Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #3011 S - July 2019

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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

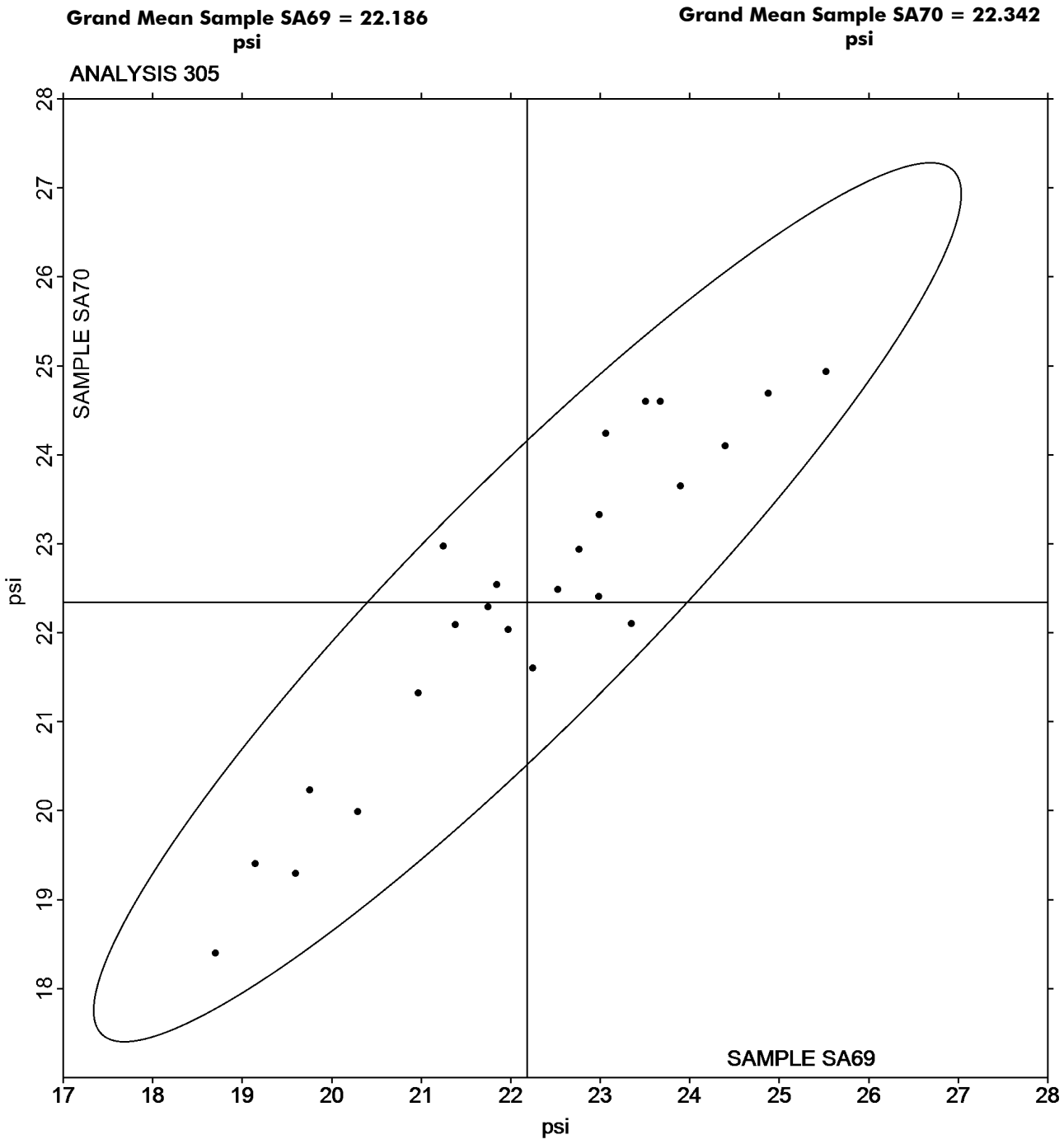
Bursting Strength - Printing Papers

TAPPI Official Test Method T403

WebCode	Data Flag	Sample SA69 Lab Mean	Sample SA69 Diff from Grand Mean	Sample SA69 CPV	Sample SA70 Lab Mean	Sample SA70 Diff from Grand Mean	Sample SA70 CPV
3JG4K2		21.75	-0.44	-0.24	22.29	-0.05	-0.03
46EZQV		22.53	0.34	0.19	22.48	0.14	0.08
8VG78U		22.99	0.80	0.44	23.32	0.98	0.53
9VWBDB		21.38	-0.81	-0.45	22.09	-0.25	-0.14
C9TN2X		23.35	1.16	0.64	22.10	-0.24	-0.13
DQ6CTJ		22.77	0.58	0.32	22.94	0.59	0.32
DU3T7D		19.59	-2.59	-1.44	19.29	-3.05	-1.66
G4H46Z		22.98	0.80	0.44	22.41	0.06	0.03
G6AWMJ		23.90	1.71	0.95	23.65	1.31	0.71
GHX4HY		19.15	-3.04	-1.68	19.40	-2.94	-1.60
HZHF2X		23.67	1.48	0.82	24.60	2.26	1.23
J4RPCL		24.88	2.69	1.49	24.69	2.35	1.28
KW9NPH		22.25	0.06	0.03	21.60	-0.74	-0.40
MHZJF8		23.51	1.32	0.73	24.60	2.26	1.23
MQWEFQ		23.06	0.87	0.48	24.24	1.90	1.03
MZ6CGU		25.53	3.34	1.85	24.93	2.59	1.41
N8U438		21.97	-0.21	-0.12	22.04	-0.31	-0.17
NVMUCH		18.70	-3.49	-1.93	18.40	-3.94	-2.14
V4TLPE		20.29	-1.89	-1.05	19.98	-2.36	-1.28
WHMAF4		21.25	-0.94	-0.52	22.97	0.63	0.34
WLNW68		20.97	-1.22	-0.67	21.32	-1.02	-0.56
WRV2LT		19.75	-2.43	-1.35	20.23	-2.11	-1.15
YXR27J		21.84	-0.34	-0.19	22.54	0.20	0.11
Z9P3HN		24.40	2.21	1.23	24.10	1.76	0.95

Summary Statistics	Sample SA69	Sample SA70
Grand Means	22.19 psi	22.34 psi
Stnd Dev Btwn Labs	1.81 psi	1.84 psi

Statistics based on 24 of 24 reporting participants.



Paper & Paperboard Interlaboratory Testing Program

Analysis 310

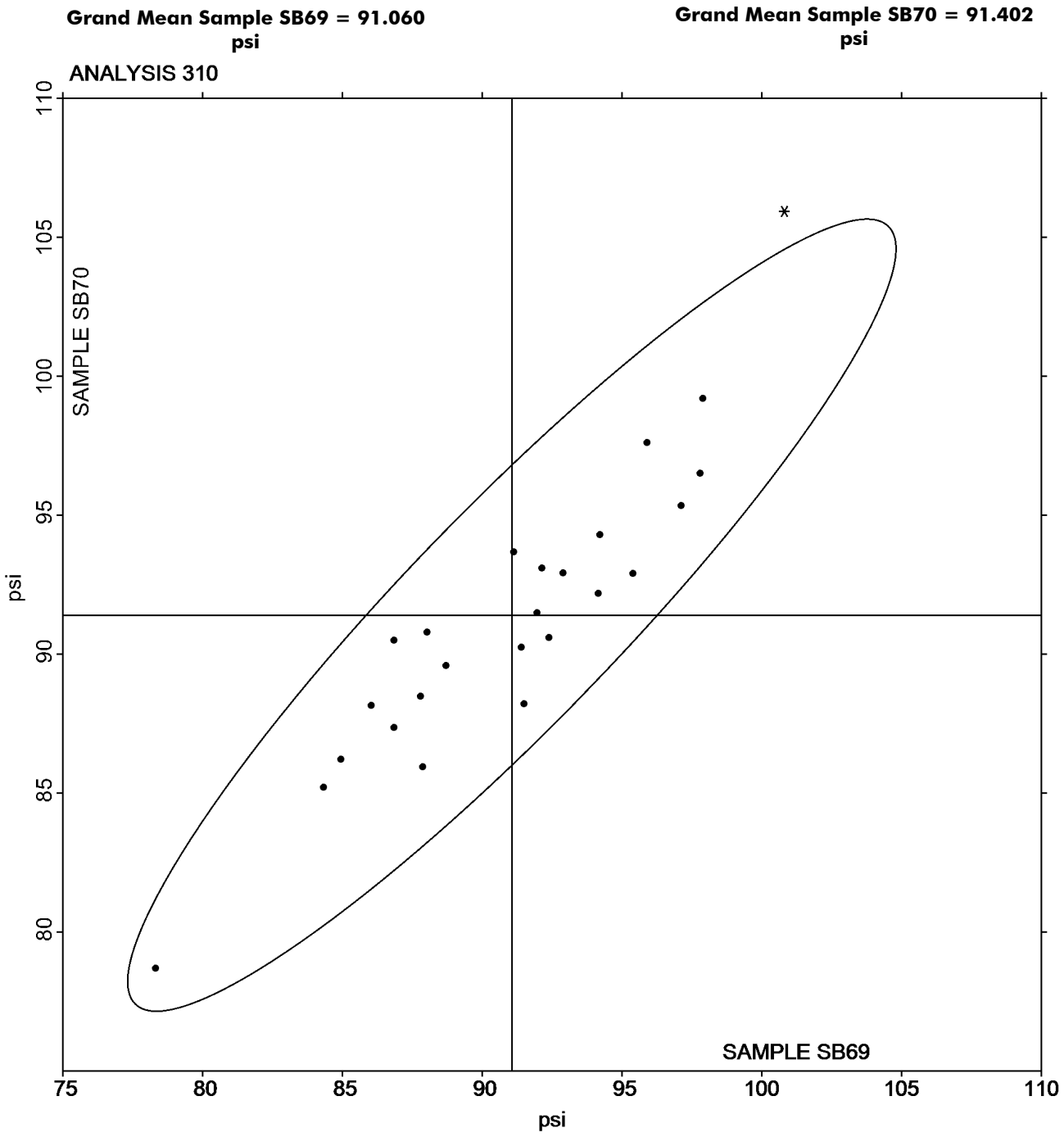
Bursting Strength - Packaging Papers

TAPPI Official Test Method T403

WebCode	Data Flag	Sample SB69 Lab Mean	Sample SB69 Diff from Grand Mean	Sample SB69 CPV	Sample SB70 Lab Mean	Sample SB70 Diff from Grand Mean	Sample SB70 CPV
2NDDB4		86.03	-5.03	-0.98	88.15	-3.25	-0.61
4DRAD9		78.32	-12.74	-2.48	78.70	-12.70	-2.38
4UDCYX		95.90	4.84	0.94	97.60	6.20	1.16
6NKWJP		97.12	6.06	1.18	95.35	3.95	0.74
7PWVDY		84.95	-6.11	-1.19	86.21	-5.19	-0.97
CHYTP9		88.71	-2.35	-0.46	89.59	-1.82	-0.34
DXJDTT		94.22	3.16	0.61	94.29	2.89	0.54
GHX4HY		92.89	1.83	0.36	92.91	1.51	0.28
HNNYCW		91.98	0.92	0.18	91.47	0.07	0.01
HZHF2X		91.13	0.07	0.01	93.67	2.26	0.42
J647RK		97.80	6.74	1.31	96.50	5.10	0.96
KW9NPH		87.88	-3.18	-0.62	85.93	-5.47	-1.03
L9YWQV		84.33	-6.73	-1.31	85.20	-6.20	-1.16
LNRLND		88.04	-3.02	-0.59	90.79	-0.61	-0.11
N4V7RZ	*	100.81	9.75	1.90	105.93	14.53	2.72
N8U438		87.79	-3.27	-0.64	88.48	-2.93	-0.55
NG2WEM		97.90	6.84	1.33	99.20	7.80	1.46
PBR3VC		91.51	0.45	0.09	88.20	-3.20	-0.60
PJL8ND		91.40	0.34	0.07	90.25	-1.15	-0.22
RVCFL7		95.40	4.34	0.84	92.90	1.50	0.28
TWHKCY		92.14	1.08	0.21	93.10	1.70	0.32
UEDDXX		94.15	3.09	0.60	92.18	0.78	0.15
UXTM2J		86.85	-4.21	-0.82	87.35	-4.05	-0.76
VKXT4F		92.40	1.34	0.26	90.60	-0.80	-0.15
WH6GGF		86.85	-4.21	-0.82	90.50	-0.90	-0.17

Summary Statistics	Sample SB69	Sample SB70
Grand Means	91.06 psi	91.40 psi
Stnd Dev Btwn Labs	5.14 psi	5.33 psi

Statistics based on 25 of 25 reporting participants.



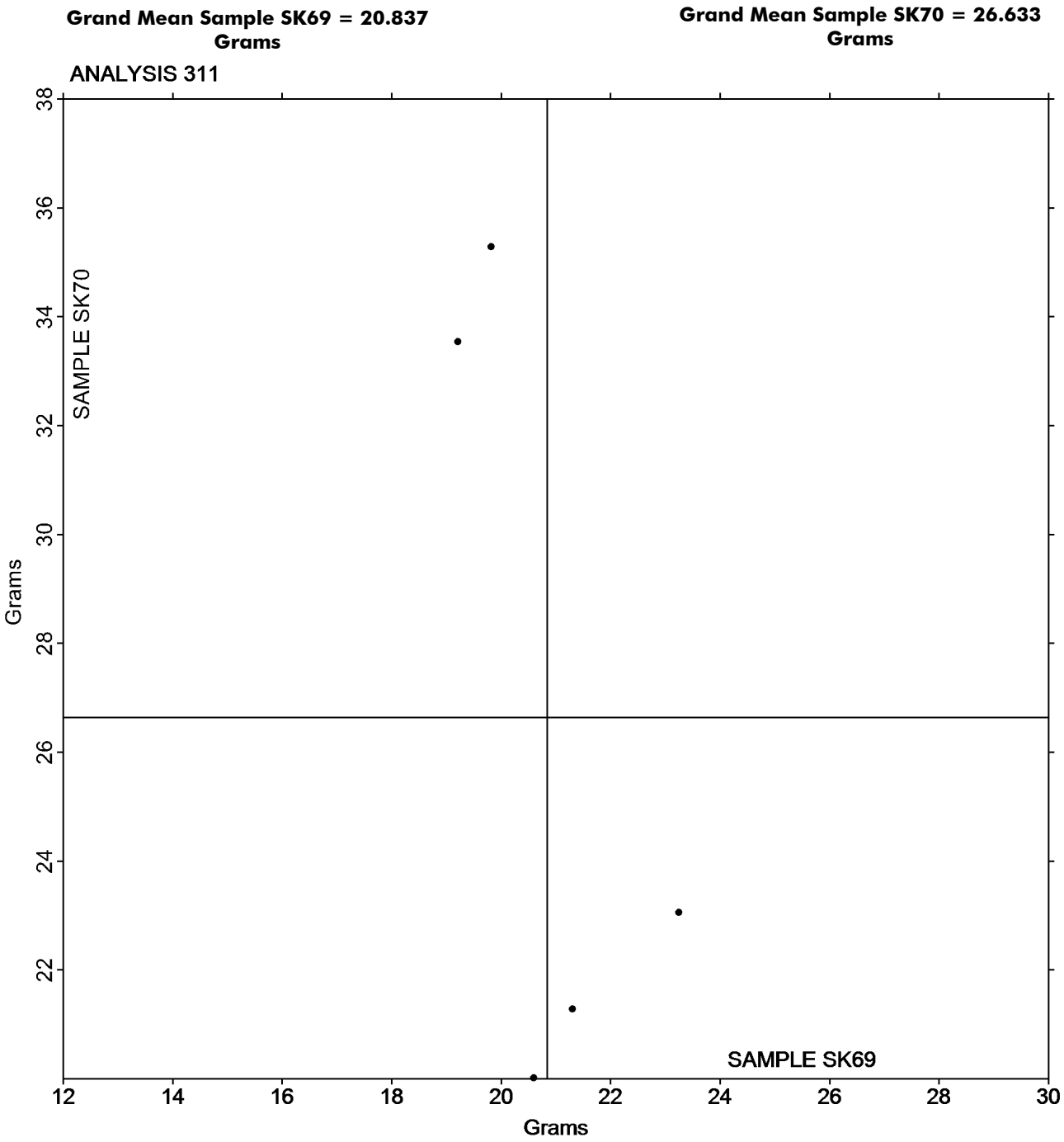
Paper & Paperboard Interlaboratory Testing Program

Analysis 311
Tearing Strength - Newsprint
TAPPI Official Test Method T414

WebCode	Data Flag	Sample SK69 Lab Mean	Sample SK69 Diff from Grand Mean	Sample SK69 CPV	Sample SK70 Lab Mean	Sample SK70 Diff from Grand Mean	Sample SK70 CPV
HLCL8Z		19.82	-1.01	-0.65	35.28	8.65	1.20
KW9NPH		23.25	2.41	1.54	23.06	-3.58	-0.50
MHZJF8		20.60	-0.24	-0.15	20.01	-6.62	-0.92
NVMUCH		21.30	0.46	0.30	21.28	-5.35	-0.74
Q4RKTP		19.21	-1.63	-1.04	33.54	6.91	0.96

Summary Statistics	Sample SK69	Sample SK70
Grand Means	20.84 Grams	26.63 Grams
Stnd Dev Btwn Labs	1.56 Grams	7.21 Grams

Statistics based on 5 of 5 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 SC69 Lab Mean	Sample SC69 Diff from Grand Mean	Sample SC69 CPV	Sample SC70 Lab Mean	Sample SC70 Diff from Grand Mean	Sample SC70 CPV
3JG4K2		50.56	3.30	0.68	51.32	3.73	0.81
4UGYEQ		48.90	1.64	0.34	50.19	2.60	0.56
6DMULM		40.35	-6.91	-1.42	42.18	-5.41	-1.17
6NKWJP		45.10	-2.15	-0.44	44.60	-2.99	-0.65
6VJGPR		43.94	-3.32	-0.68	43.75	-3.84	-0.83
9KTFU7		49.18	1.92	0.40	48.94	1.35	0.29
9L3YNV		40.30	-6.96	-1.43	42.22	-5.37	-1.16
9VWBDB	*	62.12	14.86	3.05	62.16	14.57	3.15
9YEVX7		46.59	-0.67	-0.14	46.72	-0.87	-0.19
A782Y6		56.95	9.69	1.99	55.56	7.97	1.72
AHLY2N		40.68	-6.58	-1.35	40.90	-6.69	-1.45
BXTXHB		50.70	3.44	0.71	48.40	0.81	0.17
CHYTP9		52.00	4.74	0.97	51.65	4.06	0.88
DU3T7D		43.99	-3.27	-0.67	44.75	-2.84	-0.61
EMNPR4		43.20	-4.06	-0.83	42.32	-5.27	-1.14
G4H46Z		55.27	8.01	1.65	54.63	7.04	1.52
G6AWMJ		47.60	0.34	0.07	48.20	0.61	0.13
HAJZ26		50.19	2.93	0.60	49.64	2.05	0.44
HHDMZB		50.63	3.37	0.69	50.76	3.17	0.68
HXMFNE		49.50	2.24	0.46	49.79	2.20	0.48
HZHF2X		43.54	-3.71	-0.76	43.45	-4.14	-0.90
J647RK		52.20	4.94	1.02	50.60	3.01	0.65
J8DWQU		48.94	1.68	0.35	49.78	2.19	0.47
JVFBUQ		46.34	-0.92	-0.19	46.34	-1.25	-0.27
KW9NPH		49.64	2.38	0.49	50.38	2.79	0.60
LJDWK4		45.43	-1.83	-0.37	44.53	-3.06	-0.66
LKUC8Y	X	71.86	24.60	5.05	70.35	22.76	4.92
MQWEFQ		49.27	2.01	0.41	50.52	2.93	0.63
MZ6CGU		41.35	-5.91	-1.21	43.60	-3.99	-0.86
N4Y8K9		46.18	-1.07	-0.22	47.42	-0.17	-0.04
N8U438	X	26.10	-21.16	-4.35	26.04	-21.55	-4.66
NG2WEM	*	33.36	-13.90	-2.85	33.80	-13.79	-2.98
PBR3VC		47.65	0.39	0.08	48.92	1.33	0.29
PPBKP2		47.45	0.19	0.04	47.24	-0.35	-0.08
QRUYVM		50.96	3.70	0.76	50.34	2.74	0.59
TUAQRE		49.40	2.14	0.44	49.60	2.01	0.43
TWHKCY		44.17	-3.09	-0.63	45.54	-2.05	-0.44
ULDHKR		39.17	-8.09	-1.66	39.37	-8.22	-1.78
UN6NAD		43.52	-3.74	-0.77	46.25	-1.35	-0.29
UXTM2J		45.05	-2.21	-0.45	45.90	-1.69	-0.37

Paper & Paperboard Interlaboratory Testing Program

Analysis 312

Tearing Strength - Printing Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample SC69 Lab Mean	Sample SC69 Diff from Grand Mean	Sample SC69 CPV	Sample SC70 Lab Mean	Sample SC70 Diff from Grand Mean	Sample SC70 CPV
V4TLPE		51.60	4.34	0.89	53.20	5.61	1.21
WH6GGF		48.58	1.32	0.27	47.73	0.14	0.03
WHMAF4		47.89	0.63	0.13	48.77	1.18	0.26
WLNW68		46.22	-1.04	-0.21	46.14	-1.45	-0.31
XT43EJ		46.80	-0.46	-0.09	45.50	-2.09	-0.45
YMUF9F		43.36	-3.90	-0.80	44.28	-3.31	-0.72
YXR27J		50.92	3.66	0.75	52.84	5.25	1.13
Z2VWPM		48.60	1.34	0.28	49.50	1.91	0.41
Z9P3HN		45.68	-1.58	-0.32	46.56	-1.03	-0.22

Summary Statistics	Sample SC69	Sample SC70
Grand Means	47.26 Grams	47.59 Grams
Stnd Dev Btwn Labs	4.87 Grams	4.63 Grams

Statistics based on 47 of 49 reporting participants.

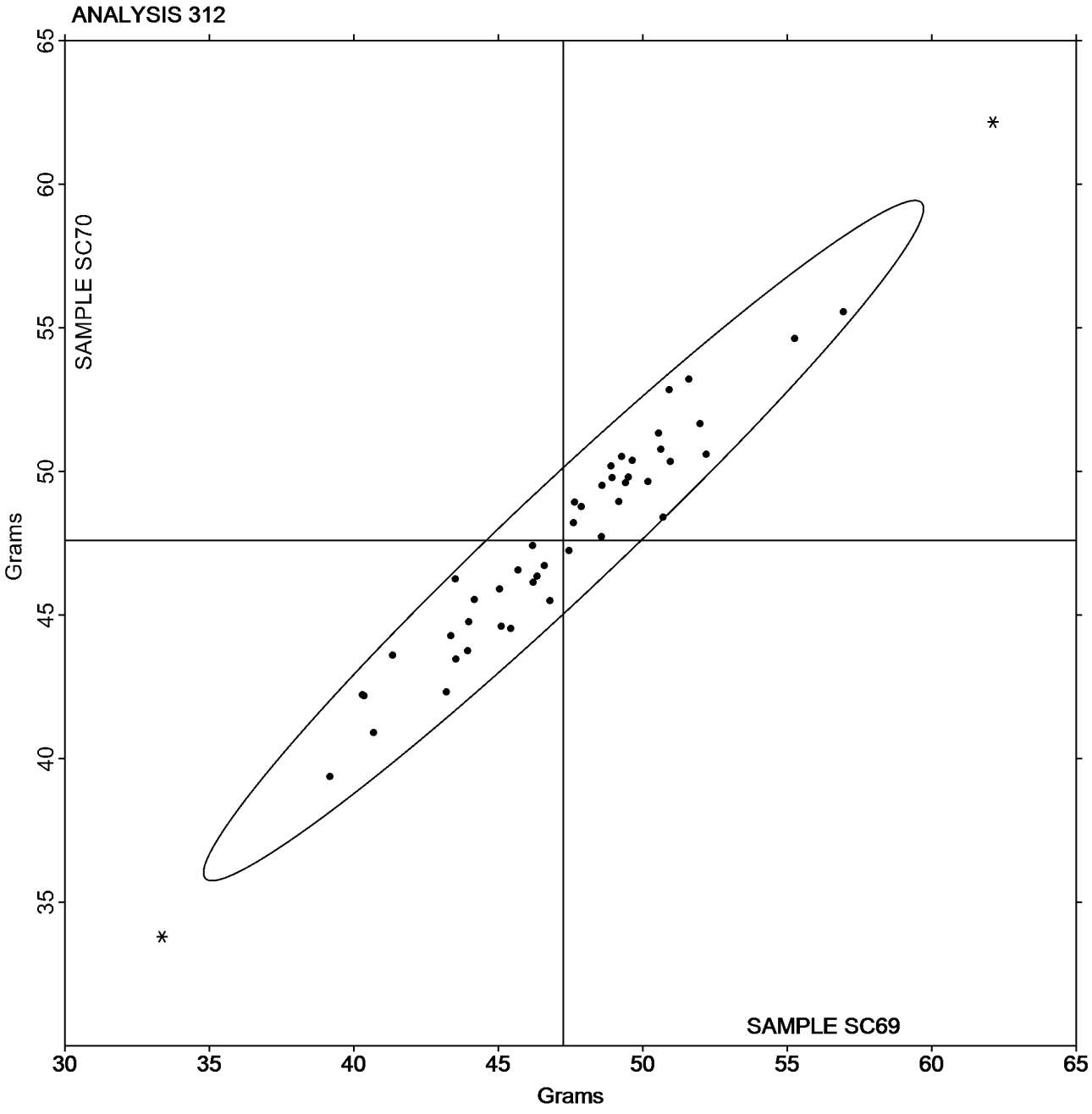
Comments on Assigned Data Flags for Test #312

LKUC8Y (X) - Data for both samples are high. Possible Systematic Error.

N8U438 (X) - Data for both samples are low. Possible Systematic Error.

Grand Mean Sample SC69 = 47.255 Grams

Grand Mean Sample SC70 = 47.591 Grams



Paper & Paperboard Interlaboratory Testing Program

Analysis 314

Tearing Strength - Packaging Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample SD69 Lab Mean	Sample SD69 Diff from Grand Mean	Sample SD69 CPV	Sample SD70 Lab Mean	Sample SD70 Diff from Grand Mean	Sample SD70 CPV
2NDDB4	*	45.9	-119.2	-2.88	50.9	-152.8	-3.06
3RUXVX		181.7	16.7	0.40	224.9	21.2	0.42
3TQHHW		167.0	2.0	0.05	206.5	2.8	0.06
3XGTTV		195.0	30.0	0.72	209.2	5.5	0.11
4DRAD9		202.5	37.5	0.91	225.0	21.3	0.43
4K8PQX		196.8	31.8	0.77	235.8	32.0	0.64
79R6BE		175.8	10.8	0.26	223.3	19.6	0.39
7BH7F3		181.8	16.8	0.41	236.3	32.6	0.65
7EEABP		174.0	9.0	0.22	222.4	18.7	0.37
7TV8AY		162.7	-2.3	-0.06	196.3	-7.4	-0.15
8GZWF3		198.4	33.4	0.81	230.6	26.9	0.54
8XK2QW		102.3	-62.7	-1.52	128.6	-75.1	-1.50
9228YW		151.8	-13.2	-0.32	199.9	-3.8	-0.08
9KATLJ	X	2,877.4	2,712.4	65.62	755.2	551.5	11.04
C4XB8G		160.0	-5.0	-0.12	208.9	5.2	0.10
C9TN2X		151.3	-13.7	-0.33	209.2	5.5	0.11
DG3F62		169.7	4.7	0.11	198.9	-4.8	-0.10
DXJDTT		174.0	9.0	0.22	220.1	16.4	0.33
FLMCJ3		171.3	6.3	0.15	206.2	2.5	0.05
GHX4HY	*	42.2	-122.8	-2.97	57.2	-146.5	-2.93
HMRLQP		183.8	18.8	0.45	207.4	3.7	0.07
HNNYCW		168.1	3.0	0.07	220.1	16.4	0.33
J647RK	*	43.7	-121.3	-2.93	56.6	-147.1	-2.94
J7YU7A	X	1,124.7	959.7	23.22	900.5	696.8	13.94
KBNQ87		192.6	27.6	0.67	237.0	33.3	0.67
KW9NPH		209.0	44.0	1.06	236.6	32.9	0.66
LNRLND		202.0	37.0	0.89	231.4	27.7	0.56
N4Y8K9		164.4	-0.6	-0.01	217.2	13.5	0.27
N8U438		140.0	-25.0	-0.61	168.1	-35.6	-0.71
PJL8ND		186.4	21.4	0.52	220.2	16.5	0.33
QLRBBE		175.9	10.9	0.26	227.8	24.1	0.48
QXKA6K		173.4	8.3	0.20	234.0	30.3	0.61
RVCFL7		190.4	25.4	0.61	227.8	24.1	0.48
TNNFJX		190.4	25.4	0.62	253.3	49.6	0.99
UMTH4G		187.9	22.9	0.55	237.7	34.0	0.68
VQ223V		169.5	4.5	0.11	188.4	-15.3	-0.31
WKWHKH		171.2	6.2	0.15	236.3	32.6	0.65
XPKGE4		180.4	15.4	0.37	213.8	10.1	0.20
Z2VWPM		172.0	7.0	0.17	232.8	29.1	0.58

Summary Statistics	Sample SD69	Sample SD70
Grand Means	165.01 Grams	203.70 Grams
Stnd Dev Btwn Labs	41.34 Grams	49.98 Grams

Statistics based on 37 of 39 reporting participants.

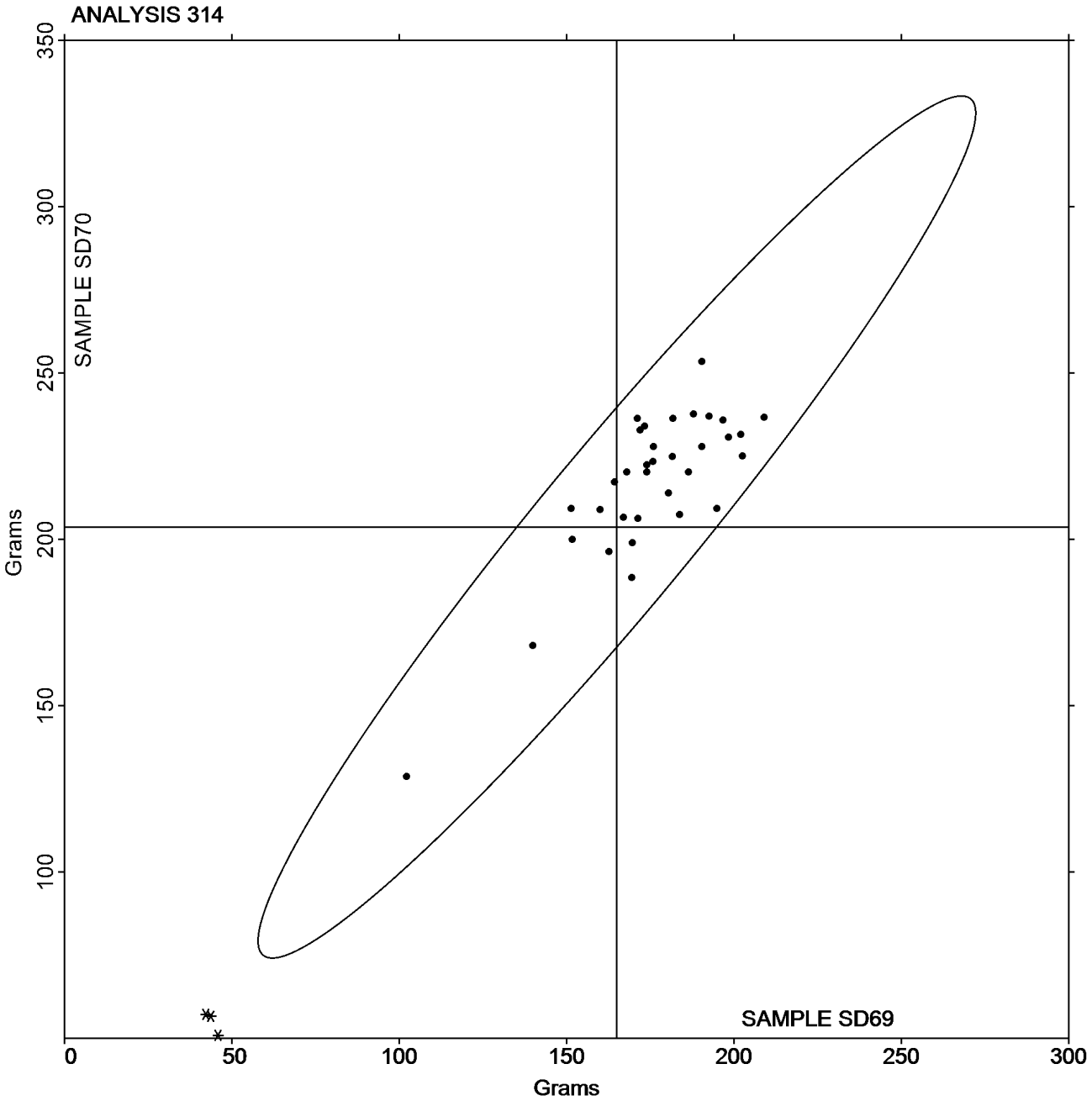
Comments on Assigned Data Flags for Test #314

J7YU7A (X) - Extreme Data.

9KATLJ (X) - Extreme Data.

Grand Mean Sample SD69 = 165.01 Grams

Grand Mean Sample SD70 = 203.70 Grams



Paper & Paperboard Interlaboratory Testing Program

Analysis 320

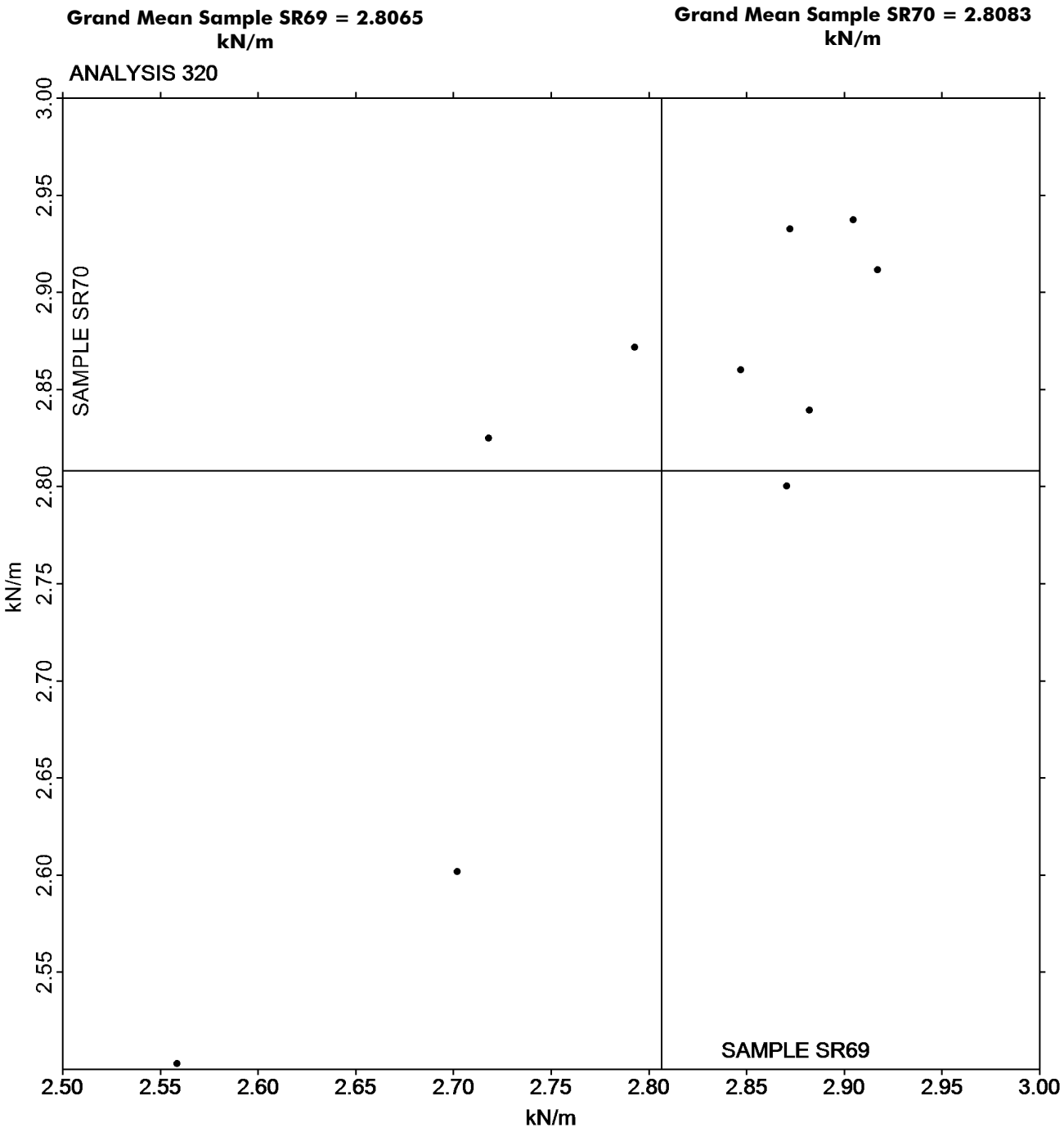
Tensile Breaking Strength - Newsprint

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SR69 Lab Mean	Sample SR69 Diff from Grand Mean	Sample SR69 CPV	Sample SR70 Lab Mean	Sample SR70 Diff from Grand Mean	Sample SR70 CPV
46EZQV		2.702	-0.105	-0.91	2.602	-0.207	-1.43
4UDCYX		2.882	0.076	0.66	2.839	0.031	0.22
G6AWMJ		2.872	0.066	0.57	2.933	0.124	0.86
HHDMZB		2.718	-0.089	-0.77	2.825	0.017	0.12
HLCL8Z		2.917	0.110	0.96	2.912	0.103	0.72
HZHF2X		2.847	0.040	0.35	2.860	0.052	0.36
MHZJF8		2.905	0.098	0.86	2.937	0.129	0.90
N4Y8K9		2.871	0.064	0.56	2.800	-0.008	-0.06
NVMUCH		2.559	-0.248	-2.16	2.503	-0.305	-2.12
Q4RKTP		2.793	-0.014	-0.12	2.872	0.064	0.44

Summary Statistics	Sample SR69	Sample SR70
Grand Means	2.81 kN/m	2.81 kN/m
Stnd Dev Btwn Labs	0.11 kN/m	0.14 kN/m

Statistics based on 10 of 10 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 321

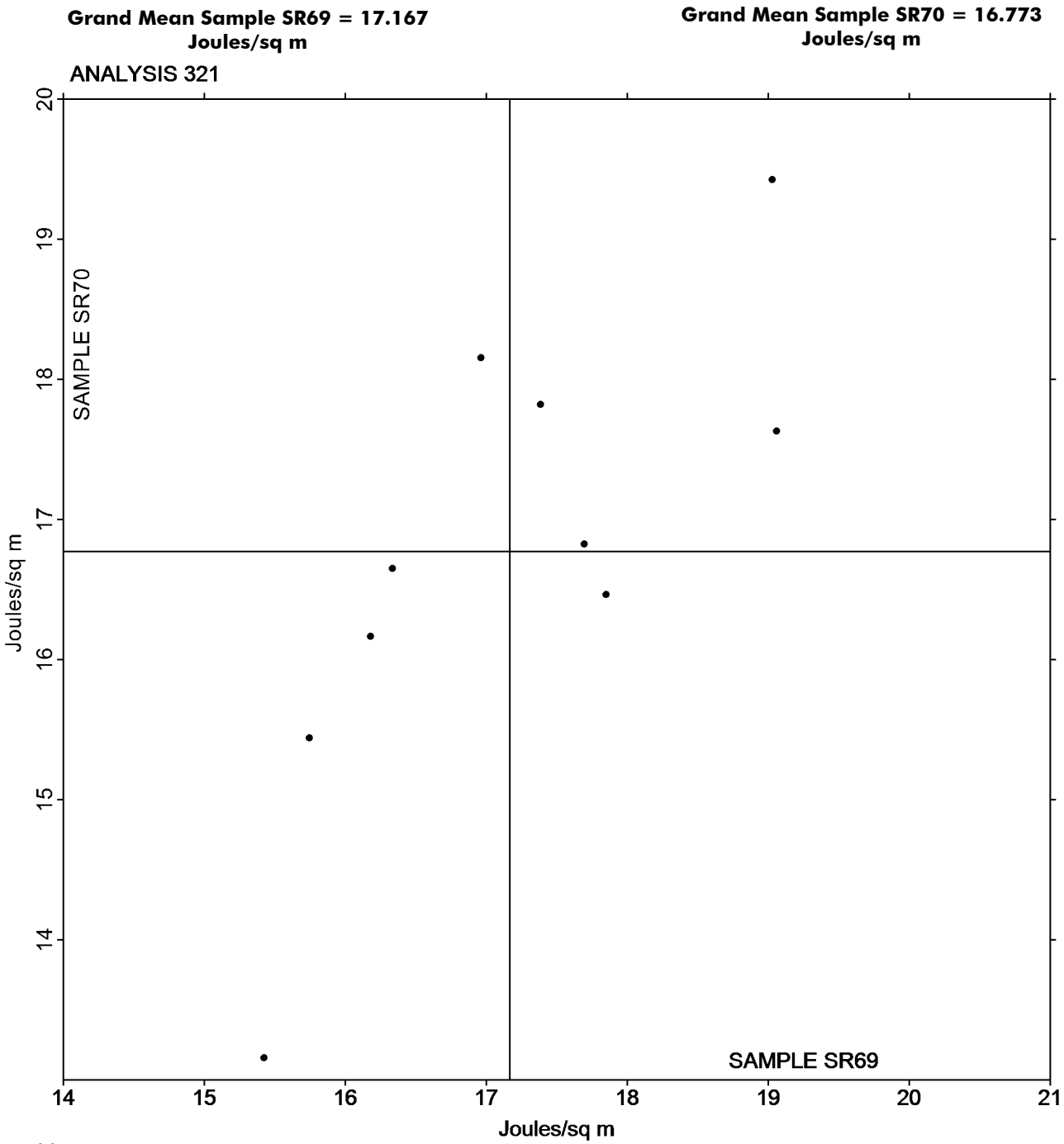
Tensile Energy Absorption - Newsprint

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SR69 Lab Mean	Sample SR69 Diff from Grand Mean	Sample SR69 CPV	Sample SR70 Lab Mean	Sample SR70 Diff from Grand Mean	Sample SR70 CPV
46EZQV		15.43	-1.74	-1.37	13.16	-3.62	-2.12
4UDCYX		17.85	0.68	0.54	16.46	-0.31	-0.18
G6AWMJ		19.03	1.86	1.46	19.42	2.65	1.56
HHDMZB		16.96	-0.20	-0.16	18.16	1.38	0.81
HLCL8Z		16.34	-0.83	-0.65	16.65	-0.12	-0.07
HZHF2X		15.75	-1.42	-1.11	15.44	-1.33	-0.78
MHZJF8		17.39	0.22	0.17	17.82	1.05	0.61
N4Y8K9		19.06	1.89	1.49	17.63	0.86	0.50
NVMUCH		17.69	0.53	0.41	16.83	0.05	0.03
Q4RKTP		16.18	-0.99	-0.78	16.16	-0.61	-0.36

Summary Statistics	Sample SR69	Sample SR70
Grand Means	17.17 Joules/sq m	16.77 Joules/sq m
Stnd Dev Btwn Labs	1.27 Joules/sq m	1.70 Joules/sq m

Statistics based on 10 of 10 reporting participants.



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

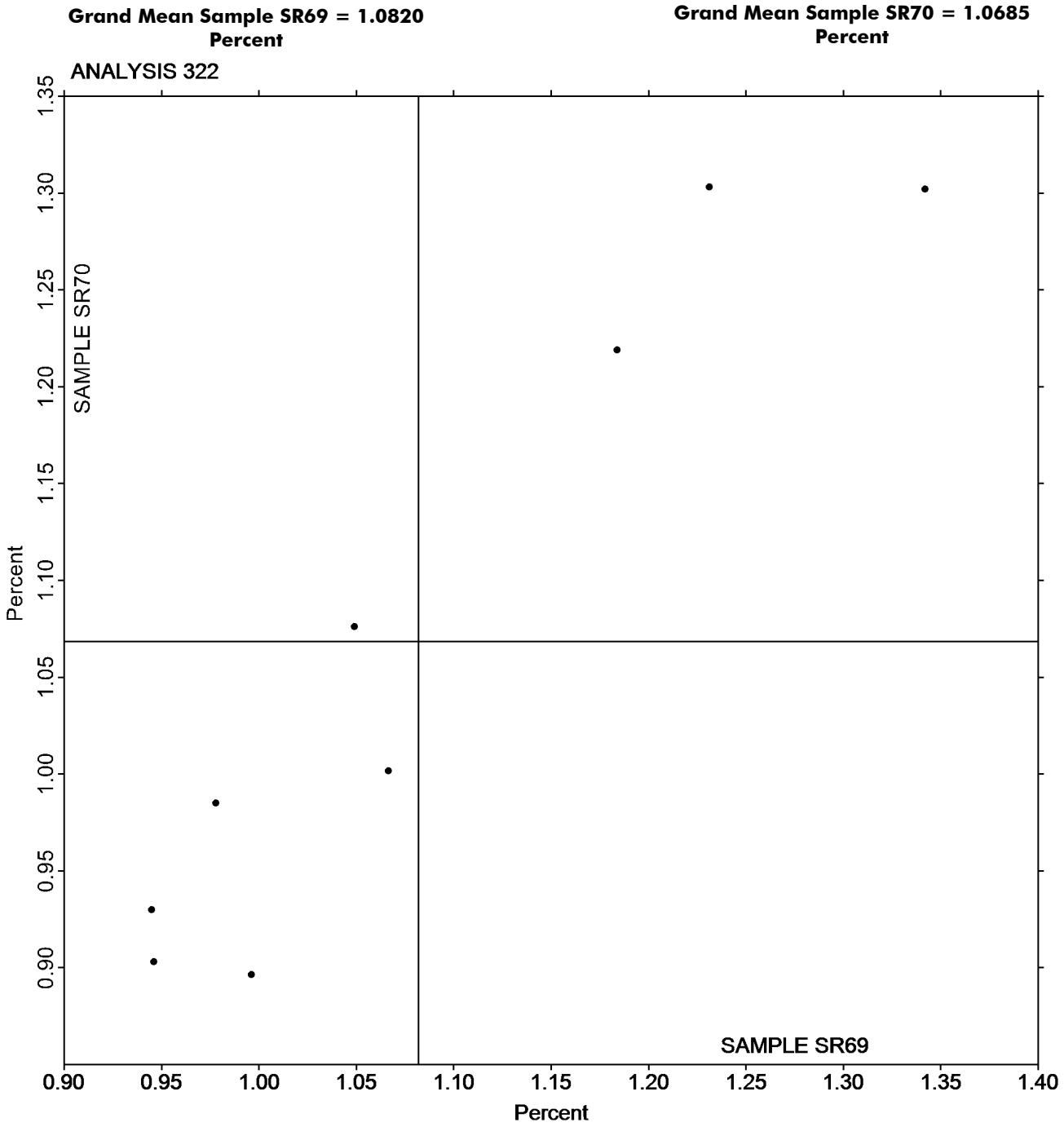
Paper & Paperboard Interlaboratory Testing Program

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

WebCode	Data Flag	Sample SR69 Lab Mean	Sample SR69 Diff from Grand Mean	Sample SR69 CPV	Sample SR70 Lab Mean	Sample SR70 Diff from Grand Mean	Sample SR70 CPV
46EZQV		0.996	-0.086	-0.61	0.897	-0.172	-1.04
4UDCYX		1.066	-0.016	-0.11	1.002	-0.067	-0.40
G6AWMJ		1.184	0.102	0.73	1.219	0.151	0.91
HHDMZB		1.049	-0.033	-0.24	1.076	0.008	0.05
HLCL8Z		0.978	-0.104	-0.74	0.985	-0.083	-0.50
HZHF2X		0.945	-0.137	-0.98	0.930	-0.138	-0.84
MHZJF8		1.231	0.149	1.07	1.303	0.235	1.41
N4Y8K9		0.946	-0.136	-0.97	0.903	-0.165	-1.00
NVMUCH		1.342	0.260	1.86	1.302	0.234	1.41

Summary Statistics	Sample SR69	Sample SR70
Grand Means	1.08 Percent	1.07 Percent
Stnd Dev Btwn Labs	0.14 Percent	0.17 Percent

Statistics based on 9 of 9 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 SF69 Lab Mean	Sample SF69 Diff from Grand Mean	Sample SF69 CPV	Sample SF70 Lab Mean	Sample SF70 Diff from Grand Mean	Sample SF70 CPV	Instr Code
2GGEZG		4.749	0.541	2.12	4.610	0.427	1.70	XX
3JG4K2		4.343	0.135	0.53	4.358	0.175	0.69	TF
486Y8E		4.405	0.197	0.77	4.455	0.272	1.08	TP
4UGYEQ		3.717	-0.491	-1.92	3.805	-0.378	-1.50	IM
6DMULM		3.878	-0.329	-1.29	4.125	-0.058	-0.23	FP
6NKWJP		4.188	-0.020	-0.08	4.154	-0.029	-0.12	LH
6VJGPR		4.358	0.150	0.59	4.581	0.398	1.58	TP
8VG78U		4.196	-0.012	-0.05	3.998	-0.185	-0.73	LF
9KTFU7		3.828	-0.380	-1.49	3.832	-0.351	-1.39	ID
9L3YNV		4.142	-0.066	-0.26	4.236	0.053	0.21	TB
9VWBDB		3.840	-0.368	-1.44	3.890	-0.293	-1.16	LA
9YEVX7		4.023	-0.185	-0.72	4.072	-0.111	-0.44	LE
A782Y6		4.457	0.249	0.98	4.424	0.241	0.96	LA
AHLY2N		4.206	-0.001	-0.01	4.108	-0.075	-0.30	TF
BXTXHB	*	3.532	-0.675	-2.64	3.707	-0.476	-1.89	TO
DQ6CTJ		4.005	-0.203	-0.79	4.006	-0.177	-0.70	DL
DU3T7D		4.534	0.326	1.28	4.624	0.441	1.75	LX
EMNPR4		4.254	0.046	0.18	4.311	0.128	0.51	LF
G4H46Z		3.846	-0.362	-1.42	3.975	-0.208	-0.83	TP
HAJZ26		4.168	-0.040	-0.16	4.242	0.059	0.23	VM
HXMFNE	*	4.098	-0.110	-0.43	3.667	-0.516	-2.05	TO
HZHF2X		4.231	0.023	0.09	4.015	-0.168	-0.67	LH
KW9NPH		4.121	-0.086	-0.34	3.931	-0.252	-1.00	LH
LJDWK4		4.061	-0.147	-0.58	4.063	-0.120	-0.48	DM
LKUC8Y		4.213	0.005	0.02	4.115	-0.068	-0.27	XX
MQWEFQ		3.996	-0.212	-0.83	3.933	-0.250	-0.99	LX
MZ6CGU		4.763	0.556	2.17	4.767	0.584	2.32	TJ
N8U438		4.439	0.231	0.90	4.201	0.018	0.07	TM
NG2WEM		4.504	0.296	1.16	4.427	0.244	0.97	TO
PPBKP2		4.275	0.067	0.26	4.212	0.029	0.11	LI
PUKZYP		4.208	0.000	0.00	4.123	-0.060	-0.24	LX
QQZBEC		4.067	-0.141	-0.55	3.993	-0.190	-0.75	RE
QRUYVM		4.188	-0.020	-0.08	4.173	-0.011	-0.04	XX
ULDHKR		4.453	0.246	0.96	4.359	0.176	0.70	LA
V4TLPE		3.933	-0.275	-1.07	4.104	-0.079	-0.31	LH
WH6GGF		4.214	0.007	0.03	4.213	0.030	0.12	TF
WHMAF4		4.221	0.013	0.05	4.264	0.081	0.32	LI
WLNW68		4.096	-0.112	-0.44	4.073	-0.110	-0.44	TB
WRV2LT		4.391	0.183	0.72	4.266	0.083	0.33	LH
X8PPT7		4.430	0.222	0.87	4.589	0.406	1.61	FP

Paper & Paperboard Interlaboratory Testing Program

Analysis 325

Tensile Breaking Strength - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF69 Lab Mean	Sample SF69 Diff from Grand Mean	Sample SF69 CPV	Sample SF70 Lab Mean	Sample SF70 Diff from Grand Mean	Sample SF70 CPV	Instr Code
XT43EJ		4.302	0.094	0.37	3.923	-0.260	-1.03	TC
YMUF9F		4.552	0.344	1.35	4.450	0.267	1.06	LH
YXR27J		4.344	0.136	0.53	4.358	0.175	0.69	LH
Z9P3HN		4.373	0.166	0.65	4.323	0.140	0.56	LH

Summary Statistics	Sample SF69	Sample SF70
Grand Means	4.21 kN/m	4.18 kN/m
Stnd Dev Btwn Labs	0.26 kN/m	0.25 kN/m

Statistics based on 44 of 44 reporting participants.

Analysis Notes:

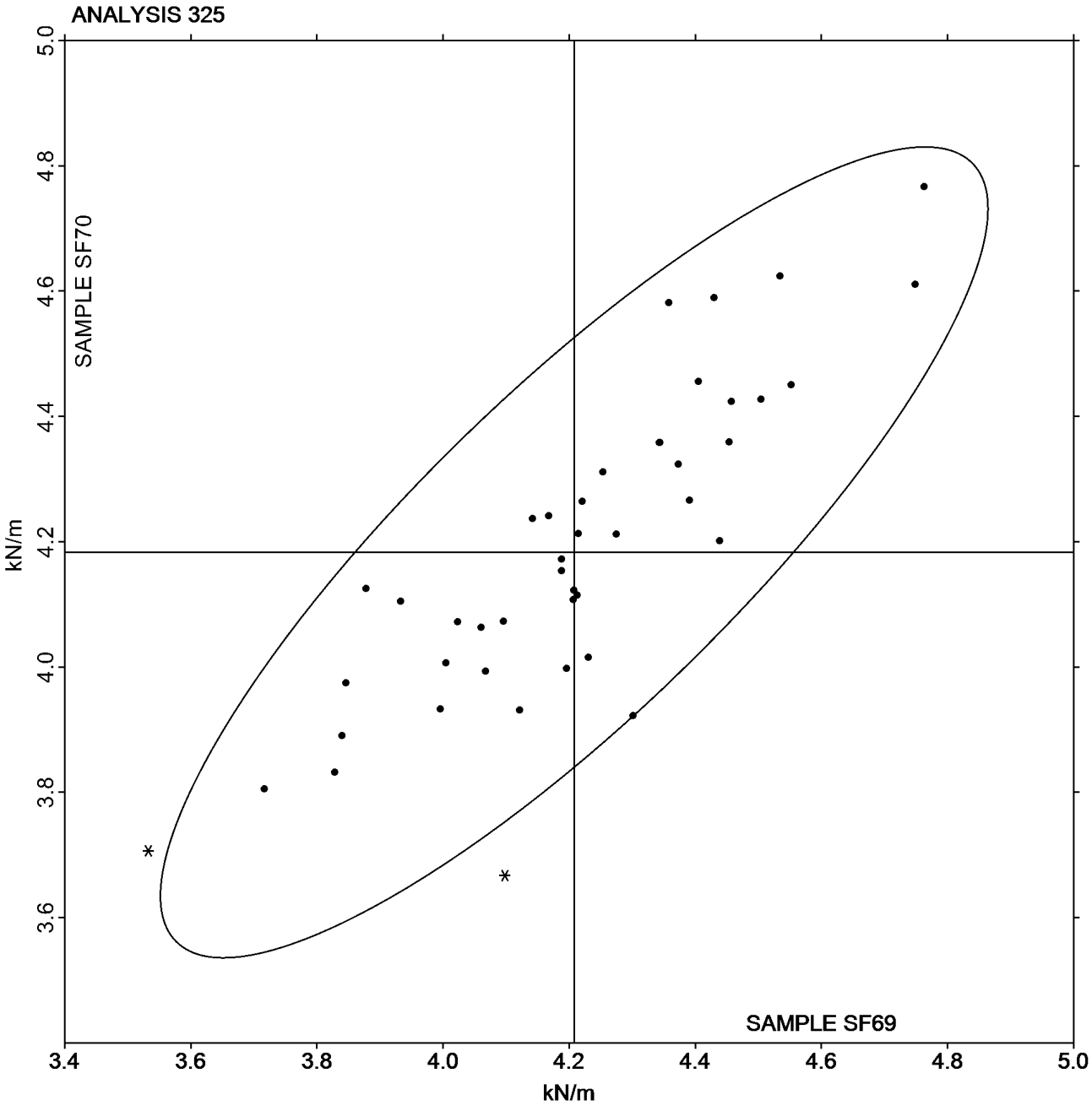
6NKWJP - Two determinations removed from the Lab Mean of Sample SF69 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

DL	EMIC DL500 Universal Testing Machines	DM	IDM Horizontal Tensile Tester
FP	Frank PTI Universal Tester TS	ID	Instron 4200 Series
IM	Instron 5500 Series	LA	L & W Tensile - Autoline 300
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)	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
TM	TMI Horizontal Tensile Tester	TO	Thwing-Albert QC-1000
TP	TMI Monitor/Tensile 100 (84-21-01)	VM	Valmet PaperLab (was Kajaani/Robotest)
XX	Instrument make/model not specified by lab		

Grand Mean Sample SF69 = 4.2078 kN/m

Grand Mean Sample SF70 = 4.1831 kN/m



Paper & Paperboard Interlaboratory Testing Program

Analysis 327

Tensile Energy Absorption - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF69 Lab Mean	Sample SF69 Diff from Grand Mean	Sample SF69 CPV	Sample SF70 Lab Mean	Sample SF70 Diff from Grand Mean	Sample SF70 CPV	Instr Code
3JG4K2		54.25	9.53	1.73	54.18	9.89	2.00	TF
4UGYEQ		34.25	-10.47	-1.90	38.28	-6.02	-1.21	IM
6DMULM		48.97	4.24	0.77	48.39	4.09	0.83	FP
6NKWJP		47.44	2.71	0.49	46.43	2.13	0.43	LH
8VG78U		43.41	-1.32	-0.24	45.12	0.82	0.17	LX
9KTFU7		43.40	-1.33	-0.24	42.91	-1.39	-0.28	ID
9VWBDB		30.95	-13.77	-2.51	33.42	-10.88	-2.20	LA
A782Y6		50.74	6.01	1.09	52.02	7.72	1.56	LA
BXTXHB		39.39	-5.34	-0.97	41.21	-3.08	-0.62	TO
DQ6CTJ		47.15	2.42	0.44	45.86	1.56	0.31	DL
DU3T7D		45.30	0.57	0.10	43.67	-0.63	-0.13	LX
EMNPR4		39.48	-5.25	-0.95	41.56	-2.73	-0.55	LX
G4H46Z		42.41	-2.32	-0.42	46.32	2.02	0.41	TP
HXMFNE	X	51.22	6.50	1.18	35.32	-8.98	-1.81	TO
HZHF2X		42.57	-2.16	-0.39	37.82	-6.48	-1.31	LH
KW9NPH		42.71	-2.01	-0.37	43.16	-1.13	-0.23	LH
LKUC8Y		36.62	-8.11	-1.48	33.73	-10.57	-2.13	XX
MQWEFQ		45.60	0.88	0.16	44.18	-0.12	-0.02	LX
N8U438		47.64	2.91	0.53	42.85	-1.45	-0.29	XX
NG2WEM		54.73	10.00	1.82	50.35	6.05	1.22	TO
PPBKP2		42.02	-2.71	-0.49	40.86	-3.44	-0.69	LI
PUKZYP		47.34	2.61	0.48	47.39	3.09	0.62	LX
QQZBEC		39.25	-5.47	-1.00	38.92	-5.38	-1.09	RE
QRUYVM		44.33	-0.39	-0.07	42.01	-2.29	-0.46	XX
ULDHKR		49.26	4.54	0.83	49.74	5.44	1.10	LA
WH6GGF		44.93	0.20	0.04	46.87	2.57	0.52	TF
WHMAF4		38.08	-6.65	-1.21	40.02	-4.28	-0.86	LI
WLNW68		45.83	1.10	0.20	44.78	0.48	0.10	TB
WRV2LT		49.15	4.42	0.80	47.04	2.74	0.55	LH
X8PPT7		53.24	8.51	1.55	52.99	8.69	1.75	FP
YMUF9F		48.99	4.27	0.78	45.84	1.54	0.31	LH
YXR27J		47.80	3.08	0.56	47.18	2.88	0.58	LH
Z9P3HN		44.02	-0.71	-0.13	42.47	-1.83	-0.37	LH

Summary Statistics	Sample SF69	Sample SF70
Grand Means	44.73 Joules/sq m	44.30 Joules/sq m
Stnd Dev Btwn Labs	5.50 Joules/sq m	4.95 Joules/sq m

Statistics based on 32 of 33 reporting participants.

Comments on Assigned Data Flags for Test #327

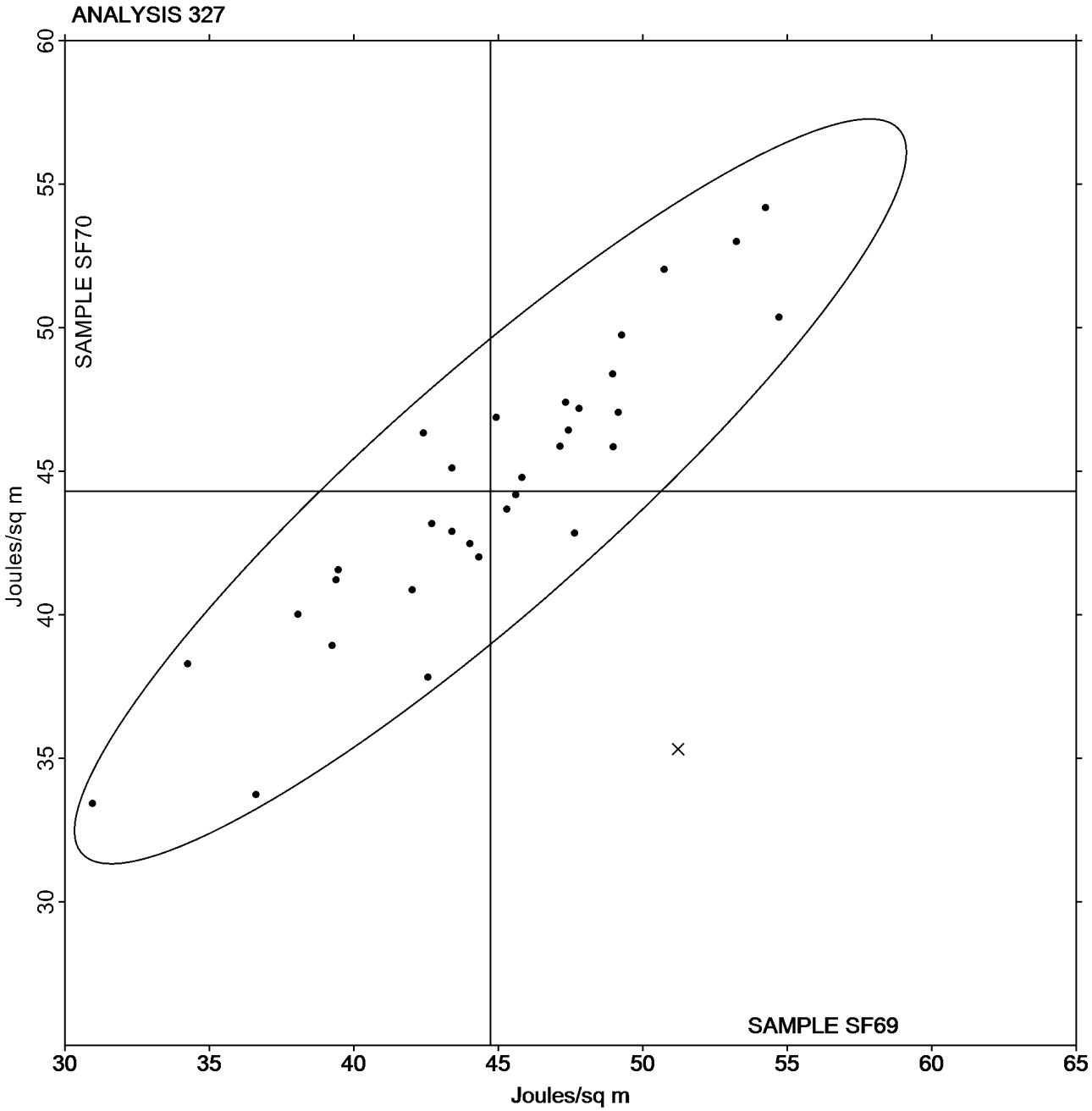
HXMFNE (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

DL	EMIC DL500 Universal Testing Machines	FP	Frank PTI Universal Tester TS
ID	Instron 4200 Series	IM	Instron 5500 Series
LA	L & W Tensile - Autoline 300	LH	L & W Alwetron TH1 (Horizontal) SE 060/065F
LI	L & W Tensile Tester SE 062	LX	L & W (model not specified)
RE	Regmed	TB	Thwing-Albert EJA/1000
TF	Thwing-Albert EJA Vantage-1	TO	Thwing-Albert QC-1000
TP	TMI Monitor/Tensile 100 (84-21-01)	XX	Instrument make/model not specified by lab

Grand Mean Sample SF69 = 44.726 Joules/sq m

Grand Mean Sample SF70 = 44.298 Joules/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 328

Elongation to Break - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SF69 Lab Mean	Sample SF69 Diff from Grand Mean	Sample SF69 CPV	Sample SF70 Lab Mean	Sample SF70 Diff from Grand Mean	Sample SF70 CPV	Instr Code
3JG4K2		1.863	0.183	1.14	1.951	0.285	2.03	TF
4UGYEQ		1.481	-0.199	-1.24	1.607	-0.059	-0.42	IM
6DMULM		1.945	0.265	1.65	1.821	0.154	1.10	FP
6NKWJP		1.779	0.099	0.61	1.711	0.045	0.32	LH
8VG78U		1.590	-0.090	-0.56	1.712	0.046	0.32	LX
9KTFU7		1.760	0.080	0.50	1.739	0.073	0.52	ID
9L3YNV		1.640	-0.040	-0.25	1.554	-0.112	-0.80	TF
9VWBDB		1.556	-0.124	-0.77	1.615	-0.051	-0.37	LA
A782Y6		1.632	-0.048	-0.30	1.673	0.007	0.05	XX
AHLY2N		1.613	-0.067	-0.42	1.657	-0.009	-0.07	TF
BXTXHB		1.629	-0.051	-0.32	1.628	-0.038	-0.27	TX
DQ6CTJ		1.958	0.278	1.73	1.898	0.232	1.65	DL
DU3T7D		1.558	-0.122	-0.76	1.486	-0.180	-1.28	LX
EMNPR4		1.472	-0.208	-1.30	1.521	-0.145	-1.03	LX
G4H46Z		1.993	0.312	1.95	1.992	0.325	2.31	TP
HAJZ26		1.500	-0.180	-1.12	1.650	-0.016	-0.12	VM
HXMFNE	X	2.054	0.374	2.33	1.579	-0.087	-0.62	TO
HZHF2X		1.543	-0.137	-0.86	1.454	-0.212	-1.51	LH
KW9NPH		1.652	-0.028	-0.18	1.628	-0.038	-0.27	LH
LKUC8Y		1.656	-0.024	-0.15	1.576	-0.090	-0.64	XX
MQWEFQ		1.715	0.035	0.22	1.686	0.020	0.14	LX
N8U438		1.764	0.084	0.52	1.670	0.003	0.02	XX
NG2WEM		2.048	0.368	2.29	1.933	0.267	1.89	TO
PPBKP2		1.522	-0.158	-0.99	1.505	-0.161	-1.15	LI
PUKZYP		1.725	0.045	0.28	1.741	0.075	0.53	LX
QQZBEC		1.714	0.033	0.21	1.663	-0.003	-0.02	RE
QRUYVM		1.624	-0.056	-0.35	1.557	-0.109	-0.78	XX
ULDHKR		1.536	-0.144	-0.90	1.574	-0.092	-0.66	LA
WH6GGF		1.763	0.083	0.52	1.770	0.104	0.74	TF
WHMAF4		1.322	-0.358	-2.23	1.366	-0.300	-2.14	LI
WLNW68		1.779	0.098	0.61	1.744	0.077	0.55	TB
WRV2LT		1.701	0.021	0.13	1.681	0.015	0.10	LH
X8PPT7		1.881	0.201	1.25	1.787	0.121	0.86	FP
YMUF9F		1.658	-0.022	-0.14	1.592	-0.074	-0.53	LH
YXR27J		1.679	-0.001	-0.01	1.655	-0.011	-0.08	LH
Z9P3HN		1.559	-0.121	-0.76	1.528	-0.138	-0.98	LH

Paper & Paperboard Interlaboratory Testing Program

Analysis 328

Elongation to Break - Printing Papers

TAPPI Official Test Method T494

Summary Statistics	Sample SF69	Sample SF70
Grand Means	1.68 Percent	1.67 Percent
Stnd Dev Btwn Labs	0.16 Percent	0.14 Percent

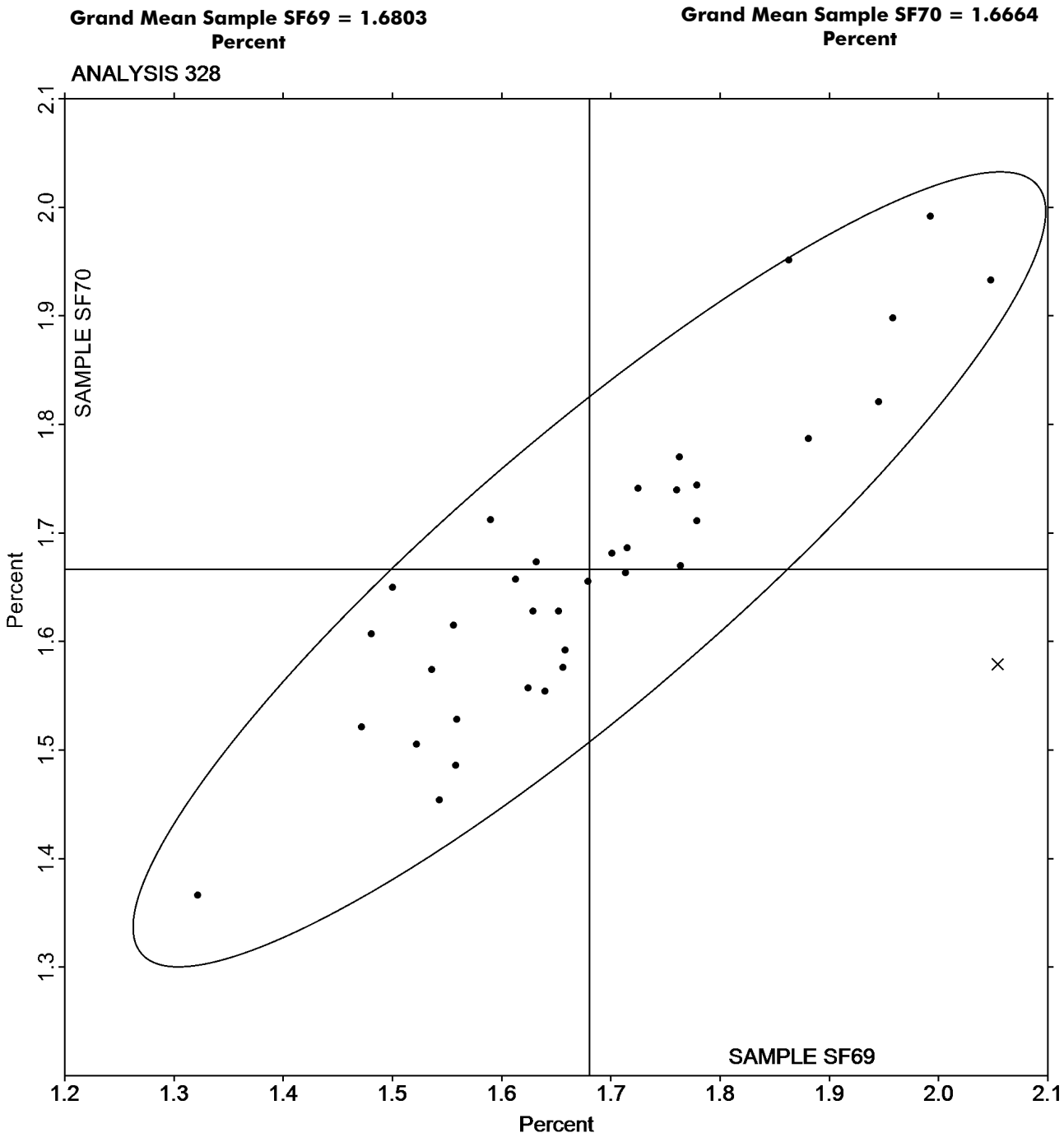
Statistics based on 35 of 36 reporting participants.

Comments on Assigned Data Flags for Test #328

HXMFNE (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

DL	EMIC DL500 Universal Testing Machines	FP	Frank PTI Universal Tester TS
ID	Instron 4200 Series	IM	Instron 5500 Series
LA	L & W Tensile - Autoline 300	LH	L & W Alwetron TH1 (Horizontal) SE 060/065F
LI	L & W Tensile Tester SE 062	LX	L & W (model not specified)
RE	Regmed	TB	Thwing-Albert EJA/1000
TF	Thwing-Albert EJA Vantage-1	TO	Thwing-Albert QC-1000
TP	TMI Monitor/Tensile 100 (84-21-01)	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 SE69 Lab Mean	Sample SE69 Diff from Grand Mean	Sample SE69 CPV	Sample SE70 Lab Mean	Sample SE70 Diff from Grand Mean	Sample SE70 CPV	Instr Code
29JQ3P		13.60	-0.65	-0.63	14.25	-0.04	-0.04	IK
2CNAAX		13.77	-0.48	-0.47	13.71	-0.58	-0.60	LA
2NDDB4		14.40	0.15	0.14	14.05	-0.24	-0.25	ID
2RZDNJ		13.58	-0.67	-0.65	13.86	-0.43	-0.44	LW
3RUXVX		15.10	0.85	0.82	15.27	0.98	1.00	TO
3TQHHW		14.43	0.18	0.17	14.96	0.67	0.68	IR
4DRAD9		14.80	0.55	0.53	14.55	0.26	0.27	LH
4K8PQX		14.81	0.56	0.54	15.06	0.77	0.78	ID
6CQFUN		13.86	-0.39	-0.38	13.86	-0.44	-0.45	IN
6PWLTU		14.19	-0.06	-0.06	13.99	-0.30	-0.31	TH
79R6BE		14.78	0.53	0.52	13.71	-0.58	-0.59	LH
7BH7F3		14.66	0.41	0.40	14.58	0.29	0.30	LW
7EEABP		16.34	2.08	2.02	16.36	2.07	2.12	LX
7M7KM7		14.76	0.51	0.49	14.25	-0.04	-0.04	TB
8GZWF3		14.02	-0.23	-0.22	14.47	0.18	0.18	TK
9228YW		15.27	1.01	0.98	15.50	1.21	1.23	LW
9KATLJ		13.85	-0.40	-0.39	14.31	0.02	0.02	IN
ACWP6P		13.81	-0.44	-0.43	13.99	-0.30	-0.31	LA
BVMPMT		16.05	1.80	1.75	16.33	2.04	2.09	XX
BZJYNY		14.09	-0.16	-0.16	14.27	-0.02	-0.02	IM
CHYTP9		13.53	-0.72	-0.70	14.03	-0.26	-0.27	LE
CR2MTT		14.23	-0.02	-0.02	13.79	-0.50	-0.51	TT
DG3F62		15.60	1.35	1.30	15.06	0.77	0.79	TO
DGHD3D		16.01	1.76	1.70	15.75	1.46	1.49	LE
ETT3HU		15.05	0.80	0.77	15.49	1.20	1.23	CE
FLMCJ3		14.78	0.53	0.51	14.76	0.47	0.48	LE
FPLRWV		14.36	0.11	0.11	14.38	0.09	0.09	IM
FXFENB		14.35	0.09	0.09	13.67	-0.62	-0.63	IK
GHX4HY	*	16.15	1.89	1.83	14.53	0.24	0.25	TH
HNNYCW		14.27	0.01	0.01	13.64	-0.65	-0.67	IM
J647RK		16.27	2.02	1.95	15.69	1.40	1.43	IF
J7YU7A	*	12.05	-2.20	-2.13	11.66	-2.63	-2.69	IN
J8DWQU		13.04	-1.21	-1.18	12.96	-1.33	-1.37	XX
JD3QXM		12.43	-1.82	-1.76	12.71	-1.58	-1.61	TH
KBNQ87		13.03	-1.22	-1.19	13.24	-1.06	-1.08	IF
KW9NPH		13.65	-0.60	-0.58	13.47	-0.83	-0.84	LH
N4V7RZ		13.93	-0.33	-0.32	14.06	-0.23	-0.24	TB
N8U438		15.17	0.91	0.89	15.25	0.96	0.98	XX
QLRBBE		15.29	1.04	1.01	15.65	1.36	1.39	TR
QXKA6K		11.78	-2.48	-2.40	12.59	-1.70	-1.74	IM

Paper & Paperboard Interlaboratory Testing Program

Analysis 330

Tensile Breaking Strength - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE69 Lab Mean	Sample SE69 Diff from Grand Mean	Sample SE69 CPV	Sample SE70 Lab Mean	Sample SE70 Diff from Grand Mean	Sample SE70 CPV	Instr Code
TWHKCY		13.98	-0.28	-0.27	13.33	-0.96	-0.99	IF
TZJN78		15.65	1.40	1.36	15.45	1.16	1.18	LI
UEDDXX		13.69	-0.56	-0.54	13.88	-0.42	-0.43	IK
UMTH4G		13.80	-0.45	-0.44	13.94	-0.35	-0.36	LE
UN6NAD		13.07	-1.18	-1.14	13.52	-0.77	-0.79	TR
VKXT4F	*	14.63	0.38	0.37	16.12	1.82	1.87	IK
VQ223V		12.04	-2.21	-2.14	12.59	-1.70	-1.74	IM
WH6GGF		14.25	-0.01	-0.01	14.38	0.09	0.10	TO
XG8FA3		14.15	-0.11	-0.10	14.64	0.34	0.35	IR
XPKGE4		13.36	-0.90	-0.87	14.58	0.29	0.30	IF
XXUVCY		13.70	-0.56	-0.54	14.11	-0.18	-0.18	IF
YPJURX		13.70	-0.56	-0.54	14.11	-0.18	-0.18	XX
YXU7R3		14.27	0.02	0.02	14.24	-0.05	-0.05	TH
Z2VWPM		14.21	-0.04	-0.04	13.13	-1.17	-1.19	TA

Summary Statistics	Sample SE69	Sample SE70
Grand Means	14.25 kN/m	14.29 kN/m
Stnd Dev Btwn Labs	1.03 kN/m	0.98 kN/m

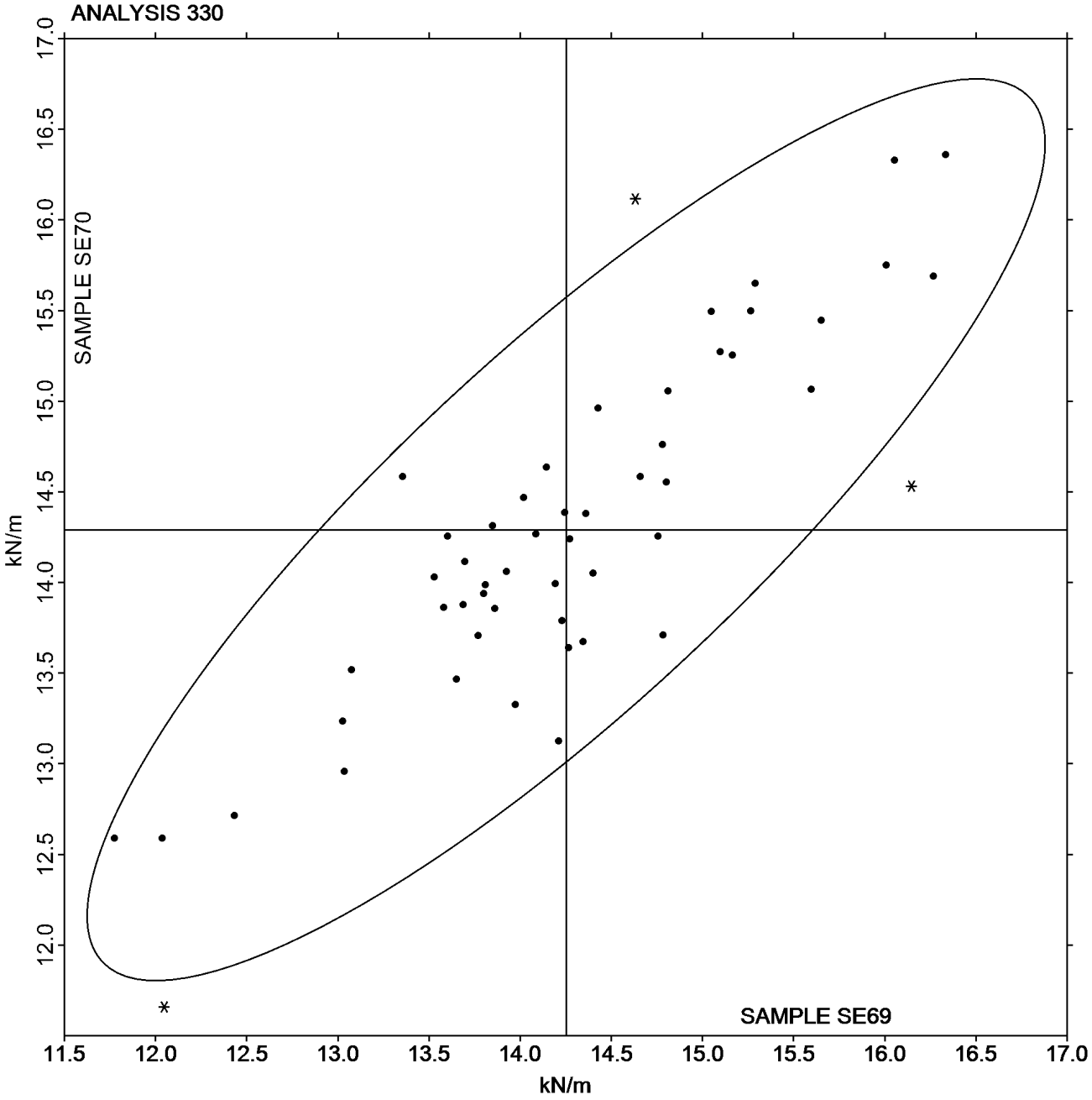
Statistics based on 54 of 54 reporting participants.

Key to Instrument Codes Reported by Participants

CE	Chatillon Model ET1100	ID	Instron 4200 Series
IF	Instron 3340 Series	IK	Instron 4400 Series
IM	Instron 5500 Series	IN	Instron 3360 Series
IR	Instron 5900 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)	TA	Thwing-Albert Tensile Tester
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	TT	Tinius Olsen Model MHT
XX	Instrument make/model not specified by lab		

Grand Mean Sample SE69 = 14.252 kN/m

Grand Mean Sample SE70 = 14.291 kN/m



WebCode	Data Flag	Sample SE69 Lab Mean	Sample SE69 Diff from Grand Mean	Sample SE69 CPV	Sample SE70 Lab Mean	Sample SE70 Diff from Grand Mean	Sample SE70 CPV	Instr Code
2CNAAX		135.9	-41.5	-1.69	137.4	-40.5	-1.70	LA
2NDDB4		204.4	27.1	1.10	180.2	2.4	0.10	ID
2RZDNJ		152.8	-24.6	-1.00	159.6	-18.2	-0.77	LW
3RUXVX		207.0	29.6	1.21	214.0	36.2	1.53	TO
4DRAD9		178.0	0.7	0.03	166.2	-11.6	-0.49	LH
6CQFUN		209.2	31.9	1.30	209.5	31.7	1.34	IN
6PWLTU		224.8	47.4	1.93	222.7	44.9	1.89	TH
79R6BE		167.3	-10.0	-0.41	152.5	-25.3	-1.07	LH
7BH7F3		167.0	-10.3	-0.42	167.7	-10.1	-0.42	LW
7EEABP		200.9	23.6	0.96	214.2	36.4	1.53	LX
7M7KM7		210.2	32.8	1.34	188.4	10.6	0.44	TB
8GZWF3		180.8	3.5	0.14	192.2	14.3	0.60	TK
9228YW		157.2	-20.1	-0.82	165.5	-12.3	-0.52	LW
9KATLJ		154.1	-23.2	-0.94	172.4	-5.4	-0.23	IN
ACWP6P		183.2	5.8	0.24	205.4	27.6	1.16	LA
BVMPMT	X	254.4	77.0	3.14	269.9	92.1	3.88	XX
BZJYNY		173.4	-3.9	-0.16	186.2	8.4	0.35	IM
CHYTP9		150.3	-27.0	-1.10	160.8	-17.0	-0.72	LE
CR2MTT		180.9	3.5	0.14	154.9	-22.9	-0.96	TT
DG3F62		190.6	13.3	0.54	178.6	0.8	0.04	TO
DGHD3D		215.2	37.9	1.54	201.6	23.8	1.00	LE
FLMCJ3		156.7	-20.6	-0.84	158.4	-19.4	-0.82	LE
FPLRWV		174.9	-2.4	-0.10	168.2	-9.6	-0.40	IM
HNNYCW		204.8	27.4	1.12	190.3	12.5	0.53	IM
J647RK		178.6	1.2	0.05	168.2	-9.6	-0.40	IN
J7YU7A		177.9	0.6	0.02	146.8	-31.1	-1.31	IN
J8DWQU		155.3	-22.0	-0.90	155.4	-22.4	-0.94	XX
KBNQ87		158.6	-18.8	-0.76	163.2	-14.6	-0.62	IF
KW9NPH		159.5	-17.8	-0.73	161.1	-16.7	-0.70	LH
N4V7RZ		169.3	-8.0	-0.33	172.0	-5.8	-0.24	TB
N8U438		182.8	5.5	0.22	187.4	9.6	0.40	XX
QLRBBE		170.1	-7.2	-0.29	178.9	1.1	0.04	TR
QXKA6K		141.7	-35.7	-1.45	150.9	-26.9	-1.13	IM
TWHKCY		191.0	13.7	0.56	170.6	-7.2	-0.31	IF
UEDDXX		207.3	29.9	1.22	218.6	40.8	1.72	IK
UMTH4G		159.8	-17.5	-0.71	162.7	-15.1	-0.64	LE
UN6NAD		121.7	-55.6	-2.26	135.7	-42.1	-1.77	TR
VKXT4F	*	153.3	-24.1	-0.98	194.9	17.0	0.72	XX
VQ223V	X	66.4	-110.9	-4.52	82.2	-95.6	-4.02	IM
WH6GGF		190.3	13.0	0.53	201.0	23.1	0.97	TO

Paper & Paperboard Interlaboratory Testing Program

Analysis 331

Tensile Energy Absorption - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE69 Lab Mean	Sample SE69 Diff from Grand Mean	Sample SE69 CPV	Sample SE70 Lab Mean	Sample SE70 Diff from Grand Mean	Sample SE70 CPV	Instr Code
XXUVCY		223.4	46.1	1.88	229.0	51.2	2.16	IF
YPJURX	X	15.3	-162.0	-6.60	15.7	-162.1	-6.83	XX
YXU7R3		173.2	-4.1	-0.17	169.1	-8.7	-0.36	TH

Summary Statistics	Sample SE69	Sample SE70
Grand Means	177.34 Joules/sq m	177.81 Joules/sq m
Stnd Dev Btwn Labs	24.56 Joules/sq m	23.75 Joules/sq m

Statistics based on 40 of 43 reporting participants.

Comments on Assigned Data Flags for Test #331

BVMPMT (X) - Data for both samples are high. Possible Systematic Error.

VQ223V (X) - Data for both samples are low. Possible Systematic Error.

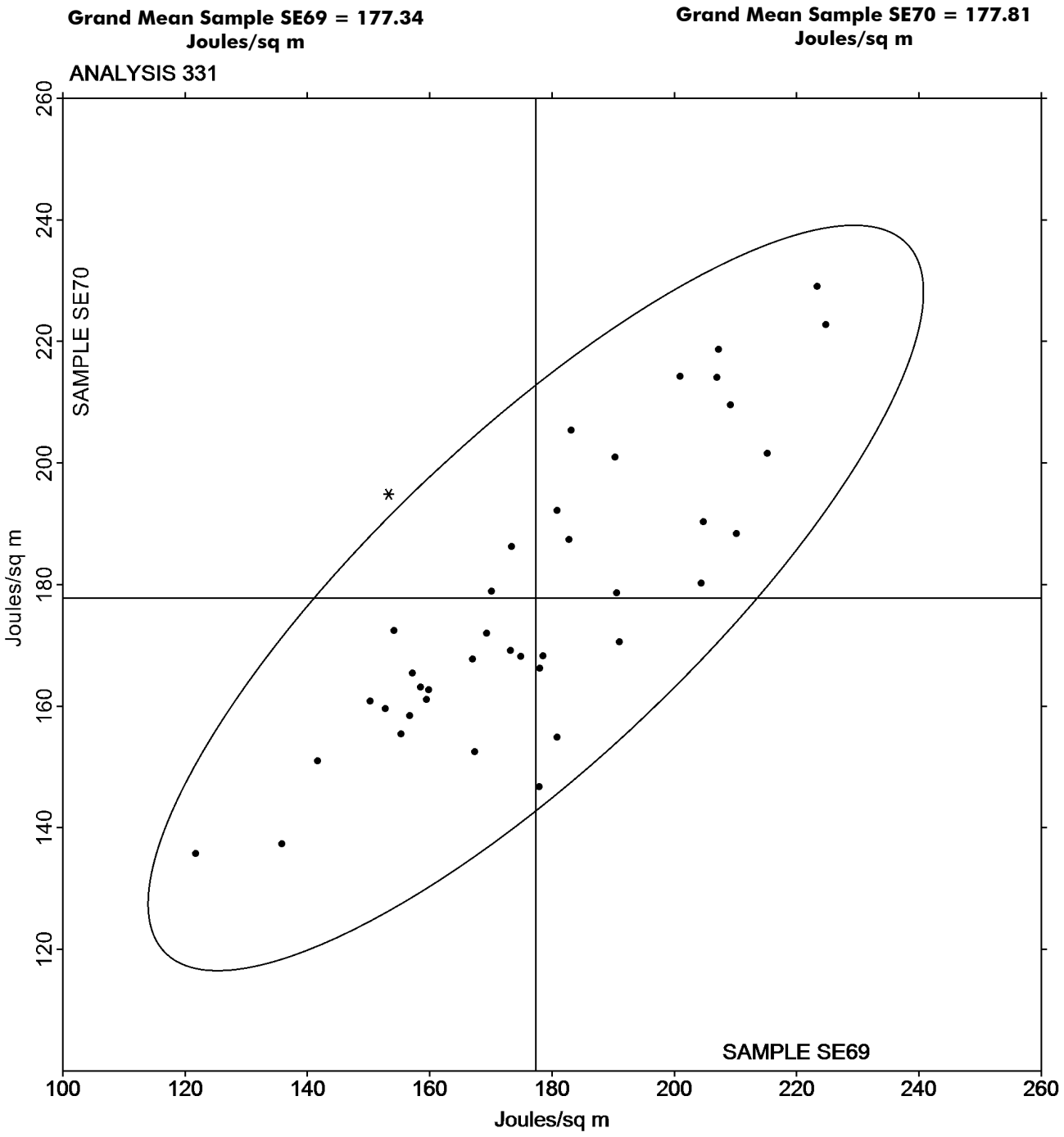
YPJURX (X) - Extreme Data.

Analysis Notes:

CR2MTT - One determination removed from the Lab Mean of Sample SE69 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

ID	Instron 4200 series	IF	Instron 3340 Series
IK	Instron 4400 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	TT	Tinius Olsen Model MHT
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 SE69 Lab Mean	Sample SE69 Diff from Grand Mean	Sample SE69 CPV	Sample SE70 Lab Mean	Sample SE70 Diff from Grand Mean	Sample SE70 CPV	Instr Code
2CNAAX		2.623	0.655	2.16	2.653	0.689	2.30	XX
2NDDB4		2.246	0.278	0.92	2.052	0.087	0.29	ID
2RZDNJ		1.769	-0.199	-0.66	1.794	-0.170	-0.57	LW
3RUXVX		2.292	0.324	1.07	2.323	0.359	1.20	TO
4DRAD9		1.852	-0.116	-0.38	1.779	-0.185	-0.62	LH
4K8PQX		1.933	-0.035	-0.12	1.978	0.014	0.05	ID
6CQFUN		1.677	-0.291	-0.96	1.645	-0.320	-1.07	IN
6PWLTU		2.668	0.700	2.31	2.721	0.757	2.53	TH
79R6BE		1.789	-0.179	-0.59	1.716	-0.249	-0.83	LH
7BH7F3		1.789	-0.179	-0.59	1.802	-0.162	-0.54	LW
7EEABP		1.898	-0.070	-0.23	2.001	0.037	0.12	LX
7M7KM7		2.249	0.281	0.93	2.111	0.147	0.49	TB
8GZWF3		2.052	0.084	0.28	2.099	0.135	0.45	TK
9228YW		1.647	-0.321	-1.06	1.695	-0.269	-0.90	LW
9KATLJ		1.413	-0.555	-1.83	1.484	-0.480	-1.61	IN
ACWP6P		1.886	-0.082	-0.27	1.911	-0.053	-0.18	LA
BVMPMT		2.494	0.526	1.74	2.589	0.625	2.09	XX
BZJYNY		1.911	-0.057	-0.19	2.016	0.052	0.17	IM
CHYTP9		1.723	-0.245	-0.81	1.779	-0.185	-0.62	LE
CR2MTT		2.120	0.152	0.50	1.911	-0.053	-0.18	TT
DG3F62		2.076	0.108	0.36	2.028	0.064	0.21	TO
DGHD3D		2.135	0.167	0.55	2.022	0.058	0.19	LE
FLMCJ3		1.657	-0.311	-1.03	1.681	-0.283	-0.95	LE
FPLRWV		2.241	0.273	0.90	2.222	0.258	0.86	IM
HNNYCW		2.260	0.292	0.96	2.202	0.238	0.79	IM
J647RK		1.744	-0.224	-0.74	1.706	-0.259	-0.86	IN
J7YU7A	*	1.778	-0.190	-0.63	1.530	-0.434	-1.45	IN
J8DWQU		1.950	-0.018	-0.06	1.964	0.000	0.00	XX
KBNQ87		1.754	-0.214	-0.71	1.785	-0.180	-0.60	IF
KW9NPH		1.783	-0.185	-0.61	1.767	-0.197	-0.66	LH
N4V7RZ		1.899	-0.069	-0.23	1.910	-0.054	-0.18	TB
N8U438		2.028	0.060	0.20	2.037	0.073	0.24	XX
QLRBBE		1.899	-0.069	-0.23	1.942	-0.022	-0.07	TR
QXKA6K		1.946	-0.022	-0.07	1.994	0.030	0.10	IN
TWHKCY		2.411	0.443	1.46	2.233	0.269	0.90	IF
UEDDXX		2.450	0.482	1.59	2.527	0.562	1.88	IK
UMTH4G		1.798	-0.170	-0.56	1.812	-0.152	-0.51	LE
UN6NAD		1.570	-0.398	-1.31	1.652	-0.313	-1.05	TR
VKXT4F		2.153	0.185	0.61	2.280	0.316	1.05	XX
VQ223V	*	1.136	-0.832	-2.75	1.290	-0.674	-2.25	IM

Paper & Paperboard Interlaboratory Testing Program

Analysis 332

Elongation to Break - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample SE69 Lab Mean	Sample SE69 Diff from Grand Mean	Sample SE69 CPV	Sample SE70 Lab Mean	Sample SE70 Diff from Grand Mean	Sample SE70 CPV	Instr Code
WH6GGF		2.152	0.184	0.61	2.216	0.252	0.84	TO
XXUVCY		1.943	-0.025	-0.08	1.940	-0.025	-0.08	IF
YPJURX		1.943	-0.025	-0.08	1.940	-0.025	-0.08	XX
YXU7R3		1.950	-0.018	-0.06	1.910	-0.054	-0.18	TH
Z2VWPM		1.870	-0.098	-0.32	1.750	-0.214	-0.72	TB

Summary Statistics	Sample SE69	Sample SE70
Grand Means	1.97 Percent	1.96 Percent
Stnd Dev Btwn Labs	0.30 Percent	0.30 Percent

Statistics based on 45 of 45 reporting participants.

Analysis Notes:

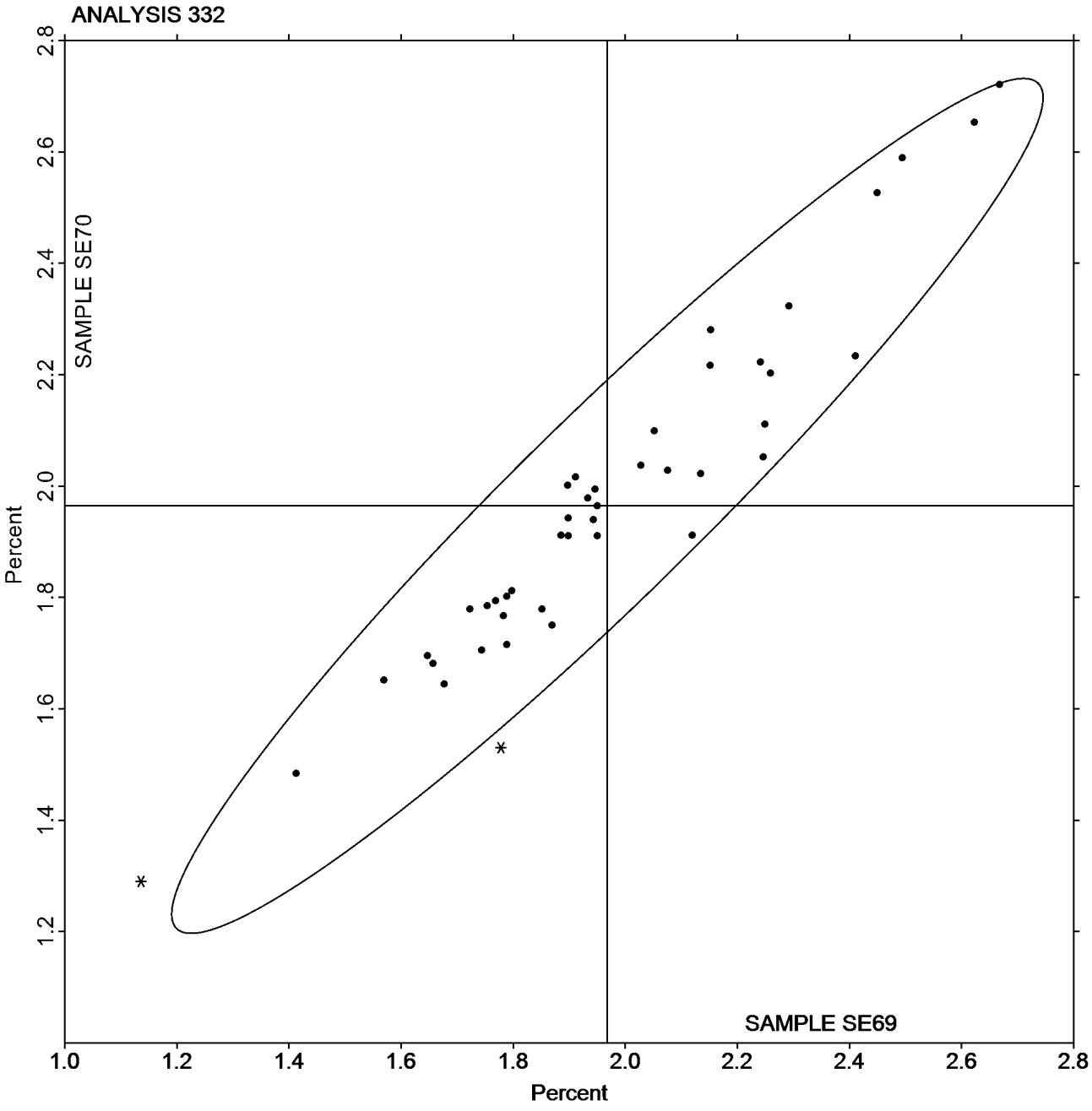
CR2MTT - One determination removed from the Lab Mean of Sample SE69 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

ID	Instron 4200 Series	IF	Instron 3340 Series
IK	Instron 4400 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
TR	TMI Horizontal Tensile Tester	TT	Tinius Olsen Model MHT
XX	Instrument make/model not specified by lab		

Grand Mean Sample SE69 = 1.9680
Percent

Grand Mean Sample SE70 = 1.9644
Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 334

Folding Endurance (MIT) - Double Folds

TAPPI Official Test Method T511

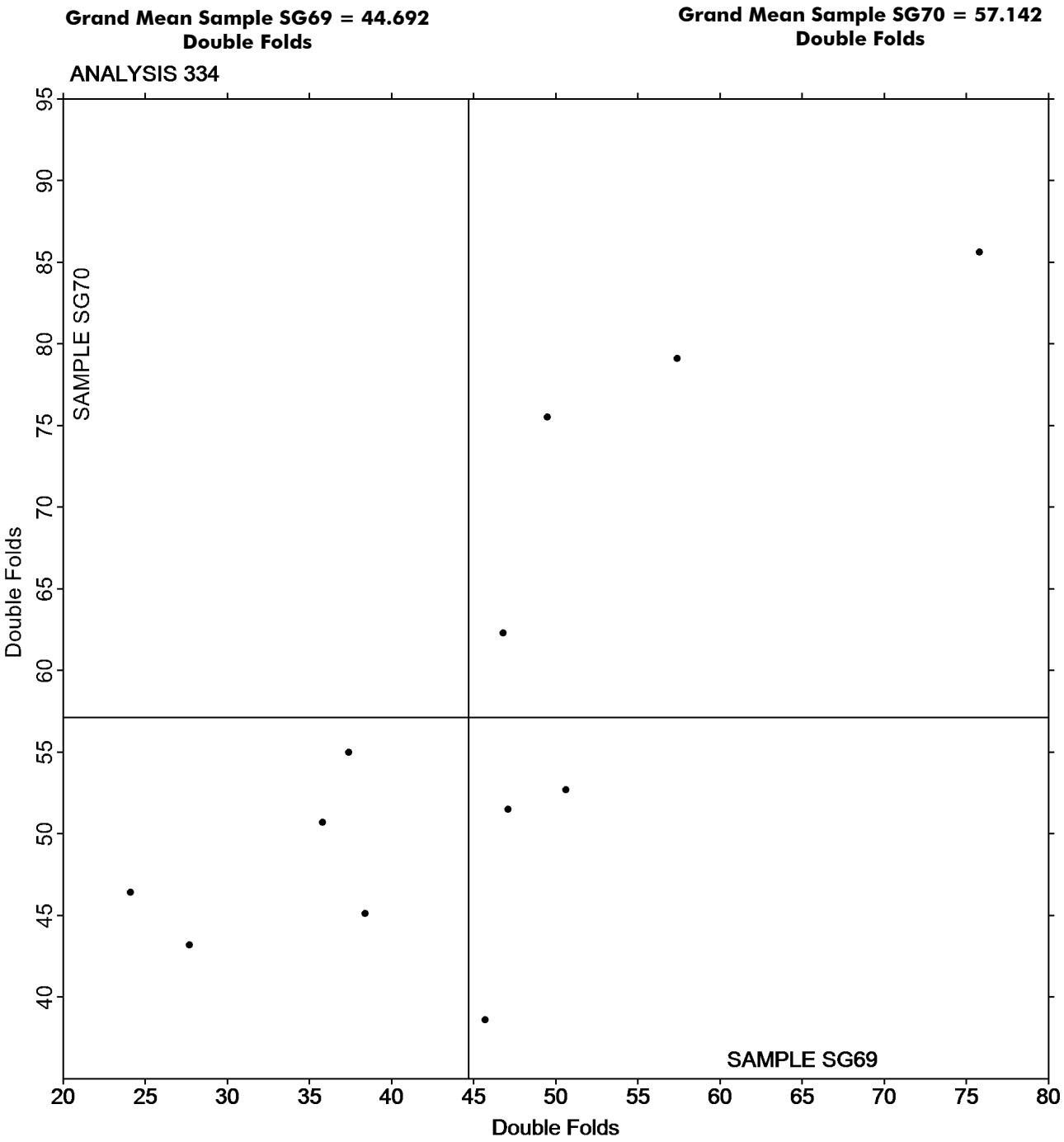
WebCode	Data Flag	Sample SG69 Lab Mean	Sample SG69 Diff from Grand Mean	Sample SG69 CPV	Sample SG70 Lab Mean	Sample SG70 Diff from Grand Mean	Sample SG70 CPV	Instr Code
2RZDNJ		45.70	1.01	0.07	38.60	-18.54	-1.22	MT
6PWLTU		47.10	2.41	0.18	51.50	-5.64	-0.37	MT
9YEVX7		49.50	4.81	0.35	75.50	18.36	1.21	MT
AHLY2N		50.60	5.91	0.43	52.70	-4.44	-0.29	MT
HAJZ26		38.40	-6.29	-0.46	45.10	-12.04	-0.79	MT
HNNYCW		57.40	12.71	0.92	79.10	21.96	1.44	MT
J8DWQU		46.80	2.11	0.15	62.30	5.16	0.34	MT
MZ6CGU		24.10	-20.59	-1.50	46.40	-10.74	-0.71	MT
NVMUCH		35.80	-8.89	-0.65	50.70	-6.44	-0.42	MT
PPBKP2		75.80	31.11	2.26	85.60	28.46	1.87	MT
Q3TR4D		37.40	-7.29	-0.53	55.00	-2.14	-0.14	MT
Z2VWPM		27.70	-16.99	-1.23	43.20	-13.94	-0.92	MT

Summary Statistics	Sample SG69	Sample SG70
Grand Means	44.69 Double Folds	57.14 Double Folds
Stnd Dev Btwn Labs	13.76 Double Folds	15.23 Double Folds

Statistics based on 12 of 12 reporting participants.

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

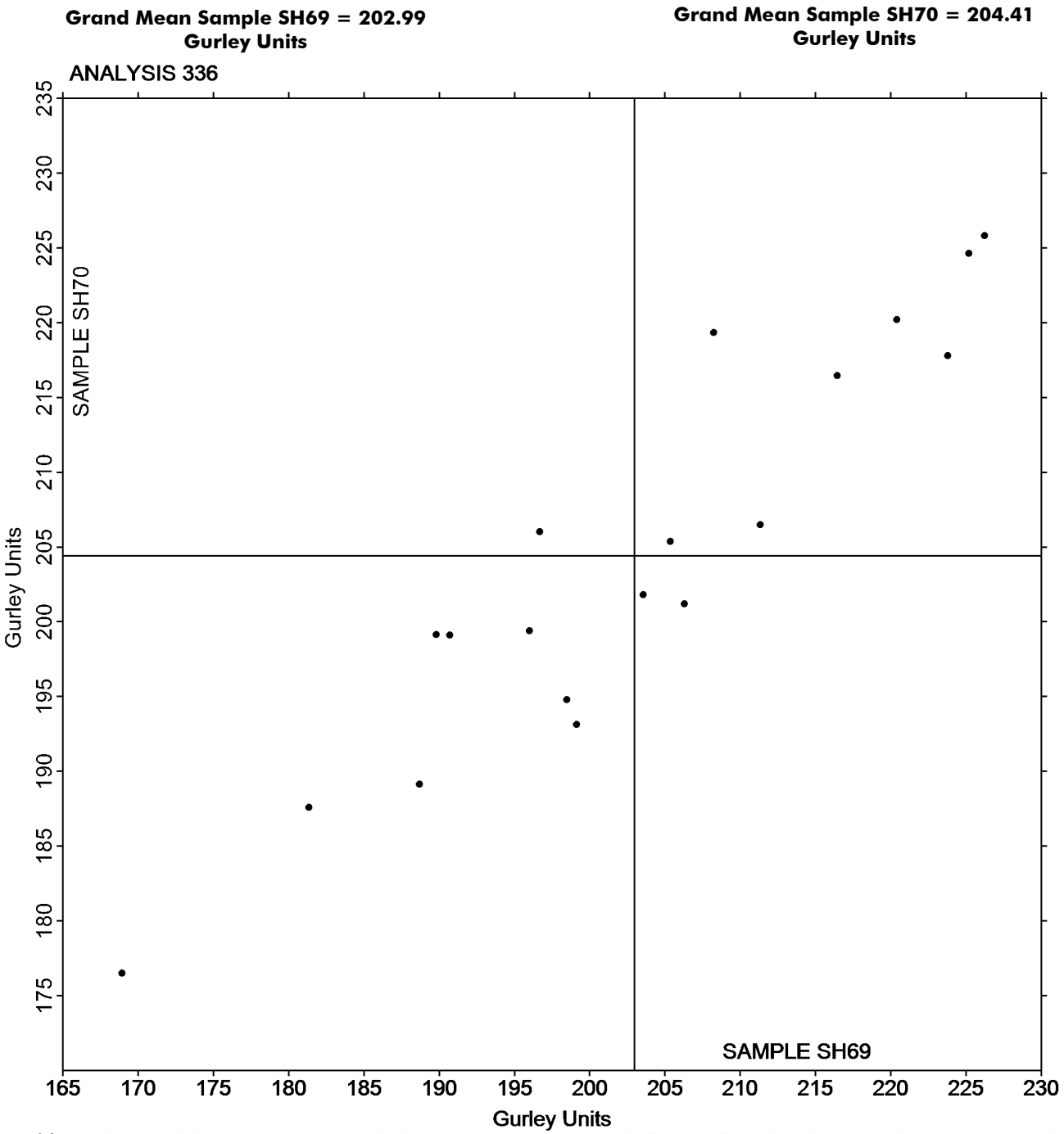
WebCode	Data Flag	Sample SH69 Lab Mean	Sample SH69 Diff from Grand Mean	Sample SH69 CPV	Sample SH70 Lab Mean	Sample SH70 Diff from Grand Mean	Sample SH70 CPV
3JG4K2		189.8	-13.2	-0.85	199.1	-5.3	-0.39
46EZQV	X	204.5	1.5	0.10	167.8	-36.6	-2.71
9VWBDB		225.2	22.2	1.43	224.6	20.2	1.50
C9TN2X		226.3	23.3	1.50	225.8	21.4	1.58
G4H46Z		181.4	-21.6	-1.39	187.6	-16.8	-1.25
HAJZ26		220.4	17.4	1.12	220.2	15.8	1.17
HNNYCW		199.1	-3.9	-0.25	193.1	-11.3	-0.83
J8DWQU		223.8	20.8	1.34	217.8	13.4	0.99
N4V7RZ		168.9	-34.0	-2.19	176.5	-27.9	-2.07
NG2WEM		188.7	-14.3	-0.92	189.1	-15.3	-1.13
NVMUCH		203.6	0.6	0.04	201.8	-2.6	-0.19
PJL8ND		211.3	8.4	0.54	206.5	2.1	0.15
TUAQRE		198.5	-4.5	-0.29	194.8	-9.6	-0.71
TWHKCY		216.5	13.5	0.87	216.5	12.0	0.89
V4TLPE		190.7	-12.3	-0.79	199.1	-5.3	-0.39
WLNW68		196.7	-6.3	-0.41	206.0	1.6	0.12
XT43EJ		196.0	-7.0	-0.45	199.4	-5.0	-0.37
YMUF9F		205.4	2.4	0.15	205.4	1.0	0.07
YXR27J		208.2	5.3	0.34	219.3	14.9	1.11
Z2VWPM		206.3	3.3	0.21	201.2	-3.2	-0.24

Summary Statistics	Sample SH69	Sample SH70
Grand Means	202.99 Gurley Units	204.41 Gurley Units
Stnd Dev Btwn Labs	15.53 Gurley Units	13.51 Gurley Units

Statistics based on 19 of 20 reporting participants.

Comments on Assigned Data Flags for Test #336

46EZQV (X) - Data for sample SH70 are low. Inconsistent within the determinations of sample SH69.



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 SJ69 Lab Mean	Sample SJ69 Diff from Grand Mean	Sample SJ69 CPV	Sample SJ70 Lab Mean	Sample SJ70 Diff from Grand Mean	Sample SJ70 CPV
2GGEZG		2.680	-0.165	-0.27	3.039	0.179	0.25
486Y8E	X	33.350	30.505	50.79	34.710	31.850	44.68
9228YW		2.430	-0.415	-0.69	2.350	-0.510	-0.72
HNNYCW		3.086	0.241	0.40	3.232	0.372	0.52
HXMFNE		2.964	0.119	0.20	3.035	0.175	0.25
J647RK		4.050	1.205	2.01	3.900	1.040	1.46
MZ6CGU		2.993	0.148	0.25	3.315	0.455	0.64
PUKZYP		2.065	-0.780	-1.30	1.865	-0.995	-1.40
TWHKCY	X	28.022	25.177	41.92	28.766	25.906	36.34
ULDHKR		2.010	-0.835	-1.39	1.600	-1.260	-1.77
WLNW68		2.887	0.042	0.07	2.909	0.049	0.07
YXR27J		3.285	0.440	0.73	3.355	0.495	0.69

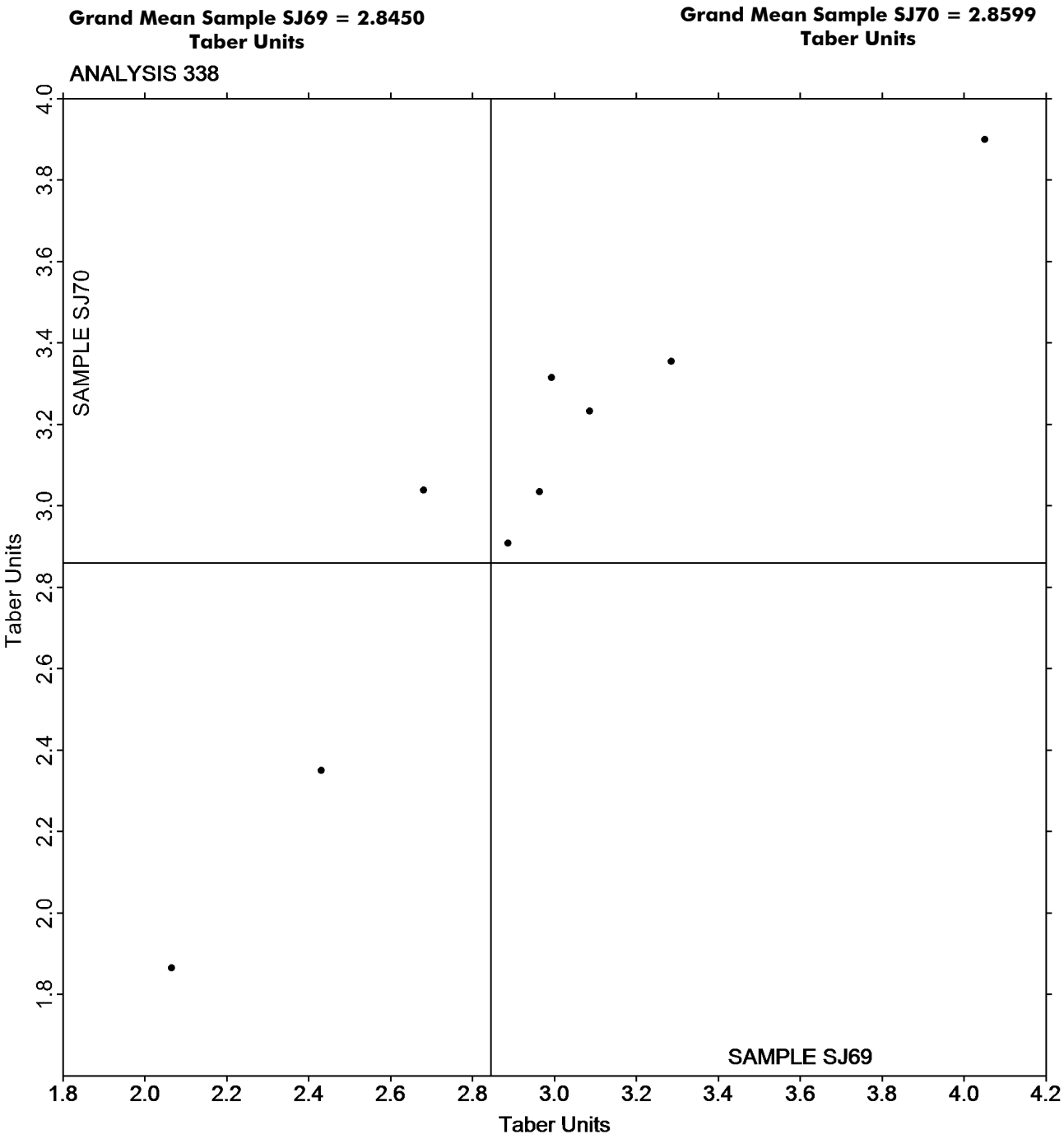
Summary Statistics	Sample SJ69	Sample SJ70
Grand Means	2.84 Taber Units	2.86 Taber Units
Stnd Dev Btwn Labs	0.60 Taber Units	0.71 Taber Units

Statistics based on 10 of 12 reporting participants.

Comments on Assigned Data Flags for Test #338

TWHKCY (X) - Extreme Data.

486Y8E (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 339

Bending Resistance, Taber Type - 10 to 100 Taber Units

TAPPI Official Test Method T489

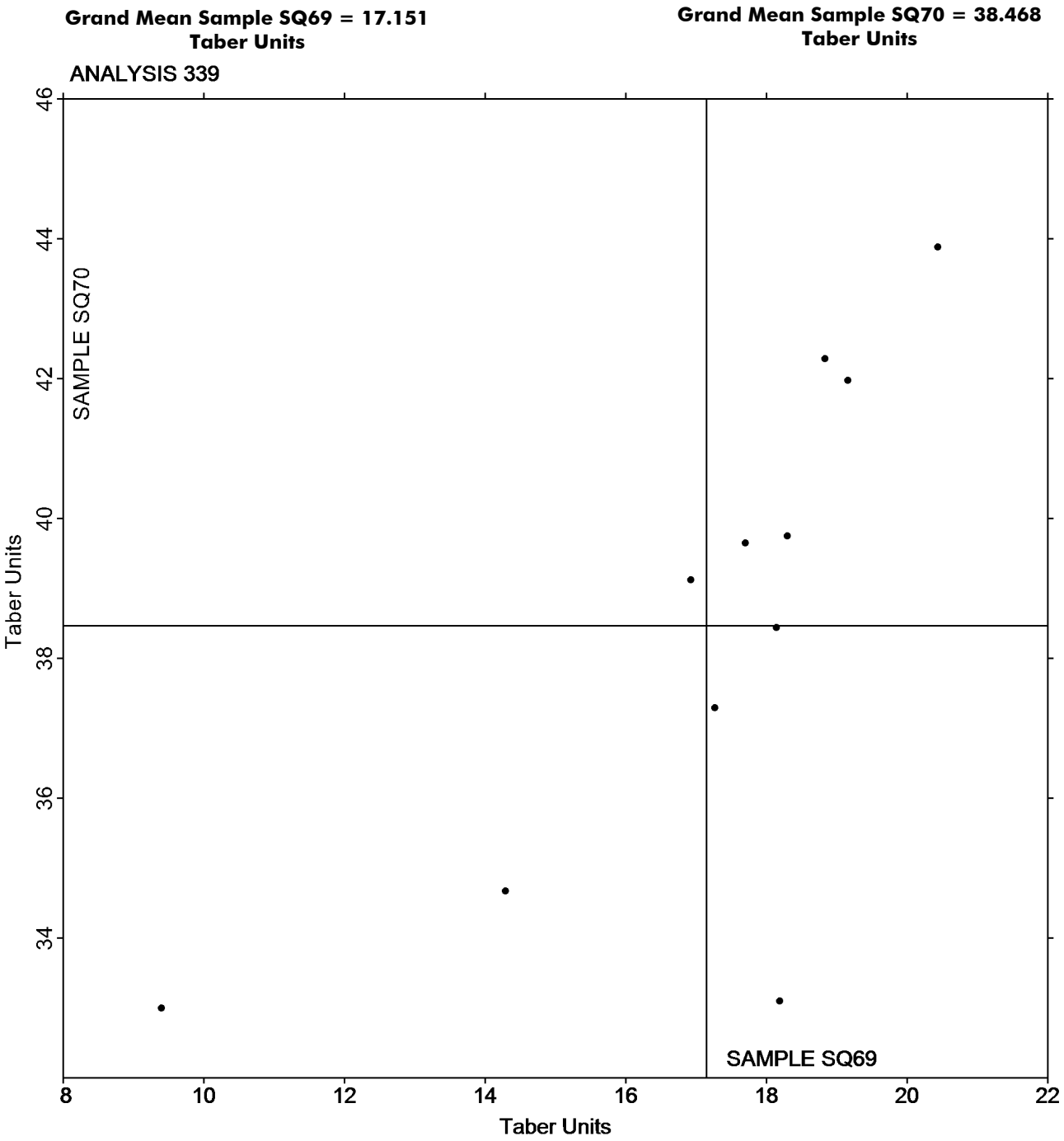
WebCode	Data Flag	Sample SQ69 Lab Mean	Sample SQ69 Diff from Grand Mean	Sample SQ69 CPV	Sample SQ70 Lab Mean	Sample SQ70 Diff from Grand Mean	Sample SQ70 CPV
2RZDNJ		18.83	1.68	0.56	42.28	3.81	1.04
46EZQV		19.16	2.01	0.67	41.97	3.50	0.96
6DMULM		18.15	1.00	0.33	38.43	-0.03	-0.01
6VJGPR		18.19	1.04	0.35	33.10	-5.37	-1.47
7M7KM7		17.27	0.12	0.04	37.29	-1.18	-0.32
9228YW		18.30	1.15	0.38	39.75	1.28	0.35
ACWP6P		14.29	-2.86	-0.96	34.67	-3.80	-1.04
BXTXHB		17.70	0.55	0.18	39.65	1.18	0.32
DGHD3D	X	21.23	4.08	1.36	21.96	-16.51	-4.51
HNNYCW		20.44	3.29	1.10	43.88	5.41	1.48
N8U438		9.40	-7.75	-2.59	33.00	-5.47	-1.49
PJL8ND		16.93	-0.22	-0.07	39.12	0.65	0.18

Summary Statistics	Sample SQ69	Sample SQ70
Grand Means	17.15 Taber Units	38.47 Taber Units
Stnd Dev Btwn Labs	2.99 Taber Units	3.66 Taber Units

Statistics based on 11 of 12 reporting participants.

Comments on Assigned Data Flags for Test #339

DGHD3D (X) - Data for sample SQ70 are low.



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 ST69 Lab Mean	Sample ST69 Diff from Grand Mean	Sample ST69 CPV	Sample ST70 Lab Mean	Sample ST70 Diff from Grand Mean	Sample ST70 CPV
2RZDNJ		173.8	1.7	0.25	173.3	1.1	0.16
46EZQV		175.5	3.3	0.51	176.3	4.2	0.63
6PWLTU		169.1	-3.1	-0.47	168.5	-3.7	-0.56
8XK2QW		175.4	3.2	0.49	168.3	-3.9	-0.59
9228YW		163.0	-9.2	-1.41	161.5	-10.7	-1.62
BJWZNM		166.9	-5.3	-0.81	165.9	-6.3	-0.95
C4XB8G		184.1	11.9	1.83	184.6	12.4	1.88
DBCLUF		170.8	-1.4	-0.22	170.6	-1.6	-0.25
DXJDTT		177.9	5.7	0.88	181.4	9.3	1.40
ETT3HU		168.6	-3.5	-0.54	168.2	-4.0	-0.60
J8DWQU	X	344.5	172.3	26.40	347.3	175.1	26.55
JD3QXM	X	38.7	-133.5	-20.45	38.4	-133.8	-20.28
N8U438		163.7	-8.5	-1.30	163.0	-9.2	-1.39
QLRBBE		169.4	-2.8	-0.43	175.4	3.2	0.49
R46QYM		184.5	12.3	1.89	178.7	6.5	0.99
RVCFL7		166.8	-5.4	-0.82	171.3	-0.9	-0.13
XPKGE4		173.1	0.9	0.14	175.7	3.5	0.53

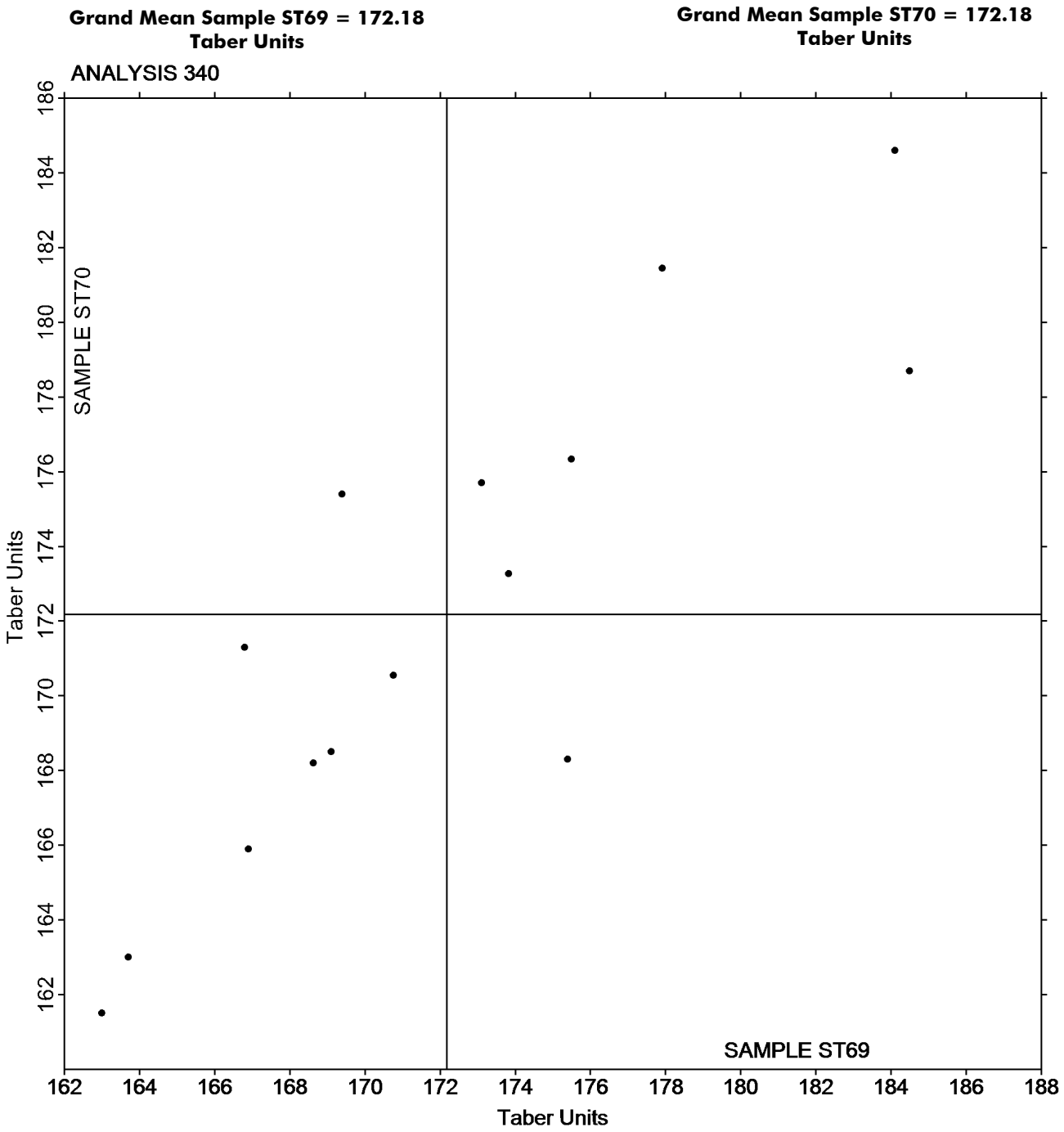
Summary Statistics	Sample ST69	Sample ST70
Grand Means	172.18 Taber Units	172.18 Taber Units
Stnd Dev Btwn Labs	6.53 Taber Units	6.60 Taber Units

Statistics based on 15 of 17 reporting participants.

Comments on Assigned Data Flags for Test #340

J8DWQU (X) - Extreme Data.

JD3QXM (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 343
Z-Direction Tensile
TAPPI Official Test Method T541

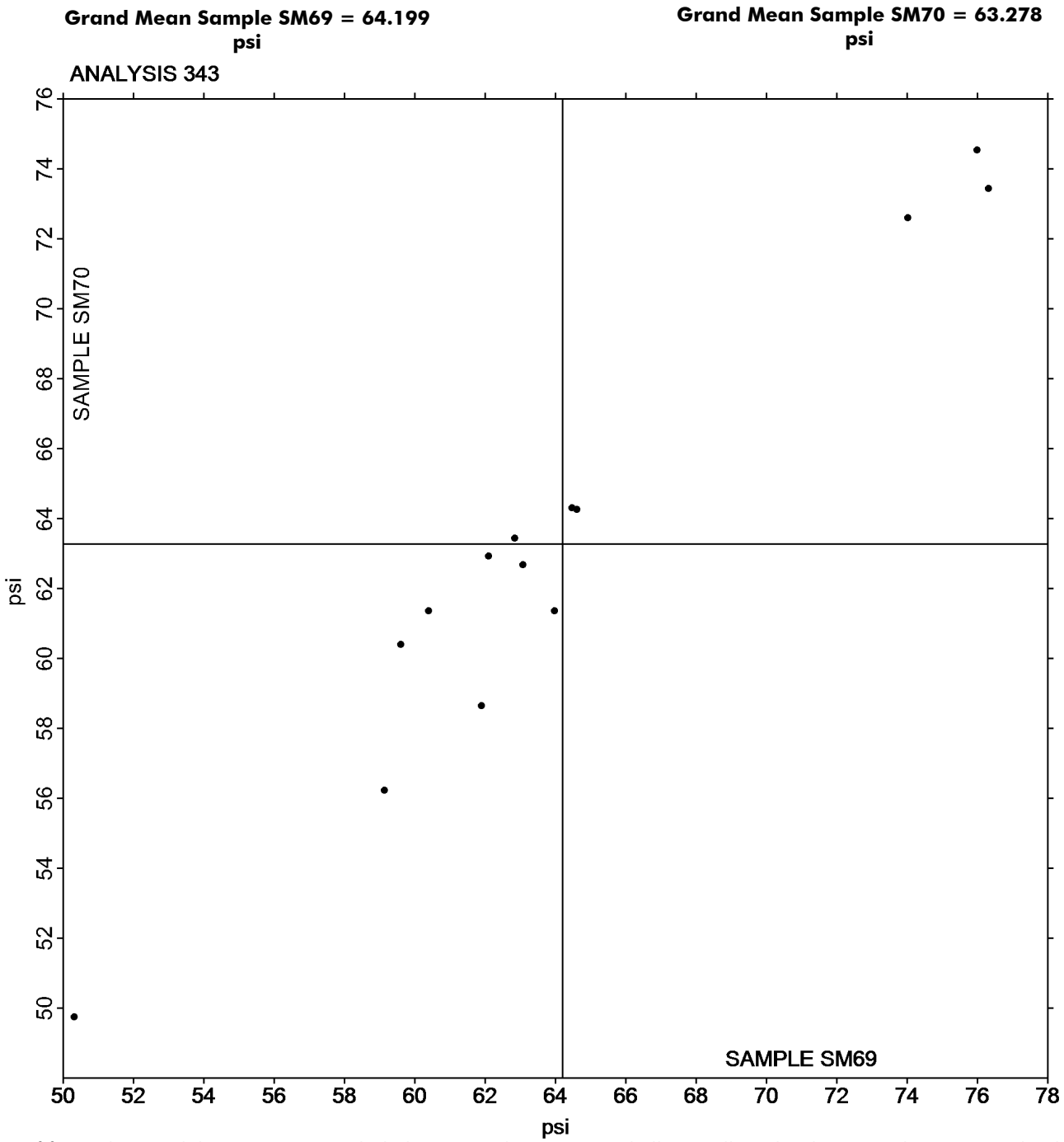
WebCode	Data Flag	Sample SM69 Lab Mean	Sample SM69 Diff from Grand Mean	Sample SM69 CPV	Sample SM70 Lab Mean	Sample SM70 Diff from Grand Mean	Sample SM70 CPV	Instr Code
2RZDNJ		62.10	-2.10	-0.30	62.92	-0.36	-0.05	LW
42ENVV		74.02	9.82	1.39	72.60	9.32	1.38	DX
6DMULM		59.14	-5.06	-0.72	56.23	-7.05	-1.05	LW
6PWLTU		50.32	-13.88	-1.96	49.74	-13.54	-2.01	LW
7M7KM7		64.62	0.42	0.06	64.26	0.98	0.15	TA
8VG78U		60.39	-3.80	-0.54	61.35	-1.93	-0.29	LW
DGHD3D		63.08	-1.12	-0.16	62.68	-0.60	-0.09	TA
HNNYCW		62.84	-1.36	-0.19	63.44	0.16	0.02	CD
LKXYMR		76.32	12.12	1.71	73.44	10.16	1.51	CA
N4Y8K9		64.48	0.28	0.04	64.30	1.02	0.15	CD
TNNFJX		61.90	-2.30	-0.33	58.64	-4.64	-0.69	TA
TWHKCY		76.00	11.80	1.67	74.53	11.25	1.67	TL
W2H323		63.98	-0.22	-0.03	61.36	-1.92	-0.28	DX
YXU7R3		59.60	-4.60	-0.65	60.40	-2.88	-0.43	TA

Summary Statistics	Sample SM69	Sample SM70
Grand Means	64.20 psi	63.28 psi
Stnd Dev Btwn Labs	7.07 psi	6.73 psi

Statistics based on 14 of 14 reporting participants.

Key to Instrument Codes Reported by Participants

CA	CSI CS-163	CD	CSI CS-163D
DX	Dek-Tron XP2 Series	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 SZ69 Lab Mean	Sample SZ69 Diff from Grand Mean	Sample SZ69 CPV	Sample SZ70 Lab Mean	Sample SZ70 Diff from Grand Mean	Sample SZ70 CPV	Instr Code
46EZQV		32.30	-3.40	-0.96	34.72	-0.14	-0.05	CA
8XK2QW		36.44	0.74	0.21	37.24	2.38	0.92	TL
BJWZNM		35.60	-0.10	-0.03	35.40	0.54	0.21	CA
DBCLUF	X	59.22	23.52	6.66	62.56	27.70	10.75	TZ
DKKWZQ		29.80	-5.90	-1.67	32.96	-1.90	-0.74	LW
DXJDTT		34.22	-1.48	-0.42	33.76	-1.10	-0.43	TA
ETT3HU		35.20	-0.50	-0.14	34.20	-0.66	-0.26	CH
HALP9M		37.62	1.92	0.54	37.70	2.84	1.10	LW
J8DWQU		33.14	-2.56	-0.73	32.84	-2.02	-0.78	CA
MK8MZN		29.84	-5.86	-1.66	30.16	-4.70	-1.82	LW
RVCFL7		37.40	1.70	0.48	31.32	-3.54	-1.37	LW
TZJN78		38.85	3.15	0.89	35.45	0.59	0.23	CH
UEDDXX		41.11	5.41	1.53	39.11	4.25	1.65	PG
WPN8Z8		38.08	2.38	0.67	37.98	3.12	1.21	LW
Y6E77U		40.20	4.50	1.28	35.20	0.34	0.13	CA

Summary Statistics	Sample SZ69	Sample SZ70
Grand Means	35.70 psi	34.86 psi
Stnd Dev Btwn Labs	3.53 psi	2.58 psi

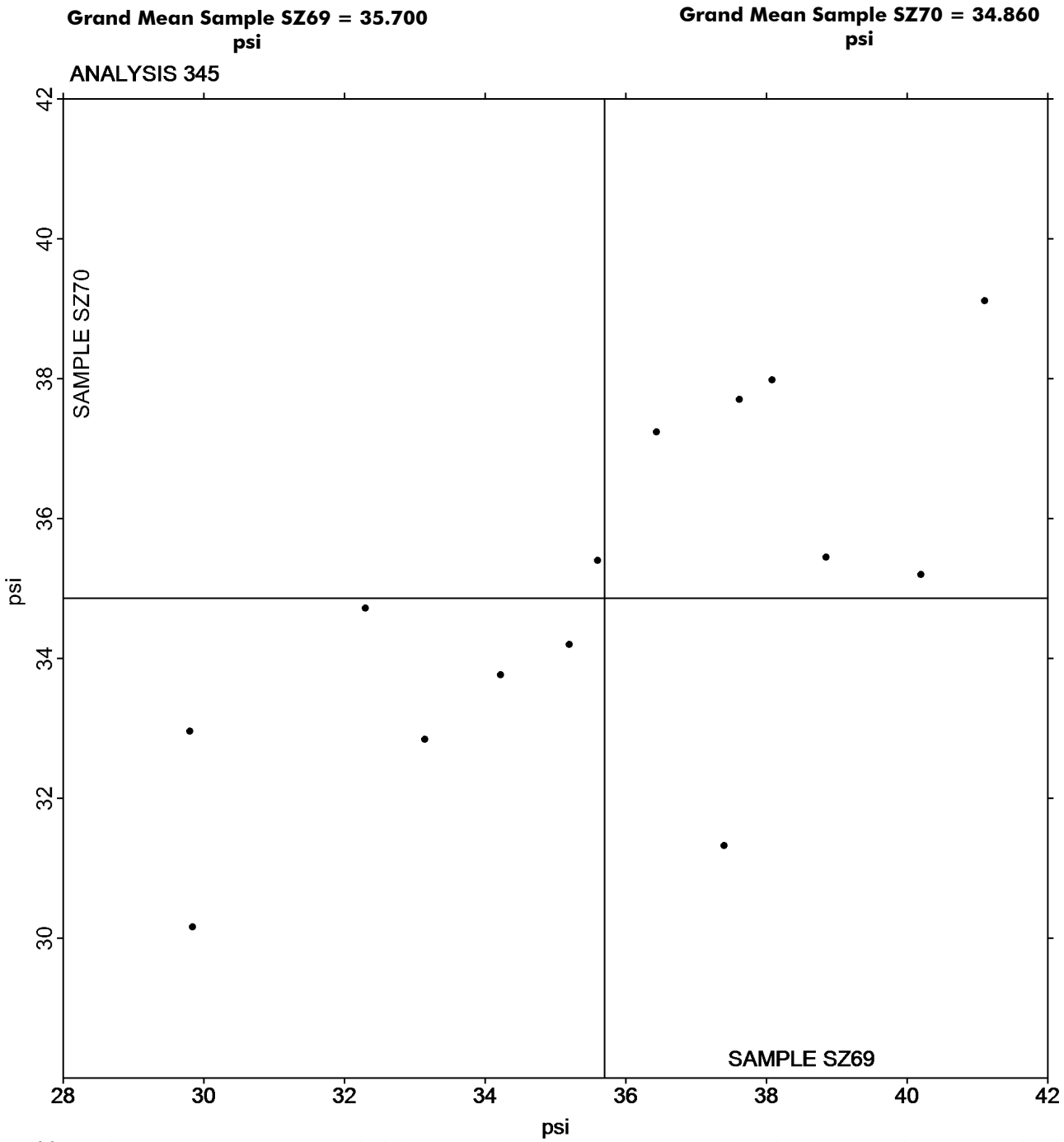
Statistics based on 14 of 15 reporting participants.

Comments on Assigned Data Flags for Test #345

DBCLUF (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

CA	CSI CS-163	CH	Chatillon Ametek
LW	L & W ZD Tensile Tester	PG	Perkins Model A Mullen Tester
TA	Thwing-Albert Tensile Tester	TL	TMI Lab Master
TZ	TMI Monitor/ZDT Tester		



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 348

Internal Bond Strength - Modified Scott Mechanics

TAPPI Provisional Test Method T569

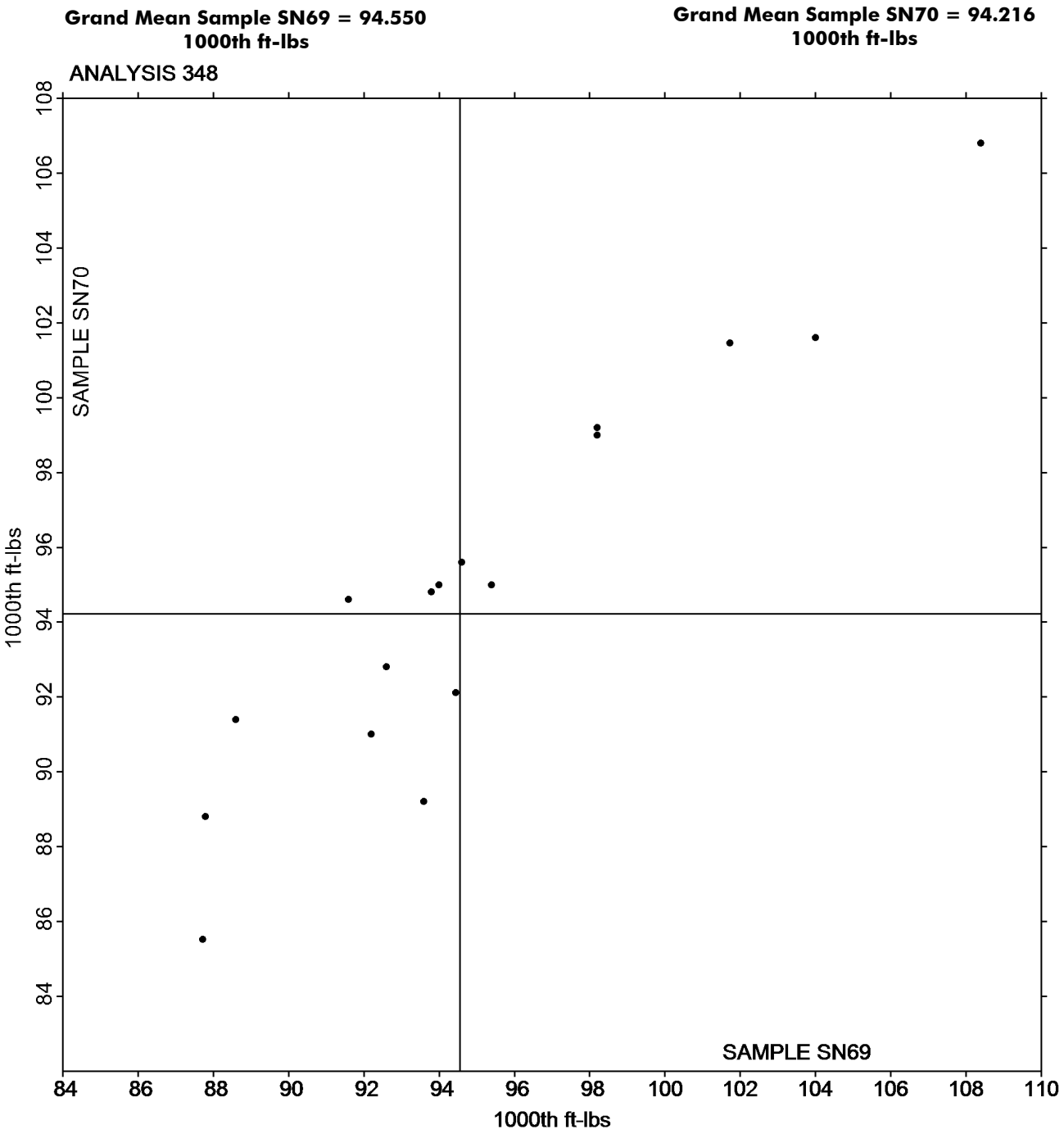
WebCode	Data Flag	Sample SN69 Lab Mean	Sample SN69 Diff from Grand Mean	Sample SN69 CPV	Sample SN70 Lab Mean	Sample SN70 Diff from Grand Mean	Sample SN70 CPV	Instr Code
2RZDNJ		92.20	-2.35	-0.40	91.00	-3.22	-0.53	HY
3JG4K2		91.60	-2.95	-0.50	94.60	0.38	0.06	HY
3RUXVX		94.00	-0.55	-0.09	95.00	0.78	0.13	HZ
6PWLTU		87.80	-6.75	-1.14	88.80	-5.42	-0.90	HZ
7M7KM7		88.60	-5.95	-1.00	91.40	-2.82	-0.47	HZ
9VZXT4		85.00	-9.55	-1.61	82.00	-12.22	-2.02	XX
DG3F62		93.60	-0.95	-0.16	89.20	-5.02	-0.83	HY
DGHD3D		108.40	13.85	2.33	106.80	12.58	2.08	HY
DXJDTT		94.60	0.05	0.01	95.60	1.38	0.23	HY
HAJZ26		92.60	-1.95	-0.33	92.80	-1.42	-0.23	HY
J8DWQU		98.20	3.65	0.62	99.20	4.98	0.82	HZ
MQWEFQ		93.80	-0.75	-0.13	94.80	0.58	0.10	HY
N4V7RZ		94.44	-0.11	-0.02	92.12	-2.10	-0.35	HY
NG2WEM		95.40	0.85	0.14	95.00	0.78	0.13	HY
QQZBEC		101.74	7.19	1.21	101.45	7.23	1.20	HY
TNNFJX		98.20	3.65	0.62	99.00	4.78	0.79	HY
YMUF9F		104.00	9.45	1.59	101.60	7.38	1.22	HZ
YXR27J		87.72	-6.83	-1.15	85.52	-8.70	-1.44	KR

Summary Statistics	Sample SN69	Sample SN70
Grand Means	94.55 1000th ft-lbs	94.22 1000th ft-lbs
Stnd Dev Btwn Labs	5.93 1000th ft-lbs	6.04 1000th ft-lbs

Statistics based on 18 of 18 reporting participants.

Key to Instrument Codes Reported by Participants

HY	Huygen Digitized Scott Internal 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 SP69 Lab Mean	Sample SP69 Diff from Grand Mean	Sample SP69 CPV	Sample SP70 Lab Mean	Sample SP70 Diff from Grand Mean	Sample SP70 CPV	Instr Code
9228YW		95.02	10.15	0.78	98.78	11.04	0.92	XX
A782Y6		93.20	8.33	0.64	93.40	5.66	0.47	SC
DKKWZQ		94.20	9.33	0.72	95.40	7.66	0.64	XX
H699YD		70.62	-14.26	-1.10	77.28	-10.46	-0.87	TM
HXMFNE		76.00	-8.87	-0.68	77.00	-10.74	-0.89	SC
HZHF2X		71.09	-13.78	-1.06	74.33	-13.41	-1.12	XX
KW9NPH		103.64	18.77	1.45	105.92	18.18	1.51	TM
TZJN78		75.20	-9.67	-0.75	79.80	-7.94	-0.66	TM

Summary Statistics	Sample SP69	Sample SP70
Grand Means	84.87 1000th ft-lbs	87.74 1000th ft-lbs
Stnd Dev Btwn Labs	12.97 1000th ft-lbs	12.02 1000th ft-lbs

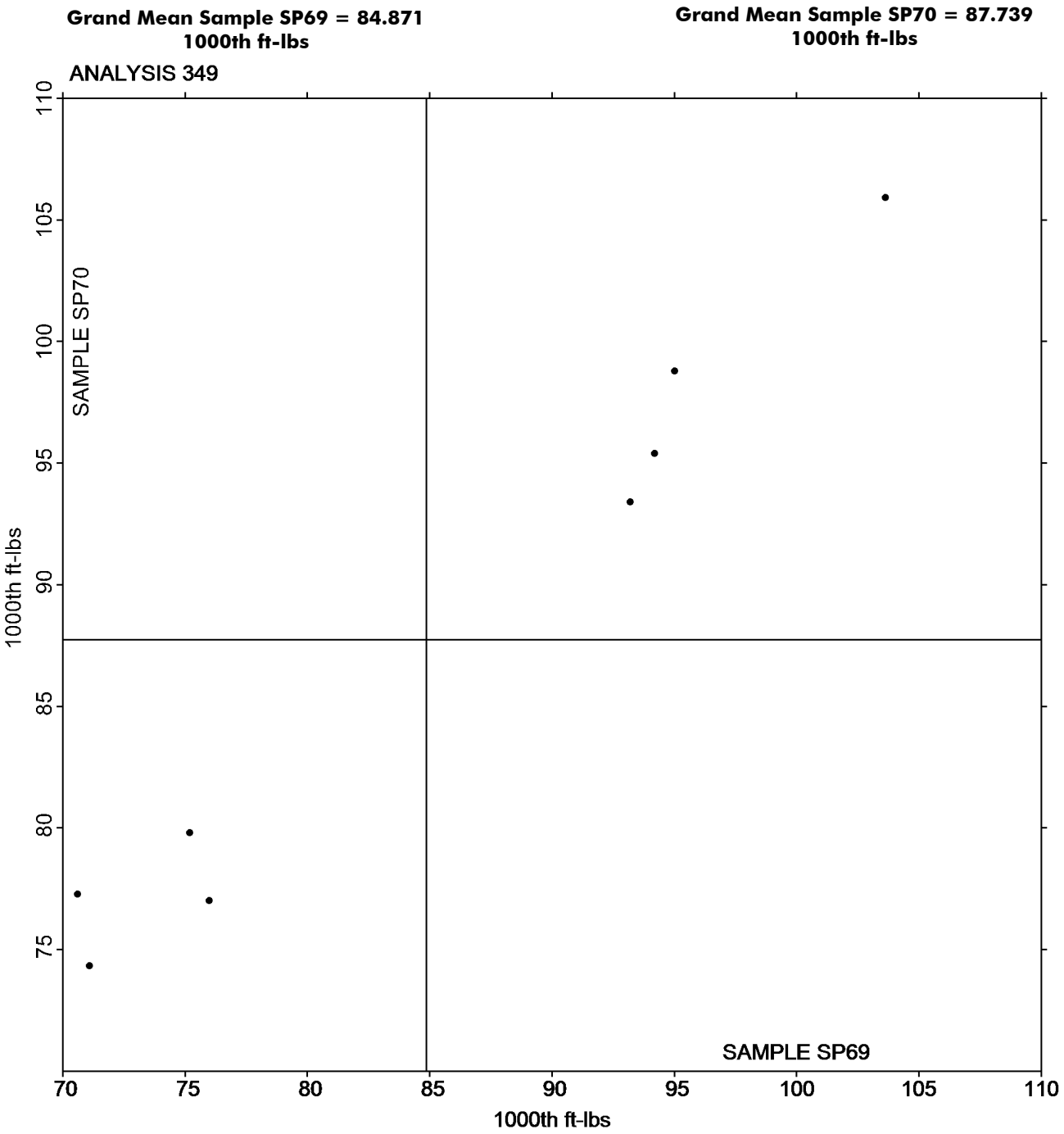
Statistics based on 8 of 8 reporting participants.

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-

