9	-1.13	2.7	1.4	4	LD
CWFKHM	64.3	65.3	65.0	64.6	64.8	0.86	3.0	0.4	63.8	0.48	2.8	1.3	8	LC
CWYA34	64.1	62.0	63.6	64.1	63.5	0.45	3.1	1.0	63.5	0.39	3.0	1.0	8	LC
D8FYAT	60.3	60.7	59.3	60.2	60.1	-0.57	2.6	0.6	60.5	-0.60	2.5	0.7	8	LC
DGM9PD	62.2	63.7	62.9	63.3	63.0	0.32	2.5	0.6	63.8	0.49	2.4	1.6	8	LC
EDEFB6	61.3	60.9	61.6	59.8	60.9	-0.33	2.6	0.8	60.9	-0.45	2.6	0.8	4	TD
EJJ7P4	No Data	No Data	No Data	57.8	57.8	-1.29	2.5	0.0 L	62.8	0.17	2.0	7.1 H	2	XX
EYGRAJ	61.5	60.5	60.5 L	60.6 L	60.8	-0.37	2.1	0.5	60.6	-0.56	1.9	0.7	8	EM
GAFCGU	60.9	60.5	59.7	60.1	60.3	-0.51	2.3	0.5	60.8	-0.49	2.6	2.0	7	LC
GBL9WL	64.7	61.9	62.4	61.2	62.5	0.17	3.6	1.5	62.3	0.02	3.5	1.1	8	LC
GKAPHL	60.8	60.7	59.2	58.3	59.7	-0.70	3.7	1.2	64.2	0.62	3.3	4.8 H	8	LC
HBYMXL	56.4	57.3	57.8	55.1 *	56.6	-1.64	3.2	1.2	58.7	-1.18	2.8	2.5	8	TB
HV72J7	62.9	61.3	65.0	63.2	63.1	0.33	2.2	1.5	62.7	0.15	2.3	1.2	8	LD
K27HTX	60.3	60.0	56.1 *	54.8 *	57.8	-1.29	3.0	2.8	58.8	-1.16	3.2	2.3	8	LC
K9BN4L	63.9	64.6	65.3	67.0	65.2	0.98	2.7	1.3	65.2	0.96	2.6	1.2	8	LC
KEFLA8	63.5	63.6	63.6	65.9	64.1	0.66	3.2	1.2	63.4	0.35	3.0	1.4	8	LC
LNJZ47	No Data	53.7 *H	No Data	No Data	53.7	-2.53 *	6.4	0.0 L	55.8	-2.15 *	3.7	1.3	5	EM

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
MCV7VB	59.1	58.9	59.2	61.8	59.7	-0.69	3.5	1.4	60.4	-0.61	3.7	1.4	8	MB
MTMR6N	58.4	59.8 L	60.9	61.9	60.3	-0.53	2.6	1.5	61.2	-0.36	2.8	1.8	8	LD
PDJGJA	57.5	59.2	61.2	60.3	59.6	-0.75	3.0	1.6	59.8	-0.84	2.7	1.1	8	LC
PTGZLW	60.5 H	No Data	55.6 *H	No Data	58.1	-1.21	7.1	3.5 H	57.2	-1.67	6.2	4.0 H	6	LC
PWWL4H	66.8	70.5 *	63.0	63.8	66.0	1.23	3.1	3.4 H	65.3	1.00	3.3	3.1	8	LC
PYLW7W	67.8	61.1	64.4	68.5	65.5	1.06	3.0	3.4 H	65.5	1.05	3.1	3.1	8	LZ
Q6VDG7	67.4	67.2	68.6 *L	68.7 L	68.0	1.83	2.0	0.8	67.8	1.82	2.5	1.1	8	XX
TFK4WV	59.5 L	61.4	60.0	59.7	60.1	-0.57	2.2	0.9	60.3	-0.65	2.1	0.6	8	LC
TMHPX3	62.2	64.1	61.0	62.3	62.4	0.12	3.2	1.3	63.0	0.24	3.2	1.2	8	LC
UATA89	57.3	55.3 *	57.6	55.6	56.4	-1.71	3.5	1.2	57.4	-1.60	3.4	1.4	8	LC
UUB3V3	58.1	59.3	60.9	59.6	59.5	-0.78	3.5	1.2	59.5	-0.92	3.4	1.0	5	LZ
V6BGL8	69.0 *	64.7	65.4	65.1	66.1	1.24	3.2	2.0	66.8	1.50	3.8	2.2	8	LD
VEJUXA	63.8	63.2	65.4	62.5 L	63.7	0.54	2.5	1.2	64.9	0.85	2.6	1.9	8	EM
VH DUZJ	68.9 *	68.6	71.2 X	No Data	69.6	2.33 *	2.7	1.4	69.6	2.43 *	2.9	1.1	7	LZ
VHFAZK	59.8 L	59.1	59.4	58.2	59.1	-0.88	2.6	0.7	60.8	-0.50	2.6	1.9	8	TD
WJ82Q3	67.9	65.2	65.3	66.9	66.3	1.33	2.8	1.3	66.0	1.24	3.3	1.8	8	EM
X6Z3VV	61.7	68.9	68.3 *	66.7	66.4	1.35	2.8	3.3	65.5	1.07	3.3	2.7	8	LC
X84WVL	62.5	63.6	65.1	64.5	63.9	0.59	3.9	1.1	64.3	0.68	3.9	1.1	8	LC
YVRAFE	61.5	61.9	61.8	61.8	61.8	-0.07	2.0	0.2 L	57.5	-1.59	2.8	4.6 H	8	LC
ZLL2H9	63.2	62.6	65.9	No Data	63.9	0.58	3.3	1.8	62.8	0.18	3.3	3.0	7	LC

Consensus (All Labs) Results									
Wk Mean	62.09	62.21	62.07	62.22	Month Mean	61.99	Grand Mean	62.28	
Avg SDr	3.46	3.12	3.27	3.03	Avg SDr	3.33	Avg SDr	3.21	
SD btwn Labs	3.30	3.43	2.99	3.56	SD btwn Labs	3.26	SD btwn Labs	3.03	
Labs Includ	51	52	50	50	SD btwn Wks	1.66	SD btwn Wks	2.24	
Labs Exclud	0	0	1	0	Labs Includ	54	Labs Includ	54	
Labs not rcvd	3	2	3	4					

Containerboard Interlaboratory Testing Program  
Analysis 240  
**Flat Crush Strength (CMT)**, 26 lb Corrugating Medium - CM72  
TAPPI Official Test Method T809



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

(EM) - Emerson 1200 Series	(LC) - L & W Crush Tester 48
(LD) - L&W Crush Tester 248	(LX) - L & W 506
(LZ) - L & W Crush Tester (model not specified)	(MB) - Messmer Buchel K440
(TA) - Thwing-Albert Model QC II-XDS	(TB) - TMI Monitor/Compression Tester, 17-70
(TD) - TMI Digital Crush Tester, Model 17-09	(TM) - TMI/Hinde & Dauch
(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
2D3GCE	72.3	73.0	73.8	69.8	72.2	-0.16	2.6	1.7	72.0	-0.16	2.6	1.3	8	TD
8G4CWC	77.6	75.1	73.6	74.1	75.1	0.61	2.7	1.8	75.1	0.66	2.7	1.8	4	XX
9C8C9L	75.4	75.9	74.5	75.2	75.3	0.65	2.5	0.6	76.0	0.89	2.6	1.2	8	TB
FC2QDR	69.6	66.3	66.7	69.1	67.9	-1.30	2.7	1.7	68.9	-0.95	2.4	1.8	8	XX
FCKHJV	76.7	77.1	76.1	76.2	76.5	0.99	2.8	0.5	75.7	0.82	2.9	1.4	7	LZ
GY7DJ8	81.2	78.7	80.1	81.2	80.3	1.99	2.5	1.2	80.6	2.07*	2.6	1.2	8	XX
JFT4MK	64.7 L	65.1 L	64.1 *L	66.1	65.0	-2.07*	1.4	0.8	66.1	-1.67	1.5	1.8	8	XX
L9QB3G	No Data	71.8	No Data	71.7	71.7	-0.28	2.1	0.1 L	71.6	-0.26	2.2	0.3 L	4	LD
LMAZYY	69.6	68.5	71.1	68.4	69.4	-0.90	2.8	1.3	69.6	-0.78	2.4	0.9	8	EM
MPMF9N	69.2	70.0 L	69.9	71.7 L	70.2	-0.69	1.7	1.0	69.4	-0.82	2.0	1.3	8	LD
RQH6QT	67.9	74.4	74.3	63.7	70.1	-0.72	2.4	5.2 H	68.6	-1.04	1.9	4.0 H	8	XX
RTBE2E	74.4	73.8	72.8 L	74.8	74.0	0.31	2.2	0.9	74.4	0.47	2.1	0.9	8	LC
TCZ4VT	71.0	68.8	75.6	75.1 H	72.6	-0.05	3.6	3.3	72.0	-0.14	4.4	2.6	8	LZ
VJ86MT	74.0	74.1	74.7	74.9	74.4	0.43	2.8	0.4	74.2	0.42	2.9	0.4	8	MB
VZH8L8	70.5	70.1	76.1 H	68.3 H	71.2	-0.41	4.4	3.4	68.5	-1.07	4.4	5.7 H	8	LC
W4VX63	76.0	77.3	77.2	78.6	77.3	1.19	2.8	1.1	77.7	1.33	2.6	1.0	8	LC
WU8HDX	78.9	77.7	77.7	78.1	78.1	1.41	2.9	0.6	77.5	1.29	3.0	1.4	8	LD
Y4GJN4	72.9	69.7	72.4	70.8	71.5	-0.36	3.1	1.5	71.6	-0.25	3.0	1.5	8	LC
YGJ3YP	69.7	72.1	70.4	69.6	70.4	-0.63	1.5	1.2	69.5	-0.80	1.5	3.6 H	8	LC

**Consensus (All Labs) Results**

<b>Wk Mean</b>	72.87	72.61	73.39	72.49	<b>Month Mean</b>	72.80	<b>Grand Mean</b>	72.57
<b>Avg SDr</b>	2.47	2.57	2.73	3.00	<b>Avg SDr</b>	2.69	<b>Avg SDr</b>	2.72
<b>SD btwn Labs</b>	4.26	3.94	3.92	4.54	<b>SD btwn Labs</b>	3.77	<b>SD btwn Labs</b>	3.85
<b>Labs Includ</b>	18	19	18	19	<b>SD btwn Wks</b>	1.92	<b>SD btwn Wks</b>	2.20
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	19	<b>Labs Includ</b>	19
<b>Labs not rcvd</b>	1	0	1	0				

**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

Containerboard Interlaboratory Testing Program  
Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM72  
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
2944NP	43.4	43.2	50.3 X	43.7	45.2	1.37	2.9	3.4 H	44.1	1.04	2.5	3.3 H	8	LC
2V464D	41.8	41.9 L	40.8	41.5	41.5	0.07	1.6	0.5	40.9	0.06	1.6	0.8	8	TD
4ZBX2M	41.8	42.2	42.6	44.7	42.8	0.54	2.1	1.3	42.7	0.61	2.2	1.3	8	LC
6NW4KR	41.0 L	41.8	42.5	42.3	41.9	0.21	2.3	0.7	41.7	0.31	2.2	0.8	8	LZ
6YP6NB	43.8 H	45.6	44.4	45.2	44.7	1.23	2.9	0.8	44.7	1.24	2.7	0.9	8	LC
7L9U6Y	45.6	43.9	44.8	44.8	44.8	1.23	2.0	0.7	41.2	0.15	1.9	3.9 H	8	EM
7VTEWA	41.3	40.1	42.0	43.4 H	41.7	0.14	3.3	1.4	41.5	0.24	3.1	1.0	8	LD
98BVU7	39.9	41.3 H	40.6	No Data	40.6	-0.26	4.3	0.7	42.5	0.54	3.8	1.8	7	MZ
AAFVAX	46.0	38.6	42.1	38.5	41.3	0.00	3.0	3.6 H	41.5	0.25	2.8	2.9 H	8	LC
ANCM39	38.8	40.9	45.6	44.4	42.4	0.40	2.5	3.1	43.2	0.76	2.3	2.3	8	LC
BN7RW8	33.9* L	34.9*	36.8*	37.3	35.7	-1.99	2.5	1.6	35.7	-1.54	2.5	1.6	4	XX
GCVYYF	43.3	44.5	42.6	43.7	43.5	0.79	2.2	0.8	42.0	0.40	2.1	1.7	8	LC
GUFYY8	37.7	37.6	38.0	38.9	38.1	-1.16	2.1	0.6	39.5	-0.37	2.1	1.9	8	MB
K26D39	43.0	43.3	41.2	44.4	43.0	0.59	2.3	1.3	42.6	0.57	2.4	1.1	8	TB
KM4YAL	39.8	39.7	38.8	39.2	39.4	-0.68	1.6	0.4	39.5	-0.36	1.9	0.4	8	WK
L2UMCV	No Data	No Data	No Data	35.0	35.0	-2.24*	2.7	0.0 L	33.4	-2.25*	2.1	2.3	2	XX
T3Q6X7	43.2	43.5	41.9	43.3	43.0	0.60	2.9	0.7	43.2	0.75	2.5	0.6	8	LC
WF34VV	41.4	39.9	40.2	41.2	40.7	-0.23	1.5	0.8	40.7	0.00	1.7	0.6	8	EN
WZ9LXJ	31.2 X	32.1 X	31.2 XL	31.9*	31.6	-3.46 X	1.5	0.5	32.5	-2.53*	1.7	1.1	8	TM
X8NDCN	39.8	39.4	39.9	36.4	38.9	-0.86	2.1	1.7	38.3	-0.75	2.2	2.0	5	TB
ZEDR2E	45.7	43.1	43.6	44.3	44.1	1.01	1.8	1.1	44.2	1.08	2.2	0.8	8	LD
ZP6RPA	38.6	38.7	39.6	39.8	39.2	-0.76	2.0	0.6	40.1	-0.20	2.1	1.1	8	LD

Consensus (All Labs) Results													
<b>Wk Mean</b>	41.48	41.19	41.48	41.13	<b>Month Mean</b>	41.30				<b>Grand Mean</b>	40.72		
<b>Avg SDr</b>	2.40	2.49	2.41	2.46	<b>Avg SDr</b>	2.50				<b>Avg SDr</b>	2.35		
<b>SD btwn Labs</b>	2.97	2.62	2.30	3.70	<b>SD btwn Labs</b>	2.80				<b>SD btwn Labs</b>	3.25		
<b>Labs Includ</b>	20	20	19	21	<b>SD btwn Wks</b>	1.60				<b>SD btwn Wks</b>	1.79		
<b>Labs Exclud</b>	1	1	2	0	<b>Labs Includ</b>	21				<b>Labs Includ</b>	22		
<b>Labs not rcvd</b>	1	1	1	1									



**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

(WK) - Zwick Z005 Crush Tester

(EN) - Emerson 2200 Series

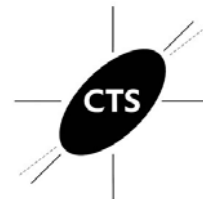
(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

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

(TM) - TMI/Hinde & Dauch

(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
7WY279	14.2	13.6	14.6	13.8	14.0	-0.48	1.1	0.4	14.3	-0.30	1.0	0.7	8	XX
98RLN7	15.3	15.7	15.2	15.5	15.4	0.92	1.2	0.2 L	15.3	1.14	1.2	0.3	8	LU
9DGYPU	13.6	12.8	12.8	12.8	13.0	-1.51	1.0	0.4	13.3	-1.70	1.1	0.5	8	LW
BMYZWK	14.9	15.2	14.6	14.5	14.8	0.29	1.3	0.3	14.9	0.49	1.2	0.3	8	LW
CJDJAX	14.9	14.7	15.4	14.5	14.9	0.35	1.1	0.4	14.9	0.58	1.1	0.3	8	XX
D9RX7M	15.0	14.4	14.4	15.5	14.8	0.30	1.1	0.5	15.0	0.68	1.2	0.5	6	XX
F9L6W7	No Data	13.3	No Data	13.7	13.5	-1.04	0.9	0.2 L	13.6	-1.31	1.1	0.9	6	LZ
H6FCPC	13.7	13.6	13.2	14.4	13.7	-0.83	1.2	0.5	14.2	-0.41	1.3	0.8	8	LZ
MQ3JGM	14.8	14.7	15.1	14.3	14.7	0.22	1.1	0.3	14.8	0.42	1.2	0.2	8	XX
RLCUTE	14.6	13.7	14.4	14.6	14.3	-0.18	1.0	0.4	14.3	-0.37	1.1	0.3	7	LW
UN4A3R	14.2	14.0	14.3	14.2	14.2	-0.36	1.2	0.1 L	13.9	-0.86	1.1	0.6	5	LU
WT7CQR	14.5	14.5	14.3	24.1 X	16.8	2.32*	1.3	4.8 H	15.7	1.65	1.1	3.4 H	8	LZ

Consensus (All Labs) Results										
<b>Wk Mean</b>	14.52	14.18	14.38	14.34	<b>Month Mean</b>	14.51	<b>Grand Mean</b>	14.53		
<b>Avg SDr</b>	1.11	1.07	1.20	1.06	<b>Avg SDr</b>	1.13	<b>Avg SDr</b>	1.14		
<b>SD btwn Labs</b>	0.55	0.85	0.78	0.76	<b>SD btwn Labs</b>	0.99	<b>SD btwn Labs</b>	0.71		
<b>Labs Includ</b>	11	12	11	11	<b>SD btwn Wks</b>	1.44	<b>SD btwn Wks</b>	1.10		
<b>Labs Exclud</b>	0	0	0	1	<b>Labs Includ</b>	12	<b>Labs Includ</b>	12		
<b>Labs not rcvd</b>	1	0	1	0						

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

(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