Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #3131 S - July 2021

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310	Bursting Strength - Packaging Papers
312	Tearing Strength - Printing Papers
314	Tearing Strength - Packaging Papers
320	Tensile Breaking Strength - Newsprint
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325	Tensile Breaking Strength - Printing Papers
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330	Tensile Breaking Strength - Packaging Papers
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334	Folding Endurance (MIT) - Double Folds
336	Bending Resistance, Gurley Type
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The CTS Paper & Paperboard Interlaboratory Program

In 1969, the National Bureau of Standards (now designated the National Institute for Standards and Technology) and the Technical Association of the Pulp and Paper Industry (TAPPI) developed an interlaboratory program for paper and paperboard testing. Since 1971, Collaborative Testing Services has operated the Collaborative Reference Program for Paper and Paperboard. With hundreds of organizations from around the world participating in these tests, this program has become one of the largest of its kind. The program allows laboratories to compare the performance of their testing with that of other participating laboratories, and provides a realistic picture of the state of paper testing.

About CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately - owned company that specializes in interlaboratory tests for a variety of industrial sectors: rubber, plastics, fasteners and metals, CKPG, 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 assurance objectives. Labs from the U.S., as well as more than 80 countries, currently participate in CTS programs.

If there are any questions on the report or testing program, please contact:

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Key for Web Summary Reports (Page 1 of 2)

WebCode — Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Paper Report published on the CTS Website. The WebCode for each analysis can be found on the datasheets and in the Performance Analysis Report mailed to each participant.

Lab Mean — The average of the values obtained for each sample by the participant.

Grand Mean — The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

Difference from Grand Mean — The difference of the LAB MEAN from the GRAND MEAN.

Between-Lab Standard Deviation — An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

Comparative Performance Value — An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.

Inst Code — A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section), if instruments are tracked.

Data Flag — DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

DATA FLAG	STATISTICALLY INCLUDED/EXCLUDED	ACTION REQUIRED
*	INCLUDED	CAUTION -review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample.

Graph - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained on the previous page.

Common Problems Highlighted in Footnotes

1. ***Extreme data*** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.

2. ***Systematic bias*** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.

3. ***Inconsistency in testing between samples/sample sets*** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.

4. ***Inconsistency in testing within a sample*** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

Labs flagged with an * are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An * should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.

Paper & Paperboard Interlaboratory Testing Program

Analysis 305

Bursting Strength - Printing Papers

TAPPI Official Test Method T403

WebCode	Data Flag	Sample SA93 Lab Mean	Sample SA93 Diff from Grand Mean	Sample SA93 CPV	Sample SA94 Lab Mean	Sample SA94 Diff from Grand Mean	Sample SA94 CPV
2NFQUG		21.80	-1.04	-0.81	21.76	-1.10	-1.13
47A3H9		22.34	-0.50	-0.39	23.12	0.26	0.26
68FU4U		23.21	0.37	0.29	23.92	1.06	1.08
7VYKWF		23.45	0.61	0.48	23.01	0.15	0.16
9FKVY6		21.82	-1.02	-0.80	21.53	-1.33	-1.36
AQVXPV		22.15	-0.69	-0.54	23.05	0.19	0.19
BZLTBW		22.73	-0.11	-0.08	22.40	-0.46	-0.47
CMPVVC		22.89	0.05	0.04	23.11	0.25	0.25
CTFGR6		23.00	0.16	0.13	23.79	0.93	0.95
DBUAVY		24.70	1.86	1.46	24.60	1.74	1.78
DLR8R7		21.31	-1.53	-1.20	21.41	-1.45	-1.48
DRV9TZ		19.85	-2.98	-2.34	21.24	-1.62	-1.66
FRBXHY		22.71	-0.12	-0.10	23.61	0.74	0.76
GKMWC7		23.28	0.44	0.35	22.54	-0.32	-0.33
H7JTM6		22.07	-0.76	-0.60	22.97	0.11	0.12
JVGVEW		25.50	2.66	2.09	23.40	0.54	0.55
KQVGY2		23.76	0.92	0.72	23.35	0.49	0.50
LRR3GY	X	32.50	9.66	7.58	31.40	8.54	8.73
LTJ74E		22.83	-0.01	0.00	24.47	1.61	1.65
M3A4CY		23.39	0.55	0.43	23.54	0.68	0.70
NHYTLL		21.10	-1.74	-1.36	22.10	-0.76	-0.78
PTRN8U		22.99	0.15	0.12	22.60	-0.26	-0.27
R4G2JV		21.02	-1.82	-1.42	21.17	-1.69	-1.73
R9WKTQ		23.42	0.59	0.46	22.92	0.06	0.06
TUQTJ6		23.10	0.26	0.21	21.85	-1.01	-1.03
TZXJLB		22.90	0.07	0.05	22.05	-0.82	-0.83
WUJZYE		23.61	0.78	0.61	23.54	0.68	0.69
XFHN4F		25.63	2.79	2.19	24.20	1.34	1.37

Summary Statistics	Sample SA93	Sample SA94
Grand Means	22.84 psi	22.86 psi
Stnd Dev Btwn Labs	1.28 psi	0.98 psi

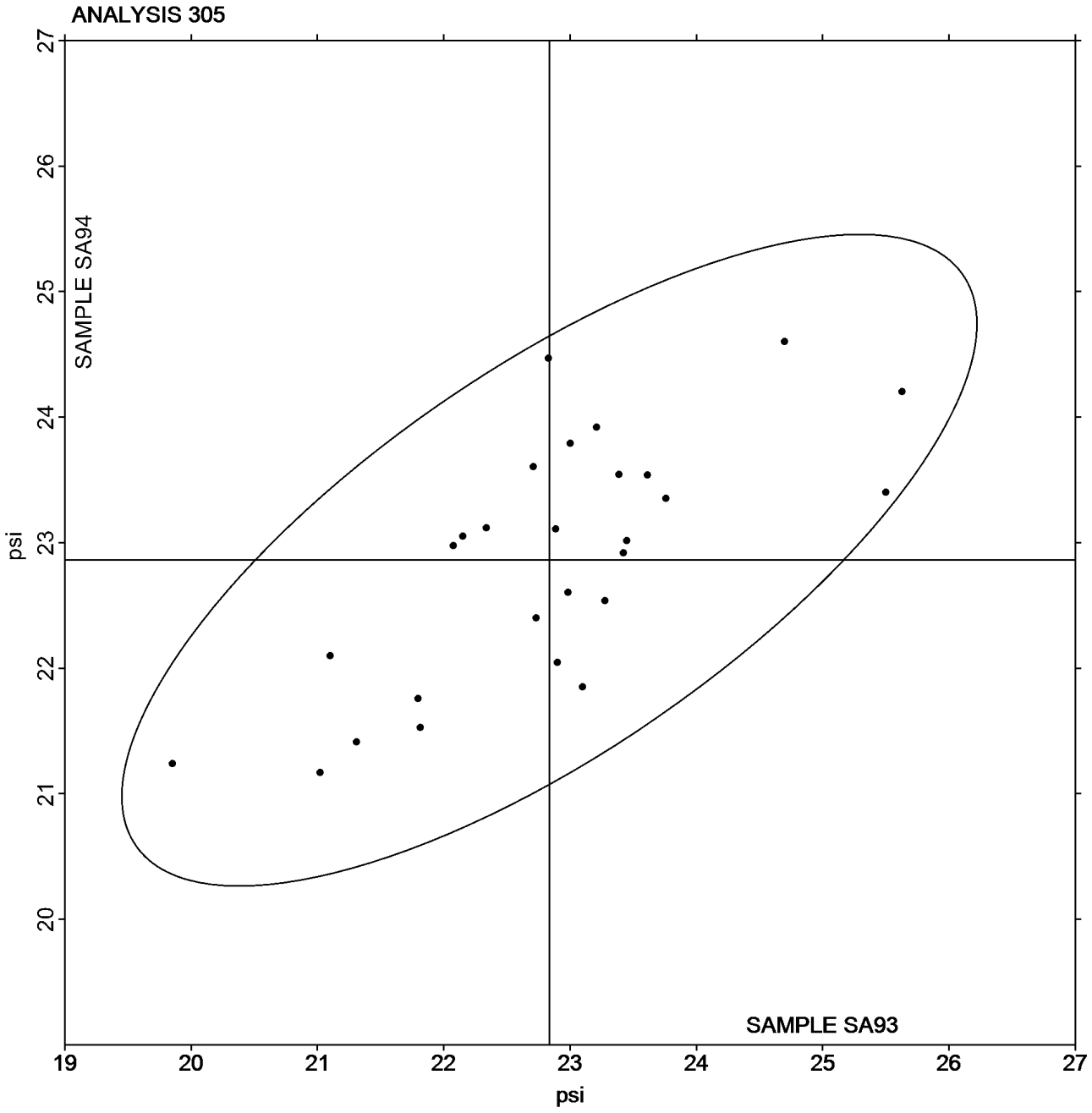
Statistics based on 27 of 28 reporting participants.

Comments on Assigned Data Flags for Test #305

LRR3GY (X) - Extreme Data.

Grand Mean Sample SA93 = 22.836 psi

Grand Mean Sample SA94 = 22.861 psi



Paper & Paperboard Interlaboratory Testing Program

Analysis 310

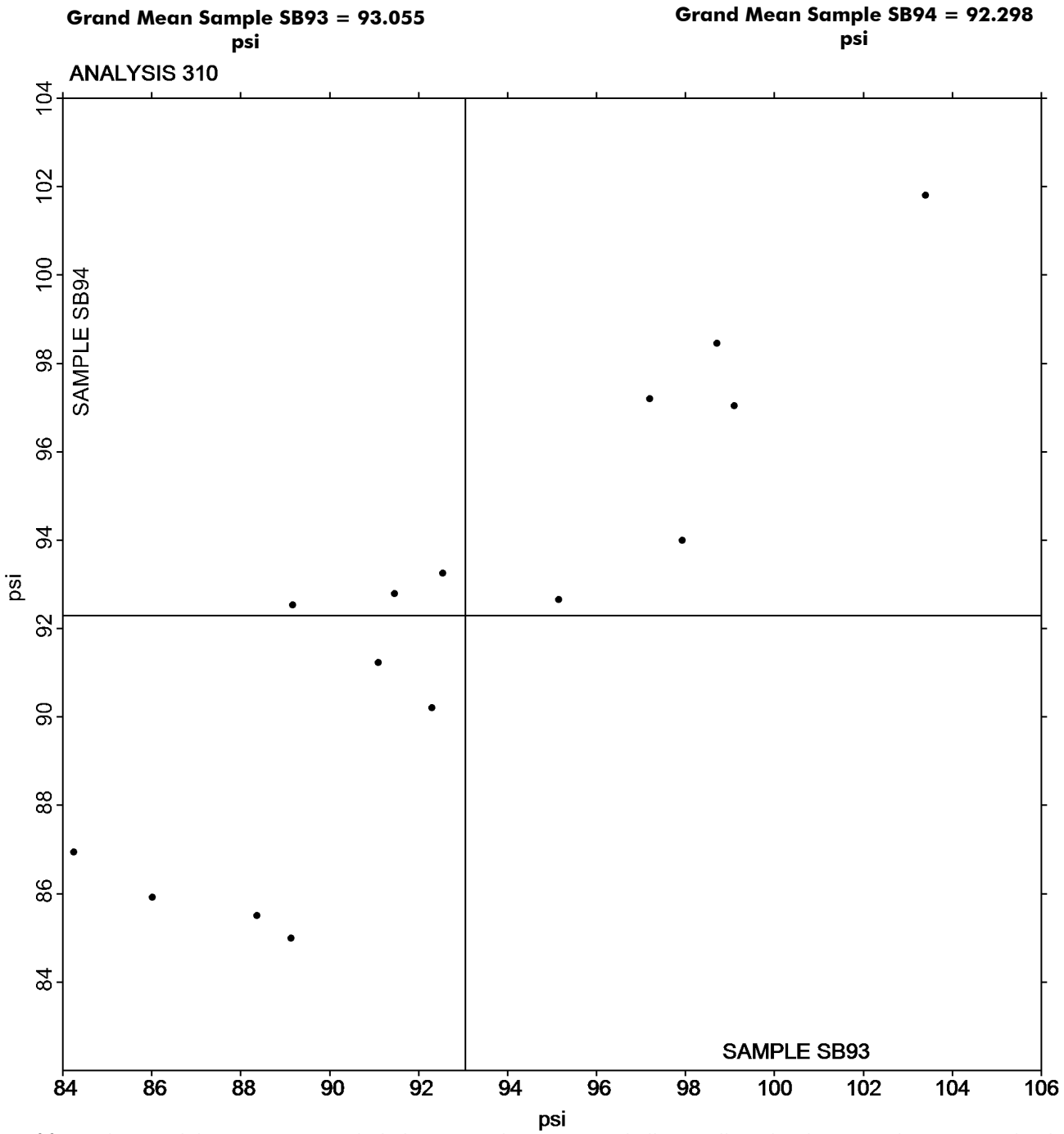
Bursting Strength - Packaging Papers

TAPPI Official Test Method T403

WebCode	Data Flag	Sample SB93 Lab Mean	Sample SB93 Diff from Grand Mean	Sample SB93 CPV	Sample SB94 Lab Mean	Sample SB94 Diff from Grand Mean	Sample SB94 CPV
338WDA		92.30	-0.76	-0.14	90.20	-2.10	-0.42
6GPE9B		97.93	4.87	0.90	93.99	1.69	0.34
7Y6THT		92.55	-0.51	-0.09	93.24	0.95	0.19
A7TRF4		95.15	2.09	0.39	92.65	0.35	0.07
BD79CB		88.37	-4.69	-0.87	85.51	-6.79	-1.35
FKPAEG		99.10	6.04	1.12	97.03	4.74	0.94
G9DZVX		86.02	-7.04	-1.30	85.92	-6.38	-1.27
LW4BG4		97.20	4.14	0.77	97.20	4.90	0.98
LWKD2W		84.25	-8.80	-1.63	86.94	-5.36	-1.07
M3A4CY		91.09	-1.96	-0.36	91.23	-1.07	-0.21
Q4MWQW		98.71	5.65	1.05	98.45	6.15	1.22
VVGRRN		89.17	-3.89	-0.72	92.53	0.23	0.05
WUJZYE		91.46	-1.59	-0.30	92.78	0.48	0.10
YM8LFG		103.40	10.34	1.92	101.80	9.50	1.89
ZWFQTJ		89.14	-3.92	-0.73	85.00	-7.30	-1.45

Summary Statistics	Sample SB93	Sample SB94
Grand Means	93.06 psi	92.30 psi
Stnd Dev Btwn Labs	5.39 psi	5.02 psi

Statistics based on 15 of 15 reporting participants.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 312

Tearing Strength - Printing Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample SC93 Lab Mean	Sample SC93 Diff from Grand Mean	Sample SC93 CPV	Sample SC94 Lab Mean	Sample SC94 Diff from Grand Mean	Sample SC94 CPV
338WDA		60.72	-2.27	-0.58	61.53	-1.28	-0.32
3KQRQH		64.76	1.77	0.45	64.66	1.85	0.46
47A3H9		66.79	3.80	0.97	65.95	3.14	0.79
4CFQ6H		69.87	6.89	1.76	70.33	7.52	1.89
6CVAPE		64.69	1.70	0.44	63.63	0.82	0.21
6GPE9B		57.43	-5.56	-1.42	58.29	-4.52	-1.14
6U9YQJ		64.27	1.28	0.33	63.91	1.10	0.28
7492F9	*	54.09	-8.90	-2.28	51.97	-10.84	-2.72
7FT2LH		58.22	-4.77	-1.22	58.00	-4.81	-1.21
7VYKWF		62.80	-0.19	-0.05	61.92	-0.89	-0.22
9AWDH9		57.30	-5.69	-1.46	55.55	-7.26	-1.82
A7TRF4		62.75	-0.24	-0.06	63.45	0.64	0.16
AJECN4		65.18	2.19	0.56	64.60	1.79	0.45
AXJBWB		64.00	1.01	0.26	60.90	-1.91	-0.48
BPFVHM		60.74	-2.25	-0.58	60.36	-2.45	-0.62
BZLTBW		57.64	-5.35	-1.37	57.88	-4.93	-1.24
C2QJD7		65.61	2.63	0.67	64.79	1.98	0.50
C4BGF3	X	92.96	29.97	7.68	88.44	25.63	6.43
CTFGR6		64.73	1.74	0.45	64.31	1.50	0.38
DBUAVY		63.35	0.36	0.09	63.08	0.27	0.07
DLR8R7		66.50	3.51	0.90	67.90	5.09	1.28
FKPAEG	X	75.80	12.82	3.28	81.14	18.33	4.60
GKMWC7		66.48	3.49	0.89	65.86	3.05	0.77
H4FX43		63.78	0.79	0.20	63.53	0.72	0.18
H7JTM6		66.31	3.33	0.85	65.79	2.98	0.75
JLQ8JT		59.79	-3.20	-0.82	57.58	-5.23	-1.31
KDCWGT		68.06	5.08	1.30	68.35	5.54	1.39
LRR3GY		62.20	-0.79	-0.20	62.90	0.09	0.02
LTJ74E		63.50	0.51	0.13	64.20	1.39	0.35
LW4BG4		68.00	5.01	1.28	67.00	4.19	1.05
LWKD2W		72.16	9.17	2.35	72.63	9.82	2.47
M3A4CY		64.40	1.41	0.36	63.85	1.04	0.26
PHDFVM	*	63.79	0.80	0.21	60.12	-2.69	-0.68
Q4MWQW		59.71	-3.27	-0.84	60.22	-2.59	-0.65
QMNTDL		55.35	-7.64	-1.96	56.54	-6.27	-1.57
R9WKTQ		64.53	1.55	0.40	64.72	1.90	0.48
TCRTDQ	X	88.33	25.34	6.49	90.86	28.05	7.04
TUQTJ6		64.44	1.45	0.37	63.62	0.81	0.20
TZXJLB		62.28	-0.71	-0.18	63.52	0.71	0.18
UJT9ZD	X	41.11	-21.88	-5.60	40.58	-22.23	-5.58

Paper & Paperboard Interlaboratory Testing Program

Analysis 312

Tearing Strength - Printing Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample SC93 Lab Mean	Sample SC93 Diff from Grand Mean	Sample SC93 CPV	Sample SC94 Lab Mean	Sample SC94 Diff from Grand Mean	Sample SC94 CPV
VVGRRN		64.86	1.88	0.48	65.10	2.29	0.57
W9ZY4F		64.70	1.71	0.44	64.50	1.69	0.42
WUJZYE		58.39	-4.60	-1.18	59.11	-3.70	-0.93
XFHN4F	*	57.68	-5.31	-1.36	61.30	-1.51	-0.38
Z8VFRN		60.57	-2.41	-0.62	61.81	-1.01	-0.25

Summary Statistics	Sample SC93	Sample SC94
Grand Means	62.99 Grams	62.81 Grams
Stnd Dev Btwn Labs	3.90 Grams	3.98 Grams

Statistics based on 41 of 45 reporting participants.

Comments on Assigned Data Flags for Test #312

UJT9ZD (X) - Data for both samples are low. Possible Systematic Error.

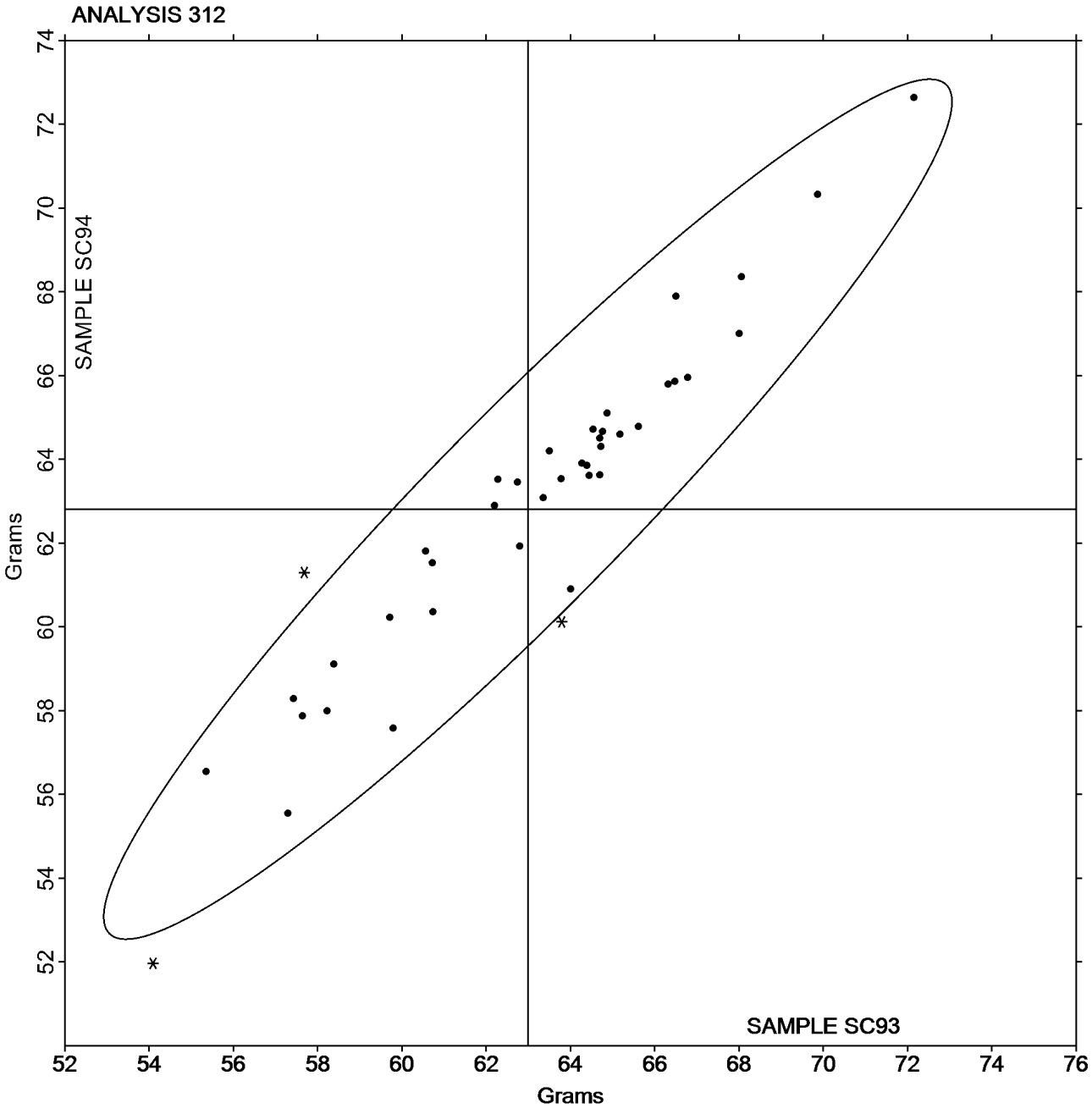
TCRTDQ (X) - Extreme Data.

FKPAEG (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample SC94.

C4BGF3 (X) - Extreme Data.

Grand Mean Sample SC93 = 62.986 Grams

Grand Mean Sample SC94 = 62.812 Grams



Paper & Paperboard Interlaboratory Testing Program

Analysis 314

Tearing Strength - Packaging Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample SD93 Lab Mean	Sample SD93 Diff from Grand Mean	Sample SD93 CPV	Sample SD94 Lab Mean	Sample SD94 Diff from Grand Mean	Sample SD94 CPV
2G3E4B		166.1	-4.7	-0.33	191.3	-11.7	-0.68
73N3DC		186.4	15.6	1.09	215.3	12.4	0.72
7QTNDF		162.9	-7.9	-0.55	199.9	-3.1	-0.18
7Y6THT		179.7	8.9	0.62	210.9	7.9	0.46
8HRWJC		179.3	8.5	0.59	210.3	7.4	0.43
9FKVY6		177.3	6.5	0.45	212.3	9.3	0.54
9P4L9B		176.3	5.5	0.38	215.2	12.3	0.71
9ZQ9TD		161.7	-9.1	-0.64	184.6	-18.4	-1.07
AXJBWB		172.3	1.5	0.10	207.8	4.8	0.28
BD79CB		164.6	-6.2	-0.43	191.2	-11.8	-0.68
CMPVVC		161.4	-9.4	-0.66	197.2	-5.8	-0.34
FRBXHY		147.8	-23.0	-1.61	189.1	-13.8	-0.80
FUHFEA	*	128.0	-42.8	-2.98	151.9	-51.0	-2.96
G9DZVX		164.2	-6.6	-0.46	201.7	-1.2	-0.07
GQU2PY		182.4	11.6	0.81	209.8	6.8	0.40
JUKLZK	X	37.7	-133.1	-9.29	43.7	-159.3	-9.24
JVGVEW	*	205.4	34.6	2.42	230.2	27.3	1.58
JYF7BW		174.4	3.6	0.25	200.3	-2.7	-0.16
KQVGY2		181.8	11.0	0.77	228.9	25.9	1.50
LW4BG4		175.6	4.8	0.33	206.4	3.4	0.20
M3A4CY		179.8	9.0	0.62	214.0	11.0	0.64
MUFWTT		176.6	5.8	0.41	211.3	8.4	0.49
PF3K8B		184.3	13.4	0.94	221.3	18.3	1.06
PLBXVZ		187.2	16.4	1.14	234.5	31.5	1.83
PULZG2		186.0	15.2	1.06	226.2	23.3	1.35
QU3VZE		152.5	-18.3	-1.27	188.6	-14.4	-0.83
R4G2JV		159.9	-10.9	-0.76	178.2	-24.8	-1.44
RAMVER		153.7	-17.2	-1.20	172.5	-30.5	-1.77
RBGJWM		165.8	-5.0	-0.35	203.3	0.3	0.02
VVGRRN		178.0	7.2	0.50	201.6	-1.4	-0.08
Y2WFX2		163.8	-7.0	-0.49	198.9	-4.0	-0.23
YE3MW8		170.6	-0.2	-0.01	194.9	-8.1	-0.47
YP2HTG		151.1	-19.7	-1.37	184.4	-18.5	-1.07
Z8VFRN		171.5	0.7	0.05	203.5	0.5	0.03
ZWFQTJ		179.1	8.3	0.58	213.2	10.2	0.59

Summary Statistics	Sample SD93	Sample SD94
Grand Means	170.80 Grams	202.96 Grams
Stnd Dev Btwn Labs	14.34 Grams	17.24 Grams

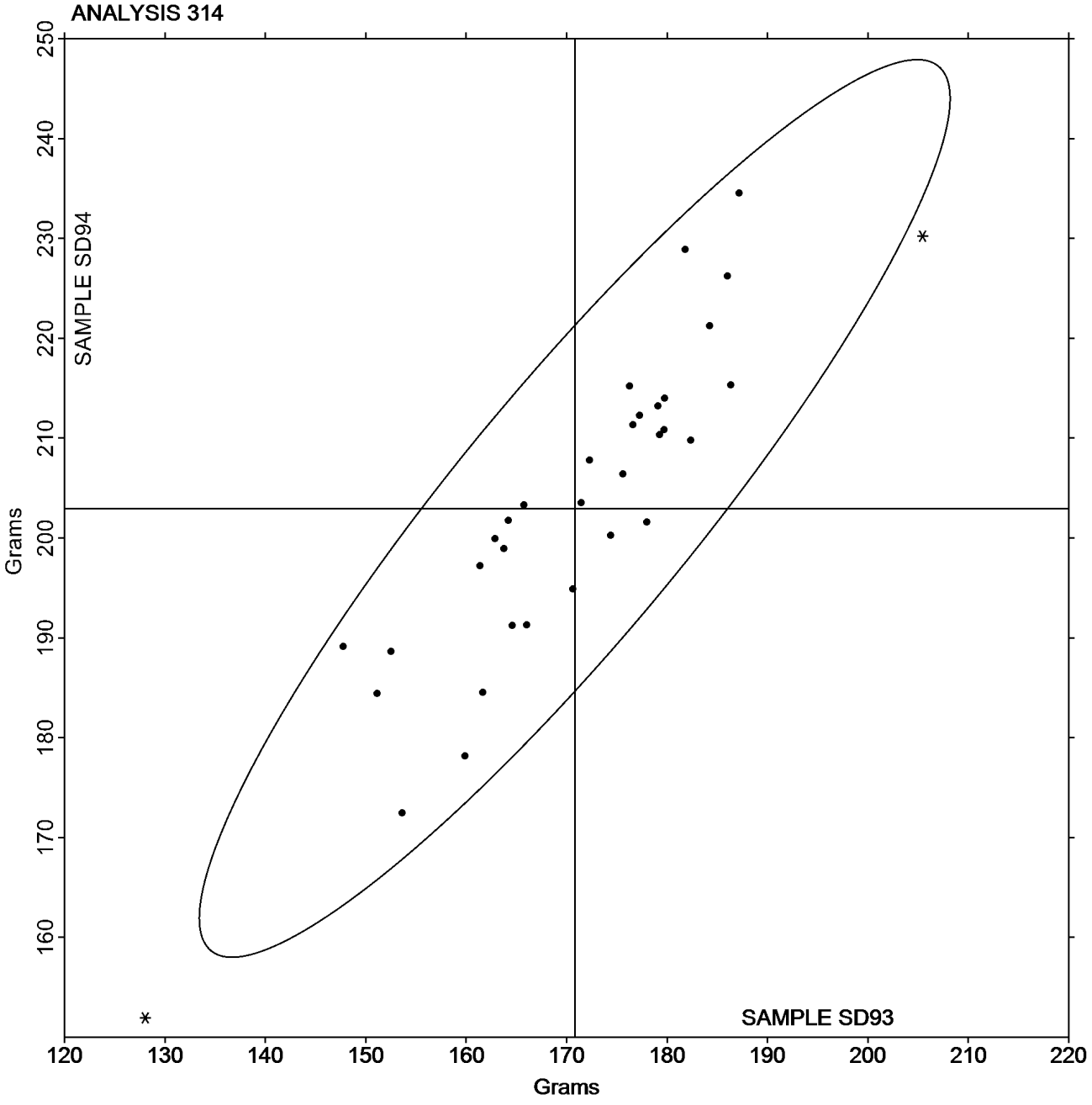
Statistics based on 34 of 35 reporting participants.

Comments on Assigned Data Flags for Test #314

JUKLZK (X) - Extreme Data.

Grand Mean Sample SD93 = 170.80 Grams

Grand Mean Sample SD94 = 202.96 Grams



Paper & Paperboard Interlaboratory Testing Program

Analysis 320

Tensile Breaking Strength - Newsprint

TAPPI Official Test Method T494

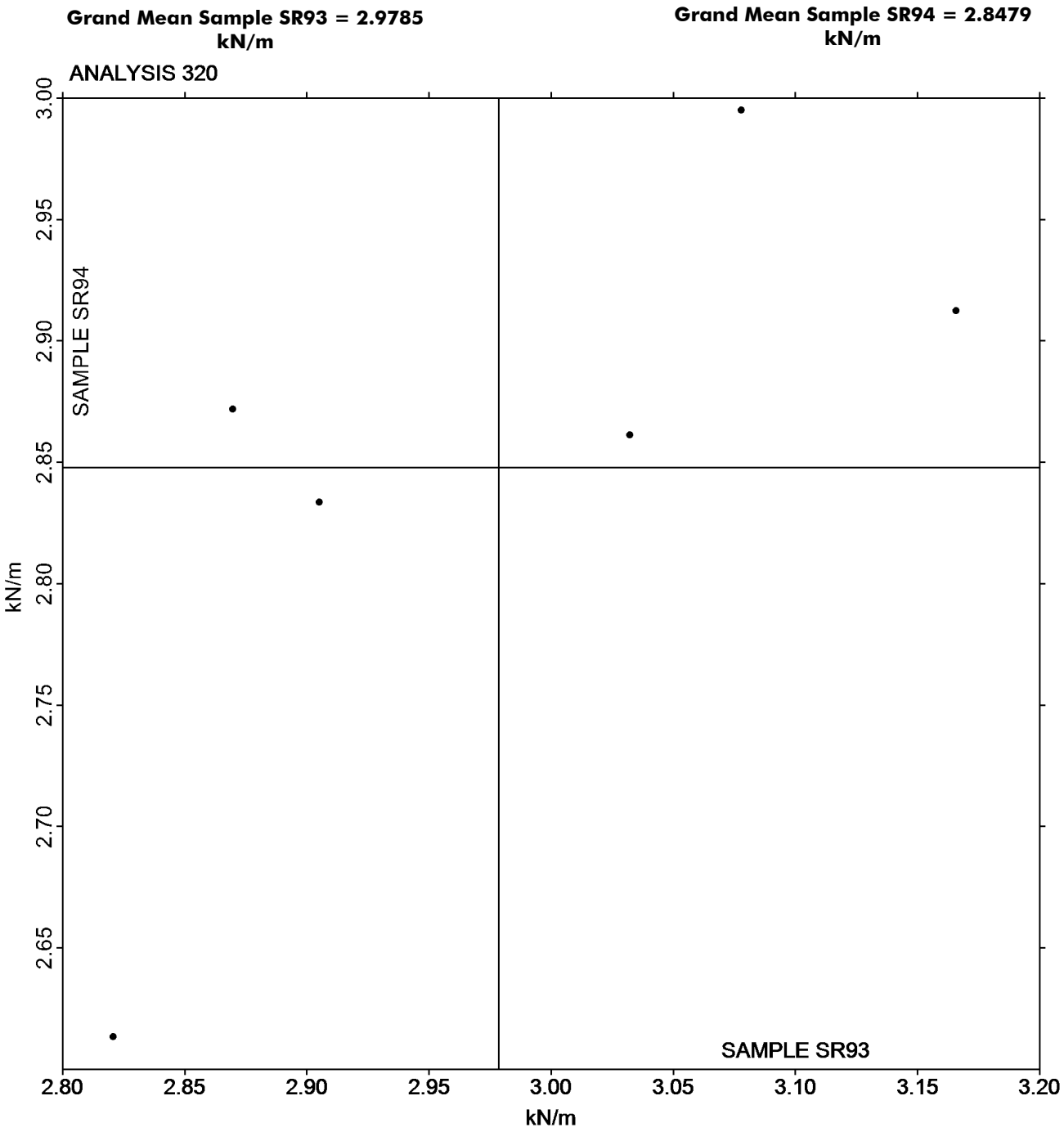
WebCode	Data Flag	Sample SR93 Lab Mean	Sample SR93 Diff from Grand Mean	Sample SR93 CPV	Sample SR94 Lab Mean	Sample SR94 Diff from Grand Mean	Sample SR94 CPV
7QTNDF		2.870	-0.109	-0.81	2.872	0.024	0.19
8FM7FH		2.821	-0.158	-1.18	2.613	-0.234	-1.83
CTFGR6		3.032	0.054	0.40	2.861	0.013	0.10
LTJ74E		3.166	0.187	1.40	2.912	0.064	0.50
WUJZYE		3.078	0.099	0.74	2.995	0.147	1.15
Z8VFRN		2.905	-0.073	-0.55	2.834	-0.014	-0.11

Summary Statistics	Sample SR93	Sample SR94
Grand Means	2.98 kN/m	2.85 kN/m
Stnd Dev Btwn Labs	0.13 kN/m	0.13 kN/m

Statistics based on 6 of 6 reporting participants.

Analysis Notes:

WUJZYE - Data appear to be reported as N/15 mm, not kN/m as indicated on data entry form. CTS will not correct the Units going forward.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 321

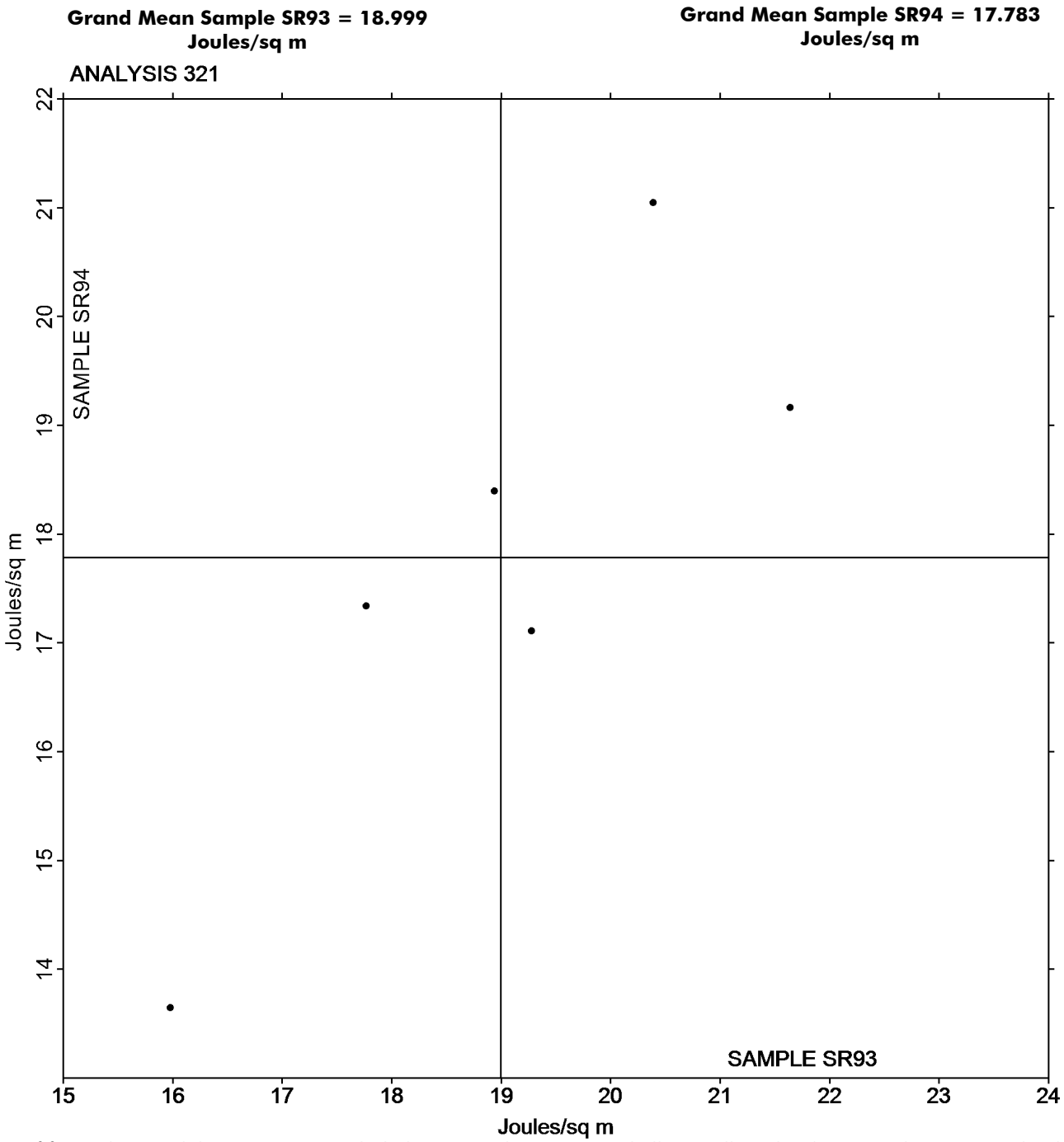
Tensile Energy Absorption - Newsprint

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SR93 Lab Mean	Sample SR93 Diff from Grand Mean	Sample SR93 CPV	Sample SR94 Lab Mean	Sample SR94 Diff from Grand Mean	Sample SR94 CPV
7QTNDF		20.39	1.39	0.70	21.04	3.26	1.32
8FM7FH		15.98	-3.02	-1.52	13.65	-4.14	-1.67
CTFGR6		19.28	0.28	0.14	17.11	-0.67	-0.27
LTJ74E		21.64	2.64	1.33	19.16	1.38	0.56
WUJZYE		17.77	-1.23	-0.62	17.34	-0.45	-0.18
Z8VFRN		18.94	-0.06	-0.03	18.40	0.61	0.25

Summary Statistics	Sample SR93	Sample SR94
Grand Means	19.00 Joules/sq m	17.78 Joules/sq m
Stnd Dev Btwn Labs	1.98 Joules/sq m	2.48 Joules/sq m

Statistics based on 6 of 6 reporting participants.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

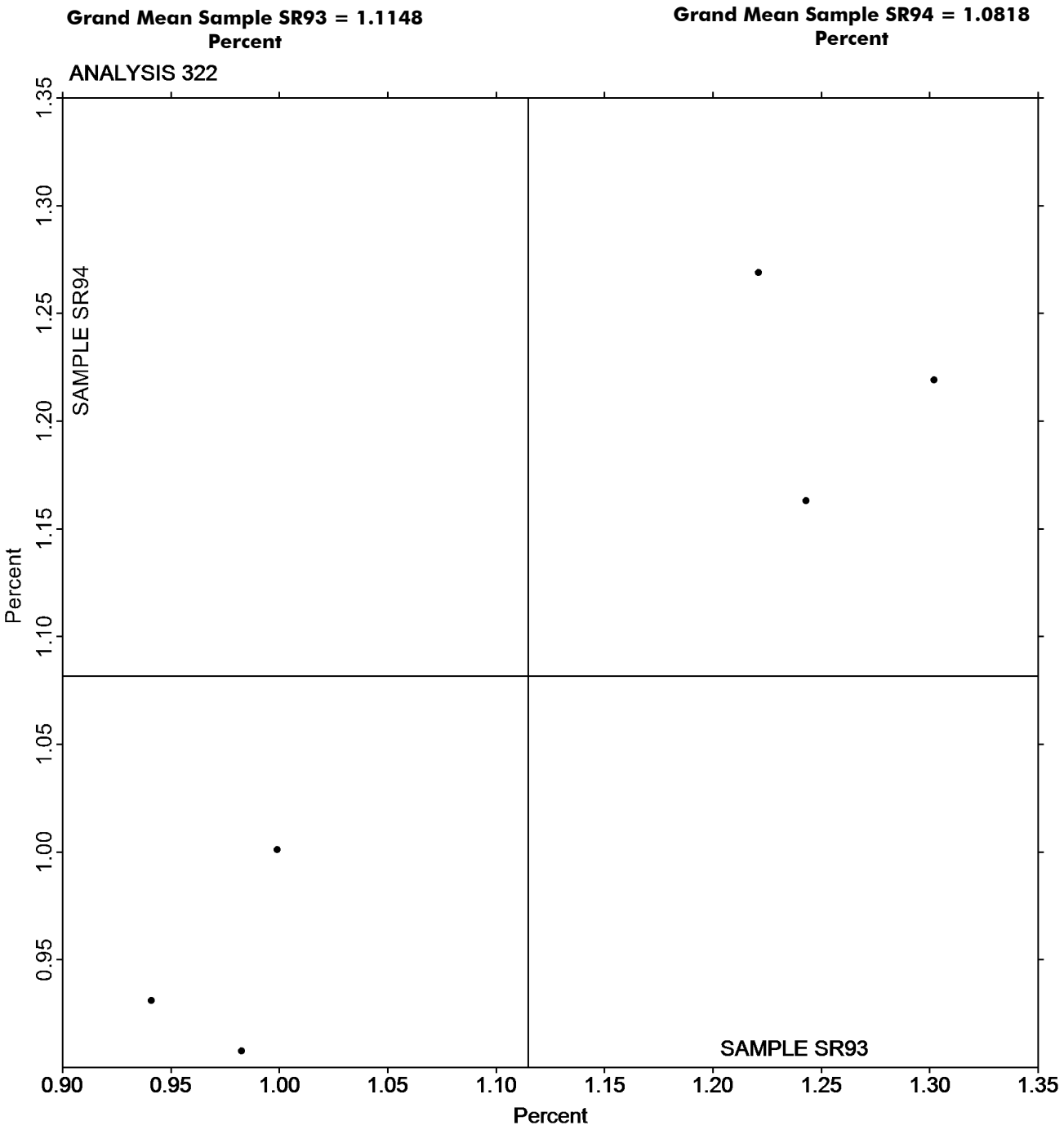
Paper & Paperboard Interlaboratory Testing Program

Analysis 322
Elongation to Break - Newsprint
TAPPI Official Test Method T494

WebCode	Data Flag	Sample SR93 Lab Mean	Sample SR93 Diff from Grand Mean	Sample SR93 CPV	Sample SR94 Lab Mean	Sample SR94 Diff from Grand Mean	Sample SR94 CPV
7QTNDF		1.221	0.106	0.67	1.269	0.187	1.21
8FM7FH		0.983	-0.132	-0.84	0.908	-0.174	-1.12
CTFGR6		1.302	0.187	1.19	1.219	0.137	0.89
LTJ74E		1.243	0.128	0.81	1.163	0.081	0.52
WUJZYE		0.999	-0.116	-0.74	1.001	-0.081	-0.52
Z8VFRN		0.941	-0.174	-1.10	0.931	-0.151	-0.97

Summary Statistics	Sample SR93	Sample SR94
Grand Means	1.11 Percent	1.08 Percent
Stnd Dev Btwn Labs	0.16 Percent	0.15 Percent

Statistics based on 6 of 6 reporting participants.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 325

Tensile Breaking Strength - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF93 Lab Mean	Sample SF93 Diff from Grand Mean	Sample SF93 CPV	Sample SF94 Lab Mean	Sample SF94 Diff from Grand Mean	Sample SF94 CPV	Instr Code
2NFQUG	X	12.630	5.944	17.73	12.520	5.812	17.40	LE
3BZ8KK	*	6.313	-0.373	-1.11	5.928	-0.780	-2.34	LY
3KQRQH		6.750	0.065	0.19	7.021	0.313	0.94	XX
47A3H9		6.935	0.249	0.74	6.960	0.252	0.75	LH
4CFQ6H		6.871	0.185	0.55	7.248	0.540	1.62	LA
6CVAPE		6.527	-0.159	-0.47	6.583	-0.125	-0.37	TO
6EHWAF		6.898	0.212	0.63	6.859	0.151	0.45	LA
6U9YQJ		7.013	0.327	0.98	7.045	0.337	1.01	LI
7492F9		6.690	0.004	0.01	6.557	-0.151	-0.45	TO
7FT2LH		6.250	-0.436	-1.30	6.322	-0.386	-1.16	TF
88DWP4	*	5.882	-0.803	-2.40	5.850	-0.858	-2.57	ID
9AWDH9		6.355	-0.330	-0.99	6.207	-0.501	-1.50	FP
9ZQ9TD		6.719	0.033	0.10	6.519	-0.189	-0.57	LI
A7TRF4		6.822	0.136	0.41	6.754	0.046	0.14	TF
AYBEJQ		6.148	-0.538	-1.60	6.334	-0.374	-1.12	RE
BZLTBW		6.627	-0.059	-0.17	6.722	0.013	0.04	TB
C2QJD7	*	5.910	-0.775	-2.31	6.312	-0.396	-1.19	IM
C4BGF3		7.320	0.634	1.89	7.198	0.490	1.47	LH
DBUAVY		6.630	-0.056	-0.17	6.665	-0.043	-0.13	LH
DLR8R7		6.517	-0.169	-0.50	6.821	0.113	0.34	TO
DRV9TZ		7.004	0.318	0.95	7.076	0.368	1.10	LH
G6BB23		6.179	-0.507	-1.51	6.482	-0.226	-0.68	TV
GKMWC7		6.947	0.261	0.78	6.971	0.263	0.79	LF
H4FX43		6.512	-0.174	-0.52	6.607	-0.101	-0.30	LX
H7JTM6		7.102	0.416	1.24	7.169	0.461	1.38	LI
JLQ8JT		6.754	0.068	0.20	6.518	-0.190	-0.57	LE
LRR3GY		6.490	-0.196	-0.58	6.695	-0.013	-0.04	TO
LZZNEZ		6.914	0.228	0.68	6.874	0.166	0.50	XX
M3A4CY		6.716	0.030	0.09	6.648	-0.060	-0.18	LH
MR7YFC		6.894	0.209	0.62	7.096	0.388	1.16	TV
NHYTLL		6.574	-0.112	-0.33	6.623	-0.085	-0.25	IN
PHDFVM	*	6.793	0.107	0.32	6.219	-0.489	-1.46	VM
Q4MWQW		6.530	-0.156	-0.46	6.660	-0.048	-0.14	LH
QMNTDL		6.947	0.261	0.78	6.809	0.101	0.30	LI
R9WKTQ		6.927	0.242	0.72	7.029	0.321	0.96	LX
TCRTDQ		6.819	0.134	0.40	6.814	0.106	0.32	LB
TUQTJ6		6.795	0.109	0.33	6.844	0.136	0.41	TV
TZXJLB		6.587	-0.099	-0.30	6.330	-0.378	-1.13	LX
UJT9ZD		6.219	-0.467	-1.39	6.604	-0.104	-0.31	TO
W9ZY4F		6.773	0.087	0.26	7.041	0.333	1.00	TC

Paper & Paperboard Interlaboratory Testing Program

Analysis 325

Tensile Breaking Strength - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF93 Lab Mean	Sample SF93 Diff from Grand Mean	Sample SF93 CPV	Sample SF94 Lab Mean	Sample SF94 Diff from Grand Mean	Sample SF94 CPV	Instr Code
WUJZYE		6.850	0.164	0.49	6.674	-0.034	-0.10	LH
XFHN4F		7.492	0.806	2.40	7.191	0.483	1.44	TJ
XH73RP		6.804	0.118	0.35	6.863	0.155	0.46	FP

Summary Statistics	Sample SF93	Sample SF94
Grand Means	6.69 kN/m	6.71 kN/m
Stnd Dev Btwn Labs	0.34 kN/m	0.33 kN/m

Statistics based on 42 of 43 reporting participants.

Comments on Assigned Data Flags for Test #325

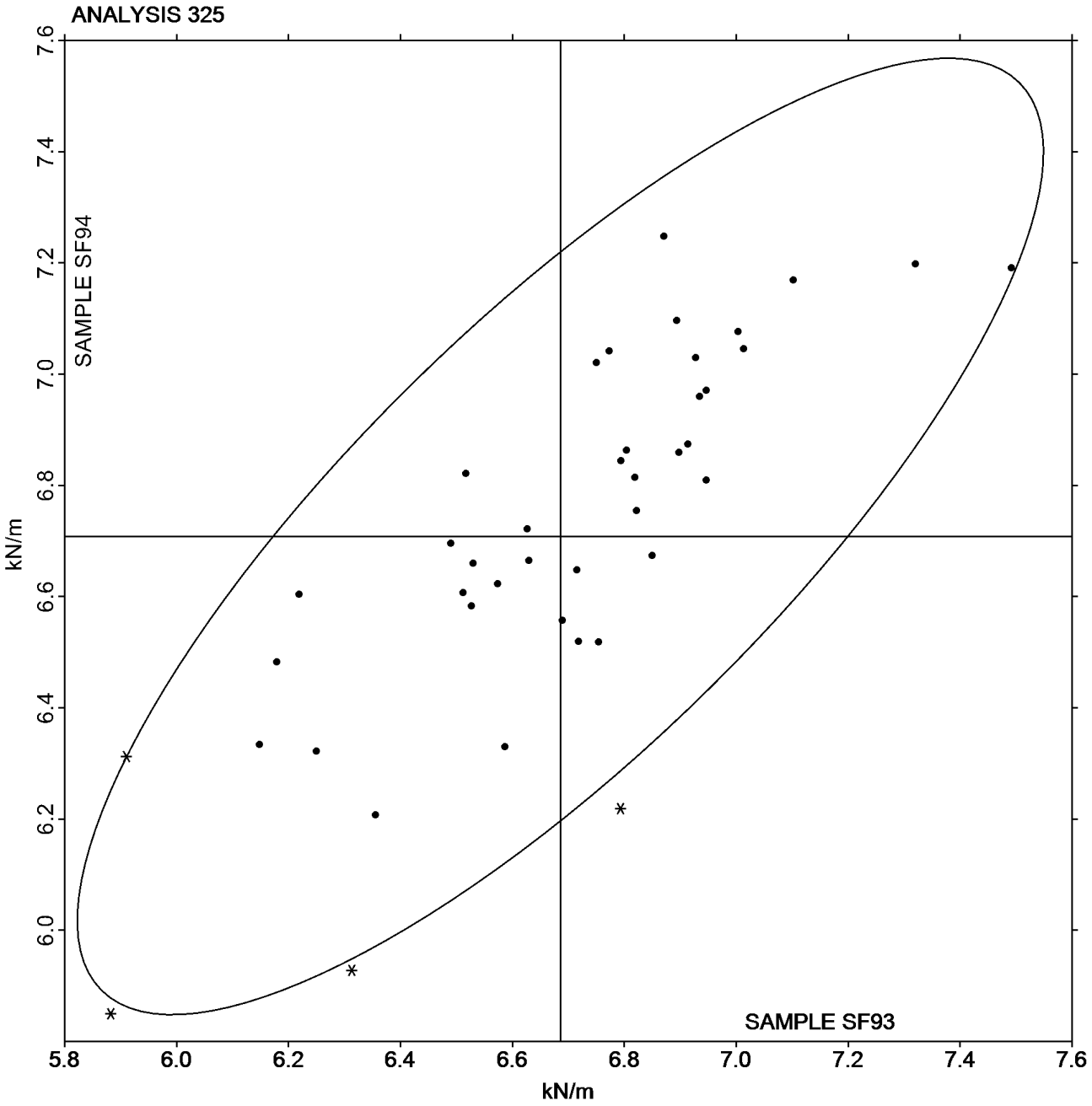
2NFQUG (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

FP	Frank PTI Universal Tester TS	ID	Instron 4200 Series
IM	Instron 5500 Series	IN	Instron 3340 series
LA	L & W Tensile - Autoline 300	LB	L & W Tensile - Autoline 400
LE	L & W Tensile Tester 066	LF	L & W Tensile/Fracture Toughness Tester SE 064
LH	L & W Alwetron TH1 (Horizontal) SE 060/065F	LI	L & W Tensile Tester SE 062
LX	L & W (model not specified)	LY	Lloyd TCD500
RE	Regmed	TB	Thwing-Albert EJA/1000
TC	Thwing-Albert Electro-Hydraulic, Model 30LT	TF	Thwing-Albert EJA Vantage-1
TJ	Thwing-Albert QC II-XS	TO	Thwing-Albert QC-1000
TV	Thwing-Albert Vantage NX	VM	Valmet PaperLab (was Kajaani/Robotest)
XX	Instrument make/model not specified by lab		

Grand Mean Sample SF93 = 6.6857 kN/m

Grand Mean Sample SF94 = 6.7081 kN/m



Paper & Paperboard Interlaboratory Testing Program

Analysis 327

Tensile Energy Absorption - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF93 Lab Mean	Sample SF93 Diff from Grand Mean	Sample SF93 CPV	Sample SF94 Lab Mean	Sample SF94 Diff from Grand Mean	Sample SF94 CPV	Instr Code
2NFQUG	X	181.30	86.12	9.07	176.70	79.91	7.31	LE
3BZ8KK	X	51.57	-43.61	-4.59	54.64	-42.15	-3.85	LY
3KQRQH		102.32	7.14	0.75	110.29	13.50	1.23	XX
47A3H9		96.66	1.48	0.16	95.91	-0.87	-0.08	LH
4CFQ6H		83.76	-11.42	-1.20	90.24	-6.55	-0.60	LA
6CVAPE		96.61	1.44	0.15	98.07	1.29	0.12	TO
6EHWAF		100.39	5.21	0.55	96.63	-0.16	-0.01	LA
6U9YQJ		86.18	-9.00	-0.95	88.61	-8.17	-0.75	LI
7492F9		100.26	5.08	0.54	94.13	-2.66	-0.24	TO
88DWP4		75.09	-20.08	-2.12	75.76	-21.03	-1.92	ID
9AWDH9		104.86	9.69	1.02	105.31	8.52	0.78	FP
9ZQ9TD		89.31	-5.86	-0.62	88.32	-8.46	-0.77	LI
A7TRF4		93.82	-1.35	-0.14	90.47	-6.32	-0.58	TF
AYBEJQ		84.56	-10.61	-1.12	92.31	-4.47	-0.41	RE
BZLTBW		95.62	0.44	0.05	98.77	1.99	0.18	TB
C2QJD7	*	85.54	-9.63	-1.01	97.39	0.60	0.05	IM
C4BGF3		93.08	-2.10	-0.22	93.46	-3.33	-0.30	LH
DBUAVY		89.61	-5.57	-0.59	91.14	-5.65	-0.52	LH
DLR8R7		114.75	19.58	2.06	123.20	26.42	2.41	TO
G6BB23		101.96	6.79	0.72	108.50	11.72	1.07	TV
GKMWC7		100.37	5.19	0.55	102.66	5.87	0.54	LF
H4FX43	X	12.93	-82.25	-8.67	12.85	-83.94	-7.67	LJ
H7JTM6		101.65	6.47	0.68	101.03	4.24	0.39	LI
LRR3GY		93.33	-1.85	-0.19	99.46	2.67	0.24	TO
M3A4CY		91.99	-3.19	-0.34	93.99	-2.80	-0.26	LH
MR7YFC		114.45	19.27	2.03	118.49	21.71	1.98	TV
NHYTLL		99.10	3.92	0.41	98.96	2.17	0.20	IN
PHDFVM	X	585.50	490.32	51.66	573.90	477.11	43.62	VM
Q4MWQW		89.07	-6.11	-0.64	92.60	-4.19	-0.38	LH
QMNTDL		77.17	-18.00	-1.90	72.20	-24.59	-2.25	LX
R9WKTQ		94.82	-0.36	-0.04	94.40	-2.38	-0.22	LX
TCRTDQ		89.48	-5.70	-0.60	88.11	-8.68	-0.79	LB
TUQTJ6		111.29	16.12	1.70	112.59	15.80	1.44	TV
TZXJLB		90.66	-4.52	-0.48	84.34	-12.45	-1.14	LX
WUJZYE		91.93	-3.24	-0.34	89.69	-7.09	-0.65	LH
XH73RP		105.92	10.74	1.13	110.12	13.33	1.22	FP

Paper & Paperboard Interlaboratory Testing Program

Analysis 327

Tensile Energy Absorption - Printing Papers

TAPPI Official Test Method T494

Summary Statistics	Sample SF93	Sample SF94
Grand Means	95.18 Joules/sq m	96.79 Joules/sq m
Stnd Dev Btwn Labs	9.49 Joules/sq m	10.94 Joules/sq m

Statistics based on 32 of 36 reporting participants.

Comments on Assigned Data Flags for Test #327

PHDFVM (X) - Extreme Data.

H4FX43 (X) - Extreme Data.

2NFQUG (X) - Extreme Data.

3BZ8KK (X) - Data for both samples are low. Possible Systematic Error.

Analysis Notes:

47A3H9 - Data appears to be transposed between Analysis 327 (T.E.A.) and Analysis 328 (% Elongation). CTS will not correct going forward.

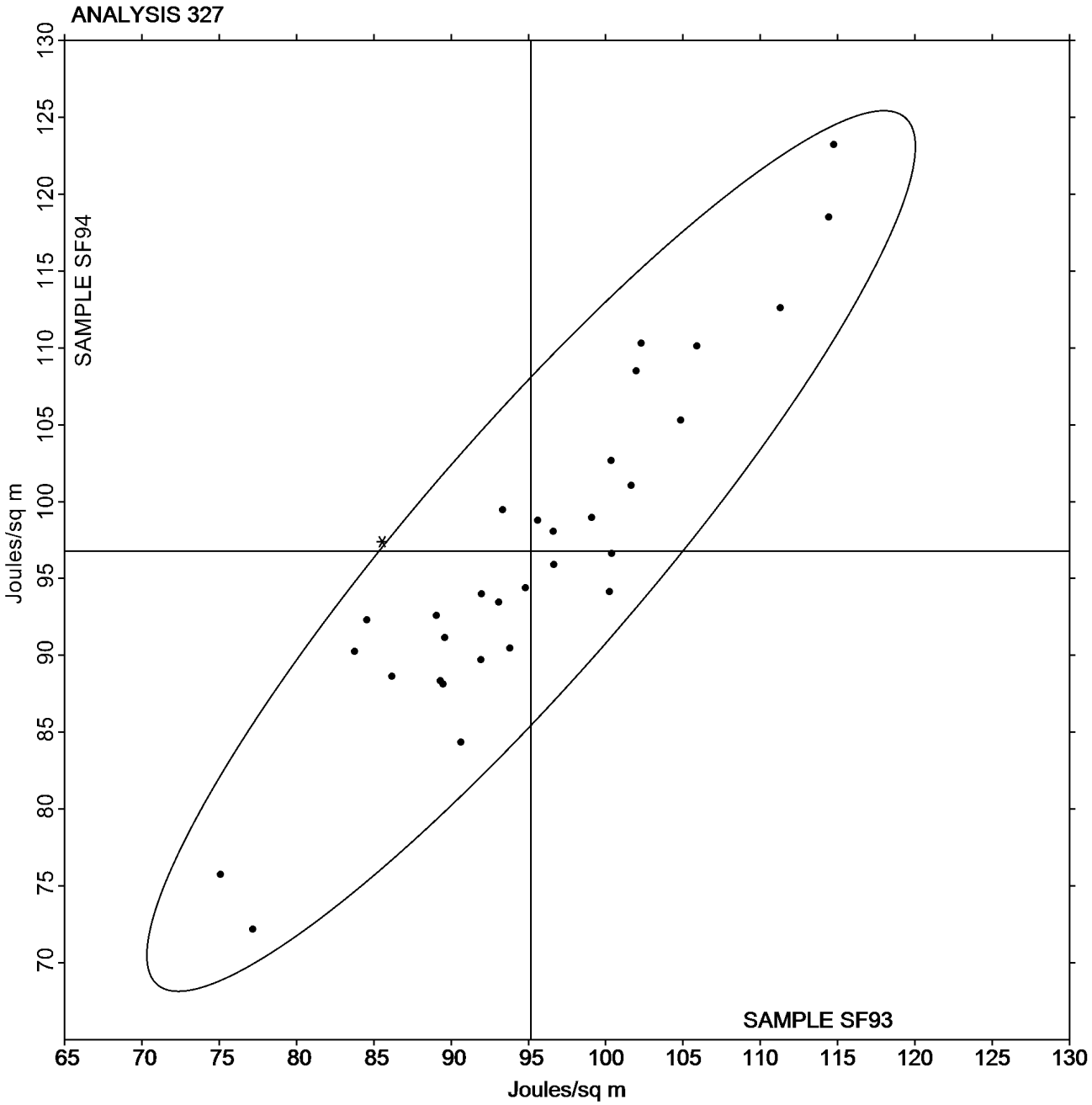
DLR8R7 - Data appear to be reported as ft-lb/sq ft, not inch-lb/sq inch as indicated on data entry form. CTS will not correct the Units going forward.

Key to Instrument Codes Reported by Participants

FP	Frank PTI Universal Tester TS	ID	Instron 4200 Series
IM	Instron 5500 Series	IN	Instron 3340 series
LA	L & W Tensile - Autoline 300	LB	L & W Tensile - Autoline 400
LE	L & W Tensile Tester 066	LF	L & W Tensile/Fracture Toughness Tester SE 064
LH	L & W Alwetron TH1 (Horizontal) SE 060/065F	LI	L & W Tensile Tester SE 062
LJ	L & W Tensile Tester SE 063	LX	L & W (model not specified)
LY	Lloyd TCD500	RE	Regmed
TB	Thwing-Albert EJA/1000	TF	Thwing-Albert EJA Vantage-1
TO	Thwing-Albert QC-1000	TV	Thwing-Albert Vantage NX
VM	Valmet PaperLab (was Kajaani/Robotest)	XX	Instrument make/model not specified by lab

Grand Mean Sample SF93 = 95.175 Joules/sq m

Grand Mean Sample SF94 = 96.786 Joules/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 328

Elongation to Break - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF93 Lab Mean	Sample SF93 Diff from Grand Mean	Sample SF93 CPV	Sample SF94 Lab Mean	Sample SF94 Diff from Grand Mean	Sample SF94 CPV	Instr Code
2NFQUG		2.183	-0.015	-0.05	2.139	-0.069	-0.25	LE
3BZ8KK		2.258	0.060	0.23	2.301	0.093	0.34	LY
3KQRQH		2.484	0.286	1.07	2.382	0.174	0.63	XX
47A3H9		2.114	-0.084	-0.31	2.092	-0.116	-0.42	LH
4CFQ6H		1.711	-0.487	-1.82	1.748	-0.460	-1.66	LA
6CVAPE		2.550	0.352	1.32	2.474	0.266	0.96	TO
6EHWAF		1.941	-0.257	-0.96	1.885	-0.323	-1.17	LA
6U9YQJ		1.907	-0.291	-1.09	1.946	-0.262	-0.95	LI
7492F9		2.385	0.187	0.70	2.323	0.115	0.42	TO
7FT2LH		1.991	-0.207	-0.77	2.073	-0.135	-0.49	TF
88DWP4		1.959	-0.239	-0.89	1.986	-0.222	-0.80	ID
9AWDH9		2.514	0.316	1.19	2.527	0.319	1.16	FP
9ZQ9TD		2.075	-0.123	-0.46	2.139	-0.069	-0.25	LI
A7TRF4		2.239	0.041	0.16	2.189	-0.019	-0.07	TF
AYBEJQ		2.184	-0.014	-0.05	2.312	0.104	0.38	RE
BZLTBW		2.286	0.088	0.33	2.324	0.116	0.42	TB
C2QJD7	*	2.227	0.029	0.11	2.384	0.176	0.64	IM
C4BGF3		1.937	-0.261	-0.98	1.979	-0.229	-0.83	LH
DBUAVY		2.063	-0.135	-0.50	2.063	-0.145	-0.52	LH
DLR8R7		2.795	0.597	2.24	2.873	0.665	2.41	TO
G6BB23		2.577	0.379	1.42	2.626	0.418	1.51	TV
GKMWC7		2.201	0.003	0.01	2.237	0.029	0.11	LF
H4FX43		2.075	-0.123	-0.46	2.060	-0.148	-0.53	LJ
H7JTM6		2.011	-0.187	-0.70	1.979	-0.229	-0.83	LI
LRR3GY		2.159	-0.039	-0.14	2.215	0.007	0.03	TX
M3A4CY		2.151	-0.047	-0.17	2.123	-0.085	-0.31	LH
MR7YFC		2.742	0.544	2.04	2.759	0.551	1.99	TV
NHYTLL		2.426	0.228	0.86	2.419	0.211	0.76	IN
PHDFVM		2.110	-0.088	-0.33	2.100	-0.108	-0.39	VM
Q4MWQW		2.130	-0.068	-0.25	2.190	-0.018	-0.06	LH
QMNTDL		1.749	-0.449	-1.68	1.679	-0.529	-1.91	LI
R9WKTQ		2.078	-0.120	-0.45	2.044	-0.164	-0.59	LX
TCRTDQ		1.812	-0.386	-1.44	1.800	-0.408	-1.48	LB
TUQTJ6		2.701	0.503	1.88	2.726	0.518	1.88	TV
TZXJLB		2.086	-0.112	-0.42	2.054	-0.154	-0.56	LX
WUJZYE		2.066	-0.132	-0.49	2.059	-0.149	-0.54	LH
XH73RP		2.432	0.234	0.88	2.477	0.269	0.97	FP

Paper & Paperboard Interlaboratory Testing Program

Analysis 328

Elongation to Break - Printing Papers

TAPPI Official Test Method T494

Summary Statistics	Sample SF93	Sample SF94
Grand Means	2.20 Percent	2.21 Percent
Stnd Dev Btwn Labs	0.27 Percent	0.28 Percent

Statistics based on 37 of 37 reporting participants.

Analysis Notes:

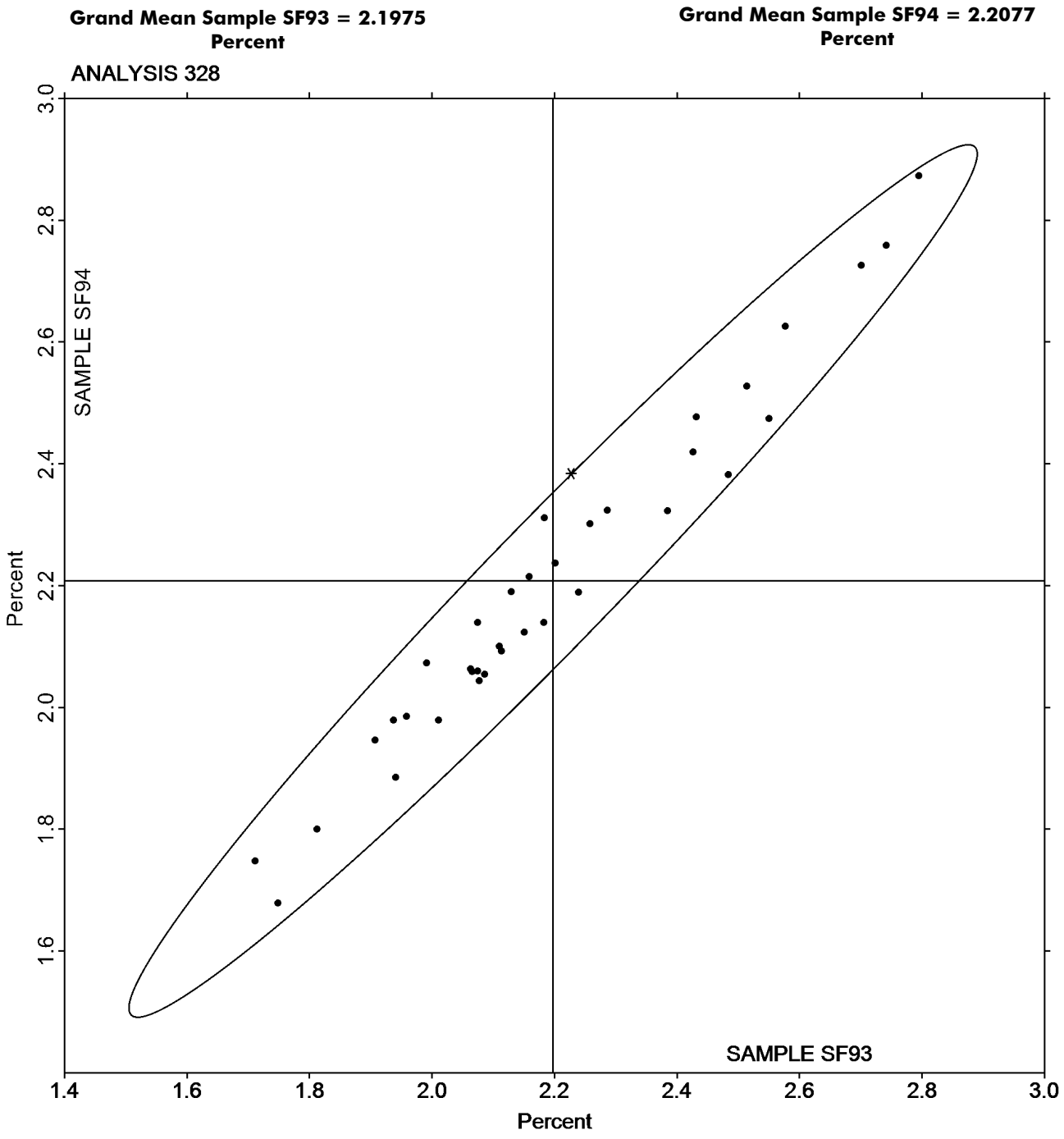
47A3H9 - Data appears to be transposed between Analysis 327 (T.E.A.) and Analysis 328 (% Elongation). CTS will not correct going forward.

7FT2LH - Data appears to be transposed between Analysis 327 (T.E.A.) and Analysis 328 (% Elongation). CTS will not correct going forward.

R9WKTQ - One determination was removed from the Lab Mean of Sample SF93 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

FP	Frank PTI Universal Tester TS	ID	Instron 4200 Series
IM	Instron 5500 Series	IN	Instron 3340 Series
LA	L & W Tensile - Autoline 300	LB	L & W Tensile - Autoline 400
LE	L & W Tensile Tester 066	LF	L & W Tensile/Fracture Toughness Tester SE 064
LH	L & W Alwetron TH1 (Horizontal) SE 060/065F	LI	L & W Tensile Tester SE 062
LJ	L & W Tensile Tester SE 063	LX	L & W (model not specified)
LY	Lloyd TCD500	RE	Regmed
TB	Thwing-Albert EJA/1000	TF	Thwing-Albert EJA Vantage-1
TO	Thwing-Albert QC-1000	TV	Thwing-Albert Vantage NX
TX	Thwing-Albert (model not specified)	VM	Valmet PaperLab (was Kajaani/Robotest)
XX	Instrument make/model not specified by lab		



Paper & Paperboard Interlaboratory Testing Program

Analysis 330

Tensile Breaking Strength - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE93 Lab Mean	Sample SE93 Diff from Grand Mean	Sample SE93 CPV	Sample SE94 Lab Mean	Sample SE94 Diff from Grand Mean	Sample SE94 CPV	Instr Code
2G3E4B	X	4.360	-3.344	-11.31	8.22	-6.09	-8.26	LE
6EHWAF		8.173	0.469	1.59	14.76	0.45	0.61	LA
6GPE9B	*	7.706	0.001	0.00	15.73	1.42	1.93	IF
6W2TQ9		7.546	-0.158	-0.53	14.13	-0.17	-0.23	IM
77MD9C		8.143	0.439	1.48	15.06	0.75	1.02	LE
8HRWJC		7.709	0.005	0.02	13.86	-0.44	-0.60	LH
8LQCNT	X	11.859	4.154	14.05	16.81	2.50	3.40	LA
9FKVY6		7.529	-0.175	-0.59	14.00	-0.30	-0.41	IF
9ZQ9TD		7.594	-0.110	-0.37	14.81	0.50	0.68	LW
A7TRF4		7.443	-0.261	-0.88	13.50	-0.81	-1.09	TO
AJECN4		7.254	-0.450	-1.52	12.96	-1.35	-1.83	XX
AXJBWB		7.532	-0.173	-0.58	13.74	-0.57	-0.77	TB
BD79CB		7.269	-0.435	-1.47	13.26	-1.04	-1.41	TX
CMPVVC		7.679	-0.026	-0.09	14.64	0.34	0.46	LA
DKVPQ6		8.196	0.492	1.66	15.10	0.79	1.08	LE
F7AWE4	X	5.804	-1.900	-6.43	8.65	-5.66	-7.68	MA
FCZEJ8		8.349	0.645	2.18	15.29	0.98	1.33	DM
FKPAEG		7.381	-0.324	-1.09	14.07	-0.24	-0.33	TR
FMEMWY		7.886	0.182	0.62	15.38	1.07	1.45	TB
FRBXHY		8.066	0.362	1.23	15.51	1.20	1.63	TO
G9DZVX		7.510	-0.194	-0.66	14.04	-0.27	-0.37	IM
GQU2PY		7.280	-0.424	-1.43	13.53	-0.77	-1.05	LE
H2AGNJ		7.995	0.290	0.98	14.36	0.06	0.08	TH
JUKLZK		7.743	0.039	0.13	14.16	-0.15	-0.21	TP
JYF7BW		7.819	0.115	0.39	14.30	0.00	0.00	LE
KQVGY2	X	9.002	1.297	4.39	16.51	2.21	2.99	LA
LTLV8B		8.184	0.480	1.62	15.29	0.98	1.33	LA
LW4BG4		7.752	0.048	0.16	13.56	-0.74	-1.01	IF
LWKD2W		7.953	0.249	0.84	15.47	1.16	1.58	LW
M3A4CY		7.907	0.202	0.68	14.21	-0.10	-0.14	LH
M9CDHR		7.404	-0.300	-1.01	13.65	-0.66	-0.89	IM
MEHU8E		7.530	-0.174	-0.59	13.40	-0.91	-1.23	TH
MHG64E		7.786	0.082	0.28	14.83	0.53	0.71	LI
MUFWTT		7.515	-0.189	-0.64	13.52	-0.79	-1.07	TK
PF3K8B		7.665	-0.039	-0.13	14.59	0.28	0.38	ID
R4G2JV		7.902	0.198	0.67	14.76	0.45	0.62	LE
RBGJWM	X	5.287	-2.417	-8.18	10.86	-3.45	-4.68	IM
TAMB94		7.770	0.066	0.22	14.45	0.15	0.20	TH
VVGRRN		7.474	-0.230	-0.78	14.09	-0.22	-0.29	LE
Y2WFX2		7.336	-0.368	-1.25	13.30	-1.01	-1.37	IF

Paper & Paperboard Interlaboratory Testing Program

Analysis 330

Tensile Breaking Strength - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE93 Lab Mean	Sample SE93 Diff from Grand Mean	Sample SE93 CPV	Sample SE94 Lab Mean	Sample SE94 Diff from Grand Mean	Sample SE94 CPV	Instr Code
YE3MW8		7.369	-0.335	-1.13	13.75	-0.55	-0.75	LW
YM8LFG	X	7.927	0.223	0.75	12.91	-1.40	-1.90	IK
ZWFQTJ	X	4.388	-3.316	-11.22	7.23	-7.08	-9.60	LX

Summary Statistics	Sample SE93	Sample SE94
Grand Means	7.70 kN/m	14.31 kN/m
Stnd Dev Btwn Labs	0.30 kN/m	0.74 kN/m

Statistics based on 36 of 43 reporting participants.

Comments on Assigned Data Flags for Test #330

2G3E4B (X) - Extreme Data.

ZWFQTJ (X) - Extreme Data.

8LQCNT (X) - Extreme Data.

YM8LFG (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample SE94.

RBGJWM (X) - Extreme Data.

KQVGY2 (X) - Data for both samples are high.

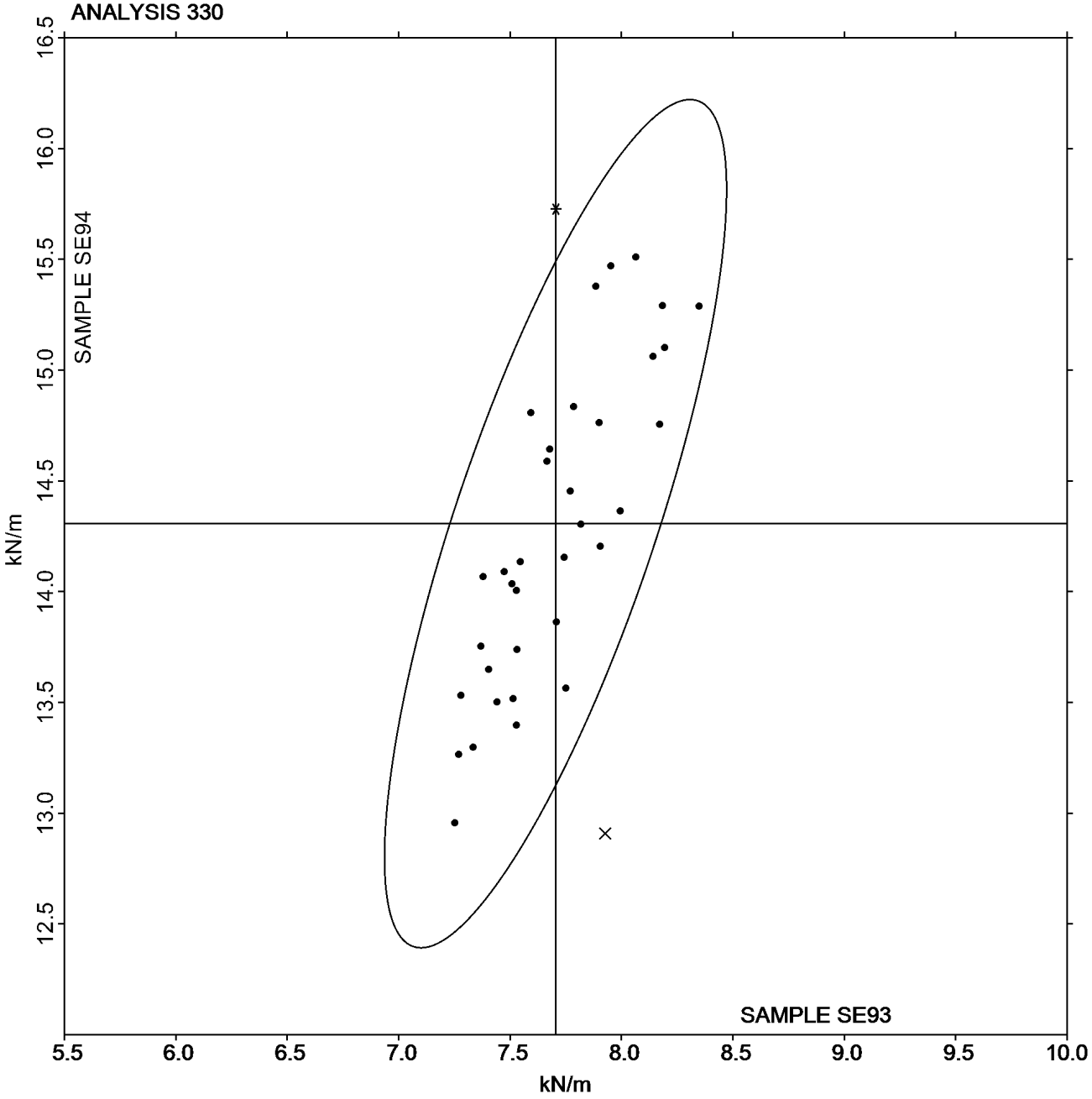
F7AWE4 (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

DM	IDM MTC-100 Tensile Tester	ID	Instron 4200 Series
IF	Instron 3340 Series	IK	Instron 4400 Series
IM	Instron 5500 Series	LA	L & W Autoline
LE	L & W Tensile Tester 066	LH	L & W Alwetron TH1 (Horizontal) SE 060
LI	LLoyds Instruments	LW	L & W Tensile Tester SE062
LX	L & W (model not specified)	MA	Mark-10 ESM301L
TB	Thwing-Albert EJA/1000	TH	Thwing-Albert QC-3A
TK	Thwing-Albert Model 37-4	TO	Thwing-Albert QC-1000
TP	TMI Monitor/Tensile 100 (84-21-01)	TR	TMI Horizontal Tensile Tester
TX	Thwing-Albert (model not specified)	XX	Instrument make/model not specified by lab

Grand Mean Sample SE93 = 7.7042 kN/m

Grand Mean Sample SE94 = 14.307 kN/m



Paper & Paperboard Interlaboratory Testing Program

Analysis 331

Tensile Energy Absorption - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE93 Lab Mean	Sample SE93 Diff from Grand Mean	Sample SE93 CPV	Sample SE94 Lab Mean	Sample SE94 Diff from Grand Mean	Sample SE94 CPV	Instr Code
2G3E4B	*	39.67	-37.56	-3.04	110.4	-90.7	-2.93	LE
6EHWAF		85.64	8.40	0.68	205.8	4.7	0.15	LA
6GPE9B	*	73.28	-3.95	-0.32	236.5	35.4	1.14	IF
6W2TQ9		71.58	-5.65	-0.46	205.8	4.7	0.15	IM
77MD9C		93.89	16.66	1.35	224.0	22.9	0.74	LE
8HRWJC		73.26	-3.97	-0.32	177.8	-23.3	-0.75	LH
8LQCNT		88.34	11.10	0.90	213.4	12.3	0.40	LA
9FKVY6		75.00	-2.23	-0.18	201.9	0.8	0.03	IF
9ZQ9TD		74.21	-3.02	-0.24	201.7	0.7	0.02	LW
A7TRF4		80.12	2.89	0.23	209.1	8.1	0.26	TO
AJECN4		78.80	1.57	0.13	188.7	-12.3	-0.40	XX
BD79CB		72.76	-4.48	-0.36	204.3	3.2	0.10	TX
CMPVVC		94.28	17.04	1.38	224.7	23.7	0.76	LA
DKVPQ6		81.67	4.44	0.36	204.3	3.2	0.10	LE
FCZEJ8		105.64	28.41	2.30	263.8	62.7	2.03	DM
FKPAEG		75.63	-1.60	-0.13	190.7	-10.4	-0.33	TR
FMEMWY		73.90	-3.33	-0.27	228.0	26.9	0.87	TB
FRBXHY		79.47	2.24	0.18	227.8	26.7	0.86	TO
G9DZVX		77.85	0.62	0.05	231.5	30.5	0.98	IM
GQU2PY		71.47	-5.77	-0.47	186.4	-14.7	-0.47	LE
H2AGNJ		89.55	12.32	1.00	242.6	41.5	1.34	TH
JYF7BW		75.90	-1.33	-0.11	194.1	-7.0	-0.23	LE
KQVGY2		89.94	12.71	1.03	215.3	14.2	0.46	LA
LTLV8B		85.70	8.46	0.69	222.4	21.3	0.69	LA
LW4BG4		67.46	-9.77	-0.79	151.4	-49.7	-1.61	IN
LWKD2W		68.33	-8.90	-0.72	184.7	-16.4	-0.53	LW
M3A4CY		77.78	0.54	0.04	213.1	12.0	0.39	LH
M9CDHR		77.06	-0.17	-0.01	187.2	-13.9	-0.45	IM
MEHU8E		86.83	9.60	0.78	197.9	-3.2	-0.10	TH
MUFWTT		80.31	3.08	0.25	207.2	6.1	0.20	TK
R4G2JV		78.09	0.86	0.07	193.1	-8.0	-0.26	LE
RBGJWM	*	44.50	-32.74	-2.65	114.7	-86.4	-2.79	IM
VVGRRN		68.02	-9.21	-0.75	191.9	-9.2	-0.30	LE
YE3MW8		69.99	-7.24	-0.59	184.4	-16.7	-0.54	LW
YM8LFG	X	84.29	7.06	0.57	146.1	-55.0	-1.78	XX
ZWFQTJ	X	36.97	-40.27	-3.26	68.5	-132.6	-4.29	LX

Paper & Paperboard Interlaboratory Testing Program

Analysis 331

Tensile Energy Absorption - Packaging Papers

TAPPI Official Test Method T494

Summary Statistics	Sample SE93	Sample SE94
Grand Means	77.23 Joules/sq m	201.08 Joules/sq m
Stnd Dev Btwn Labs	12.35 Joules/sq m	30.94 Joules/sq m

Statistics based on 34 of 36 reporting participants.

Comments on Assigned Data Flags for Test #331

ZWFQTJ (X) - Data for both samples are low.

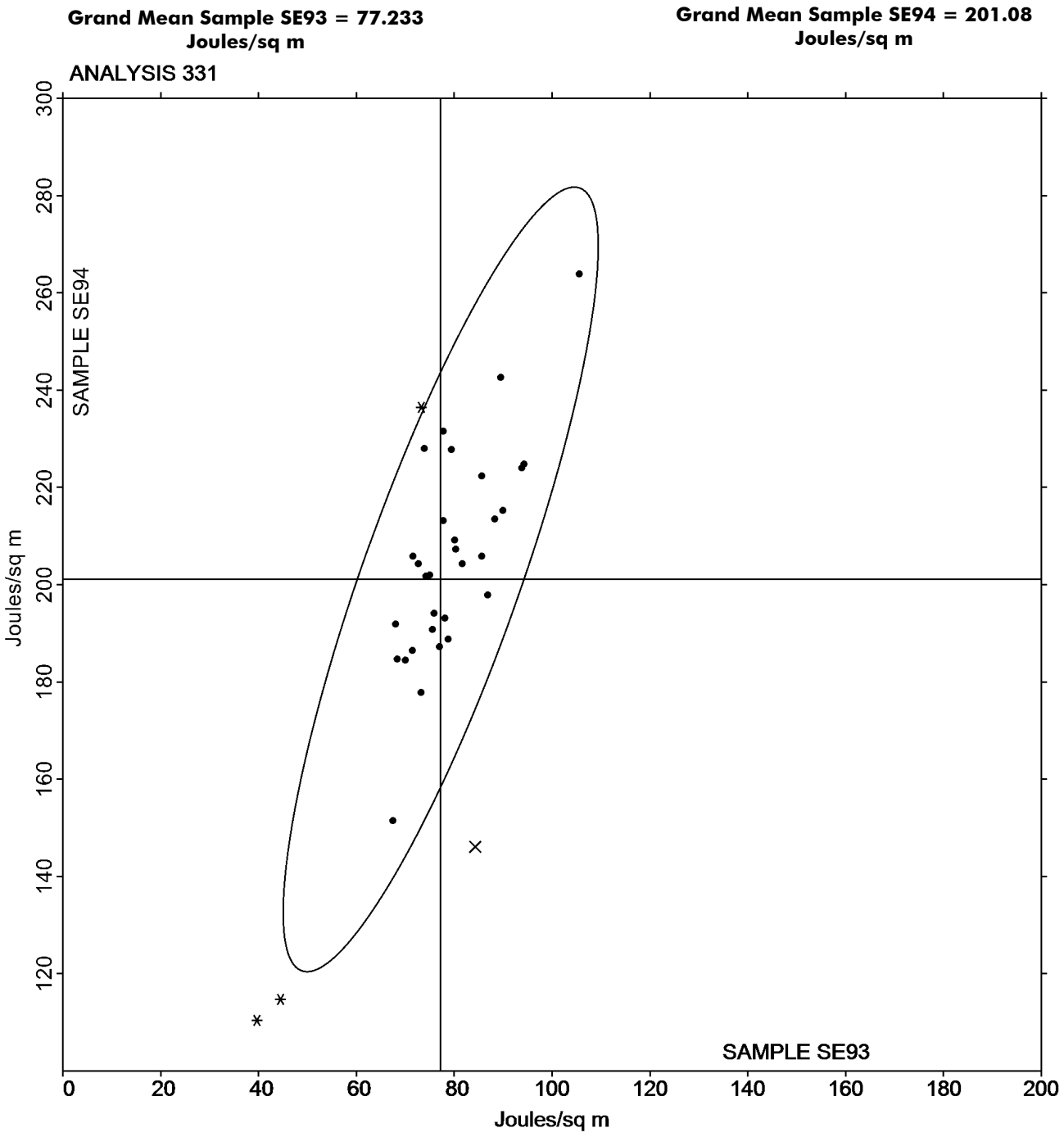
YM8LFG (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample SE94.

Analysis Notes:

JYF7BW - Data appears to be transposed between Analysis 331 (T.E.A.) and Analysis 332 (% Elongation). CTS will not correct going forward.

Key to Instrument Codes Reported by Participants

DM	IDM MTC-100 Tensile Tester	IF	Instron 3340 Series
IM	Instron 5500 Series	IN	Instron 3360 Series
LA	L & W Autoline	LE	L & W Tensile Tester 066
LH	L & W Alwetron TH1 (Horizontal) SE 060	LW	L & W Tensile Tester SE062
LX	L & W (model not specified)	TB	Thwing-Albert EJA/1000
TH	Thwing-Albert QC-3A	TK	Thwing-Albert Model 37-4
TO	Thwing-Albert QC-1000	TR	TMI Horizontal Tensile Tester
TX	Thwing-Albert (model not specified)	XX	Instrument make/model not specified by lab



Paper & Paperboard Interlaboratory Testing Program

Analysis 332

Elongation to Break - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE93 Lab Mean	Sample SE93 Diff from Grand Mean	Sample SE93 CPV	Sample SE94 Lab Mean	Sample SE94 Diff from Grand Mean	Sample SE94 CPV	Instr Code
2G3E4B		1.384	-0.191	-1.11	2.051	-0.136	-0.48	LE
6EHWAF		1.383	-0.192	-1.12	1.841	-0.346	-1.21	LA
6GPE9B		1.755	0.180	1.05	2.635	0.448	1.56	IF
6W2TQ9		1.458	-0.117	-0.68	2.216	0.029	0.10	IM
77MD9C		1.720	0.145	0.84	2.277	0.090	0.31	LE
8HRWJC		1.460	-0.115	-0.67	1.990	-0.197	-0.69	LH
8LQCNT	X	2.577	1.002	5.82	3.143	0.956	3.34	LA
9FKVY6		1.544	-0.031	-0.18	2.226	0.039	0.14	IF
9ZQ9TD		1.514	-0.061	-0.35	2.112	-0.075	-0.26	LW
A7TRF4		1.733	0.158	0.92	2.438	0.251	0.88	TO
AJECN4		1.719	0.144	0.84	2.302	0.115	0.40	XX
AXJBWB		1.603	0.028	0.16	2.147	-0.040	-0.14	TB
BD79CB		1.552	-0.023	-0.13	2.391	0.204	0.71	TX
CMPVVC		1.896	0.321	1.86	2.626	0.439	1.53	LA
DKVPQ6		1.539	-0.036	-0.21	2.064	-0.123	-0.43	LE
FCZEJ8	*	2.020	0.445	2.59	2.724	0.537	1.87	DM
FKPAEG		1.639	0.064	0.37	2.193	0.006	0.02	TR
FMEMWY		1.464	-0.111	-0.65	2.295	0.108	0.38	TB
FRBXHY		1.552	-0.023	-0.13	2.317	0.130	0.45	TO
G9DZVX		1.634	0.059	0.34	2.530	0.342	1.20	IM
GQU2PY		1.494	-0.081	-0.47	2.093	-0.094	-0.33	LE
H2AGNJ		1.762	0.187	1.09	2.740	0.553	1.93	TH
JUKLZK	X	2.152	0.577	3.35	3.400	1.213	4.24	TP
JYF7BW		1.482	-0.093	-0.54	2.075	-0.112	-0.39	LE
KQVGY2		1.513	-0.062	-0.36	1.901	-0.286	-1.00	LA
LTLV8B		1.555	-0.020	-0.12	2.147	-0.040	-0.14	LA
LW4BG4		1.372	-0.203	-1.18	1.772	-0.415	-1.45	IN
LWKD2W		1.379	-0.196	-1.14	1.933	-0.254	-0.89	LW
M3A4CY		1.517	-0.058	-0.34	2.194	0.007	0.02	LH
M9CDHR		1.835	0.260	1.51	2.408	0.221	0.77	IM
MEHU8E		1.840	0.265	1.54	2.390	0.203	0.71	TH
MUFWTT		1.654	0.079	0.46	2.379	0.192	0.67	TK
PF3K8B		1.580	0.005	0.03	2.291	0.104	0.36	ID
R4G2JV		1.526	-0.049	-0.29	2.013	-0.174	-0.61	LE
RBGJWM		1.353	-0.222	-1.29	1.790	-0.397	-1.39	IM
VVGRRN		1.391	-0.184	-1.07	2.055	-0.132	-0.46	LE
YE3MW8		1.459	-0.116	-0.67	2.050	-0.137	-0.48	LW
YM8LFG	*	1.769	0.194	1.13	2.004	-0.183	-0.64	XX
ZWFQTJ	*	1.229	-0.346	-2.01	1.319	-0.868	-3.03	LX

Paper & Paperboard Interlaboratory Testing Program

Analysis 332
Elongation to Break - Packaging Papers
TAPPI Official Test Method T494

Summary Statistics	Sample SE93	Sample SE94
Grand Means	1.58 Percent	2.19 Percent
Stnd Dev Btwn Labs	0.17 Percent	0.29 Percent

Statistics based on 37 of 39 reporting participants.

Comments on Assigned Data Flags for Test #332

8LQCNT (X) - Data for both samples are high.

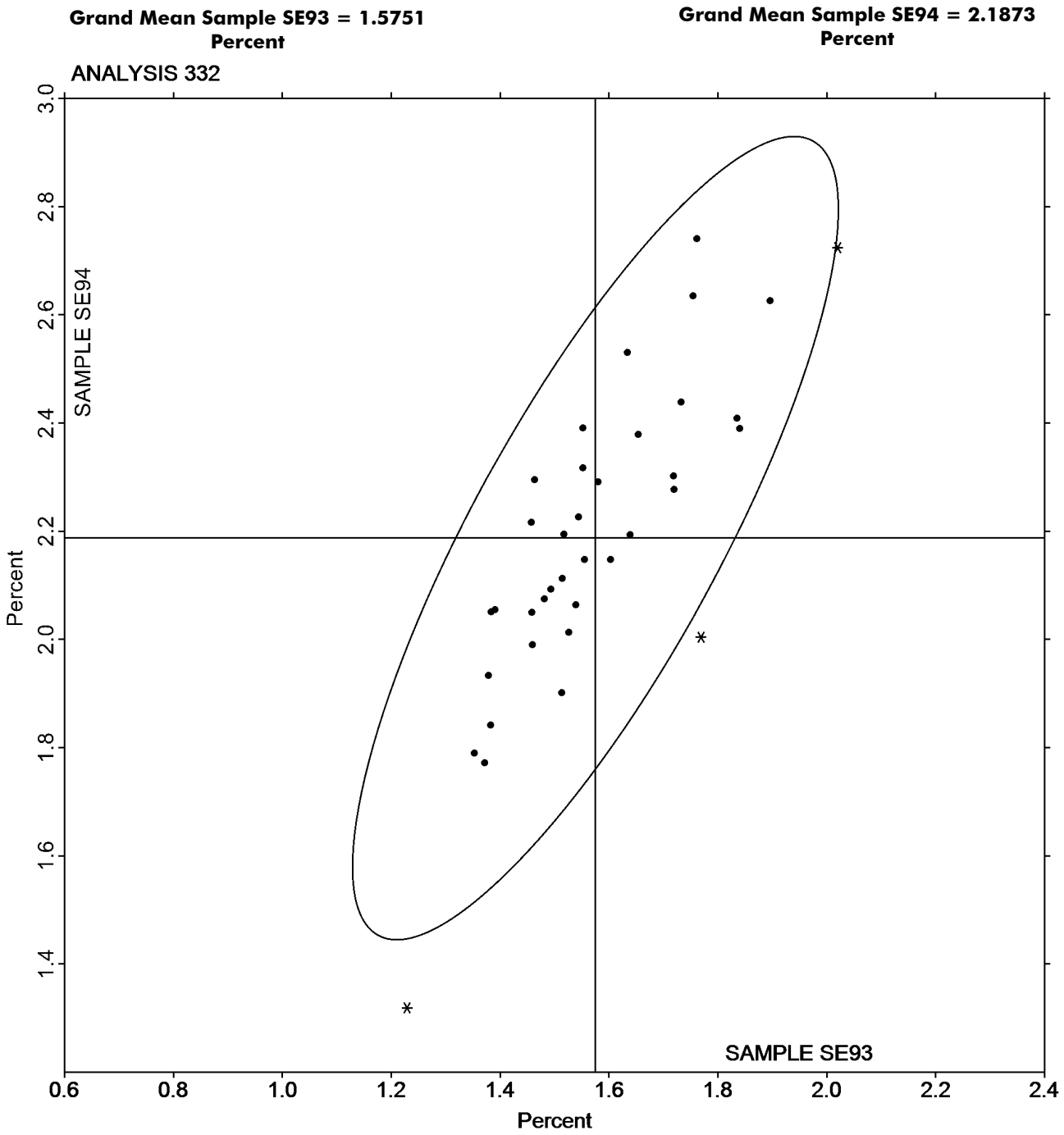
JUKLZK (X) - Data for both samples are high.

Analysis Notes:

JYF7BW - Data appears to be transposed between Analysis 331 (T.E.A.) and Analysis 332 (% Elongation). CTS will not correct going forward.

Key to Instrument Codes Reported by Participants

DM	IDM MTC-100 Tensile Tester	ID	Instron 4200 Series
IF	Instron 3340 Series	IM	Instron 5500 Series
IN	Instron 3360 Series	LA	L & W Autoline 300
LE	L & W Tensile Tester 066	LH	L & W Alwetron TH1 (Horizontal) SE 060
LW	L & W Tensile Tester SE062	LX	L & W (model not specified)
TB	Thwing-Albert EJA/1000	TH	Thwing-Albert QC-3A
TK	Thwing-Albert Model 37-4	TO	Thwing-Albert QC-1000
TP	TMI Monitor/Tensile 100 (84-21-01)	TR	TMI Horizontal Tensile Tester
TX	Thwing-Albert (model not specified)	XX	Instrument make/model not specified by lab



Paper & Paperboard Interlaboratory Testing Program

Analysis 334

Folding Endurance (MIT) - Double Folds

TAPPI Official Test Method T511

WebCode	Data Flag	Sample SG93 Lab Mean	Sample SG93 Diff from Grand Mean	Sample SG93 CPV	Sample SG94 Lab Mean	Sample SG94 Diff from Grand Mean	Sample SG94 CPV	Instr Code
6U9YQJ		47.10	-1.80	-0.16	25.70	1.10	0.33	MT
7FT2LH		48.00	-0.90	-0.08	24.20	-0.40	-0.12	MT
9ZQ9TD		66.70	17.80	1.58	27.20	2.60	0.77	MT
AJECN4		60.50	11.60	1.03	26.60	2.00	0.59	MT
AXJBWB	X	96.10	47.20	4.19	29.40	4.80	1.42	MT
G9DZVX		50.30	1.40	0.12	27.20	2.60	0.77	MT
H2AGNJ		38.00	-10.90	-0.97	19.70	-4.90	-1.45	MT
JLQ8JT		58.00	9.10	0.81	28.90	4.30	1.27	MT
NHYTLL		38.20	-10.70	-0.95	19.70	-4.90	-1.45	MT
PHDFVM		33.30	-15.60	-1.38	22.20	-2.40	-0.71	MT

Summary Statistics	Sample SG93	Sample SG94
Grand Means	48.90 Double Folds	24.60 Double Folds
Stnd Dev Btwn Labs	11.27 Double Folds	3.38 Double Folds

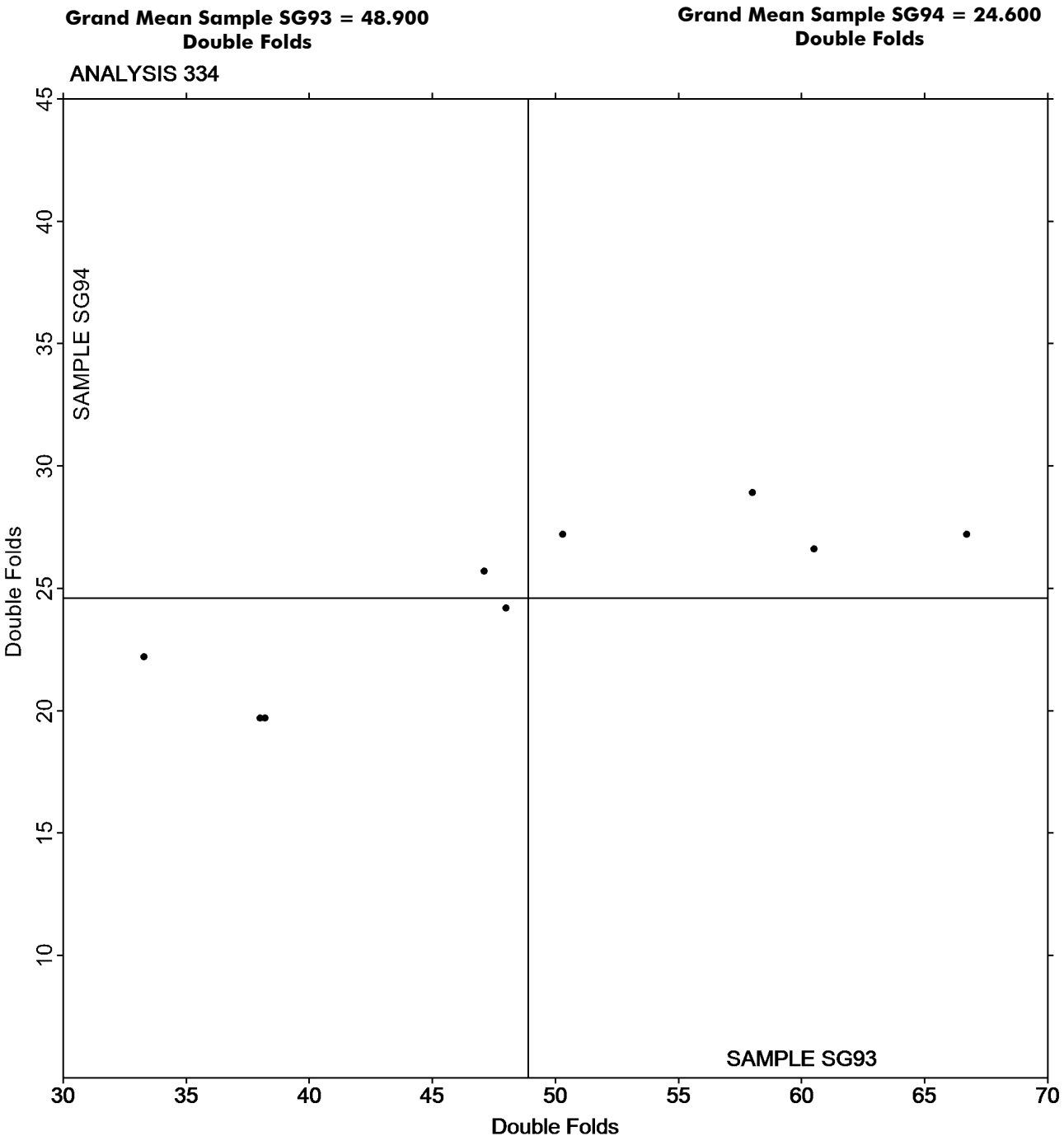
Statistics based on 9 of 10 reporting participants.

Comments on Assigned Data Flags for Test #334

AXJBWB (X) - Data for sample SG93 are high. Inconsistent within the determinations of sample SG93.

Key to Instrument Codes Reported by Participants

MT MIT - Tinius Olsen



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 336

Bending Resistance, Gurley Type

TAPPI Official Test Method T543

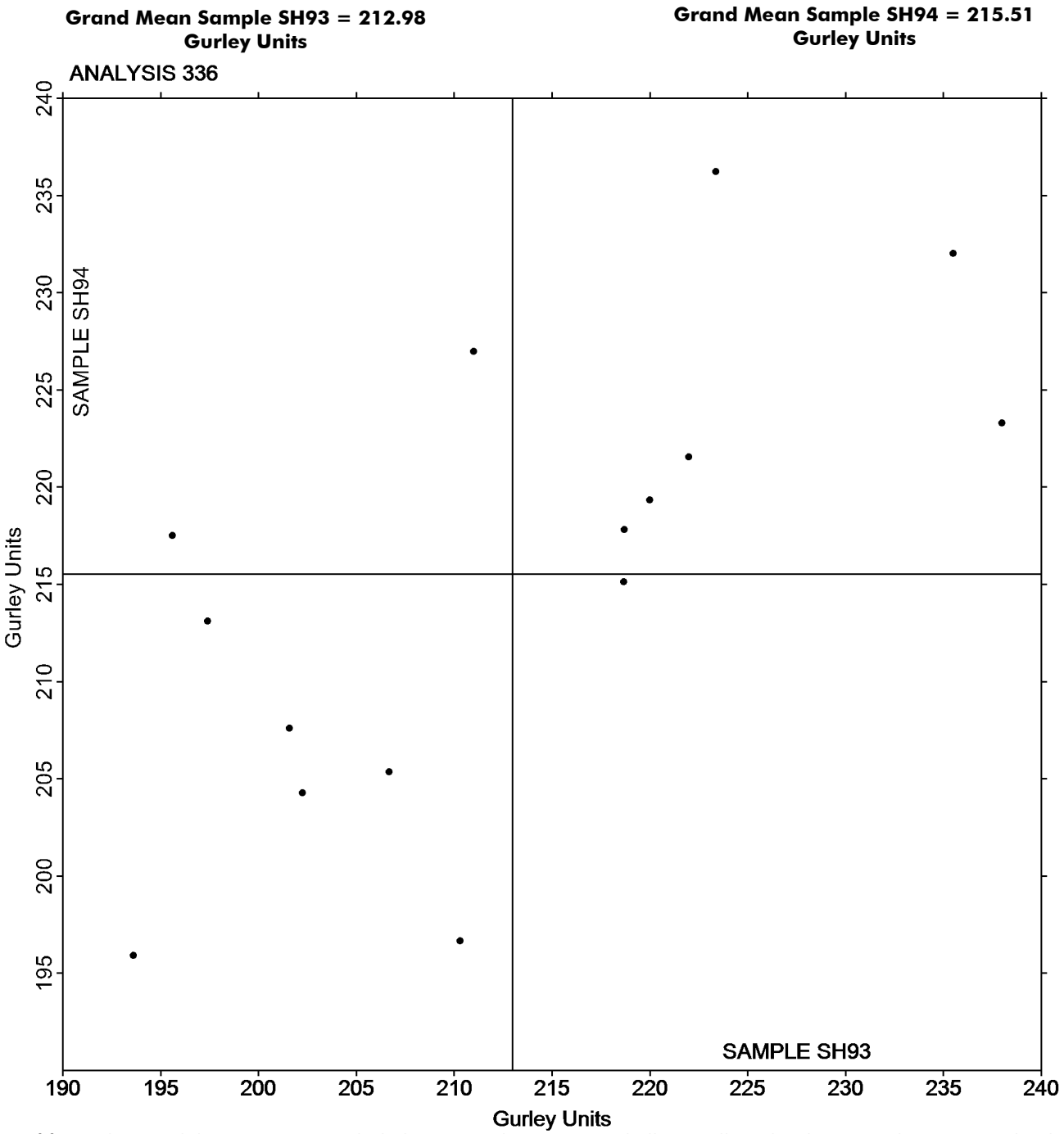
WebCode	Data Flag	Sample SH93 Lab Mean	Sample SH93 Diff from Grand Mean	Sample SH93 CPV	Sample SH94 Lab Mean	Sample SH94 Diff from Grand Mean	Sample SH94 CPV
47A3H9		223.4	10.4	0.75	236.2	20.7	1.74
8FM7FH		218.7	5.7	0.41	215.1	-0.4	-0.03
AJECN4		222.0	9.0	0.66	221.6	6.0	0.51
AXJBWB		193.6	-19.4	-1.41	195.9	-19.6	-1.64
BZLTBW		218.7	5.7	0.42	217.8	2.3	0.19
C4BGF3		195.6	-17.4	-1.26	217.5	2.0	0.17
DLR8R7		201.6	-11.4	-0.83	207.6	-7.9	-0.66
DRV9TZ		210.3	-2.7	-0.19	196.7	-18.8	-1.58
G9DZVX		202.2	-10.7	-0.78	204.3	-11.2	-0.94
JVGVEW		235.5	22.5	1.64	232.0	16.5	1.38
NHYTLL		220.0	7.0	0.51	219.3	3.8	0.32
PHDFVM		238.0	25.0	1.82	223.3	7.8	0.65
TUQTJ6		206.7	-6.3	-0.46	205.4	-10.2	-0.85
W9ZY4F		197.4	-15.6	-1.13	213.1	-2.4	-0.20
XFHN4F		211.0	-2.0	-0.14	227.0	11.5	0.96

Summary Statistics	Sample SH93	Sample SH94
Grand Means	212.98 Gurley Units	215.51 Gurley Units
Stnd Dev Btwn Labs	13.77 Gurley Units	11.92 Gurley Units

Statistics based on 15 of 15 reporting participants.

Analysis Notes:

DRV9TZ - One determination was removed from the Lab Mean of Sample SH94 per Grubb's Test at 1% risk (TAPPI 1205).



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 338

Bending Resistance, Taber Type - 0 to 10 Units

TAPPI Official Test Method T566

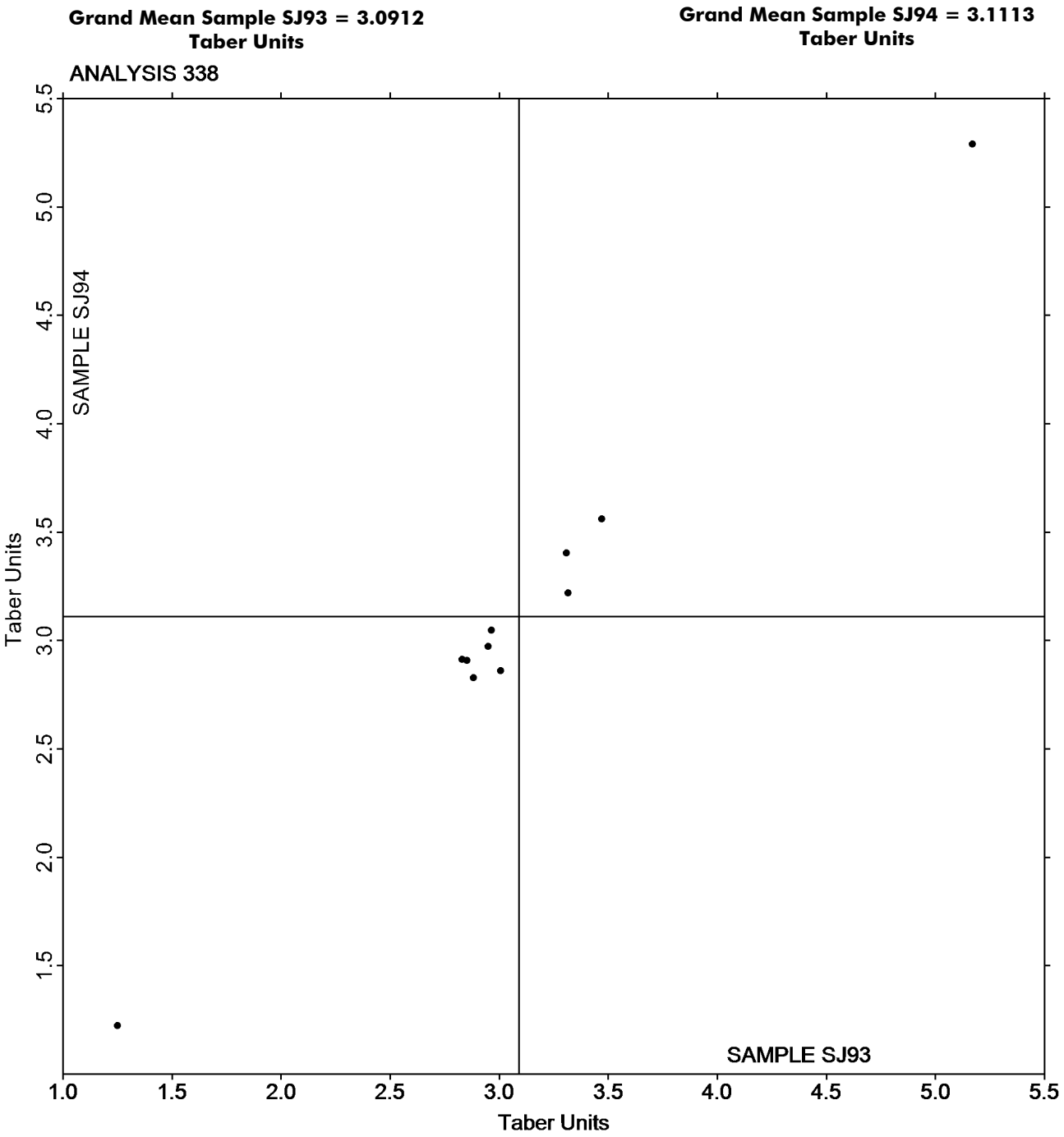
WebCode	Data Flag	Sample SJ93 Lab Mean	Sample SJ93 Diff from Grand Mean	Sample SJ93 CPV	Sample SJ94 Lab Mean	Sample SJ94 Diff from Grand Mean	Sample SJ94 CPV
2G3E4B		1.250	-1.841	-2.04	1.223	-1.888	-2.01
47A3H9		2.950	-0.141	-0.16	2.973	-0.138	-0.15
6CVAPE		2.831	-0.260	-0.29	2.913	-0.198	-0.21
6GPE9B		3.309	0.218	0.24	3.404	0.293	0.31
BZLTBW		2.882	-0.209	-0.23	2.828	-0.283	-0.30
DLR8R7		3.008	-0.083	-0.09	2.860	-0.251	-0.27
G9DZVX		3.317	0.226	0.25	3.220	0.109	0.12
LW4BG4		3.470	0.379	0.42	3.560	0.449	0.48
LZZNEZ		2.852	-0.239	-0.26	2.907	-0.204	-0.22
TCRTDQ		5.170	2.079	2.30	5.290	2.179	2.31
XFHN4F		2.964	-0.127	-0.14	3.046	-0.065	-0.07

Summary Statistics	Sample SJ93	Sample SJ94
Grand Means	3.09 Taber Units	3.11 Taber Units
Stnd Dev Btwn Labs	0.90 Taber Units	0.94 Taber Units

Statistics based on 11 of 11 reporting participants.

Analysis Notes:

6CVAPE - Data appear to be reported as g-cm, not mN-m as indicated on data entry form. CTS will not correct the Units going forward.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 339

Bending Resistance, Taber Type - 10 to 100 Taber Units

TAPPI Official Test Method T489

WebCode	Data Flag	Sample SQ93 Lab Mean	Sample SQ93 Diff from Grand Mean	Sample SQ93 CPV	Sample SQ94 Lab Mean	Sample SQ94 Diff from Grand Mean	Sample SQ94 CPV
73N3DC		57.22	5.18	1.47	55.41	3.53	1.11
77MD9C		55.46	3.42	0.97	55.56	3.68	1.16
8FM7FH		51.35	-0.69	-0.20	51.84	-0.04	-0.01
9AWDH9		47.96	-4.08	-1.16	47.83	-4.04	-1.27
9ZQ9TD		53.02	0.98	0.28	52.67	0.79	0.25
E3V2Y7	X	287.05	235.01	66.88	291.13	239.25	75.32
FMEMWY	X	53.60	1.56	0.44	27.20	-24.68	-7.77
KDCWGT		52.39	0.35	0.10	52.60	0.72	0.23
LRR3GY		52.35	0.31	0.09	52.40	0.52	0.17
YE3MW8		46.60	-5.44	-1.55	46.70	-5.18	-1.63

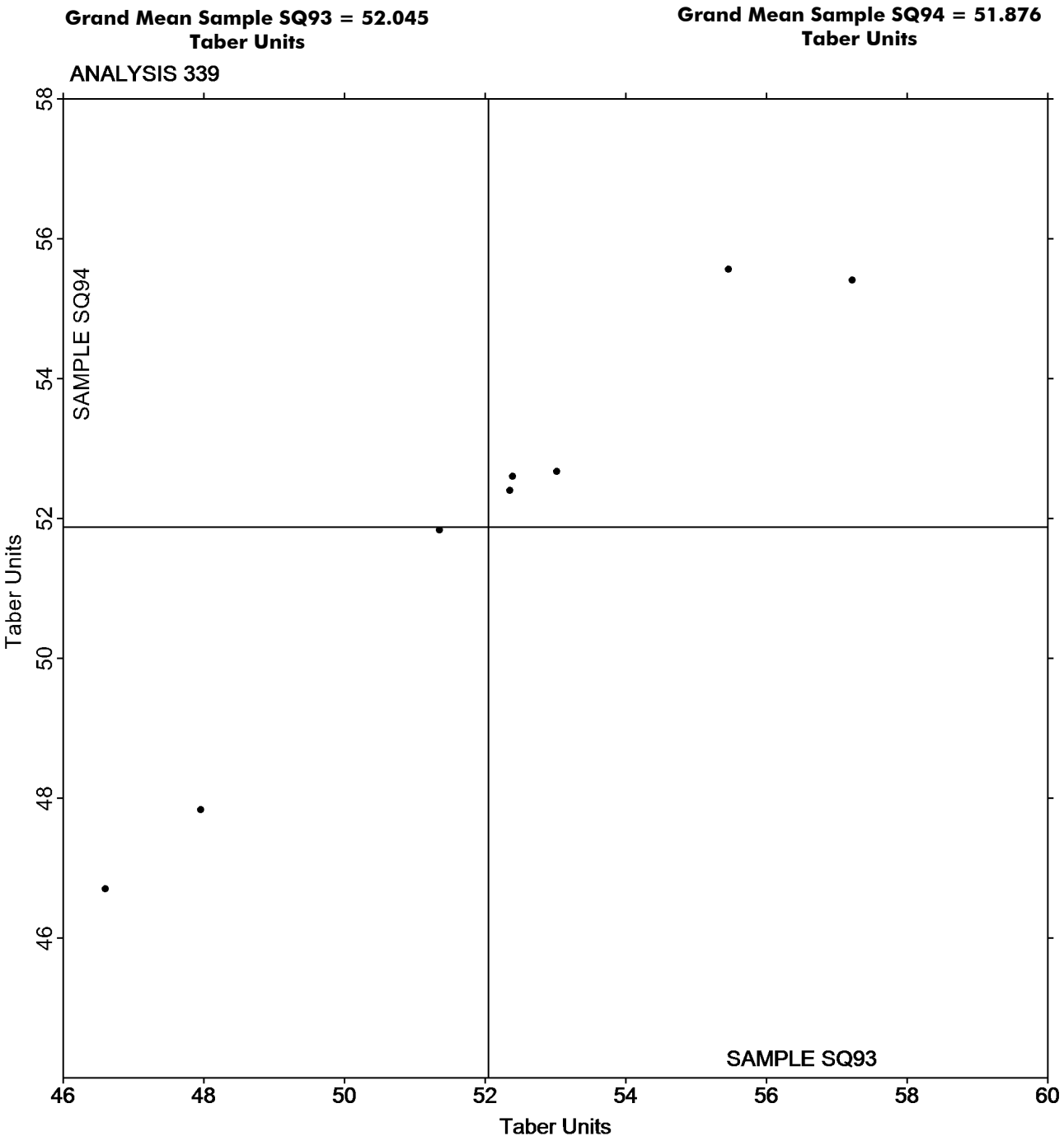
Summary Statistics	Sample SQ93	Sample SQ94
Grand Means	52.04 Taber Units	51.88 Taber Units
Stnd Dev Btwn Labs	3.51 Taber Units	3.18 Taber Units

Statistics based on 8 of 10 reporting participants.

Comments on Assigned Data Flags for Test #339

FMEMWY (X) - Extreme Data for Sample SQ94.

E3V2Y7 (X) - Extreme Data.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 340

Bending Resistance, Taber Type - 50 to 500 Taber Units - Recycled Paperboard

TAPPI Official Test Method T489

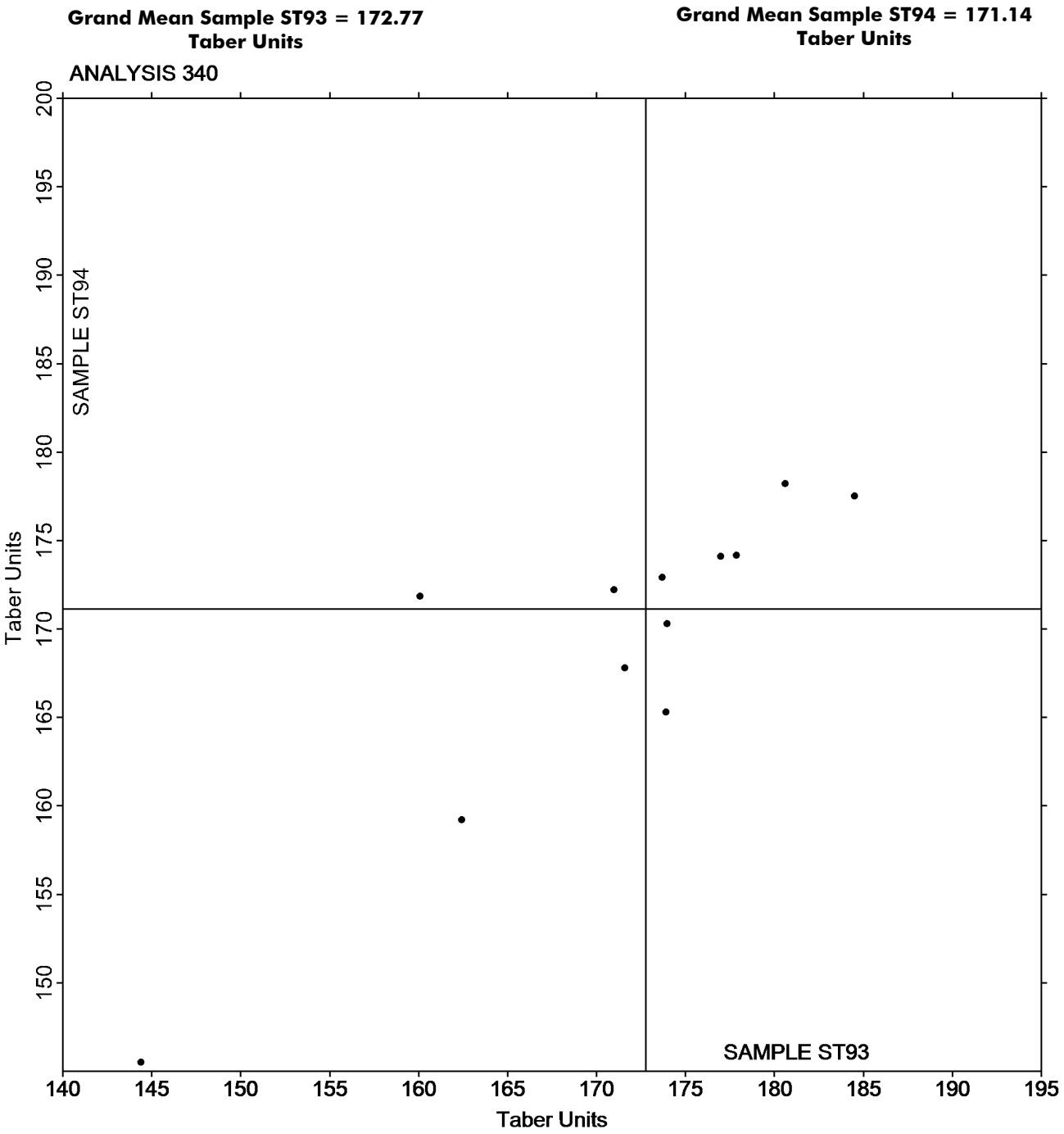
WebCode	Data Flag	Sample ST93 Lab Mean	Sample ST93 Diff from Grand Mean	Sample ST93 CPV	Sample ST94 Lab Mean	Sample ST94 Diff from Grand Mean	Sample ST94 CPV
7Y6THT		162.4	-10.4	-0.84	159.2	-11.9	-1.04
8FM7FH		177.9	5.1	0.41	174.2	3.0	0.27
9ZQ9TD		160.1	-12.7	-1.03	171.9	0.7	0.06
AJECN4		173.9	1.1	0.09	165.3	-5.8	-0.51
D7XN2B		173.7	0.9	0.08	172.9	1.8	0.15
FGCAGP		171.6	-1.2	-0.10	167.8	-3.3	-0.29
FUHFEA		184.5	11.7	0.95	177.5	6.4	0.56
H2AGNJ		144.4	-28.4	-2.31	145.5	-25.6	-2.25
JUKLZK		174.0	1.2	0.10	170.3	-0.8	-0.07
TAMB94		195.0	22.2	1.81	195.8	24.6	2.16
UAYCLP	X	61.9	-110.9	-9.01	149.8	-21.3	-1.87
XNMMMP		171.0	-1.8	-0.14	172.2	1.1	0.09
Y2WFX2		177.0	4.2	0.34	174.1	3.0	0.26
YP2HTG		180.6	7.8	0.64	178.2	7.1	0.62

Summary Statistics	Sample ST93	Sample ST94
Grand Means	172.77 Taber Units	171.14 Taber Units
Stnd Dev Btwn Labs	12.31 Taber Units	11.42 Taber Units

Statistics based on 13 of 14 reporting participants.

Comments on Assigned Data Flags for Test #340

UAYCLP (X) - Extreme Data for Sample ST93.



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 343
Z-Direction Tensile
TAPPI Official Test Method T541

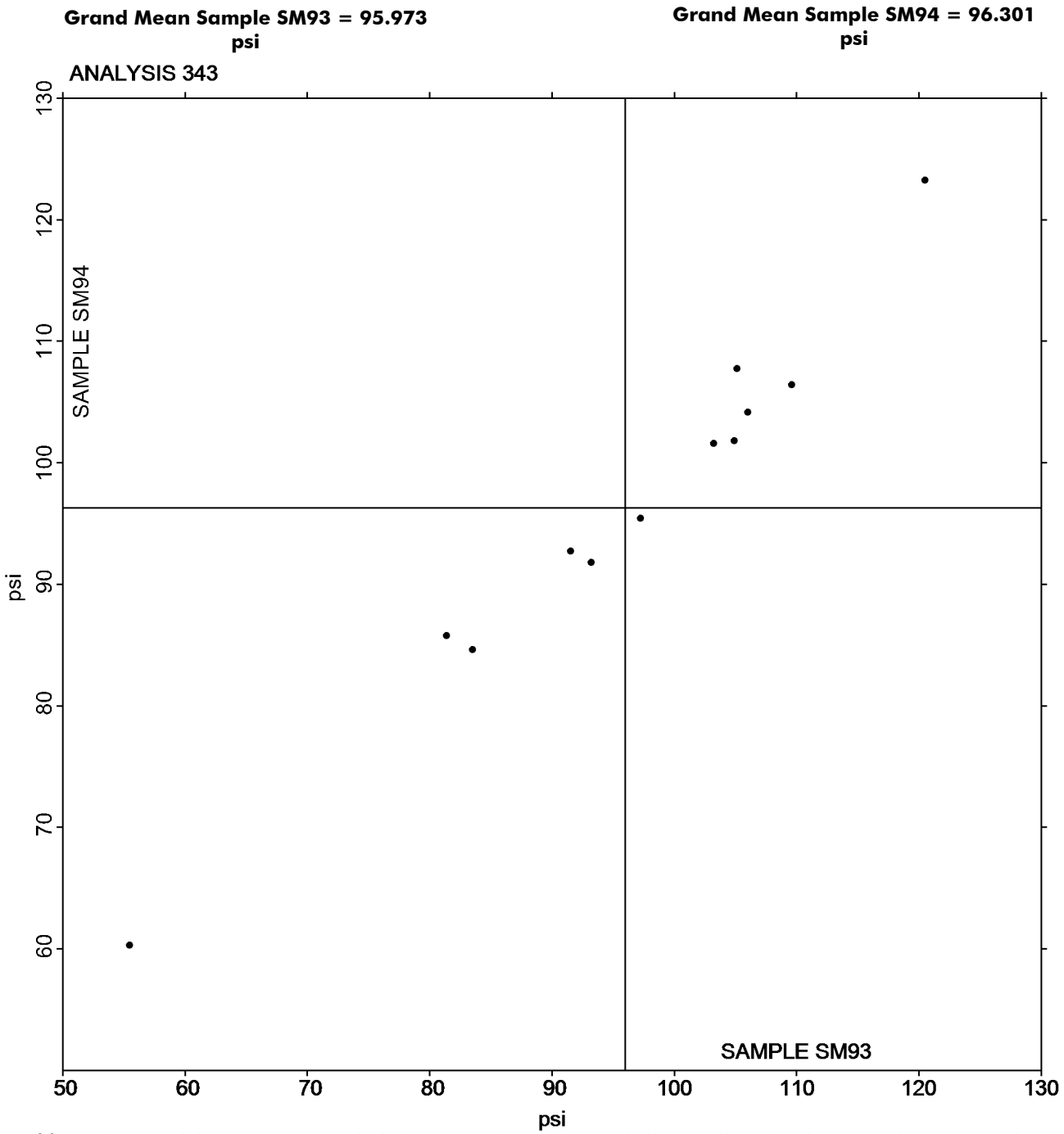
WebCode	Data Flag	Sample SM93 Lab Mean	Sample SM93 Diff from Grand Mean	Sample SM93 CPV	Sample SM94 Lab Mean	Sample SM94 Diff from Grand Mean	Sample SM94 CPV	Instr Code
6GPE9B		97.24	1.27	0.08	95.43	-0.87	-0.06	TL
73N3DC		104.92	8.95	0.53	101.80	5.50	0.35	CD
77MD9C		106.00	10.03	0.59	104.16	7.86	0.51	CD
9AWDH9		91.55	-4.43	-0.26	92.73	-3.57	-0.23	LW
9ZQ9TD		103.22	7.25	0.43	101.58	5.28	0.34	LW
FMEMWY		109.60	13.63	0.81	106.40	10.10	0.65	TA
G9DZVX		83.52	-12.45	-0.74	84.64	-11.66	-0.75	CD
GKMWC7		81.37	-14.61	-0.86	85.78	-10.52	-0.68	LW
H2AGNJ		105.12	9.15	0.54	107.76	11.46	0.74	LW
JUKLZK		55.46	-40.52	-2.40	60.30	-36.01	-2.32	LW
MEHU8E		93.20	-2.77	-0.16	91.80	-4.50	-0.29	TA
Z8VFRN		120.48	24.51	1.45	123.24	26.94	1.73	DT

Summary Statistics	Sample SM93	Sample SM94
Grand Means	95.97 psi	96.30 psi
Stnd Dev Btwn Labs	16.90 psi	15.54 psi

Statistics based on 12 of 12 reporting participants.

Key to Instrument Codes Reported by Participants

CD	CSI CS-163D
DT	Dek-Tron DCS-163A ZDT Tester
LW	L & W ZD Tensile Tester
TA	Thwing-Albert Tensile Tester
TL	TMI Lab Master



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 345

Z-Direction Tensile, Recycled Paperboard

TAPPI Official Test Method T541

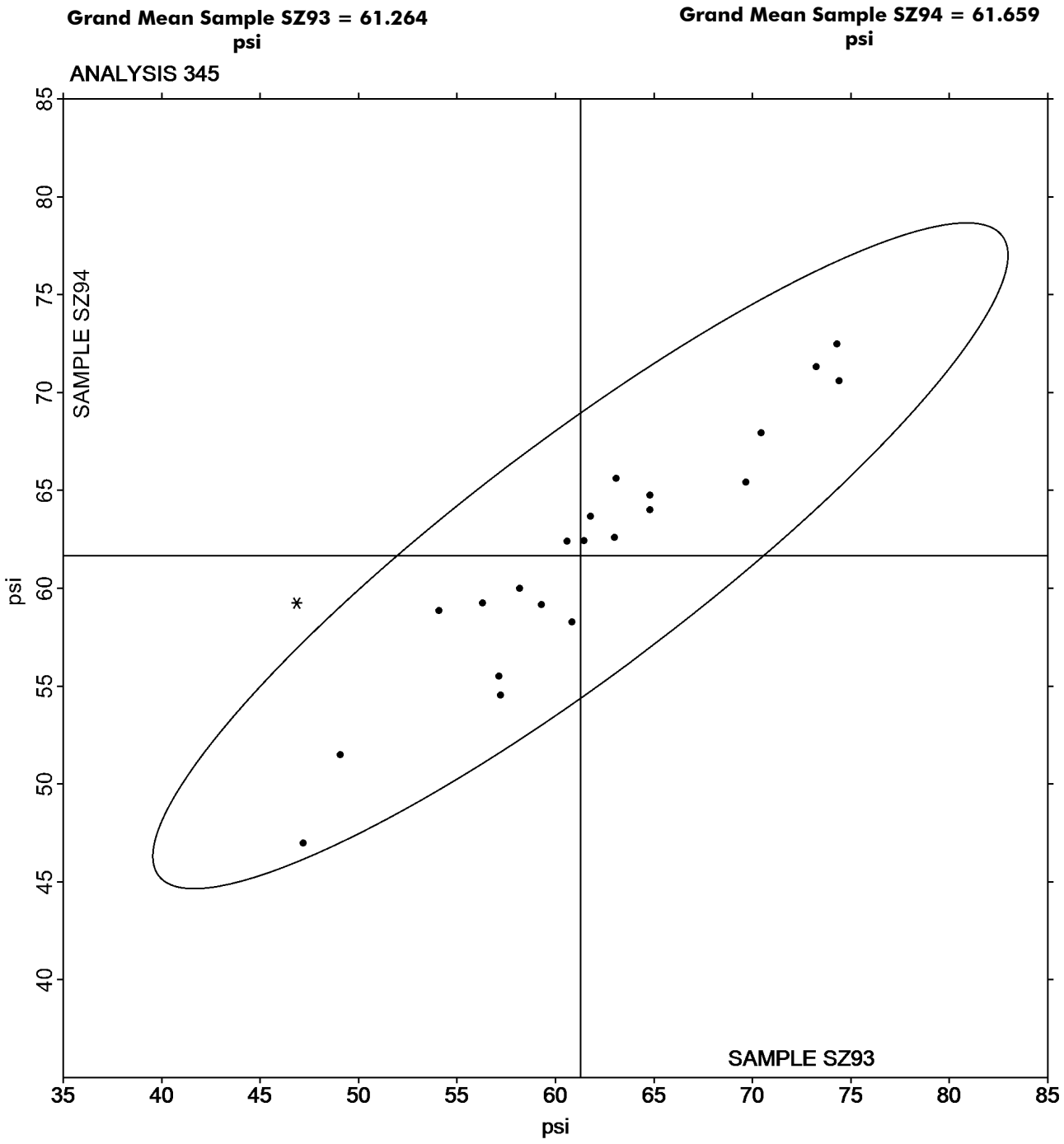
WebCode	Data Flag	Sample SZ93 Lab Mean	Sample SZ93 Diff from Grand Mean	Sample SZ93 CPV	Sample SZ94 Lab Mean	Sample SZ94 Diff from Grand Mean	Sample SZ94 CPV	Instr Code
7Y6THT		60.60	-0.66	-0.08	62.40	0.74	0.12	CA
8FM7FH		60.84	-0.42	-0.05	58.28	-3.38	-0.54	CA
8PVXK7		61.44	0.18	0.02	62.42	0.76	0.12	DP
9ZQ9TD		54.10	-7.16	-0.89	58.86	-2.80	-0.45	LW
AJECN4		63.08	1.82	0.23	65.60	3.94	0.63	CA
BD79CB	*	46.86	-14.40	-1.80	59.24	-2.42	-0.39	XX
D7XN2B		63.00	1.74	0.22	62.60	0.94	0.15	TA
FGCAGP		74.40	13.14	1.64	70.60	8.94	1.42	TA
FUHFEA		61.78	0.52	0.06	63.68	2.02	0.32	CD
J8XHNW		47.20	-14.06	-1.75	46.98	-14.68	-2.34	LW
LTLV8B		59.30	-1.96	-0.24	59.16	-2.50	-0.40	TA
M9CDHR		58.20	-3.06	-0.38	60.00	-1.66	-0.26	CA
MHG64E		73.24	11.98	1.49	71.30	9.64	1.54	CH
N2T8LK		69.68	8.42	1.05	65.43	3.77	0.60	LW
NU8CHV		57.22	-4.04	-0.50	54.54	-7.12	-1.13	DP
QU3VZE		70.44	9.18	1.14	67.94	6.28	1.00	LW
RE2J6F		74.30	13.04	1.63	72.48	10.82	1.72	LW
TLFMPM		64.80	3.54	0.44	64.00	2.34	0.37	CA
UAYCLP		56.30	-4.96	-0.62	59.24	-2.42	-0.39	TA
XNMMMP		57.14	-4.12	-0.51	55.50	-6.16	-0.98	TA
Y2WFX2		49.08	-12.18	-1.52	51.50	-10.16	-1.62	LW
YP2HTG		64.80	3.54	0.44	64.76	3.10	0.49	CA

Summary Statistics	Sample SZ93	Sample SZ94
Grand Means	61.26 psi	61.66 psi
Stnd Dev Btwn Labs	8.02 psi	6.28 psi

Statistics based on 22 of 22 reporting participants.

Key to Instrument Codes Reported by Participants

CA	CSI CS-163	CD	CSI CS-163D
CH	Chatillon Ametek	DP	Dek-Tron XP Series
LW	L & W ZD Tensile Tester	TA	Thwing-Albert Tensile Tester
XX	Instrument make/model not specified by lab		



Paper & Paperboard Interlaboratory Testing Program

Analysis 348

Internal Bond Strength - Modified Scott Mechanics

TAPPI Provisional Test Method T569

WebCode	Data Flag	Sample SN93 Lab Mean	Sample SN93 Diff from Grand Mean	Sample SN93 CPV	Sample SN94 Lab Mean	Sample SN94 Diff from Grand Mean	Sample SN94 CPV	Instr Code
47A3H9		102.8	-3.8	-0.46	100.8	-4.7	-0.63	KR
73N3DC		116.4	9.7	1.16	115.6	10.1	1.35	HY
7492F9		104.8	-1.9	-0.22	100.0	-5.5	-0.73	HY
77MD9C		114.8	8.1	0.97	113.8	8.3	1.11	HY
7QTNDF		106.2	-0.5	-0.06	103.0	-2.5	-0.33	HZ
7Y6THT		101.9	-4.7	-0.56	103.4	-2.1	-0.29	HY
8PVXK7		88.0	-18.7	-2.22	89.0	-16.5	-2.20	XX
9ZQ9TD		108.2	1.5	0.18	108.4	2.9	0.39	HY
AJECN4		110.0	3.3	0.40	109.6	4.1	0.55	HZ
AYBEJQ		107.9	1.3	0.15	106.3	0.8	0.11	HY
C4BGF3		122.6	15.9	1.89	121.0	15.5	2.07	HZ
FMEMWY		106.8	0.1	0.02	107.2	1.7	0.23	HZ
FRBXHY		108.8	2.1	0.25	99.6	-5.9	-0.79	HY
H2AGNJ		105.6	-1.1	-0.13	104.2	-1.3	-0.17	HZ
PHDFVM		97.4	-9.3	-1.10	99.4	-6.1	-0.81	HY
TUQTJ6		95.0	-11.7	-1.39	101.2	-4.3	-0.57	HY
TZXJLB		116.0	9.4	1.11	111.0	5.5	0.73	HX

Summary Statistics	Sample SN93	Sample SN94
Grand Means	106.66 1000th ft-lbs	105.50 1000th ft-lbs
Stnd Dev Btwn Labs	8.42 1000th ft-lbs	7.49 1000th ft-lbs

Statistics based on 17 of 17 reporting participants.

Key to Instrument Codes Reported by Participants

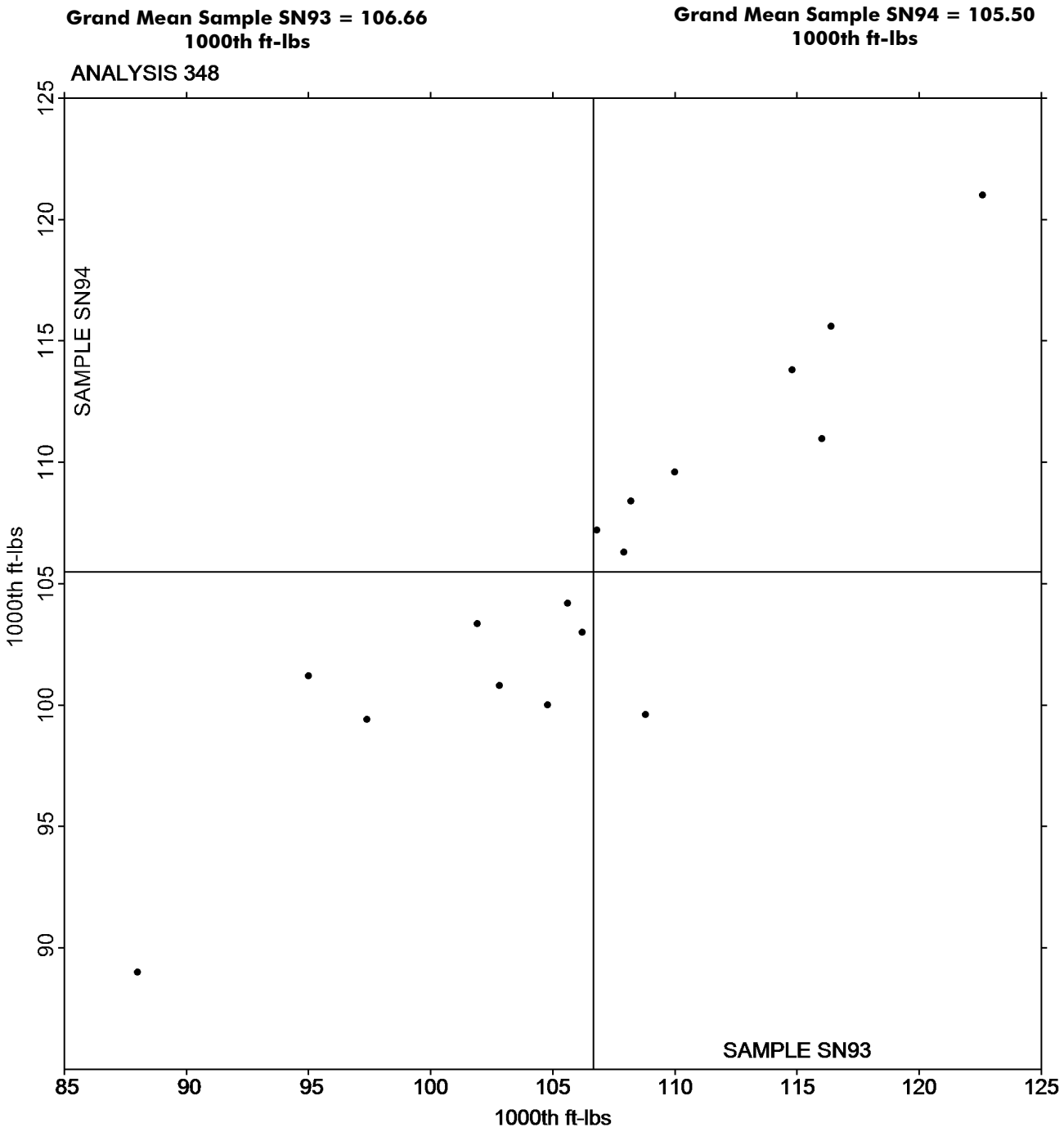
HX Huygen Internal Scott Bond Tester

HY Huygen Digitized Internal Scott Bond Tester

HZ Huygen Internal Bond Tester with AccuPress

KR Kumagai Riki Kogyo Internal Bond Tester

XX Instrument make/model not specified by lab



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Paper & Paperboard Interlaboratory Testing Program

Analysis 349

Internal Bond Strength - Scott Bond Models

TAPPI Provisional Test Method T569

WebCode	Data Flag	Sample SP93 Lab Mean	Sample SP93 Diff from Grand Mean	Sample SP93 CPV	Sample SP94 Lab Mean	Sample SP94 Diff from Grand Mean	Sample SP94 CPV	Instr Code
4CFQ6H		107.00	9.80	0.87	108.20	11.81	1.08	SC
6CVAPE		91.40	-5.80	-0.51	89.00	-7.39	-0.67	SC
BUBFQD		76.96	-20.24	-1.79	78.88	-17.51	-1.60	SC
BZLTBW	X	152.00	54.80	4.84	163.00	66.61	6.08	TM
CMPVVC		85.40	-11.80	-1.04	80.40	-15.99	-1.46	TM
DLR8R7		105.28	8.08	0.71	105.76	9.37	0.86	SC
JUKLZK	X	18.22	-78.98	-6.98	20.64	-75.75	-6.91	TM
M3A4CY		92.41	-4.79	-0.42	93.36	-3.03	-0.28	TM
MHG64E		91.00	-6.20	-0.55	94.00	-2.39	-0.22	TM
R4G2JV		106.60	9.40	0.83	103.00	6.61	0.60	SC
WUJZYE		92.31	-4.88	-0.43	92.03	-4.36	-0.40	XX
XV8UB9		113.00	15.80	1.40	110.80	14.41	1.32	XX
YE3MW8		107.80	10.60	0.94	104.84	8.45	0.77	XX

Summary Statistics	Sample SP93	Sample SP94
Grand Means	97.20 1000th ft-lbs	96.39 1000th ft-lbs
Stnd Dev Btwn Labs	11.31 1000th ft-lbs	10.96 1000th ft-lbs

Statistics based on 11 of 13 reporting participants.

Comments on Assigned Data Flags for Test #349

BZLTBW (X) - Extreme Data.

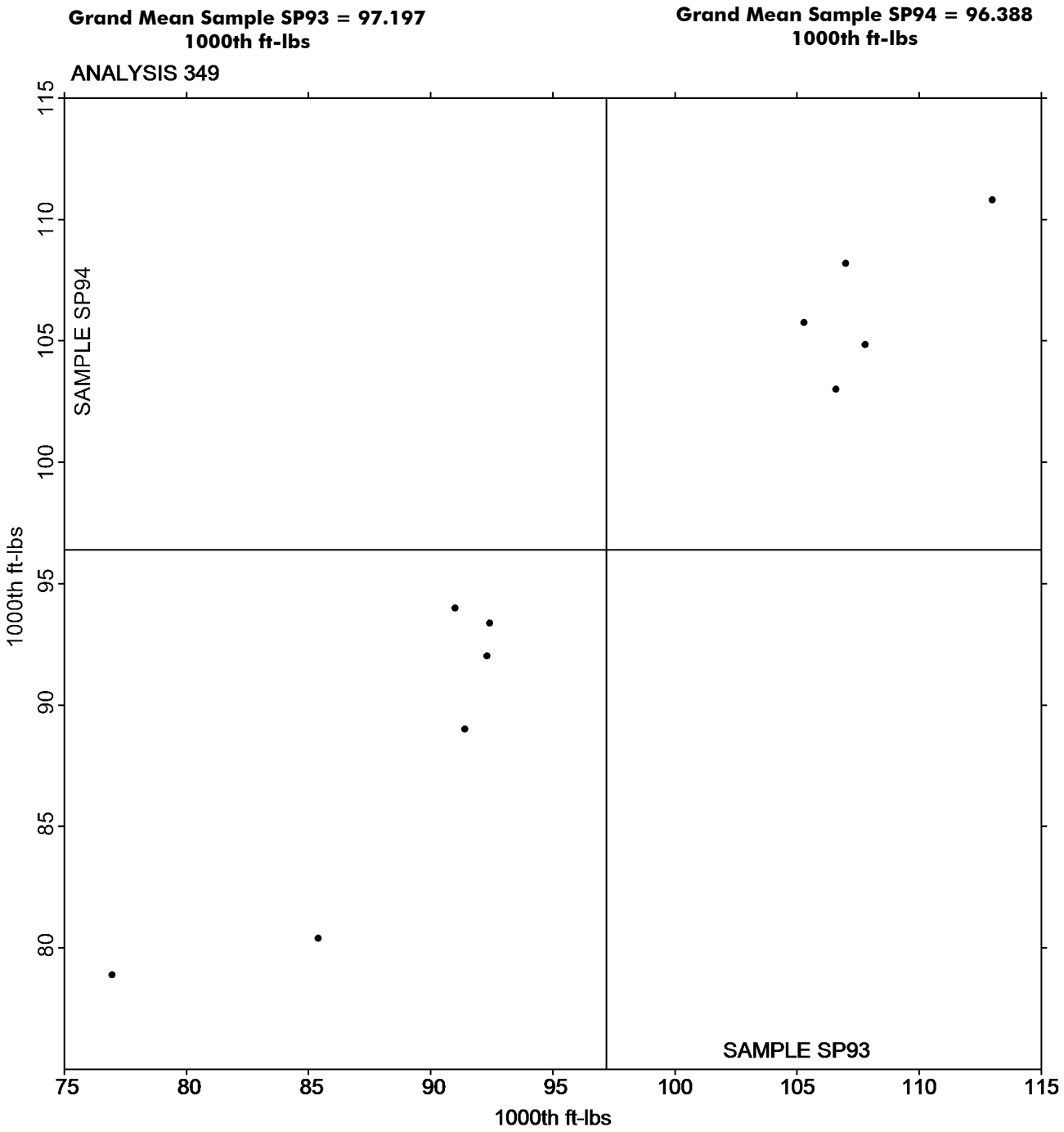
JUKLZK (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

SC Scott Internal Bond Tester (Manual)

TM TMI Monitor/Internal Bond Tester

XX Instrument make/model not specified by lab



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

-End of Report-

