

Containerboard Interlaboratory Testing Program

Participant Summary Report #669 - June 2025

[Introduction to the Containerboard Program](#)

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

Analysis	Sample	Analysis Name
<u>201</u>	<u>BO18</u>	<u>Top to Bottom Box Compression Strength, Corrugated Boxes</u>
<u>202</u>	<u>EC17</u>	<u>Edgewise Compressive Strength, by T811, Corrugated Board</u>
<u>203</u>	<u>EC17</u>	<u>Edgewise Compressive Strength by T839, Corrugated Board</u>
<u>205</u>	<u>42L3</u>	<u>Bursting Strength (Mullen), 42 lb Linerboard</u>
<u>207</u>	<u>31K1</u>	<u>Bursting Strength (Mullen), 31 lb Linerboard</u>
<u>215</u>	<u>42L3</u>	<u>Ring Crush, 42 lb Linerboard</u>
<u>217</u>	<u>31K1</u>	<u>Ring Crush, 31 lb Linerboard</u>
<u>223</u>	<u>42L3</u>	<u>STFI, 42 lb Linerboard</u>
<u>225</u>	<u>31K1</u>	<u>STFI, 31 lb Linerboard</u>
<u>228</u>	<u>42L3</u>	<u>Roughness - Stylus Method, 42 lb Linerboard</u>
<u>229</u>	<u>42L3</u>	<u>Roughness - Sheffield Method, 42 lb Linerboard</u>
<u>231</u>	<u>42L</u>	<u>Internal Bond, 42 lb Linerboard</u>
<u>234</u>	<u>42L</u>	<u>COF Inclined Plane (Slide Angle), 42 lb Linerboard</u>
<u>237</u>	<u>42L3</u>	<u>Air Resistance, 42 lb Linerboard</u>
<u>240</u>	<u>CM13</u>	<u>Flat Crush Strength (CMT), 26 lb Corrugating Medium</u>
<u>250</u>	<u>CM13</u>	<u>Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium</u>
<u>255</u>	<u>CM13</u>	<u>Ring Crush (RCT), 26 lb Corrugating Medium</u>
<u>261</u>	<u>CM13</u>	<u>STFI, 26 lb Corrugating Medium</u>

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; 31 lb. and 52 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.

Material	Lot Code	Dates in Use
26# Corrugating Medium	CM13	September 2023 - Current
	CM12	June 2022 - August 2023
31# Linerboard	31K1	August 2024 - Current
	35E3	June 2022 - June 2024
42# Linerboard	42L3	March 2025 - Current
	42L2	Nov 2024 - Feb 2025
52# Linerboard	52J2	September 2024 - Current
	52J1	November 2023 - July 2024

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, agriculture, hemp, 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 100 countries, currently participate in the CTS programs.

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EXPLANATION OF TABLES

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

Definitions of Terms Used

Weekly Results

Laboratory Data

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

Consensus Data

- Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.
- Avg SD - For each week, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SD 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.
- SD - For each laboratory, the average of the weekly within-lab standard deviations (SD's) for all reported Weekly Means this month.
- SD Wk - The standard deviation among the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

Consensus Data

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

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 (SD's) for the weeks shown.
SD Wk	-	The standard deviation among the laboratory's weekly Means for the weeks shown, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.
Wks	-	The number of weeks included in the cumulative period.
Inst	-	The two letter instrument code. Codes are summarized at the bottom of the last analysis page.

Consensus Data

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

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

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

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

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

Flags assigned to Weekly Means:

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

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

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



Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BO18
TAPPI Official Test Method T804

Report #669
June 2025

WebCode	Monthly Results			Cumulative Results					Inst
	Mean	CPV	SD	Mean	CPV	SD Months	Months		
22N87B	414.0	-4.91 X	16.73	414.0	-6.58 X	0.00	1	LL	
3M44Z8	545.3	-0.57	17.99	571.7	0.19	24.44	4	LO	
67T67U	551.8	-0.36	32.26	563.2	-0.18	36.11	4	LS	
6JT3R6	607.4	1.48	22.01	542.0	-1.09	49.24	4	ER	
C8ZUA4	584.6	0.73	31.15	598.8	1.35	17.04	4	EX	
CMEXVY	509.2	-1.77	71.28	533.0	-1.47	27.77	4	ER	
CNKK94	569.7	0.24	32.33	559.3	-0.34	19.31	4	EX	
GE3VBT	574.2	0.39	23.33	568.2	0.04	28.00	4	ES	
J2BK4E	551.0	-0.38	32.87	551.9	-0.66	3.12 L	4	LG	
J6PHAF	585.5	0.76	28.36	564.8	-0.10	22.45	4	LS	
JJQU6E	507.5	-1.82	27.12	486.1	-3.48 X	39.85	4	TB	
JURJJV	557.8	-0.16	60.52	565.7	-0.07	12.12	4	EX	
JXQVFU	557.1	-0.18	53.30	531.2	-1.55	36.55	4	ER	
N987W9	581.5	0.63	1.50 L	578.6	0.49	6.89	4	EX	
NJC4YQ	569.7	0.24	66.39	584.9	0.76	17.36	4	LG	
NZHKRB	638.5	2.51 *	35.16	611.9	1.92 *	45.90	4	ER	
PZUE8B	573.2	0.35	35.15	582.7	0.66	21.07	4	EX	
Q8BDDA	541.4	-0.70	46.00	590.0	0.97	32.43	4	ET	
RJHKQL	546.9	-0.52	46.52	580.5	0.57	31.56	4	EX	
TTGXYK	528.4	-1.13	17.76	537.2	-1.29	12.66	4	ER	
UEFK4L	586.0	0.78	57.58	572.2	0.21	17.78	4	EX	
UY628E	521.6	-1.35	29.21	529.7	-1.61	11.62	4	LG	
WPTLEC	554.6	-0.26	33.40	564.5	-0.12	8.38	4	LG	
WQ9LX2	570.4	0.26	20.57	611.7	1.91 *	34.48	4	LG	
XVAE62	540.2	-0.74	19.03	545.0	-0.95	17.93	4	LG	
ZG2F8E	563.9	0.04	42.54	558.2	-0.39	21.84	4	EX	
ZHHCZE	608.9	1.53	24.52	585.0	0.76	19.68	4	LM	
Consensus (All Labs) Results									
Month Mean			562.55	Grand Mean		567.26			
Avg SD			38.52	Avg SD Months		25.72			
SD btwn Labs			30.23	SD btwn Labs		23.30			
Labs Incl			26	Labs Incl		25			



Containerboard Interlaboratory Testing Program
Analysis 201

Report #669
June 2025

Top to Bottom Box Compression Strength, Corrugated Boxes - BO18

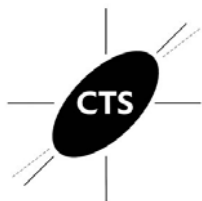
TAPPI Official Test Method T804

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	554.48	31.15	8.06	8
Clip sealing	561.87	24.68	0.67	17
Staple sealing	638.50	0.00	75.95	1

Key to Instrument Codes Reported by Participants

ER	Emerson 6200 Series	ES	Emerson 8510
ET	Emerson 7200	EX	Emerson Apparatus (Model not specified)
LG	TLS / L.A.B. Validator Series	LL	Lansmont 76-5K
LM	Lansmont 122-15k	LO	Lansmont 152-30k
LS	Lansmont Squeezer	TB	TMI Monitor/Compression Tester, Model 17-70



Containerboard Interlaboratory Testing Program
 Analysis 202
Edgewise Compressive Strength, by T811, Corrugated Board - EC17
 TAPPI Official Test Method T811

Report #669
June 2025

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
2LDM4D	36.8	-1.00	1.52		36.8	-1.00	0.00	1	TS
CMEXVY	35.3	-1.31	3.06		35.3	-1.31	0.00	1	EN
CNKK94	45.3	0.78	1.67		45.3	0.78	0.00	1	LC
J6PHAF	37.5	-0.85	5.02	H	37.5	-0.85	0.00	1	LD
N987W9	49.5	1.67	1.42		49.5	1.67	0.00	1	TL
PZUE8B	42.6	0.23	3.62		42.6	0.23	0.00	1	LC
WEATJH	42.8	0.25	1.14	L	42.8	0.25	0.00	1	XX
WPTLEC	42.7	0.23	1.77		42.7	0.23	0.00	1	EX
Consensus (All Labs) Results									
Month Mean			41.55	Grand Mean			41.55		
Avg SD			2.72	Avg SD Months			0.00		
SD btwn Labs			4.77	SD btwn Labs			4.77		
Labs Incl			8	Labs Incl			8		

Key to Instrument Codes Reported by Participants

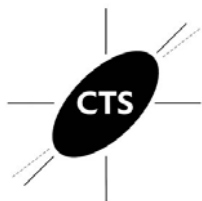
EN	Emerson 2200	EX	Emerson (model not specified)
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
TL	Tech-Lab Systems Compression	TS	TMI Digital Crush Tester, Model 17-56
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC17
 TAPPI Official Test Method T839

Report #669
June 2025

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
22N87B	51.6	1.47	1.46		51.6	1.47	0.00	1	EM
2LDM4D	42.2	-1.09	1.33		42.2	-1.09	0.00	1	TS
3M44Z8	40.5	-1.55	1.28		40.5	-1.55	0.00	1	LD
4JXZPV	46.2	0.01	0.63	L	46.2	0.01	0.00	1	EM
67T67U	42.2	-1.08	0.70	L	42.2	-1.08	0.00	1	EM
6JT3R6	46.3	0.04	1.51		46.3	0.04	0.00	1	LD
8K2UXR	50.8	1.25	1.52		50.8	1.25	0.00	1	TE
8XKLF7	44.3	-0.50	1.08		44.3	-0.50	0.00	1	TU
BR6BWM	46.0	-0.05	1.94		46.0	-0.05	0.00	1	EM
C8ZUA4	45.3	-0.23	1.99		45.3	-0.23	0.00	1	CT
CMEXVY	40.4	-1.58	2.25		40.4	-1.58	0.00	1	EN
CNKK94	49.5	0.91	1.70		49.5	0.91	0.00	1	LC
EGEQ3Z	50.8	1.25	1.62		50.8	1.25	0.00	1	TG
EJ4XPH	51.4	1.40	2.09		51.4	1.40	0.00	1	LC
GE3VBT	46.6	0.10	1.87		46.6	0.10	0.00	1	LD
GTZLDX	50.5	1.18	1.70		50.5	1.18	0.00	1	EM
J2BK4E	40.9	-1.44	1.40		40.9	-1.44	0.00	1	EM
J6PHAF	44.3	-0.50	1.28		44.3	-0.50	0.00	1	LD
JJQU6E	49.2	0.82	1.00		49.2	0.82	0.00	1	LD
JURJIV	39.9	-1.70	2.29		39.9	-1.70	0.00	1	LD
JXQVFU	39.9	-1.69	1.98		39.9	-1.69	0.00	1	LD
KMHM9T	49.4	0.87	1.12		49.4	0.87	0.00	1	EM
N987W9	49.8	0.98	1.33		49.8	0.98	0.00	1	TL
NZHKRB	50.4	1.13	4.04	H	50.4	1.13	0.00	1	LD
P4TVHJ	49.1	0.79	1.69		49.1	0.79	0.00	1	LD
PX737K	47.4	0.33	2.79		47.4	0.33	0.00	1	EM
PZUE8B	45.2	-0.26	1.30		45.2	-0.26	0.00	1	LC
Q8BDDA	47.8	0.44	1.39		47.8	0.44	0.00	1	TD
RQVTRM	39.1	-1.93 *	1.99		39.1	-1.93 *	0.00	1	TD
TTGXYK	44.7	-0.39	2.06		44.7	-0.39	0.00	1	EM
WEATJH	46.9	0.20	1.80		46.9	0.20	0.00	1	XX
WMJEBJ	33.5	-3.42 X	4.46	H	33.5	-3.42 X	0.00	1	XX
WPTLEC	46.2	-0.01	1.61		46.2	-0.01	0.00	1	LY
WQ9LX2	48.2	0.54	2.30		48.2	0.54	0.00	1	EM
XVAE62	47.3	0.30	0.72	L	47.3	0.30	0.00	1	MK
ZHHCZE	46.1	-0.02	2.73		46.1	-0.02	0.00	1	TG



Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC17
TAPPI Official Test Method T839

Report #669
June 2025

Consensus (All Labs) Results			
Month Mean	46.18	Grand Mean	46.18
Avg SD	1.82	Avg SD Months	0.00
SD btwn Labs	3.70	SD btwn Labs	3.70
Labs Incl	35	Labs Incl	35

Key to Instrument Codes Reported by Participants

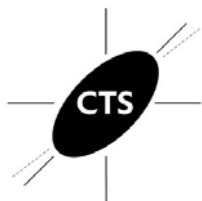
CT	Con-Ten	EM	Emerson 1200 Series
EN	Emerson 2200	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LY	L&W 830
MK	Mark-10 ESM303	TD	TMI Digital Crush Tester, Model 17-09
TE	TMI Monitor/Compression Tester, Model 17-60	TG	TMI Digital Crush Tester, 17-76
TL	Tech-Lab Systems Compression	TS	TMI Digital Crush Tester, Model 17-56
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L3
 TAPPI Official Test Method T807

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2EUHDX	120.9	118.9	117.5	123.5	120.2	1.29	8.8	2.6	120.2	1.54	8.8	2.6	4	LA
37GNWB_AL	107.7	117.9	No DATA	No DATA	112.8	-0.33	7.7	7.2	117.8	0.97	7.2	4.0	12	AL
4CKWWB	105.4	106.9 H	107.7	109.3	107.3	-1.53	9.2	1.6	107.9	-1.38	8.4	2.4	16	XX
63R2E8_AL	125.0 *	121.1	120.2	124.5 *	122.7	1.84	9.4	2.4	122.7	2.13	*10.5	5.2	16	AL
6JT3R6	114.2	115.6	118.2	114.5	115.6	0.29	7.3	1.8	116.1	0.57	7.9	2.7	16	AH
7HXKP4	121.4	131.0 X	119.1	131.9 X	125.9	2.53 *	8.8	6.5 H	127.8	3.33 X	8.3	6.7 H	16	AX
8C8P4Q	150.2 XH	146.8 XH	149.7 XH	150.5 XH	149.3	7.67 X	13.4	1.7	148.7	8.30 X	12.6	6.0	12	XX
9TAQE4	108.5	112.0	112.3	114.3	111.8	-0.55	7.7	2.4	112.3	-0.34	7.9	1.9	16	LA
A43UW3_AL	106.6	105.3 *	111.0	105.3	107.0	-1.59	6.0	2.7	107.4	-1.50	5.7	1.8	16	XX
AVT6H4_AL	109.8 L	111.1	105.9	110.3	109.3	-1.10	6.4	2.3	110.1	-0.86	5.6	2.7	16	AL
B7PQZL	115.7 L	116.0	117.1	115.6	116.1	0.40	4.0	0.7	115.6	0.45	4.1	0.8 L	16	AH
BAP2VL	113.7	115.7	116.2	117.3	115.7	0.31	4.6	1.5	115.1	0.32	4.6	1.1	16	TP
C8ZUA4	119.0	119.0	121.5	117.0	119.1	1.06	7.8	1.8	118.2	1.07	8.5	2.9	16	XX
CNKK94	114.0	111.7	109.6	114.7	112.5	-0.40	9.0	2.3	113.3	-0.09	8.2	2.1	16	AH
DLCMEM	107.9	109.5	109.0	108.5	108.7	-1.22	8.6	0.7	106.6	-1.68	8.0	2.0	16	LA
EFJ82Y	116.8	116.5	115.2	116.5	116.3	0.43	7.8	0.7	116.1	0.57	9.0	2.7	16	LC
F84NGZ_AL	116.2	117.6	122.4	116.8	118.2	0.87	10.0	2.8	117.1	0.82	8.9	3.6	16	AL
GE3VBT	115.1	118.6	118.1	110.0	115.5	0.25	7.2	3.9	114.9	0.28	8.3	3.7	16	LA
HV7NHT_AL	114.1	113.2	113.6	116.6	114.4	0.02	6.6	1.5	113.4	-0.06	5.9	2.9	16	XX
J6PHAF	112.2	116.3	112.7	111.2	113.1	-0.26	8.9	2.2	115.3	0.39	9.0	2.2	16	LA
JJQU6E	111.3	108.8	108.0	102.1 *	107.5	-1.48	7.6	3.9	107.9	-1.37	7.9	3.3	16	XX
JURJ JV	109.8	109.2	112.0	107.6	109.7	-1.02	7.2	1.8	108.8	-1.15	7.2	3.2	16	AH
JXQVFU	111.7	106.5	110.5	110.6	109.8	-0.98	7.3	2.3	109.7	-0.95	7.9	3.7	16	LZ
KGYFRN_AL	118.4	115.2	120.4	117.9	118.0	0.80	8.3	2.1	118.2	1.06	8.3	3.0	16	AL
KMHM9T_AI	106.9	111.8	108.2	111.0	109.5	-1.06	8.1	2.3	106.3	-1.76	11.5	8.0 H	16	AL
L2KC6U	119.3 L	118.8 L	118.9 L	119.5 L	119.1	1.06	1.2	0.3 L	116.2	0.60	1.1	2.9	16	LA
L8ND7N	116.0	117.4	109.9	112.5	113.9	-0.08	11.0	3.4	115.0	0.30	8.6	2.4	16	LA
L8ND7N_AL	113.3	111.8	116.3	115.1	114.1	-0.04	5.6	2.0	114.2	0.11	5.7	2.4	16	AL
LH8R9Q_AL	114.3	111.9	118.2	113.2	114.4	0.02	8.7	2.7	113.1	-0.14	9.5	3.0	16	AL
M9E22N	No DATA	No DATA	118.4	No DATA	118.4	0.90	5.5	0.0	120.2	1.55	7.7	2.6	9	AH
NEWQZN	109.3	No DATA	No DATA	No DATA	109.3	-1.10	4.0	0.0	106.8	-1.63	7.6	2.0	9	LJ
NEWQZN_AI	119.2	No DATA	No DATA	No DATA	119.2	1.07	3.9	0.0	117.0	0.79	8.0	4.6	9	AL
NZH KRB	120.0	117.0	115.8	118.0	117.7	0.75	6.5	1.8	115.3	0.38	6.6	3.5	16	LA
NZH KRB_AL	112.3	116.8	115.4	116.3	115.2	0.20	8.7	2.0	112.6	-0.26	7.5	2.6	12	AK
PGHV9L_AL	110.6	110.3 H	110.8	111.0	110.7	-0.80	10.7	0.3 L	113.0	-0.17	8.7	2.8	16	AL



Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42L3
 TAPPI Official Test Method T807

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
PY3L8L	107.8	107.6	107.0	110.6	108.2	-1.33	6.1	1.6	108.5	-1.24	6.3	2.6	15	LC
Q3V3XK	110.3	110.1	108.8	112.1	110.3	-0.87	8.2	1.4	109.7	-0.96	7.8	1.7	16	LC
QZA3ZP_AL	118.1	120.7	120.4	119.3	119.6	1.16	8.7	1.2	117.6	0.94	8.2	3.1	16	AL
R7X6ML	106.2	No DATA	106.6	No DATA	106.4	-1.73	6.8	0.3	106.9	-1.61	7.4	2.2	10	AX
R7X6ML_AL	108.9	No DATA	109.4	No DATA	109.2	-1.13	6.8	0.4	109.5	-1.00	6.2	2.5	10	AL
RVFJF7	119.1	109.0	118.1	112.9	114.8	0.11	8.8	4.7	114.6	0.23	8.3	4.1	12	LC
RVFJF7_AL	115.4	117.6	121.9	114.1	117.2	0.65	8.3	3.4	116.9	0.77	8.8	3.7	12	AL
U9UTRL_AL	111.3	112.7	112.9 H	113.8	112.6	-0.36	10.6	1.0	114.7	0.24	10.2	5.3	15	AL
UHZBR6	130.1 X	137.4 XH	135.8 X	135.3 XH	134.7	4.46 X	12.8	3.2	135.3	5.13 X	11.4	4.8	16	AX
W89VEC	122.2	126.0 *	119.6	122.6	122.6	1.82	6.7	2.6	121.7	1.90	6.1	3.1	16	LA
WAW8F4_AL	115.8	114.0	117.8	116.2	115.9	0.36	6.8	1.6	114.3	0.15	8.2	5.2	16	AL
VERYME	110.6	115.5	118.9	114.8	115.0	0.15	7.7	3.4	114.4	0.18	8.6	3.1	15	TB
XGBHZZH_AL	111.3	115.3	117.0	117.6	115.3	0.22	8.3	2.8	111.7	-0.47	11.9	3.8	16	AL
XKATWH_AI	114.8	112.7	115.9	121.3	116.2	0.41	4.6	3.7	114.9	0.29	8.3	2.8	12	AL

					Consensus (All Labs) Results			
Wk Mean	113.66	114.14	114.64	114.39	Month Mean	114.30	Grand Mean	113.69
Avg SDr	8.19	7.64	7.51	7.72	Avg SD	7.66	Avg SD	7.96
SD btwn Labs	4.79	4.50	4.78	4.74	SD btwn Labs	4.56	SD btwn Labs	4.22
Labs Incl	46	41	44	40	SD btwn Wks	2.71	SD btwn Wks	3.29
Labs Excl	2	3	2	3	Labs Incl	47	Labs Incl	46
Labs not Rcvd	1	5	3	6				

Key to Instrument Codes Reported by Participants

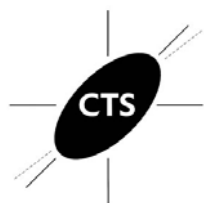
AH	Perkins Model AH	AK	L & W Autoline 300
AL	L & W Autoline 400	AX	Perkins Mullen Tester (model not specified)
LA	L&W Bursting Strength Tester	LC	L&W Autoline (205 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
TB	TMI Monitor/Burst 1000	TP	Technidyne PROFILE/Plus
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
Analysis 207
Bursting Strength (Mullen), 31 lb Linerboard - 31K1
TAPPI Official Test Method T807

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
37GNWB_AL	76.5	No DATA	No DATA	No DATA	76.5	0.46	7.3	0.0	74.9	-0.04	8.6	4.7	5	AL
4CKWWB	71.0	70.5	70.2	70.9	70.6	-1.61	4.3	0.4	71.4	-1.44	4.8	1.5	12	XX
63R2E8_AL	80.7	74.2 H	78.2	76.7 L	77.4	0.79	7.9	2.7	78.5	1.39	6.3	2.2	12	XX
6JT3R6	75.9	79.5	81.7 *	83.3 *	80.1	1.74	6.2	3.2	80.0	1.99 *	6.8	3.0	12	AH
7HXKP4	77.1	86.7 X	93.8 X	85.1 *	85.7	3.72 X	5.7	6.9 H	84.6	3.87 X	5.0	4.7	12	AX
8C8P4Q	77.1 H	75.5	77.6	75.7	76.5	0.45	8.4	1.0	76.3	0.53	8.0	1.8	8	XX
9TAQE4	73.0	76.6	74.0	75.1	74.7	-0.19	5.8	1.5	74.7	-0.13	5.5	1.7	12	LA
A43UW3_AL	72.2	68.6	72.4	70.9	71.0	-1.47	5.5	1.7	72.0	-1.20	4.7	1.4	12	XX
AVT6H4_AL	74.3	72.8	75.9	72.8	74.0	-0.44	4.9	1.5	75.8	0.32	4.1	1.8	12	AL
B7PQZL	77.2	74.2	75.0	75.1	75.4	0.06	3.7	1.3	75.9	0.38	3.9	0.9	12	AH
BAP2VL	77.2	75.9	77.4	76.5	76.8	0.55	4.1	0.7	76.2	0.48	4.5	1.0	12	TP
C8ZUA4	84.5 X	77.0	79.0	80.0	80.1	1.75	6.4	3.2	76.8	0.72	5.9	3.8	12	XX
CNKK94	74.6	74.5	77.1	80.8	76.7	0.55	6.4	2.9	76.2	0.49	6.4	2.3	12	AH
DLCMEM	71.0	68.0 *	71.8	69.5	70.1	-1.82	6.4	1.7	69.1	-2.34 *	6.9	2.1	12	LA
EFJ82Y	74.7	74.7	77.8 L	75.4	75.6	0.16	4.6	1.5	76.2	0.47	6.2	1.7	12	LC
F84NGZ_AL	78.7	77.3	74.3	75.5	76.4	0.44	7.6	1.9	76.3	0.52	6.5	2.3	12	AL
GE3VBT	75.9	77.1	78.0	78.3	77.3	0.76	5.4	1.1	75.0	0.02	5.8	3.5	12	LA
HV7NHT_AL	76.8	69.4	74.3	74.7	73.8	-0.49	4.7	3.1	74.9	-0.02	4.4	2.4	12	XX
J6PHAF	78.3	77.5	75.5	81.3	78.2	1.05	5.4	2.4	77.4	0.96	5.4	2.0	12	LA
JJQU6E	69.8	74.4	74.0	68.9	71.8	-1.21	5.4	2.8	72.7	-0.92	4.6	2.2	12	XX
JURJJV	72.2	73.6	73.2	75.0	73.5	-0.60	5.3	1.2	73.0	-0.81	6.2	2.1	12	AH
JXQVFU	72.9	73.6	72.1	74.2	73.2	-0.70	4.7	0.9	72.7	-0.90	6.5	4.3	12	LA
KGYFRN_AL	78.9	78.1	79.7	77.0	78.4	1.15	5.0	1.2	77.2	0.90	5.0	1.7	12	AL
KMHM9T_AI	71.6	72.5	70.1	69.3	70.9	-1.53	4.9	1.4	71.1	-1.58	4.9	2.0	12	AL
L2KC6U	76.2 L	76.2 L	76.9 L	76.5 L	76.5	0.45	1.2	0.3	75.8	0.31	1.4	0.8	12	LA
L8ND7N	74.6	78.3	77.9	74.9	76.4	0.43	5.7	2.0	76.6	0.66	5.5	2.3	12	LA
L8ND7N_AL	73.2	73.8	74.8	75.1	74.2	-0.35	4.7	0.9	75.0	0.00	4.5	1.9	12	AL
LH8R9Q_AL	71.9	70.2	71.9	72.4 H	71.6	-1.27	8.2	1.0	72.9	-0.84	6.6	1.4	12	AL
M9E22N	No DATA	No DATA	79.8	No DATA	79.8	1.63	7.5	0.0	80.3	2.13 *	5.6	1.7	8	AH
NEWQZN	69.4	No DATA	No DATA	No DATA	69.4	-2.06 *	8.6	0.0	71.3	-1.48	6.3	2.1	6	LJ
NEWQZN_AI	77.9	No DATA	No DATA	No DATA	77.9	0.96	6.5	0.0	74.5	-0.19	6.1	3.5	6	AL
NZHKRB	77.7	68.7 H	75.3	77.8	74.9	-0.10	7.2	4.3 H	75.2	0.10	6.2	2.9	12	LC
NZHKRB_AL	74.1	77.2 L	74.7	75.6	75.4	0.08	5.8	1.4	74.5	-0.21	7.5	3.8	12	AK
PGHV9L_AL	76.4	71.8	71.3	72.0	72.9	-0.81	6.7	2.4	74.1	-0.36	6.3	2.5	12	AL
PY3L8L	72.4	77.2 L	73.7	72.8	74.0	-0.42	5.3	2.2	75.0	-0.01	5.0	2.5	12	LC



Containerboard Interlaboratory Testing Program
Analysis 207
Bursting Strength (Mullen), 31 lb Linerboard - 31K1
 TAPPI Official Test Method T807

Report #669
June 2025

Consensus (All Labs) Results																
Wk Mean	75.17	74.80	75.44	75.36	Month Mean	75.19			Grand Mean	74.99						
Avg SDr	5.60	6.36	5.51	5.64	Avg SD	5.86			Avg SD	5.76						
SD btwn Labs	3.07	3.22	2.82	3.71	SD btwn Labs	2.82			SD btwn Labs	2.49						
Labs Incl	46	41	44	42	SD btwn Wks	1.94			SD btwn Wks	2.47						
Labs Excl	1	1	1	0	Labs Incl	47			Labs Incl	47						
Labs not Rcvd	1	6	3	6												

Key to Instrument Codes Reported by Participants

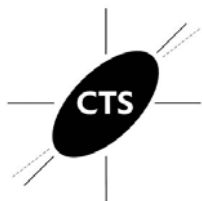
AH	Perkins Model AH	AK	L & W Autoline 300
AL	L & W Autoline 400	AX	Perkins Mullen Tester (model not specified)
LA	L&W Bursting Strength Tester	LC	L&W Autoline (207 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 215
Ring Crush, 42 lb Linerboard - 42L3
TAPPI Official Test Method T822

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
37GNWB	93.8	94.4	94.9	97.9	95.3	-0.35	3.1	1.8	95.3	-0.48	7.5	2.5	16	LC
4JXZPV	94.2	93.2	95.6	94.1	94.3	-0.58	3.5	1.0	90.6	-1.79	3.4	3.6	16	EM
63R2E8	78.1 XH	105.3	81.4 XH	104.8	92.4	-1.02	8.3	14.7 H	99.0	0.55	5.7	11.6 H	16	LZ
6JT3R6	97.8	97.0	97.8	97.0	97.4	0.16	2.8	0.5 L	94.6	-0.69	2.3	2.0	16	LD
7HXKP4	95.3 H	104.8 H	104.3	112.1 *	104.1	1.73	6.7	6.9 H	104.5	2.05 *	5.5	6.4	16	LX
A43UW3	95.3	93.6	95.7	96.3	95.2	-0.36	2.6	1.1	94.1	-0.80	2.5	1.1	16	LD
BAP2VL	95.4	96.6	94.4	94.0	95.1	-0.39	2.9	1.2	95.5	-0.42	2.9	1.4	16	TH
BBKKXN	97.7 L	97.8 L	98.5	102.6	99.1	0.56	1.5	2.3	98.7	0.46	1.3	1.9	8	MZ
CMEXVY	89.5	88.5	90.2	88.5	89.2	-1.77	3.2	0.8	89.6	-2.05 *	3.3	1.8	16	LZ
CNKK94	97.4	99.8	95.4	98.8	97.8	0.26	2.4	1.9	97.5	0.13	2.6	1.0	16	LC
EFJ82Y	102.3	101.1	101.7	102.6	101.9	1.21	3.2	0.7	99.9	0.80	2.8	2.0	16	LD
EGEQ3Z	97.0	100.6	100.0 H	100.2	99.5	0.63	3.8	1.7	98.1	0.30	3.2	1.5	16	TH
EJ4XPH	94.0	98.8	99.5	99.6	97.9	0.28	3.7	2.7	95.8	-0.36	3.6	2.2	16	LC
GJG7QH	98.0 L	97.8 L	99.8 L	105.1	100.2	0.80	1.4	3.4	100.2	0.86	1.3	2.7	12	MZ
J6PHAF	91.5	92.3	91.7	91.8	91.8	-1.15	2.6	0.3 L	94.0	-0.85	3.0	1.8	16	LD
JJQU6E	103.4	103.9	99.8	99.5 H	101.7	1.15	4.2	2.3	98.9	0.50	4.0	2.6	16	XX
JXQVFU	95.8	98.3	99.2	97.1	97.6	0.20	2.7	1.5	95.1	-0.55	3.0	5.0	15	LD
L2KC6U	95.8 L	95.4 L	95.3 L	95.0 L	95.4	-0.32	0.7	0.3 L	95.3	-0.49	0.7	0.4 L	16	TU
L8ND7N	93.0	92.7	92.0	92.6	92.6	-0.97	3.0	0.4 L	96.4	-0.17	3.3	2.5	16	LD
LBPGBX	83.8 X	84.4 *	90.1	89.4	86.9	-2.30 *	3.1	3.3	93.1	-1.09	3.7	5.3	16	EM
LH8R9Q	97.7 L	100.7	100.7	99.6	99.7	0.69	2.8	1.4	98.9	0.52	2.8	1.4	16	LD
MUX3WM	93.9	94.4	93.8 L	93.8	94.0	-0.65	2.5	0.3 L	92.8	-1.17	3.3	1.7	16	LD
MXUPMQ	101.4	103.4	98.0	100.4	100.8	0.94	2.2	2.2	102.4	1.48	2.6	3.2	16	LD
PGHV9L	99.2	101.5	103.1	100.4	101.0	1.00	2.9	1.6	99.0	0.54	3.0	2.4	16	LD
PY3L8L	95.6	92.7	96.7	91.4	94.1	-0.62	3.8	2.4	95.9	-0.32	4.9	3.0	16	LD
Q3V3XK	94.6	95.8	94.7	94.0	94.8	-0.45	2.8	0.7	94.9	-0.59	2.5	1.3	16	LD
RQVTRM	98.1	98.9	98.3	98.2	98.4	0.38	1.7	0.4 L	97.6	0.17	1.7	0.9 L	16	MB
RVFJF7	102.8	96.7	100.1	93.8	98.4	0.38	3.2	3.9	100.0	0.82	3.3	8.5 H	12	LD
U9UTRL	95.1	97.1	93.7 H	96.2	95.5	-0.29	4.2	1.5	95.6	-0.41	3.4	1.4	16	LD
V74NYE	101.8	110.7 *	103.9	109.0 *H	106.3	2.24 *	5.1	4.2	106.4	2.60 *	4.5	3.2	16	TU
W89VEC	86.1 *	95.0 H	92.7	88.4	90.6	-1.45	3.7	4.0	96.9	-0.05	3.1	4.8	16	LC
WERYME	94.1	96.8	94.8	97.5	95.8	-0.22	2.7	1.6	96.3	-0.19	3.6	2.0	13	LD
WPTLEC	92.3	93.8	93.5 L	92.5	93.0	-0.88	2.4	0.7	94.2	-0.78	2.8	1.6	16	LG
YL33NX	71.4 XH	72.0 XH	71.3 XH	70.4 XH	71.3	-5.96 X	9.9	0.7	68.7	-7.85 X	10.4	3.0	12	LD
ZUCQ2W	101.7	99.7	102.4 H	103.2	101.8	1.17	4.6	1.5	102.4	1.47	4.4	2.5	16	MB



Containerboard Interlaboratory Testing Program
 Analysis 215
Ring Crush, 42 lb Linerboard - 42L3
 TAPPI Official Test Method T822

Report #669
June 2025

					Consensus (All Labs) Results			
Wk Mean	96.29	97.46	97.04	97.57	Month Mean	96.75	Grand Mean	97.04
Avg SDr	3.66	3.15	3.16	3.22	Avg SD	3.54	Avg SD	3.52
SD btwn Labs	3.89	5.04	3.88	5.51	SD btwn Labs	4.27	SD btwn Labs	3.61
Labs Incl	32	34	33	34	SD btwn Wks	3.40	SD btwn Wks	3.63
Labs Excl	3	1	2	1	Labs Incl	34	Labs Incl	34
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

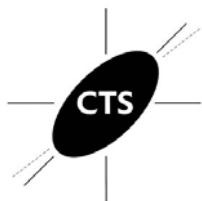
EM	Emerson 1200	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LG	L&W 753
LX	L&W 506	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	MZ	Messmer Buchel (model not specified)
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 217
Ring Crush, 31 lb Linerboard - 31K1
 TAPPI Official Test Method T822

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
37GNWB	75.2	73.7 H	73.8	74.9	74.4	0.09	3.2	0.8	72.9	-0.32	3.6	1.8	12	LC
4JXZPV	73.6	74.2	73.1	73.3	73.6	-0.22	3.3	0.5	69.8	-1.49	3.1	2.9	12	EM
63R2E8	57.8 XH	72.1	58.5 XH	57.2 XH	61.4	-4.60 X	6.3	7.1 H	71.3	-0.93	4.9	10.8 H	12	LZ
6JT3R6	73.9	72.4	74.6	75.4	74.1	-0.03	2.8	1.3	72.6	-0.45	2.4	1.6	12	LD
7HXKP4	68.8 H	74.9	78.9 H	81.4 *	76.0	0.66	5.4	5.5 H	74.1	0.11	5.6	6.4 H	12	LX
A43UW3	73.8	73.5	72.4	76.6	74.1	-0.03	2.1	1.8	73.2	-0.23	2.3	1.5	12	LD
BAP2VL	71.5	70.1	74.0	73.5	72.3	-0.68	2.8	1.8	72.8	-0.36	2.4	2.3	12	TH
BBKKXN	78.1 L	78.5 L	75.7 L	79.0	77.8	1.31	1.2	1.5	77.8	1.51	1.2	1.5	4	MZ
CMEXVY	70.4	69.9	70.3	71.4	70.5	-1.32	2.7	0.6	70.4	-1.25	3.1	1.2	12	LZ
CNKK94	74.5	74.6	72.4	75.7	74.3	0.04	2.6	1.4	74.3	0.20	2.5	1.3	12	LC
EFJ82Y	78.4	77.8	77.2	77.2	77.6	1.25	2.5	0.6	76.3	0.93	2.4	1.3	12	LD
EGEQ3Z	75.3	74.6	75.3	74.1	74.8	0.24	2.8	0.6	74.7	0.35	2.6	1.5	12	TH
EJ4XPH	74.7	72.7	72.6	72.4	73.1	-0.38	3.3	1.1	72.7	-0.41	3.2	0.8 L	12	LC
GJG7QH	78.9	78.2 L	79.6 L	77.2	78.5	1.55	1.5	1.0	79.5	2.15 *	1.4	1.4	8	MZ
J6PHAF	71.1	69.4	70.9	70.1	70.4	-1.36	2.8	0.8	71.4	-0.89	2.5	1.4	12	LD
JJQU6E	74.4	74.6	76.0	73.5	74.6	0.17	4.2	1.0	75.9	0.77	3.9	2.4	12	XX
JXQVFU	73.1	74.1	74.4	71.8	73.3	-0.30	2.5	1.2	71.1	-0.99	3.3	4.2	12	LD
L2KC6U	74.0 L	73.7 L	73.6 L	73.5 L	73.7	-0.17	0.7	0.2 L	73.5	-0.10	0.6	0.7 L	12	TU
L8ND7N	71.3	73.1	71.3	70.5	71.6	-0.93	2.9	1.1	74.4	0.23	3.0	2.8	12	LD
LBPGXB	67.8 *	61.9 X	61.5 X	59.3 X	62.6	-4.16 X	3.4	3.6 H	67.5	-2.35 *	3.3	5.1	12	EM
LH8R9Q	75.2	76.9	77.4	77.8	76.8	0.95	2.3	1.2	76.1	0.88	2.5	1.3	12	LD
MUX3WM	73.5	73.4	72.2	73.6	73.2	-0.35	2.6	0.6	72.7	-0.39	2.5	2.5	12	LD
MXUPMQ	78.1	80.4 *	80.6 *	79.5	79.6	1.97 *	2.1	1.2	78.5	1.76	2.3	1.5	12	LD
PGHV9L	80.1 *	79.3	80.1 *	76.6	79.0	1.75	2.8	1.7	76.0	0.84	2.8	3.2	12	LD
PY3L8L	71.9	67.9 *	72.6	73.4	71.4	-0.98	3.4	2.5	71.6	-0.80	3.1	2.6	12	LD
Q3V3XK	72.3	73.0	71.1	73.1	72.4	-0.65	2.7	0.9	73.4	-0.15	2.5	1.0	12	LD
RQVTRM	73.0	72.2	72.5	72.5	72.5	-0.59	1.7	0.3	72.5	-0.47	1.7	0.3 L	8	MB
RVFJF7	79.1	74.0	76.2	70.1 H	74.9	0.25	3.7	3.8 H	73.8	0.01	3.5	4.0	8	LD
U9UTRL	71.6 L	74.3	71.8	74.4	73.0	-0.41	2.7	1.5	73.0	-0.27	3.3	1.3	12	LD
V74NYE	76.5	77.5	76.0	81.0 *	77.7	1.29	3.9	2.3	79.4	2.09 *	3.5	2.2	12	TU
W89VEC	64.3 X	67.4 *	71.7	64.3 X	66.9	-2.60 *	2.4	3.5	72.1	-0.61	3.1	4.8	12	LC
WPTLEC	73.8	72.3	73.2	72.8	73.0	-0.41	2.4	0.6	73.7	-0.01	2.6	1.2	12	LG
YL33NX	55.7 XH	56.4 XH	55.8 XH	56.3 XH	56.0	-6.52 X	9.8	0.4	54.2	-7.32 X	9.3	2.1	8	LD
ZUCQ2W	73.6	71.9	75.0	75.0	73.9	-0.10	3.9	1.5	75.5	0.65	3.7	1.9	12	MB



Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 31 lb Linerboard - 31K1

TAPPI Official Test Method T822

Report #669

June 2025

Consensus (All Labs) Results								
Wk Mean	74.10	73.83	74.39	74.71	Month Mean	74.16	Grand Mean	73.78
Avg SDr	2.88	2.67	3.27	2.87	Avg SD	2.91	Avg SD	3.02
SD btwn Labs	2.98	3.10	2.81	3.01	SD btwn Labs	2.78	SD btwn Labs	2.68
Labs Incl	31	32	31	30	SD btwn Wks	1.80	SD btwn Wks	3.16
Labs Excl	3	2	3	4	Labs Incl	31	Labs Incl	33
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LG	L&W 753
LX	L&W 506	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	MZ	Messmer Buchel (model not specified)
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42L3
 TAPPI Official Test Method T826

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2EUHDX	26.6	26.6	27.1	27.1	26.8	1.19	1.3	0.3	26.8	1.11	1.3	0.3	L 4	LZ
37GNWB	26.6	25.2	L No DATA	No DATA	25.9	0.37	1.4	1.0	25.9	0.40	1.8	0.8	12	LU
3M44Z8	25.4	26.0	24.8	25.5	25.4	0.02	1.5	0.5	25.5	0.06	1.6	0.5	16	LH
4CKWWB	27.5	26.7	27.8	26.8	27.2	1.51	1.7	0.5	27.5	1.69	1.9	0.5	16	LH
63R2E8_AL	23.6	23.6	24.6	24.7	24.1	-1.07	1.4	0.6	25.3	-0.16	1.5	4.0	H 16	AL
6JT3R6	24.2	24.7	24.1	24.6	24.4	-0.84	1.6	0.3	24.2	-1.04	1.7	0.4	16	LU
7HXKP4	23.5	29.1	X 26.6	23.7 H	25.7	0.26	2.3	2.6 H	27.4	1.58	2.4	6.8	H 16	LZ
8C8P4Q	25.2	26.7	26.3 H	25.7	26.0	0.47	2.1	0.7	25.7	0.18	2.0	0.7	12	XX
8K2UXR	24.3	26.2	L 24.3	L 25.9	25.2	-0.21	1.2	1.0	26.1	0.54	1.6	1.1	16	LA
98RGD6	26.3 H	25.1 H	25.1	26.5	25.7	0.26	2.1	0.8	26.1	0.53	2.2	0.7	16	LH
9TAQE4	25.7	24.9	25.3	25.9	25.4	0.02	1.5	0.4	25.4	-0.02	1.6	0.6	16	LY
A43UW3_AL	24.9	24.8	24.0	25.3	24.8	-0.55	1.3	0.6	24.4	-0.84	1.5	0.5	16	XX
AVT6H4	26.3 L	25.2	24.9	26.0	25.6	0.16	1.8	0.7	25.4	-0.07	1.4	0.9	15	LU
BBKKXN	24.6 L	24.4 L	24.5	25.7 L	24.8	-0.53	0.9	0.6	24.6	-0.66	0.7	0.5	8	LZ
CMEXVY	23.4	23.5	22.6	22.7 *	23.1	-1.99 *	1.8	0.4	23.1	-1.87	1.6	0.6	16	LZ
CNKK94	25.0	24.8	24.6	24.4	24.7	-0.63	1.6	0.3	24.5	-0.75	1.5	0.4	16	LU
D7H892	26.3	26.4	27.8	28.2 *	27.2	1.47	1.6	0.9	26.9	1.17	1.8	0.7	16	LU
DLCMEM	27.8	27.1 H	27.9 H	27.1	27.5	1.73	2.2	0.4	27.7	1.80	2.1	0.6	16	LH
EBTV4H	23.2	23.1 *	22.9	23.2 L	23.1	-1.95 *	1.0	0.1	22.9	-2.09 *	0.8	0.5	16	TT
EFJ82Y	26.7	25.0	26.7	25.8	26.0	0.52	1.5	0.8	25.6	0.13	1.6	1.2	16	LA
F84NGZ_AL	23.1	24.5 L	25.9	25.8	24.8	-0.51	1.4	1.3	26.1	0.51	3.5	1.3	16	AL
FRPKQY	25.2 H	24.0 H	24.2 H	24.4 H	24.5	-0.80	2.9	0.5	24.6	-0.68	2.5	0.8	16	LH
GJG7QH	24.3 L	24.4 L	24.5 L	25.0 L	24.6	-0.72	0.8	0.3	24.8	-0.48	0.8	0.7	12	LZ
HV7NHT_AL	25.8	25.9	25.8	24.7	25.6	0.12	1.6	0.6	26.1	0.54	1.7	0.7	16	XX
J6PHAF	23.7	24.0	23.5	23.9	23.8	-1.38	1.4	0.2	24.3	-0.94	1.4	0.6	16	LY
JNMFVG	26.4	26.4	25.7	26.4	26.2	0.70	1.7	0.4	26.0	0.42	1.5	0.5	12	LH
JXQVFU	24.7	24.9	24.6	25.5	24.9	-0.40	1.7	0.4	24.7	-0.56	1.5	0.4	16	LY
KGYFRN_AL	24.0	24.4	24.2	22.9	23.9	-1.31	1.4	0.7	23.6	-1.46	1.8	0.6	16	AL
KMHM9T_AI	25.4	25.3	25.5	25.7	25.5	0.06	1.5	0.2	26.2	0.61	1.5	0.7	16	AL
L2KC6U	25.2	25.1	25.6	25.6	25.4	-0.03	2.0	0.3	24.3	-0.89	1.9	1.1	16	ID
L8ND7N_AL	25.4	26.1	24.5	25.6	25.4	-0.03	1.7	0.7	24.8	-0.49	1.5	1.4	16	AL
LH8R9Q_AL	25.1	25.3	25.0	25.1	25.1	-0.23	1.2	0.1	25.0	-0.35	1.4	0.9	16	AL
M9E22N	No DATA	No DATA	27.4	No DATA	27.4	1.70	1.5	0.0	27.8	1.89	1.8	0.8	9	LU
MXUPMQ	26.3	26.6	25.7	26.2	26.2	0.66	1.4	0.4	26.0	0.43	1.5	0.5	16	LH
NEWQZN	24.2	No DATA	No DATA	No DATA	24.2	-1.02	2.1	0.0	23.7	-1.37	1.7	1.0	9	LH



Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42L3
TAPPI Official Test Method T826

Report #669
June 2025

WebCode	Weekly Means					Monthly Results					Cumulative Results					Inst					
	Week 1	Week 2	Week 3	Week 4		Mean	CPV	SD	SD Wks		Mean	CPV	SD	SD Wks	Wks						
NZHKB_AL	22.9	24.2	22.9	25.0	H	23.8	-1.40	1.8	1.0		24.8	-0.56	1.9	1.7	12	AK					
PGHV9L_AL	26.3	25.7	24.5	25.2		25.4	0.01	1.6	0.7		24.8	-0.50	1.6	0.7	16	AL					
PY3L8L	27.6	H	26.7	26.8	27.3	27.1	1.41	1.8	0.4		27.3	1.50	2.1	0.7	16	LA					
PZUE8B	23.5	23.6	23.1	23.2		23.3	-1.74	1.4	0.2		23.0	-1.97	*	1.6	1.2	16	LZ				
Q3V3XK	24.2	L	25.0	24.5	L	24.3	24.5	-0.80	1.0	0.3	24.7	-0.61	1.4	0.6	16	LA					
QZA3ZP_AL	24.5	27.8	*	29.1	*H	28.4	*	27.4	1.71	2.1	2.0	H	28.2	2.24	*	2.0	1.4	16	AL		
R7X6ML	27.5	No DATA	26.2	No DATA		26.8	1.20	1.8	0.9		26.8	1.12	1.7	0.4	10	LU					
R7X6ML_AL	25.0	No DATA	25.8	No DATA		25.4	-0.01	1.3	0.5		26.1	0.55	1.6	1.1	10	AL					
RVFJF7	25.2	23.8	24.0	23.5		24.1	-1.10	1.5	0.7		24.8	-0.51	1.8	1.8	12	LZ					
RVFJF7_AL	44.0	XL	40.3	XL	41.0	XL	41.3	XL	41.6	13.68	X	0.0	1.6	H	42.9	14.07	X	0.0	2.2	12	AL
U9UTRL_AL	25.6	26.1	26.2	24.7		25.7	0.20	1.4	0.7		24.5	-0.73	1.8	1.1	16	AL					
UHZBR6	26.1	L	25.8	L	25.2	L	25.2	L	25.6	0.14	0.0	0.5	26.1	0.49	0.0	1.0	16	LH			
V74NYE	28.1	*	28.8	X	28.5	*	26.7	28.0	2.20	*	1.7	0.9	27.7	1.80	1.9	1.0	16	LA			
W89VEC	25.2	24.6	25.3	24.7		25.0	-0.39	1.5	0.4		25.3	-0.16	1.6	0.5	16	LA					
WAW8F4_AL	27.4	28.5	X	27.8	27.2	27.7	1.95	*	1.7	0.6	26.7	1.00	1.7	1.1	16	AL					
WERYME	24.9	24.7	26.0	24.1		24.9	-0.42	1.7	0.8		25.0	-0.32	1.9	0.6	16	LW					
WMJEBJ	26.4	25.8	26.4	25.9		26.1	0.60	1.8	0.3		25.3	-0.10	1.7	0.7	16	XX					
WPTLEC	25.9	25.1	25.3	25.1		25.4	-0.02	1.9	0.4		25.3	-0.09	1.5	0.4	16	BK					
WYXAT4	26.1	26.4	26.7	27.1		26.6	0.98	1.6	0.4		25.6	0.10	1.6	1.2	16	LH					
XGBHZZH_AL	31.1	X	31.3	XH	31.3	X	32.2	X	31.5	5.10	X	1.9	0.5	31.6	4.98	X	2.1	0.7	16	AL	
XKATWH_AI	27.7	L	26.4	L	24.9	L	26.3	L	26.3	0.77	0.0	1.1	90.2	52.23	X	0.0	101.7	H	16	AL	
XT8JJD	23.8	L	24.1	23.2	23.6	23.7	-1.45	1.6	0.4		24.5	-0.73	1.6	0.7	16	LW					
YL33NX	25.2	25.2	24.9	26.0		25.3	-0.08	2.0	0.5		24.2	-1.00	1.7	1.0	12	LY					
YL33NX_AL	25.3	25.0	24.9	25.1		25.1	-0.27	1.9	0.2		24.4	-0.81	1.8	0.7	12	AL					
ZUCQ2W	25.4	25.5	24.8	23.8		24.9	-0.46	1.5	0.8		25.9	0.41	1.7	1.0	16	LA					

Consensus (All Labs) Results									
Wk Mean	25.36	25.26	25.37	25.35	Month Mean	25.41	Grand Mean	25.45	
Avg SDr	1.73	1.56	1.62	1.72	Avg SD	1.66	Avg SD	1.75	
SD btwn Labs	1.31	1.04	1.46	1.29	SD btwn Labs	1.19	SD btwn Labs	1.24	
Labs Incl	57	51	56	53	SD btwn Wks	0.75	SD btwn Wks	1.35	
Labs Excl	2	5	2	2	Labs Incl	58	Labs Incl	57	
Labs not Rcvd	1	4	2	5					

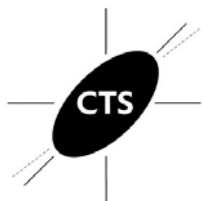


Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42L3
TAPPI Official Test Method T826

Report #669
June 2025

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
BK	Buchel Strip Compression Tester BK-155	ID	IDM Compression Tester
LA	L&W Autoline (223 Enrollment)	LH	L&W 282
LU	L&W 52 without moisture correction(was 53)	LW	L&W 53 with moisture correction (was 53M)
LY	L&W 152 without moisture correction	LZ	L&W (model not specified)
TT	TMI Short Span Compression, 17-34 (MB K455)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 225
STFI, 31 lb Linerboard - 31K1
 TAPPI Official Test Method T826

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
37GNWB	21.5	20.5	No DATA	No DATA	21.0	0.81	1.6	0.7	20.5	0.07	1.4	0.7	8	LU
3M44Z8	20.0	20.8	20.7	20.5	20.5	0.16	1.4	0.4	20.8	0.51	2.3	1.9 H	12	LH
4CKWWB	21.3	20.7	21.0	22.2	21.3	1.17	1.3	0.6	21.2	0.96	1.4	0.5	12	LH
63R2E8_AL	19.5	20.0	19.8	20.1 L	19.9	-0.66	1.2	0.3	20.0	-0.62	1.2	0.5	12	XX
6JT3R6	20.7	20.1	20.3	20.4	20.4	0.01	1.5	0.2	20.1	-0.43	1.4	0.5	12	LU
7HXKP4	25.2 X	27.0 XL	22.3 *L	23.7 XH	24.6	5.30 X	2.4	2.0 H	23.2	3.68 X	2.1	5.5 H	12	LZ
8C8P4Q	19.4 H	19.7	19.8	20.1	19.8	-0.79	1.6	0.3	20.3	-0.20	1.7	0.6	8	XX
8K2UXR	22.1	21.2	20.8	20.6 H	21.2	1.03	1.7	0.7	21.2	1.00	1.7	0.5	12	LA
98RGD6	20.9	21.2	20.3	20.8	20.8	0.52	1.6	0.4	20.9	0.59	1.7	0.4	12	LH
9TAQE4	19.8	21.3	20.4	21.8	20.8	0.59	1.2	0.9	21.3	1.13	1.4	0.7	12	LU
A43UW3_AL	20.4	20.7	20.2	20.2	20.4	0.00	1.2	0.2	20.3	-0.19	1.3	0.7	12	XX
AVT6H4	20.6	20.6	20.6	21.1	20.7	0.44	1.2	0.2	20.6	0.19	1.4	0.7	11	LU
BBKKXN	21.2 L	21.2 L	20.9	20.8	21.0	0.80	0.7	0.2	21.0	0.75	0.7	0.2 L	4	LZ
CMEXVY	18.6	19.0	18.8 *	18.4	18.7	-2.12 *	1.5	0.3	18.9	-2.06 *	1.3	0.6	12	LZ
CNKK94	20.7	20.4	20.7	19.5	20.3	-0.06	1.2	0.6	20.1	-0.49	1.2	0.5	12	LU
D7H892	19.9	20.7	21.6 H	21.8	21.0	0.79	1.7	0.9	20.6	0.21	1.6	0.6	12	LU
DLCMEM	21.3 H	21.9	21.4	21.2	21.5	1.37	1.7	0.3	21.5	1.43	1.7	0.3	12	LH
EBTV4H	18.5 *L	18.4 *	18.7 *L	18.3 *	18.5	-2.40 *	0.8	0.2	18.7	-2.31 *	0.6	0.3	12	TT
EFJ82Y	21.1	20.2	21.4	20.5	20.8	0.53	1.5	0.6	20.7	0.34	1.4	0.8	12	LA
F84NGZ_AL	20.5 L	19.2	20.9	20.6	20.3	-0.11	1.3	0.8	20.8	0.54	1.4	0.8	12	AL
FRPKQY	18.8 H	19.2 H	19.9 H	19.9 H	19.4	-1.17	2.4	0.5	19.6	-1.10	2.0	0.4	12	LH
GJG7QH	21.3 L	21.0 L	19.6 L	19.7 L	20.4	0.03	0.7	0.8	21.0	0.80	0.6	0.9	8	LZ
HV7NHT_AL	19.4	21.7	20.4	21.4	20.7	0.45	1.3	1.0	20.9	0.64	1.4	0.7	12	XX
J6PHAF	19.7	19.9	19.4	19.8	19.7	-0.88	1.2	0.2	19.8	-0.87	1.3	0.4	12	LY
JNMFVG	20.2	20.7	20.8	20.5	20.6	0.23	1.3	0.3	20.7	0.36	1.3	0.4	8	LH
JXQVFU	20.0	19.8	20.5	19.8	20.0	-0.48	1.3	0.4	20.1	-0.41	1.3	0.3	12	LY
KGYFRN_AL	20.0	20.4 L	20.4	17.9 *L	19.7	-0.87	1.0	1.2 H	19.7	-0.96	1.3	0.7	12	XX
KMHM9T_AI	21.0	21.2	21.1	21.2	21.1	0.95	1.3	0.1 L	21.3	1.15	1.2	0.5	12	AL
L2KC6U	21.7	20.8	20.9	20.3	20.9	0.70	1.1	0.6	23.8	4.37 X	1.4	4.3 H	12	ID
L8ND7N_AL	20.3	20.5 L	21.0	20.4	20.5	0.21	1.3	0.3	20.6	0.23	1.4	0.5	12	AL
LH8R9Q_AL	20.7 L	21.2	20.4	20.9	20.8	0.54	1.3	0.4	20.6	0.19	1.2	0.6	12	AL
M9E22N	No DATA	No DATA	21.6 H	No DATA	21.6	1.54	2.1	0.0	21.5	1.42	1.6	0.3	8	LU
MXUPMQ	20.8	20.4	21.1	20.8	20.8	0.52	1.1	0.3	21.1	0.87	1.2	0.3	12	LH
NEWQZN	18.7	No DATA	No DATA	No DATA	18.7	-2.17 *	1.2	0.0	19.4	-1.41	1.8	1.4	6	LH
NZHCRB_AL	19.4	18.6 *	18.5 *	19.2	18.9	-1.83	1.5	0.4	20.4	-0.11	1.6	1.2	12	AK



Containerboard Interlaboratory Testing Program
Analysis 225
STFI, 31 lb Linerboard - 31K1
 TAPPI Official Test Method T826

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
PGHV9L_AL	20.9	21.8	21.3	20.6	21.1	0.98	1.3	0.5	20.8	0.42	1.5	0.7	12	AL
PY3L8L	21.9	22.5 *	20.4	19.9	21.2	1.03	1.7	1.2 H	21.4	1.30	1.7	2.0 H	12	LA
PZUE8B	18.9	18.7	19.2	19.2	19.0	-1.75	1.1	0.2	18.7	-2.30 *	1.3	1.2	12	LZ
Q3V3XK	18.9	19.1	20.3	19.4	19.4	-1.20	1.2	0.6	19.9	-0.77	1.1	0.7	12	LW
QZA3ZP_AL	24.1 X	23.5 X	23.9 X	22.9 *H	23.6	4.06 X	1.9	0.5	23.0	3.33 X	1.7	0.9	12	AL
R7X6ML	20.4	No DATA	21.3	No DATA	20.8	0.57	1.3	0.6	20.8	0.42	1.5	0.4	9	LU
R7X6ML_AL	20.9	No DATA	20.8	No DATA	20.8	0.57	1.4	0.1	21.2	1.04	1.5	1.0	9	AL
RVFJF7	20.4	19.4 L	20.2	18.7	19.7	-0.89	1.2	0.8	19.7	-0.97	1.1	0.9	8	LZ
RVFJF7_AL	35.0 XL	35.3 XL	34.0 XL	35.3 XL	34.9	18.37 X	0.0	0.6	35.1	19.27 X	0.0	1.3	8	AL
U9UTRL_AL	19.6	20.4 H	19.9	19.7	19.9	-0.60	1.6	0.4	19.3	-1.56	1.6	0.8	12	AL
UHZBR6	21.2 L	20.6 L	20.0 L	20.7 L	20.6	0.28	0.0	0.5	21.2	1.01	0.0	0.6	12	LH
V74NYE	21.5	21.6	21.0	21.1	21.3	1.18	1.5	0.3	21.8	1.73	1.5	0.7	12	LA
W89VEC	19.9	21.1	20.6	19.6	20.3	-0.09	1.3	0.7	20.6	0.23	1.4	0.7	12	LA
WAW8F4_AL	22.3 *	22.0	22.1	21.6	22.0	2.06 *	1.3	0.3	21.2	0.95	1.3	1.1	12	AL
WERYME	20.3 H	20.9	20.3	20.7	20.6	0.23	2.1	0.3	20.6	0.21	1.8	0.6	12	LW
WMJEBJ	19.4	19.9	19.0	19.7	19.5	-1.14	1.6	0.4	20.0	-0.64	1.5	0.5	12	XX
WPTLEC	19.5	20.1	19.1	19.5	19.6	-1.03	1.4	0.4	19.8	-0.90	1.3	0.4	12	LW
WYXAT4	20.6	21.2	21.8	21.8	21.3	1.21	1.5	0.6	21.3	1.12	1.4	0.5	12	LH
XGBHZZH_AL	25.4 X	24.7 X	24.8 X	24.8 X	24.9	5.73 X	1.5	0.3	25.5	6.66 X	1.8	0.6	12	AL
XKATWH_AI	22.3 *L	23.3 XL	22.8 *L	22.7 *L	22.8	3.04 X	0.0	0.4	63.7	56.85 X	0.0	49.1 H	12	AL
XT8JJD	20.0	20.3	20.2	19.7	20.0	-0.46	1.4	0.3	20.2	-0.35	1.4	0.3	12	LW
YL33NX	20.1	19.8	20.5	20.2 H	20.2	-0.26	1.8	0.3	19.2	-1.61	1.6	1.0	8	LU
YL33NX_AL	21.2 H	20.1	20.0	20.4	20.4	0.05	1.9	0.6	19.5	-1.27	1.8	1.1	8	AL
ZUCQ2W	20.0	19.4	19.6	20.6	19.9	-0.60	1.4	0.5	20.2	-0.31	1.4	0.4	12	LA
Consensus (All Labs) Results														
Wk Mean	20.37	20.44	20.49	20.38	Month Mean	20.37		Grand Mean	20.44					
Avg SDr	1.46	1.41	1.38	1.43	Avg SD	1.43		Avg SD	1.45					
SD btwn Labs	0.95	0.93	0.89	1.04	SD btwn Labs	0.79		SD btwn Labs	0.76					
Labs Incl	54	50	54	51	SD btwn Wks	0.54		SD btwn Wks	0.77					
Labs Excl	4	5	3	3	Labs Incl	54		Labs Incl	53					
Labs not Rcvd	1	4	2	5										



Containerboard Interlaboratory Testing Program
Analysis 225
STFI, 31 lb Linerboard - 31K1
TAPPI Official Test Method T826

Report #669
June 2025

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
ID	IDM Compression Tester	LA	L&W Autoline (223 Enrollment)
LH	L&W 282	LU	L&W 52 without moisture correction (was 53)
LW	L&W 53 with moisture correction (was 53M)	LY	L&W 152 (was 52M)
LZ	L&W (model not specified)	TT	TMI Short Span Compression, 17-34 (MB K455)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42L
 TAPPI Official Test Method T575

Report #669
June 2025

WebCode	Monthly Results				Cumulative Results					
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst	
2EUHDX	201.6	0.70	51.49	H	201.6	0.42	0.00	1	LS	
37GNWB	229.8	1.75	21.62		205.2	0.54	38.64	3	EV	
63R2E8_AL	140.2	-1.61	25.15		134.2	-1.95 *	4.88	L	4	AL
6JT3R6	192.1	0.34	19.64		189.4	-0.01	7.03		4	EV
8K2UXR	188.9	0.22	38.14		217.1	0.96	33.53		4	LA
98RGD6	153.0	-1.13	20.11		146.1	-1.53	5.50		4	LS
AVT6H4	187.2	0.16	19.88		178.4	-0.40	6.11		4	EV
CMEXVY	186.2	0.12	29.17		186.1	-0.13	0.40	L	4	EV
DLCMEM	175.6	-0.28	25.02		199.3	0.33	41.56		4	EV
EBTV4H	176.0	-0.26	10.46	L	210.5	0.73	31.99		4	EV
F84NGZ_AL	147.9	-1.32	20.15		158.8	-1.08	7.45		4	AL
HV7NHT_AL	251.9	2.58 *	18.22		245.6	1.96 *	7.91		3	AL
J6PHAF	170.7	-0.46	16.82		178.1	-0.41	5.32		4	LS
JXQVFU	190.7	0.29	16.36		193.3	0.12	4.53	L	4	EV
KGYFRN_AL	166.9	-0.61	14.02		178.5	-0.39	25.90		4	AL
KMHM9T_AL	181.3	-0.06	16.53		179.6	-0.35	8.69		4	AL
NEWQZN_AL	180.0	-0.11	17.20		215.9	0.92	79.75	H	4	AL
PGHV9L	157.0	-0.98	17.64		172.8	-0.60	38.43		4	LS
PGHV9L_AL	202.0	0.71	26.13		190.1	0.01	8.28		4	AL
PY3L8L	204.3	0.80	21.78		172.3	-0.61	37.84		4	LA
Q3V3XK	164.1	-0.71	29.43		172.9	-0.59	10.27		4	LA
QZA3ZP_AL	180.3	-0.10	25.68		222.1	1.13	57.10		4	AL
R7X6ML_AL	155.0	-1.05	16.32		159.5	-1.06	5.07		4	AL
RJHKQL	220.7	1.41	22.05		211.1	0.75	11.50		4	LS
RVFJF7	0.3	-6.85 X	0.03	L	0.3	-6.64 X	0.01	L	3	LA
RVFJF7_AL	172.7	-0.39	19.81		176.1	-0.48	3.42	L	3	AL
V74NYE	193.9	0.41	32.79		241.8	1.82	50.83		4	LA
WAW8F4_AL	145.0	-1.43	20.74		153.3	-1.28	7.44		4	AL
WERYME	237.8	2.05 *	10.52	L	235.3	1.60	3.48	L	4	XX
XGBHZZH_AL	91.0	-3.45 X	13.66		99.2	-3.17 X	14.26		4	AL
YL33NX	165.1	-0.67	10.27	L	164.5	-0.89	5.13		3	XX
YL33NX_AL	166.6	-0.62	25.32		163.4	-0.92	4.76	L	3	AL
ZUCQ2W	189.4	0.24	38.51		229.6	1.39	56.01		4	LA



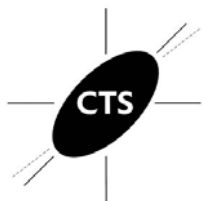
Containerboard Interlaboratory Testing Program
Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42L
TAPPI Official Test Method T575

Report #669
June 2025

Consensus (All Labs) Results			
Month Mean	183.03	Grand Mean	189.75
Avg SD	24.11	Avg SD Months	28.94
SD btwn Labs	26.67	SD btwn Labs	28.53
Labs Incl	31	Labs Incl	31

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400	EV	Emveco Microgage Model 210-R
LA	L&W Autoline (228 Enrollment)	LS	L&W 263
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 229
Roughness - Sheffield Method, 42 lb Linerboard - 42L3
 TAPPI Official Test Method T538

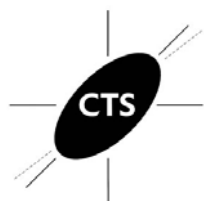
Report #669
June 2025

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
A43UW3_AL	393.1	0.34	3.98		390.6	0.30	1.86	4	XX
CNKK94	395.9	0.51	5.76		395.0	0.62	2.75	4	XX
F84NGZ_AL	370.8	-1.01	8.44		373.1	-0.96	3.58	4	AL
HV7NHT_AL	386.6	-0.05	4.81		384.4	-0.15	1.94	3	XX
J6PHAF	387.8	0.02	10.23	H	392.4	0.43	3.81	4	XX
L8ND7N_AL	392.2	0.29	3.29		389.6	0.23	2.78	4	AL
LBPGXB	349.4	-2.30	3.34	*	357.6	-2.09	19.67	H	TS
LH8R9Q_AL	398.6	0.67	6.79		391.3	0.36	8.27	4	AL
NZHKRB_AL	394.1	0.40	3.08		395.5	0.65	3.54	3	AK
PGHV9L_AL	419.7	1.95	4.88	*	413.0	1.93	4.76	4	AL
QZA3ZP_AL	397.2	0.59	7.55		396.7	0.74	2.40	4	AL
RVFJF7_AL	381.1	-0.38	8.09		378.8	-0.55	2.02	3	AL
U9UTRL	391.0	0.21	4.11		390.2	0.27	7.94	4	PP
WAW8F4_AL	362.7	-1.49	4.32		363.5	-1.66	2.19	4	AL
YL33NX_AL	391.5	0.24	9.11		385.0	-0.10	5.61	3	AL

Consensus (All Labs) Results			
Month Mean	387.45	Grand Mean	386.43
Avg SD	6.27	Avg SD Months	6.58
SD btwn Labs	16.56	SD btwn Labs	13.79
Labs Incl	15	Labs Incl	15

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
PP	Technidyne Profile/Plus	TS	TMI Monitor/Smoothness
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 231
Internal Bond, 42 lb Linerboard - 42L
 TAPPI Official Test Method T569

Report #669
June 2025

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
37GNWB	110.2	-2.07 *	3.90	118.1	-1.98 *	6.82	3	TM
63R2E8	152.8	0.11	3.83	152.0	-0.03	9.72	4	TM
6JT3R6	140.4	-0.52	6.27	145.9	-0.38	4.46	4	TM
A43UW3	164.0	0.68	11.60	170.1	1.01	4.18	4	HY
AVT6H4	145.0	-0.29	12.02	147.2	-0.31	3.72	4	TM
BXEAQ2	133.8	-0.86	15.83	151.6	-0.05	12.66	4	TM
CNKK94	182.2	1.62	12.79	181.4	1.66	5.57	3	HY
DLCMEM	126.6	-1.23	4.39	135.6	-0.97	13.35	4	TM
EFJ82Y	155.8	0.26	4.76	153.2	0.04	3.43	4	HZ
FRPKQY	146.4	-0.22	35.52 H	152.7	0.01	15.39 H	4	HY
JXQVFU	168.4	0.91	6.24	167.3	0.85	5.85	4	HZ
L8ND7N	150.4	-0.01	10.70	145.5	-0.40	3.97	4	TM
LH8R9Q	163.2	0.64	15.06	166.6	0.82	8.12	4	LZ
PGHV9L	130.4	-1.03	9.04	125.9	-1.53	3.34	4	TM
Q3V3XK	183.6	1.69	14.71	181.3	1.66	3.37	4	HY
RJHKQL	171.6	1.07	11.37	164.1	0.67	5.75	4	HY
U9UTRL	169.8	0.98	6.61	169.1	0.95	4.54	4	HY
W89VEC	147.0	-0.19	3.39	147.8	-0.27	4.05	4	TM
WAW8F4	126.8	-1.22	7.76	128.8	-1.36	3.68	4	TM
YL33NX	144.4	-0.32	5.41	145.4	-0.41	0.92 L	3	TM

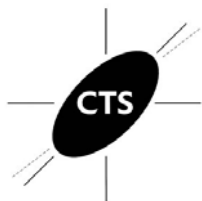
Consensus (All Labs) Results			
Month Mean	150.65	Grand Mean	152.46
Avg SD	12.29	Avg SD Months	7.19
SD btwn Labs	19.54	SD btwn Labs	17.38
Labs Incl	20	Labs Incl	20

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	146.87	17.93	3.77	15
Modified Scott Bond Mechanics	176.34	11.40	25.70	3

Key to Instrument Codes Reported by Participants

HY	Huygen Digitized Scott Internal Bond Tester	HZ	Huygen Internal Bond Tester with AccuPress
LZ	L&W (model not specified)	TM	TMI Monitor/Internal Bond Tester



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

Report #669
June 2025

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	
2EUHDX	0.5	-6.44 X	0.04 L	0.5	-9.56 X	0.00	1	
37GNWB	23.0	-1.10	1.58	25.1	-0.79	2.21	3	
3M44Z8	21.2	-1.52	2.68	23.3	-1.42	3.82	4	
63R2E8	33.5	1.39	2.51	30.7	1.21	2.74	4	
6JT3R6	19.8	-1.86	3.11	25.0	-0.83	3.59	4	
98RGD6	20.4	-1.71	1.14	21.3	-2.13 *	2.22	4	
A43UW3	25.4	-0.53	4.72	26.2	-0.38	1.19	4	
AVT6H4	29.4	0.42	0.89	32.4	1.83	2.35	4	
BAP2VL	28.4	0.19	5.32	28.2	0.31	1.02	4	
CMEXVY	30.4	0.66	3.70	29.4	0.77	2.34	4	
CNKK94	28.8	0.29	2.85	25.7	-0.57	3.02	4	
DLCMEM	29.3	0.41	3.58	29.7	0.86	1.49	4	
F84NGZ	26.7	-0.21	2.53	28.7	0.50	3.46	4	
FRPKQY	36.2	2.04 *	0.84	31.5	1.51	6.87 H	4	
J6PHAF	35.0	1.75	1.84	28.7	0.52	6.04 H	4	
JXQVFU	31.2	0.85	1.79	28.1	0.28	2.39	4	
KGYFRN	29.8	0.52	2.49	26.9	-0.15	2.66	4	
LH8R9Q	20.3	-1.74	4.24	23.1	-1.49	2.59	4	
PGHV9L	29.4	0.42	3.44	29.7	0.85	0.75	4	
Q3V3XK	27.2	-0.10	2.59	27.8	0.19	2.23	4	
QZA3ZP	30.5	0.68	1.27	30.9	1.29	0.89	4	
RJHKQL	27.8	0.04	0.84	27.5	0.08	0.53	4	
U9UTRL	29.6	0.47	3.51	29.1	0.64	2.74	4	
UHZBR6	26.6	-0.24	1.67	22.9	-1.56	2.64	4	
WAW8F4	30.4	0.66	4.16	28.3	0.35	3.11	4	
WERYME	29.8	0.52	3.35	29.1	0.63	2.26	4	
XGBHZH	22.1	-1.31	6.60 H	27.2	-0.02	4.08	4	
XKATWH	26.9	-0.18	1.01	25.6	-0.60	1.80	4	
YJYARE	25.6	-0.48	0.55 L	23.4	-1.38	1.77	4	
YL33NX	26.2	-0.34	2.77	25.9	-0.50	0.58	3	

Consensus (All Labs) Results

Month Mean	27.62	Grand Mean	27.27
Avg SD	3.04	Avg SD Months	2.90
SD btwn Labs	4.21	SD btwn Labs	2.80
Labs Incl	29	Labs Incl	29



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

Report #669
June 2025

Key to Instrument Codes Reported by Participants

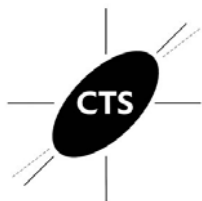
ZZ Instruments No Longer Tracked



Containerboard Interlaboratory Testing Program
Analysis 237
Air Resistance, 42 lb Linerboard - 42L
TAPPI Official Test Method T460

Report #669
June 2025

WebCode	Monthly Results			Cumulative Results					Inst
	Mean	CPV	SD	Mean	CPV	SD Months	Months		
2EUHDX	30.2	-1.37	1.31	30.2	-1.62	0.00	1	LP	
37GNWB_AL	32.9	0.12	2.73	33.7	0.87	1.58	4	AL	
3M44Z8	31.0	-0.93	1.77	25.0	-5.29 X	13.80 H	4	XX	
4C33Z8	32.6	0.00	2.45	33.0	0.39	1.13	4	LP	
63R2E8_AL	29.8	-1.56	1.65	31.9	-0.43	1.58	4	AL	
6JT3R6	36.8	2.31 *	2.50	35.1	1.82	1.85	4	GA	
8K2UXR	30.3	-1.30	1.95	31.4	-0.76	0.81	4	LA	
98RGD6	30.4	-1.27	2.88	29.0	-2.47 *	1.10	4	TD	
A43UW3	30.9	-0.99	3.97	31.8	-0.48	0.74	4	TP	
A43UW3_AL	32.3	-0.21	2.30	32.9	0.33	1.55	4	XX	
AVT6H4_AL	34.1	0.84	3.04	32.8	0.22	0.92	4	AL	
CNKK94	33.7	0.62	5.09 H	32.1	-0.27	2.62 H	4	TP	
DLCMEM	31.0	-0.91	1.06 L	32.6	0.12	1.19	4	LP	
F84NGZ_AL	30.3	-1.30	1.82	30.8	-1.17	0.68	4	AL	
HV7NHT_AL	34.0	0.77	2.55	33.7	0.85	0.32	3	XX	
J3G6PT	33.1	0.26	3.57	32.6	0.07	1.29	4	LP	
J6PHAF	34.2	0.86	2.96	34.6	1.47	1.11	4	GA	
JXQVFU	32.6	-0.04	2.86	32.9	0.33	0.34	4	LP	
KGYFRN_AL	31.8	-0.49	1.41	31.0	-1.04	1.42	4	AL	
KMHM9T_AL	33.9	0.68	1.65	33.7	0.90	0.47	4	AL	
L8ND7N_AL	30.6	-1.13	1.94	30.6	-1.30	1.07	4	AL	
LH8R9Q_AL	34.9	1.23	1.05 L	34.7	1.57	1.38	4	AL	
MXUPMQ	32.1	-0.30	2.56	32.2	-0.19	0.14	2	XX	
NZHKRB_AL	33.6	0.51	3.31	33.7	0.88	0.49	3	AK	
PGHV9L_AL	32.7	0.06	3.93	32.9	0.28	0.41	4	AL	
PY3L8L	30.3	-1.31	1.76	31.2	-0.91	1.24	4	LA	
Q3V3XK	32.5	-0.08	1.90	32.9	0.30	0.28	4	LP	
QZA3ZP_AL	31.9	-0.40	2.67	40.2	5.47 X	13.15 H	4	AL	
R7X6ML_AL	32.3	-0.19	2.16	31.9	-0.44	1.65	4	AL	
RJHKQL	33.2	0.30	2.87	32.7	0.13	0.82	4	LP	
RVFJF7_AL	31.5	-0.61	2.23	31.3	-0.84	1.24	3	XX	
U9UTRL	34.3	0.90	6.87 H	34.0	1.07	1.40	4	TP	
UHZBR6	34.5	1.02	3.74	34.0	1.10	1.24	4	XX	
V74NYE	33.3	0.34	4.16	32.7	0.15	0.59	4	LA	
WAW8F4_AL	33.2	0.31	3.21	32.7	0.16	0.59	4	AL	
WERYME	30.9	-0.97	1.55	31.0	-1.06	0.16 L	4	LP	
XGBHZH_AL	36.2	2.00 *	3.50	44.4	8.42 X	16.38 H	4	AL	
XKATWH_AL	32.8	0.08	0.97 L	31.1	-0.98	1.40	4	XX	
YJYARE_AL	35.8	1.75	2.21	35.4	2.08 *	0.55	4	AL	



Containerboard Interlaboratory Testing Program

Analysis 237

Report #669

June 2025

Air Resistance, 42 lb Linerboard - 42L

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
YL33NX	30.8	-1.00	2.60	32.2	-0.20	1.17	3	LP
YL33NX_AL	36.0	1.90	1.62	37.2	3.33 X	2.40 H	3	AL
ZUCQ2W	31.8	-0.47	2.52	31.2	-0.91	0.56	4	LA
Consensus (All Labs) Results								
Month Mean			32.64	Grand Mean		32.47		
Avg SD			2.83	Avg SD Months		1.13		
SD btwn Labs			1.79	SD btwn Labs		1.41		
Labs Incl			42	Labs Incl		38		

Key to Instrument Codes Reported by Participants

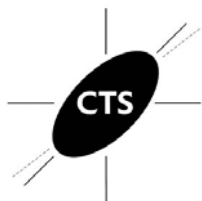
AK	L & W Autoline 300	AL	L & W Autoline 400
GA	Gurley Precision #4340 Automatic Densometer	LA	L&W Autoline (237 Enrollment)
LP	L&W Air Permeance Tester SE 166	TD	TMI Gurley Densometer
TP	Technidyne Profile/ plus Roughness & Porosity	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13
 TAPPI Official Test Method T809

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results						Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks		
2EUHDX	44.5 X	41.7 X	43.4 X	43.4 X	43.2	-4.74 X	3.1	1.2	43.2	-5.25 X	3.1	1.2	4	LD	
37GNWB	56.5	60.9	59.6	No DATA	59.0	0.34	3.3	2.3	59.1	0.41	3.7	2.2	13	LC	
3M44Z8	59.5	59.3	59.6	58.3	59.2	0.40	3.0	0.6	57.8	-0.05	3.6	2.4	16	LD	
4C33Z8	59.8	59.8	56.6	59.0	58.8	0.29	2.5	1.5	58.1	0.08	2.7	1.3	16	LD	
4CKWWB	55.1	55.3	57.8	57.9	56.5	-0.46	2.3	1.5	56.8	-0.38	3.0	1.4	16	EM	
4DBFHA	62.2	61.9	61.5	62.9	62.1	1.35	2.0	0.6	61.8	1.38	2.0	0.7 L	16	LC	
4WNWP9	66.5 *	65.0 *	65.0 *	66.9 *	65.8	2.55 *	2.5	1.0	64.4	2.32 *	2.7	2.3	12	LD	
6JT3R6	57.9	55.9	55.4	56.3	56.4	-0.50	3.1	1.1	56.7	-0.44	3.2	1.2	16	LD	
6LLWQU	56.7	57.1	56.1	56.0	56.5	-0.48	3.3	0.5	56.4	-0.55	3.3	1.9	16	TX	
7HXKP4	61.4	60.7 H	63.4	61.2 H	61.7	1.21	4.7	1.2	60.9	1.06	3.8	3.4	16	LD	
9TAQE4	64.5	59.5	60.8	59.7	61.1	1.03	4.3	2.3	60.8	1.02	4.4	2.5	16	LD	
A43UW3	59.4	58.1	56.1	57.1	57.7	-0.08	3.9	1.4	58.1	0.07	3.5	1.7	16	LD	
BAP2VL	56.0	58.7	58.2	58.1	57.8	-0.05	3.4	1.2	58.4	0.19	4.1	1.3	16	TX	
CMEXVY	59.1	57.8	57.7	57.3	57.9	0.00	3.9	0.8	56.6	-0.46	3.8	2.4	16	EN	
CNKK94	57.7	53.8	57.4	59.5	57.1	-0.27	4.2	2.4	58.6	0.26	4.2	2.4	16	LC	
EFJ82Y	55.6	57.0	56.3	56.0	56.2	-0.55	3.1	0.6	57.3	-0.20	3.7	1.2	16	LD	
GJG7QH	51.6 *	52.8	56.3	52.3	53.2	-1.51	3.4	2.1	56.1	-0.65	2.3	2.5	12	XX	
HWXHHH	58.1 L	58.3 L	58.3 L	58.3 L	58.2	0.10	0.6	0.1 L	58.2	0.09	0.7	0.3 L	16	LD	
J3G6PT	59.2	58.0	59.4	56.5	58.3	0.10	4.5	1.3	58.6	0.23	3.9	1.4	16	LD	
J6PHAF	61.8	58.3	59.1	61.6	60.2	0.73	3.2	1.8	58.3	0.12	4.0	2.1	16	LZ	
JNMFWG	52.0	53.5	53.1	53.3	53.0	-1.61	2.8	0.6	53.0	-1.76	3.3	1.0	12	LD	
JXQVFU	59.0	56.2 H	55.0	58.0	57.0	-0.29	4.2	1.8	58.2	0.11	4.6	2.1	16	LZ	
KGYFRN	57.1	58.7	52.8	60.7	57.3	-0.20	3.6	3.3 H	56.7	-0.43	3.5	1.9	16	LZ	
L2KC6U	60.0 L	59.7 L	59.7 L	59.8 L	59.8	0.60	0.7	0.1 L	58.1	0.08	0.6	1.8	16	TU	
LH8R9Q	53.5	52.7	54.7	55.9	54.2	-1.21	3.3	1.4	54.0	-1.39	3.4	1.5	16	LD	
M86Q9Q	63.0 L	62.9	62.5	63.8 L	63.0	1.64	1.6	0.5	62.6	1.67	2.2	0.8	16	TB	
MXUPMQ	55.5	51.1	51.8	56.0	53.6	-1.40	2.2	2.5	53.3	-1.65	2.9	2.0	16	LD	
PZUE8B	59.0	57.9	57.6	62.0 H	59.1	0.38	4.0	2.0	57.7	-0.09	5.3	2.7	16	EN	
Q3V3XK	56.3 H	57.6	59.7	60.5	58.5	0.18	4.3	1.9	58.8	0.32	4.2	1.7	16	XX	
RJHKQL	No DATA	No DATA	No DATA	56.0	56.0	-0.62	1.6	0.0	50.6	-2.62 *	2.6	13.4 H	5	LD	
RQVTRM	56.4	56.8	56.4	56.9	56.6	-0.43	1.7	0.2 L	56.8	-0.40	1.7	0.6 L	16	MB	
RVFJF7	57.9 L	53.6	56.6	54.8	55.7	-0.71	2.8	1.9	55.7	-0.80	3.3	2.2	12	LD	
T437GL	60.8	61.3	61.6	56.8	60.1	0.70	4.2	2.2	59.0	0.39	5.1	3.6	16	LD	
TW2MN4	52.1	50.7 *	48.8 *	49.1 *	50.2	-2.51 *	3.8	1.5	48.4	-3.40 X	5.4	3.2	12	TH	
U9UTRL	54.3	53.2	53.5	54.1	53.8	-1.34	3.5	0.5	54.0	-1.38	3.4	1.0	16	LD	



Containerboard Interlaboratory Testing Program
 Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13
 TAPPI Official Test Method T809

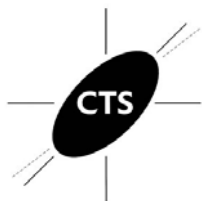
Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
UHZBR6	62.9	61.2	60.2	60.1	61.1	1.02	4.0	1.3	59.7	0.64	3.9	2.2	16	LD
V74NYE	55.8	63.4	60.9	61.9	60.5	0.83	4.0	3.3 H	60.5	0.94	4.5	2.2	16	TU
W89VEC	63.8	62.1	58.7 L	63.8	62.1	1.34	2.1	2.4	63.1	1.84	3.0	2.2	16	LC
WAGQFH	58.0	57.4	57.6	58.1	57.8	-0.05	3.1	0.3	57.1	-0.31	3.3	2.1	16	LD
WAW8F4	57.5	52.8	54.3	55.8	55.1	-0.91	3.7	2.0	54.6	-1.19	4.2	1.6	16	LD
WERYME	58.1	58.9	60.3 L	58.4	58.9	0.32	2.5	1.0	59.1	0.43	3.1	1.9	16	LD
WMJEBJ	59.6 L	62.7 L	61.1 L	60.5 L	61.0	0.98	0.9	1.3	60.8	1.03	0.9	1.4	16	XX
WPTLEC	60.6	58.4	59.6	55.9	58.6	0.22	3.0	2.0	58.7	0.29	3.5	1.7	16	LZ
WYXAT4	61.3	60.7	57.6	59.6	59.8	0.60	3.9	1.6	60.9	1.06	3.4	1.9	16	LD
YL33NX	52.5	52.8	52.3	52.7	52.6	-1.73	3.8	0.2 L	54.3	-1.29	4.4	1.3	12	LD

					Consensus (All Labs) Results			
Wk Mean	58.27	57.77	57.69	58.12	Month Mean	57.94	Grand Mean	57.91
Avg SDr	3.19	3.12	3.51	3.28	Avg SD	3.26	Avg SD	3.48
SD btwn Labs	3.44	3.52	3.31	3.40	SD btwn Labs	3.10	SD btwn Labs	2.80
Labs Incl	43	43	43	43	SD btwn Wks	1.62	SD btwn Wks	2.79
Labs Excl	1	1	1	1	Labs Incl	44	Labs Incl	43
Labs not Rcvd	1	1	1	1				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200 Series
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TB	TMI Monitor/Compression Tester, 17-70	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	TX	TMI Crush Tester (model not specified)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program

Analysis 250

Report #669

June 2025

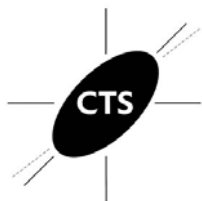
Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T843

WebCode	Weekly Means				Monthly Results				Cumulative Results						Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks		
2EUHDX	58.3 *	55.6	56.6 X	57.7 *	57.1	-2.51 *	2.9	1.2	57.1	-2.07 *	2.9	1.2	4	LD	
37GNWB	70.4	70.1	66.5	No DATA	69.0	0.77	3.8	2.2	68.7	0.68	4.1	2.8	13	LC	
4C33Z8	70.8	71.5	67.5	69.7	69.9	1.01	3.0	1.8	69.9	0.95	3.5	1.6	16	LD	
4WNP9	70.8	69.2	69.8	70.5	70.1	1.06	2.1	0.7	69.9	0.95	2.2	0.9	12	LD	
A43UW3	69.2	71.0	69.1	70.0	69.8	0.99	3.8	0.9	69.8	0.92	3.4	1.1	16	LD	
CNKK94	68.0	64.0	64.5	67.7	66.0	-0.05	3.3	2.1	68.5	0.61	3.7	2.4	16	LC	
GJG7QH	61.4	61.5	63.7	62.5 L	62.3	-1.08	1.8	1.1	64.0	-0.44	1.4	1.7	12	XX	
J3G6PT	67.4	69.2	67.4	67.9	68.0	0.49	3.9	0.9	67.4	0.35	3.6	1.6	16	LD	
KGYFRN	64.7	62.9	60.6 *	65.7	63.4	-0.76	3.8	2.2	63.0	-0.68	3.9	2.2	16	LZ	
LH8R9Q	63.8	68.6	65.7 H	68.4	66.6	0.12	4.2	2.3	68.0	0.50	3.5	2.2	16	LD	
PZUE8B	65.8	65.1	65.8	67.5	66.1	-0.04	2.3	1.0	66.1	0.05	2.8	0.9	16	LC	
Q3V3XK	69.7	69.1	68.5	69.7	69.3	0.84	3.5	0.6	68.7	0.67	3.2	1.4	16	XX	
RQVTRM	66.0	65.2	65.3	64.3	65.2	-0.29	1.7	0.7	65.5	-0.09	1.7	0.5 L	16	MB	
RVFJF7	63.9	62.4	64.8	60.2	62.8	-0.93	4.2	2.0	64.4	-0.36	4.3	3.0	12	XX	
U9UTRL	70.1	66.5	65.0	67.0	67.2	0.26	2.8	2.1	68.0	0.50	3.9	1.4	16	LD	
UHZBR6	61.0	56.5	61.4	60.0	59.7	-1.78	4.6	2.2	57.6	-1.94 *	4.2	2.0	16	XX	
WAW8F4	68.5	68.6	69.8	69.1	69.0	0.77	3.6	0.6	67.4	0.36	3.7	2.0	16	LD	
WERYME	68.4	68.2	65.8	65.6	67.0	0.22	4.2	1.5	66.5	0.15	4.3	1.6	16	LD	
WMJEBJ	68.6 L	71.8 L	71.3 L	70.1 L	70.4	1.16	0.8	1.4	70.9	1.19	0.9	1.5	16	XX	
WPTLEC	66.1	64.7	65.7	64.5	65.2	-0.26	3.2	0.8	65.5	-0.08	3.6	1.5	16	LZ	
YL33NX	51.4 XH	52.2 *H	52.1 XH	52.2 XH	52.0	-3.91 X	7.4	0.4	56.4	-2.23 *	6.8	3.3	12	LD	
Consensus (All Labs) Results															
Wk Mean	66.65	65.43	66.22	66.21	Month Mean		66.21		Grand Mean		65.87				
Avg SDr	3.58	3.27	3.45	3.23	Avg SD		3.32		Avg SD		3.62				
SD btwn Labs	3.55	5.41	2.77	3.80	SD btwn Labs		3.64		SD btwn Labs		4.25				
Labs Incl	20	21	19	19	SD btwn Wks		1.55		SD btwn Wks		1.89				
Labs Excl	1	0	2	1	Labs Incl		20		Labs Incl		21				
Labs not Rcvd	0	0	0	1											

Key to Instrument Codes Reported by Participants

LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM13
 TAPPI Official Test Method T822

Report #669
June 2025

	Weekly Means					Monthly Results					Cumulative Results										
WebCode	Week 1	Week 2	Week 3	Week 4		Mean	CPV	SD	SD Wks		Mean	CPV	SD	SD Wks	Wks	Inst					
3M44Z8	40.7	41.2	39.5	41.1	H	40.6	-0.47	3.6	0.8		39.2	-1.75	3.6	2.1	16	LD					
4C33Z8	41.2	40.9	40.3	40.5	L	40.7	-0.42	1.8	0.4		41.4	-0.44	2.3	1.4	16	LD					
4DBFHA	96.0	X	98.7	XL	94.0	X	94.8	X	95.8	25.10	X	1.9	2.1	54.4	7.21	X	1.6	24.7	H	16	XX
4PNBYU	38.2	37.8	*	37.6		37.7			37.8	-1.75	3.3	0.2	L	39.8	-1.38	4.7	2.5	16		XX	
6LLWQU	34.5	*	41.2		36.7	*	37.7		37.5	-1.89	*	2.9	2.8	40.8	-0.80	3.0	2.9	16		LZ	
7HXKP4	48.9	*	46.0	*	43.9		37.8		44.2	1.17	3.5	4.7	H	44.8	1.54	3.6	3.5	16		LZ	
A43UW3	43.1	H	41.7		42.6		42.1		42.4	0.35	3.2	0.6		42.0	-0.11	2.9	1.1	16		LD	
CNKK94	40.0		42.2		39.1		41.3		40.6	-0.46	3.1	1.4		42.3	0.12	3.1	1.6	16		LC	
EFJ82Y	42.9		43.2		42.6		43.7		43.1	0.68	2.6	0.5		43.3	0.70	3.3	1.7	16		LD	
EGEQ3Z	40.1		43.1	H	42.1		41.0		41.6	-0.03	3.7	1.3		41.1	-0.60	3.3	1.4	16		TH	
GJG7QH	44.4	L	44.0	L	44.2		44.8		44.4	1.26	1.2	0.3		43.8	0.98	1.2	0.6	12		XX	
HWXHHH	43.8	L	43.8	L	43.5	L	43.3	L	43.6	0.92	0.6	0.2	L	43.8	1.00	0.6	0.5	16		LD	
J3G6PT	37.2		37.2	*	39.9		38.5		38.2	-1.58	2.4	1.3		39.2	-1.73	2.8	1.3	16		LD	
J6PHAF	40.3		39.9		39.8		38.3		39.6	-0.96	2.5	0.9		40.9	-0.70	3.2	1.6	16		LD	
L2KC6U	42.3	L	42.8	L	42.3	L	42.2	L	42.4	0.36	0.7	0.3		42.7	0.35	0.6	0.6	16		TU	
LH8R9Q	42.5		42.2		45.7		43.5		43.5	0.85	3.7	1.6		43.3	0.69	3.4	1.7	16		LD	
M86Q9Q	99.8	X	102.3	XL	95.8	X	96.6	X	98.6	26.37	X	2.5	3.0	55.6	7.91	X	2.3	25.7	H	16	XX
MXUPMQ	47.2		44.2		44.4		46.4	*	45.5	1.81	2.3	1.5		45.5	1.96	*	2.5	2.1	16		LD
Q3V3XK	39.6		42.0	H	39.1		38.7	L	39.9	-0.82	3.6	1.5		41.5	-0.38	3.3	1.5	16		XX	
RQVTRM	41.1		41.5		41.2		42.0		41.4	-0.09	1.7	0.4		41.6	-0.29	1.7	0.3	L	16		MB
RVFJF7	44.2		41.2		44.1		41.6		42.8	0.53	2.5	1.6		43.2	0.64	3.3	2.1	12		LD	
T437GL	40.1		40.4		44.1		44.8		42.3	0.32	3.7	2.4		43.5	0.79	3.9	1.5	16		LD	
U9UTRL	41.5		44.9		44.2		42.1		43.2	0.71	3.2	1.7		42.6	0.25	3.7	1.5	15		LD	
WAGQFH	40.8		42.6		39.4		39.4		40.6	-0.50	3.4	1.5		40.7	-0.84	3.1	1.5	16		LD	
Consensus (All Labs) Results																					
Wk Mean	41.58	42.01	41.65	41.29		Month Mean	41.63		Grand Mean	42.14											
Avg SDr	2.50	3.35	2.65	2.84		Avg SD	2.85		Avg SD	3.04											
SD btwn Labs	3.12	2.09	2.49	2.52		SD btwn Labs	2.16		SD btwn Labs	1.70											
Labs Incl	22	22	22	22		SD btwn Wks	1.63		SD btwn Wks	1.76											
Labs Excl	2	2	2	2		Labs Incl	22		Labs Incl	22											
Labs not Rcvd	0	0	0	0																	



Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T822

Report #669
June 2025

Key to Instrument Codes Reported by Participants

LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		

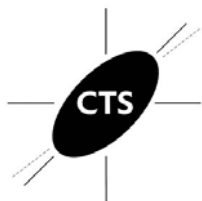


Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T826

Report #669
June 2025

WebCode	Weekly Means				Monthly Results				Cumulative Results						Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks		
2EUHDX	13.8 L	14.4 L	14.5 L	13.8 L	14.1	0.99	0.4	0.4	14.1	0.99	0.4	0.4	4	LA	
3M44Z8	13.8	14.0	14.1	13.4	13.8	0.42	1.2	0.3	13.7	0.09	1.2	0.4	16	XX	
4CKWWB	13.9	14.1	14.0	14.5	14.1	0.98	1.1	0.3	14.2	1.03	1.1	0.3	16	LH	
4WNWP9	13.8 H	13.0	14.3	13.1	13.5	-0.13	1.1	0.6	14.2	1.14	1.1	0.6	12	LA	
6LLWQU	12.5	13.8	12.8	12.6	12.9	-1.34	0.9	0.6	13.5	-0.21	1.1	0.8	8	XX	
7HXKP4	12.1 *	12.3	9.6 XL	11.0 XH	11.2	-4.50 X	1.1	1.2 H	12.5	-2.20 *	1.6	3.0 H	16	LZ	
8K2UXR	13.2	14.0	13.9	13.2	13.6	-0.04	1.1	0.4	14.2	1.05	1.1	0.6	16	LA	
BAP2VL	12.6	12.7	13.0	13.5	13.0	-1.24	1.1	0.4	13.3	-0.67	1.1	0.4	16	TX	
CNKK94	13.5	13.4	14.1	13.6	13.7	0.08	1.0	0.3	13.4	-0.32	1.0	0.3	16	LU	
D7H892	13.0	14.6	13.4	14.7	13.9	0.56	1.1	0.8	13.8	0.38	1.2	0.5	16	LU	
EFJ82Y	14.2 H	14.2 H	14.0	14.1 H	14.1	0.96	1.6	0.1	14.1	0.91	1.7	0.4	16	XX	
GJG7QH	13.6 L	13.6 L	14.5	12.9	13.6	0.03	0.7	0.6	13.6	-0.04	0.5	0.5	12	LZ	
J6PHAF	13.3	13.2	12.9	13.1	13.1	-0.98	0.9	0.2	13.2	-0.72	1.0	0.4	16	LB	
L2KC6U	13.9	13.6	13.6	13.9	13.8	0.27	1.0	0.2	13.6	-0.06	1.1	0.2 L	16	XX	
LH8R9Q	13.4	14.2	14.4	14.0	14.0	0.70	1.0	0.5	13.8	0.42	0.9	0.4	16	LA	
NZHKRB	14.2	13.3	14.3	14.2	14.0	0.68	1.0	0.5	13.9	0.55	1.1	0.5	16	LH	
PGHV9L	14.6	14.6	14.3	14.9	14.6	1.88	1.2	0.2	14.0	0.83	1.1	0.4	16	LA	
RJHKQL	No DATA	No DATA	No DATA	13.4	13.4	-0.49	1.0	0.0	13.3	-0.55	0.9	0.2 L	4	LH	
RVFJF7	14.5	13.2	12.9	13.3 L	13.5	-0.24	0.8	0.7	13.5	-0.14	0.9	0.6	12	LZ	
TW2MN4	13.1	12.9	13.1	12.7	13.0	-1.23	1.0	0.2	13.4	-0.37	1.1	0.6	12	TS	
U9UTRL	13.8	12.7	13.1	13.5	13.3	-0.62	1.0	0.5	13.2	-0.87	1.1	0.5	16	LB	
UHZBR6	13.7 L	13.1 L	13.7 L	13.8 L	13.6	-0.09	0.0	0.3	14.2	1.18	0.0	0.8	16	LH	
V74NYE	14.4	14.3	13.9	14.1	14.2	1.07	1.0	0.2	14.3	1.39	1.1	0.5	16	LA	
W89VEC	13.6	13.4	14.1	13.2	13.6	-0.07	1.1	0.4	13.4	-0.35	1.0	0.4	16	LA	
WAW8F4	14.1	14.5	15.2 *	14.9 *	14.7	2.02 *	1.3	0.5	14.2	1.12	1.1	0.5	16	LA	
WMJEBJ	12.3 *	12.7	13.4	12.8	12.8	-1.53	1.0	0.4	12.4	-2.31 *	0.9	3.1 H	16	XX	
YL33NX	13.5	13.1	13.0 H	13.1	13.2	-0.87	1.2	0.2	12.7	-1.69	1.3	0.5	12	LB	
ZUCQ2W	12.9	12.7	12.7	12.4	12.7	-1.80	1.0	0.2	13.3	-0.57	1.1	0.7	16	LA	

					Consensus (All Labs) Results			
Wk Mean	13.52	13.54	13.73	13.57	Month Mean	13.61	Grand Mean	13.62
Avg SDr	1.02	1.06	1.10	1.03	Avg SD	1.05	Avg SD	1.11
SD btwn Labs	0.65	0.68	0.66	0.68	SD btwn Labs	0.53	SD btwn Labs	0.52
Labs Incl	27	27	26	27	SD btwn Wks	0.43	SD btwn Wks	0.94
Labs Excl	0	0	1	1	Labs Incl	27	Labs Incl	28
Labs not Rcvd	1	1	1	0				



Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T826

Report #669

June 2025

Key to Instrument Codes Reported by Participants

LA	L&W Autoline	LB	L&W Model 152
LH	L&W 282	LU	L&W 52 without moisture correction (was 53)
LZ	L&W (model not specified)	TS	TMI Monitor/STFI Compression Tester, 17-33
TX	TMI (model not specified)	XX	Instrument make/model not specified by lab

End of Report