Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #4341 - January 2025

Analysis	Analysis Name
3101	Thickness (Caliper), Printing papers
3111	Bursting Strength - Printing Papers
3113	Tearing Strength - Printing Papers
3115	Tensile Breaking Strength - Printing Papers
3116	Tensile Energy Absorption - Printing Papers
3117	Elongation to Break - Printing Papers
3121	Air Resistance - Gurley Oil Type
3123	Porosity - Sheffield Type - Sheffield Units for 3/4 inch Diameter Orifice
3131	Roughness - Print Surf Method - 2.5 to 6.0 Microns
3133	Roughness - Sheffield Type
3135	Grammage (Mass per Unit Area)
3141	Opacity (89% Reflectance Backing) - Fine Papers
3143	Opacity (Paper Backing) - Fine Papers and Newsprint
3145	Directional Brightness of Fluorescent Samples
3146	Fluorescent Component of Directional Brightness
3201	Bending Resistance, Taber Type - 0 to 10 Units
3203	Bending Resistance, Taber Type - 10 to 100 Taber Units
3205	Bending Resistance, Taber Type - 50 to 500 Taber Units - Recycled Paperboard
3207	Z-Direction Tensile, Recycled Paperboard
3209	Z-Direction Tensile
3211	Internal Bond Strength - Modified Scott Mechanics
3213	Internal Bond Strength - Scott Bond Models

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 industries including color, rubber, plastics, fasteners and metals, containerboard, paper, agriculture, hemp, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality assurance objectives. Labs from the U.S., as well as more than 100 countries, currently participate in the CTS programs.

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

Collaborative Testing Services, Inc.
21331 Gentry Drive
Sterling, Virginia 20166 USA
+1-571-434-1925
FAX #: +1-571-434-1937
paper@cts-interlab.com

Office Hours: 8:00 a.m. - 4:30 p.m. ET

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 3101

Thickness (Caliper), Printing papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample CP37 Lab Mean	Sample CP37 Diff from Grand Mean	Sample CP37 CPV	Sample CP38 Lab Mean	Sample CP38 Diff from Grand Mean	Sample CP38 CPV
26AFLG		4.005	0.015	0.21	4.001	0.014	0.22
2JUWCZ		4.044	0.055	0.78	4.002	0.015	0.23
3FPNMF		3.968	-0.022	-0.31	3.957	-0.030	-0.47
6VR6LD		4.001	0.011	0.16	4.019	0.032	0.50
8LTJ7P		3.894	-0.096	-1.36	3.923	-0.064	-1.01
8ZVMXB		3.988	-0.002	-0.02	3.988	0.001	0.02
9F9HQC		4.030	0.040	0.57	3.980	-0.007	-0.11
A3QH7N		4.063	0.074	1.05	4.056	0.069	1.08
AUX6AA		4.075	0.085	1.21	4.075	0.088	1.38
C6TXV7		3.907	-0.083	-1.17	3.917	-0.070	-1.10
CK87TN		4.026	0.036	0.51	4.029	0.042	0.66
DPW3X6		4.104	0.114	1.62	4.109	0.122	1.92
DZU49N		3.999	0.010	0.14	4.026	0.039	0.61
FDE3EG		3.984	-0.006	-0.08	4.016	0.029	0.46
FLQJN3		3.997	0.007	0.10	3.998	0.011	0.17
HNQ93G		3.999	0.010	0.14	4.051	0.064	1.01
HTHJDE		4.049	0.059	0.84	4.008	0.021	0.33
KX8WTZ		3.924	-0.066	-0.93	3.932	-0.055	-0.87
LFZXHB		4.026	0.036	0.52	4.014	0.027	0.42
LNU3BC		4.009	0.019	0.28	3.986	-0.001	-0.02
PBFABV		4.029	0.040	0.56	4.007	0.020	0.31
PLYNCC	*	3.803	-0.187	-2.65	3.836	-0.151	-2.37
R87ZVA		3.982	-0.008	-0.11	3.970	-0.017	-0.27
T7RXN2		4.066	0.076	1.08	4.071	0.084	1.32
TBKZR2		4.011	0.021	0.30	4.019	0.032	0.50
TMW734		3.917	-0.073	-1.03	3.918	-0.069	-1.09
TMXXYQ		4.012	0.022	0.32	4.012	0.025	0.39
TUZAT2		3.925	-0.064	-0.92	3.917	-0.070	-1.10
UE3GK7		4.032	0.042	0.60	4.001	0.014	0.22
UFBU38		3.907	-0.083	-1.17	3.907	-0.080	-1.26
V6RFY6		4.094	0.104	1.48	4.071	0.084	1.32
W27AHL		4.000	0.010	0.15	3.990	0.003	0.05
X64THY		3.973	-0.017	-0.24	3.995	0.008	0.13
X66LDL		3.855	-0.135	-1.91	3.861	-0.126	-1.98
XAYMFZ		4.027	0.038	0.53	4.052	0.065	1.02
YDUVYZ		4.040	0.050	0.72	3.993	0.006	0.09
YGT8WL		3.920	-0.070	-0.99	3.941	-0.046	-0.72
YRNLUX	X	3.336	-0.654	-9.28	3.956	-0.031	-0.49
ZEJG8H		4.068	0.078	1.11	4.044	0.057	0.90
ZFULFZ		3.820	-0.170	-2.41	3.830	-0.157	-2.47

Paper & Paperboard Interlaboratory Testing Program

Analysis 3101
Thickness (Caliper), Printing papers
TAPPI Official Test Method T411

WebCode	Data Flag	Sample CP37 Lab Mean	Sample CP37 Diff from Grand Mean	Sample CP37 CPV	Sample CP38 Lab Mean	Sample CP38 Diff from Grand Mean	Sample CP38 CPV
ZX93MY		4.012	0.022	0.32	3.959	-0.028	-0.45

Summary Statistics	Sample CP37	Sample CP38
Grand Means	3.99 mils	3.99 mils
Stnd Dev Btwn Labs	0.07 mils	0.06 mils

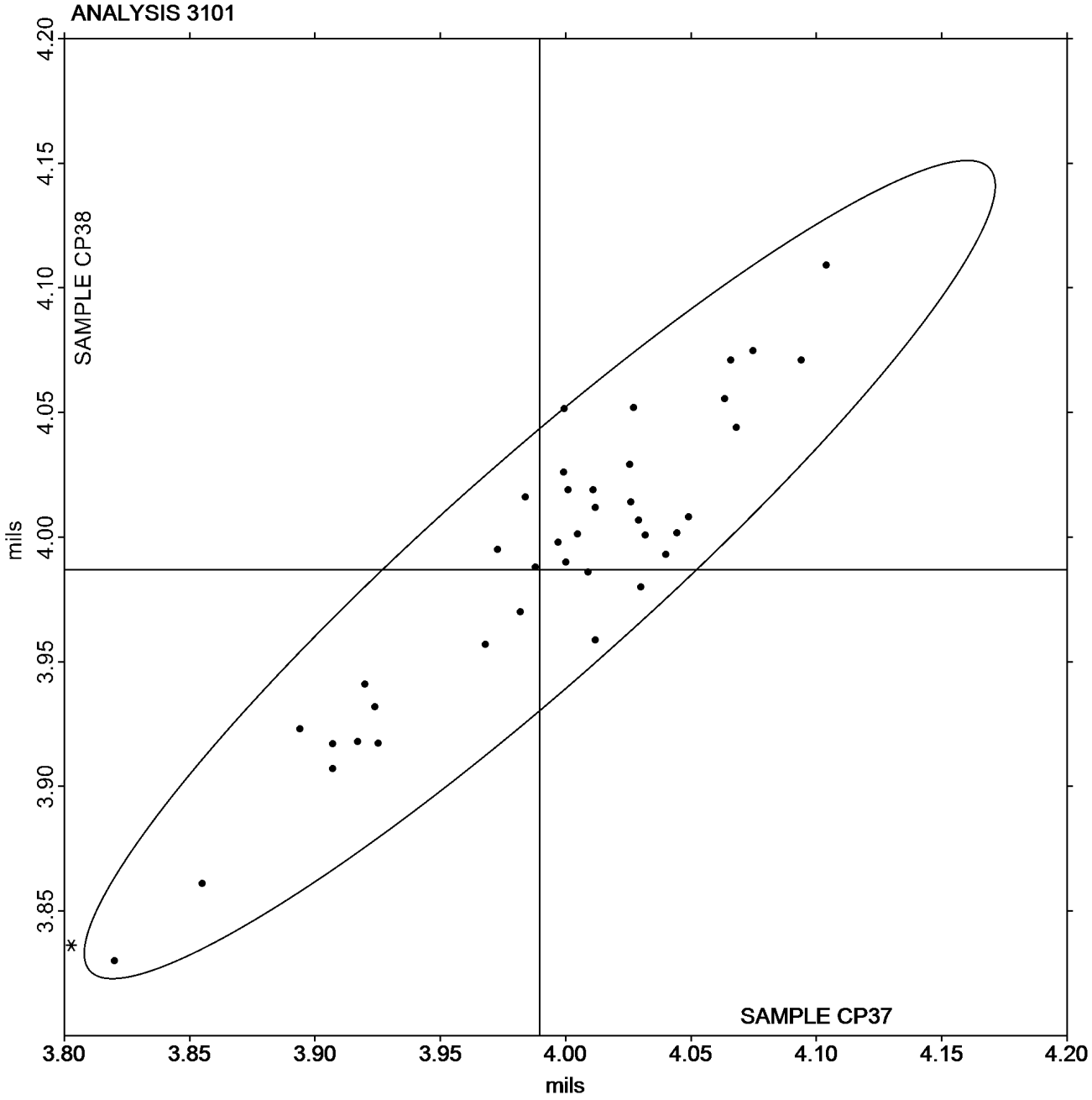
Statistics based on 40 of 41 reporting participants.

Comments on Assigned Data Flags for Test #3101

YRNLUX (X) - Extreme Data for sample CP37.

Grand Mean Sample CP37 = 3.9896 mils

Grand Mean Sample CP38 = 3.9870 mils



Paper & Paperboard Interlaboratory Testing Program

Analysis 3111

Bursting Strength - Printing Papers

TAPPI Official Test Method T403

WebCode	Data Flag	Sample BP37 Lab Mean	Sample BP37 Diff from Grand Mean	Sample BP37 CPV	Sample BP38 Lab Mean	Sample BP38 Diff from Grand Mean	Sample BP38 CPV
3FPNMF		19.02	-4.38	-1.85	19.27	-4.05	-1.55
8LUB2C		24.40	1.00	0.42	23.87	0.55	0.21
8NJKAR		28.10	4.70	1.99	29.80	6.48	2.48
9NY7JU		23.92	0.52	0.22	23.26	-0.06	-0.02
A3QH7N		20.87	-2.53	-1.07	21.71	-1.61	-0.61
C6TXV7		28.50	5.10	2.16	29.20	5.88	2.25
DPW3X6		21.39	-2.01	-0.85	21.34	-1.98	-0.76
DZU49N		22.42	-0.98	-0.41	22.45	-0.87	-0.33
FDE3EG		21.80	-1.60	-0.68	21.00	-2.32	-0.89
HTHJDE		25.30	1.90	0.80	24.70	1.38	0.53
JVGCKH		27.47	4.06	1.72	26.23	2.91	1.11
KX66WD		24.15	0.75	0.32	23.46	0.14	0.05
LFZXHB		22.60	-0.80	-0.34	22.10	-1.22	-0.47
PBFABV		22.78	-0.62	-0.26	22.75	-0.57	-0.22
T7RXN2		20.81	-2.59	-1.10	21.22	-2.10	-0.80
TBKZR2		26.62	3.22	1.36	27.55	4.23	1.62
TMW734		25.14	1.73	0.73	24.56	1.24	0.48
UE3GK7		22.69	-0.71	-0.30	21.28	-2.04	-0.78
W4Q3R3		23.09	-0.31	-0.13	23.16	-0.16	-0.06
WMKVEL		22.60	-0.80	-0.34	22.50	-0.82	-0.31
X64THY		22.06	-1.34	-0.57	22.76	-0.56	-0.21
Y9Y34K		22.53	-0.87	-0.37	24.04	0.72	0.28
YGT8WL		21.54	-1.86	-0.79	19.38	-3.94	-1.51
ZEHPBV		23.50	0.09	0.04	22.68	-0.63	-0.24
ZEJG8H		21.75	-1.65	-0.70	22.70	-0.62	-0.24

Summary Statistics	Sample BP37	Sample BP38
Grand Means	23.40 psi	23.32 psi
Stnd Dev Btwn Labs	2.37 psi	2.61 psi

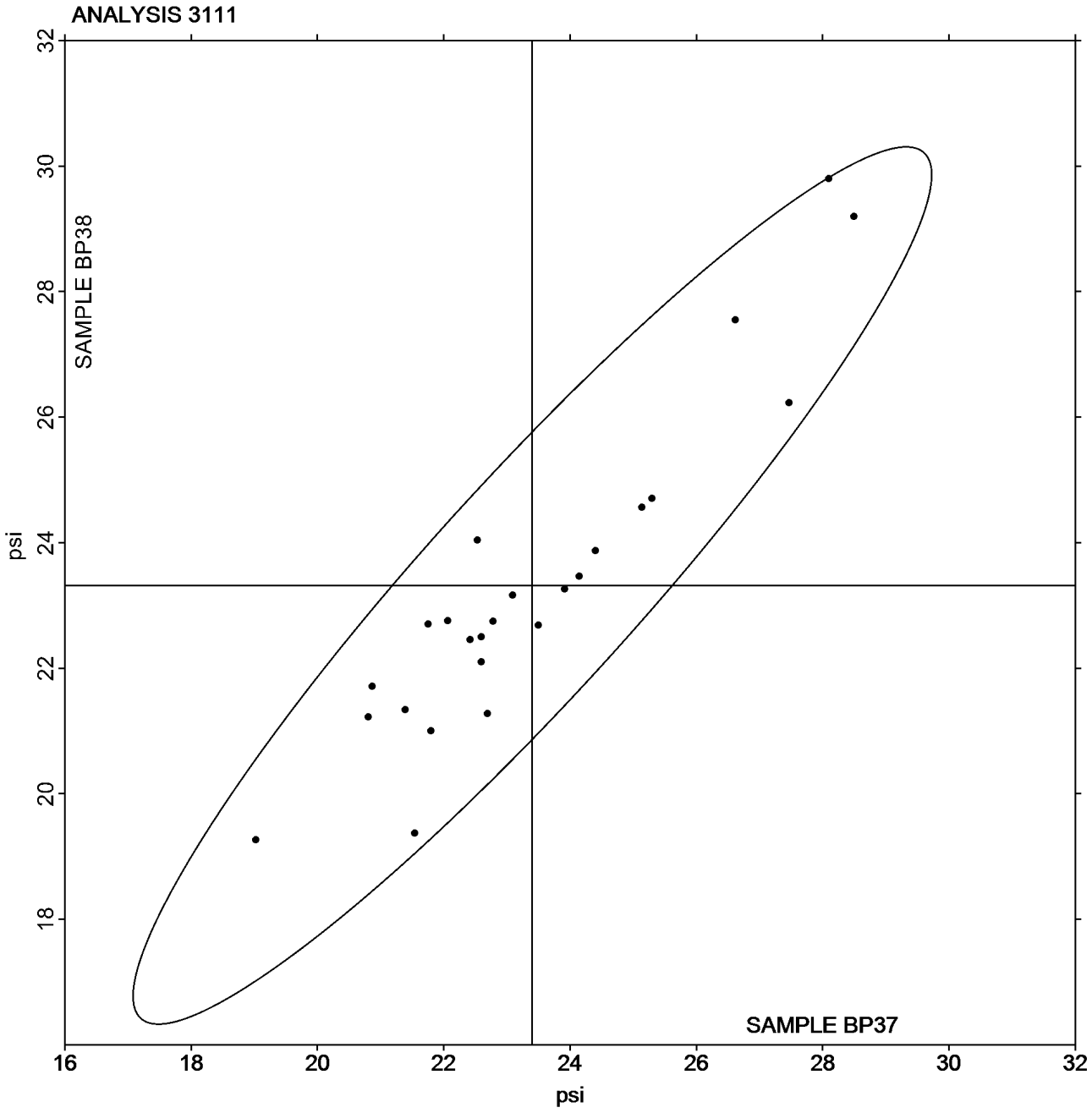
Statistics based on 25 of 25 reporting participants.

Analysis Notes:

DZU49N - Data appear to be reported as kPa, not psi as indicated on data entry form. CTS will not correct the Units going forward.

Grand Mean Sample BP37 = 23.402 psi

Grand Mean Sample BP38 = 23.319 psi



Paper & Paperboard Interlaboratory Testing Program

Analysis 3113

Tearing Strength - Printing Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample RP37 Lab Mean	Sample RP37 Diff from Grand Mean	Sample RP37 CPV	Sample RP38 Lab Mean	Sample RP38 Diff from Grand Mean	Sample RP38 CPV
3DZEBT		48.64	-10.45	-1.97	50.01	-9.29	-1.56
3FPNMF		58.76	-0.33	-0.06	58.20	-1.10	-0.18
6VR6LD		58.22	-0.87	-0.16	63.78	4.48	0.75
7YBJPD		52.98	-6.11	-1.15	50.99	-8.31	-1.39
8HELZN		63.32	4.23	0.80	60.72	1.42	0.24
8LUB2C	X	75.40	16.31	3.07	60.60	1.30	0.22
8NJKAR	*	72.40	13.31	2.51	70.20	10.90	1.83
9NY7JU		65.32	6.23	1.17	66.68	7.38	1.24
A3QH7N		60.98	1.88	0.36	60.64	1.34	0.22
AUX6AA		66.05	6.96	1.31	66.10	6.80	1.14
CK87TN		62.16	3.07	0.58	63.80	4.50	0.75
DPW3X6		63.74	4.65	0.88	63.42	4.12	0.69
DZU49N		58.24	-0.86	-0.16	57.08	-2.22	-0.37
FDE3EG		60.83	1.74	0.33	62.49	3.19	0.54
HKP7FZ	X	62.80	3.71	0.70	48.92	-10.38	-1.74
HNQ93G		54.75	-4.34	-0.82	54.42	-4.88	-0.82
HTHJDE		60.20	1.11	0.21	58.50	-0.80	-0.13
KX66WD		56.49	-2.60	-0.49	51.76	-7.54	-1.26
LFZXHB		60.58	1.49	0.28	60.53	1.23	0.21
LNU3BC		53.21	-5.88	-1.11	53.66	-5.64	-0.95
PBFABV		59.78	0.68	0.13	60.15	0.85	0.14
PWYB7U		51.37	-7.72	-1.45	50.12	-9.18	-1.54
R222L6		48.51	-10.58	-1.99	51.32	-7.98	-1.34
R87ZVA		53.42	-5.67	-1.07	52.64	-6.66	-1.12
R9ZNFQ		53.45	-5.64	-1.06	54.85	-4.45	-0.75
T7RXN2		65.44	6.35	1.20	68.72	9.42	1.58
TBKZR2		55.00	-4.09	-0.77	53.51	-5.79	-0.97
TMW734		56.82	-2.27	-0.43	56.34	-2.96	-0.50
UE3GK7		56.18	-2.92	-0.55	57.54	-1.76	-0.29
UFBU38		61.48	2.39	0.45	59.78	0.48	0.08
V6RFY6		58.80	-0.29	-0.05	58.90	-0.40	-0.07
W27AHL		68.73	9.64	1.82	72.00	12.70	2.13
W4Q3R3		63.16	4.07	0.77	64.70	5.40	0.91
X64THY		55.56	-3.53	-0.67	55.01	-4.29	-0.72
X66LDL		62.77	3.68	0.69	63.84	4.54	0.76
YA9CTW	X	146.54	87.45	16.48	150.48	91.18	15.30
YDUVYZ		59.16	0.07	0.01	56.00	-3.30	-0.55
YRNLUX		59.40	0.31	0.06	57.80	-1.50	-0.25
ZEJG8H	*	61.40	2.31	0.44	68.60	9.30	1.56

Summary Statistics	Sample RP37	Sample RP38
Grand Means	59.09 Grams	59.30 Grams
Stnd Dev Btwn Labs	5.30 Grams	5.96 Grams

Statistics based on 36 of 39 reporting participants.

Comments on Assigned Data Flags for Test #3113

YA9CTW (X) - Extreme Data.

HKP7FZ (X) - Inconsistent in testing between samples.

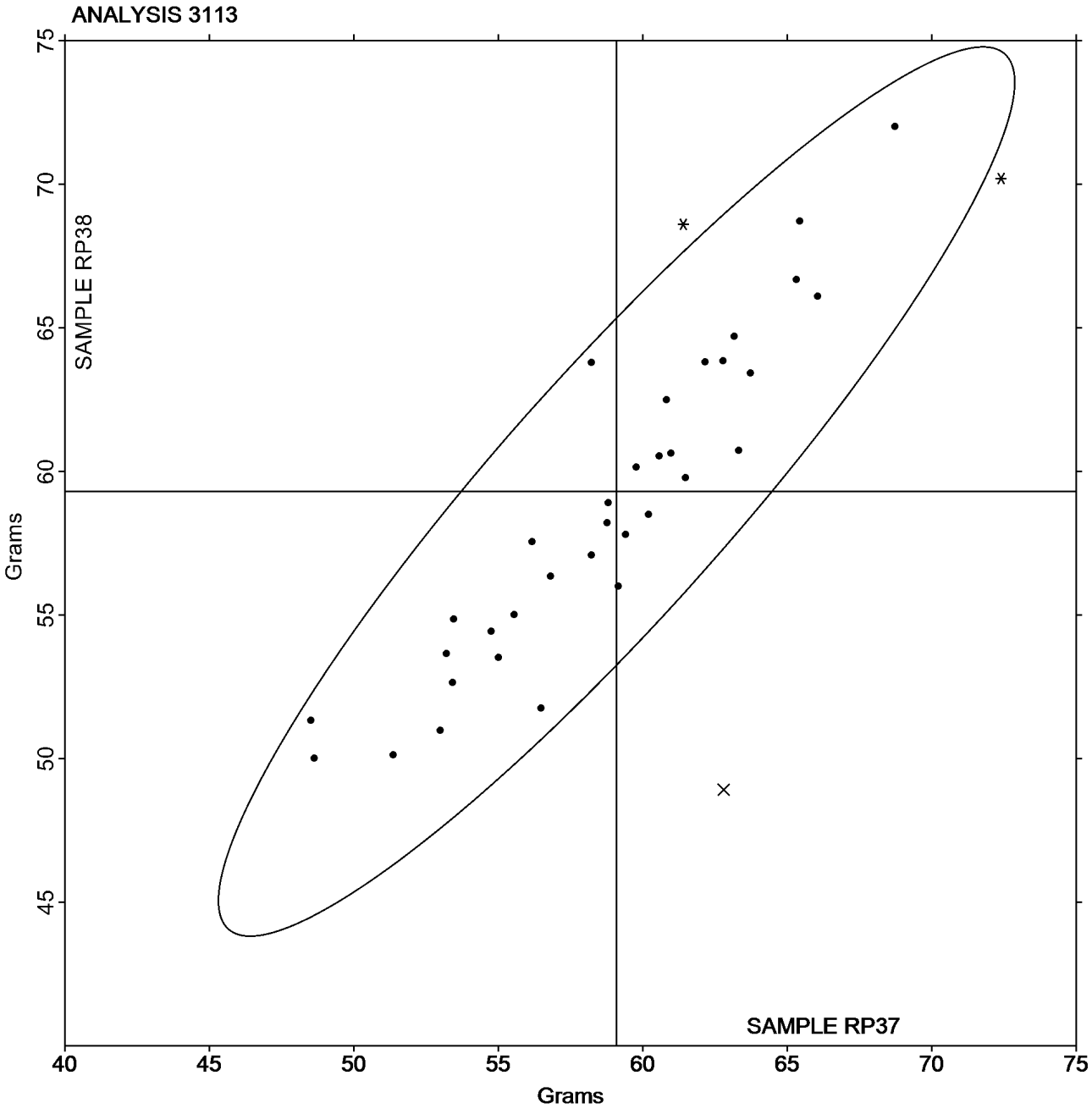
8LUB2C (X) - Data for sample RP37 are high. Inconsistent within the determinations of sample RP37.

Analysis Notes:

6VR6LD - One determination removed from the Lab Mean of Sample RP37 per Grubb's Test at 1% risk (TAPPI 1205).

Grand Mean Sample RP37 = 59.091 Grams

Grand Mean Sample RP38 = 59.300 Grams



Paper & Paperboard Interlaboratory Testing Program

Analysis 3115

Tensile Breaking Strength - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample NP37 Lab Mean	Sample NP37 Diff from Grand Mean	Sample NP37 CPV	Sample NP38 Lab Mean	Sample NP38 Diff from Grand Mean	Sample NP38 CPV
26AFLG		3.918	0.314	1.00	4.151	0.576	2.02
2JUWCZ		3.231	-0.372	-1.19	3.340	-0.235	-0.82
3DZEBT		4.021	0.417	1.33	3.818	0.243	0.85
3FPNMF		3.545	-0.058	-0.19	3.503	-0.071	-0.25
6VR6LD		3.396	-0.207	-0.66	3.446	-0.128	-0.45
7YBJPD		3.460	-0.143	-0.46	3.410	-0.165	-0.58
8LTJ7P		3.350	-0.253	-0.81	3.246	-0.328	-1.15
8LUB2C		4.170	0.567	1.81	3.945	0.370	1.30
8ZVMXB		4.108	0.505	1.61	4.142	0.567	1.99
A3QH7N		3.468	-0.135	-0.43	3.285	-0.289	-1.02
AUX6AA		3.508	-0.095	-0.30	3.497	-0.077	-0.27
AWP4M9		3.356	-0.247	-0.79	3.430	-0.145	-0.51
DZU49N		3.399	-0.204	-0.65	3.347	-0.228	-0.80
HNQ93G		3.598	-0.005	-0.02	3.378	-0.197	-0.69
HTHJDE		3.281	-0.322	-1.03	3.485	-0.089	-0.31
JEVQ4Y		3.799	0.196	0.63	3.543	-0.031	-0.11
KX66WD		3.997	0.394	1.26	4.085	0.510	1.79
LFZXHB		3.343	-0.260	-0.83	3.424	-0.151	-0.53
LNU3BC		3.666	0.063	0.20	3.687	0.112	0.39
PBFABV		3.412	-0.191	-0.61	3.430	-0.145	-0.51
R222L6		3.810	0.207	0.66	3.828	0.253	0.89
R87ZVA		3.638	0.035	0.11	3.440	-0.135	-0.47
T7RXN2		3.422	-0.181	-0.58	3.226	-0.349	-1.23
TBKZR2	X	89.298	85.695	273.77	90.103	86.528	304.13
TMW734		3.993	0.390	1.25	3.940	0.366	1.29
TMXXYQ		3.194	-0.409	-1.31	3.254	-0.321	-1.13
UE3GK7		3.480	-0.123	-0.39	3.463	-0.112	-0.39
UFBU38		3.898	0.295	0.94	3.906	0.331	1.16
V6RFY6		3.704	0.100	0.32	3.326	-0.249	-0.87
W27AHL		3.640	0.037	0.12	3.480	-0.095	-0.33
W4Q3R3		3.430	-0.173	-0.55	3.260	-0.314	-1.11
X64THY		3.601	-0.002	-0.01	3.722	0.147	0.52
X66LDL		4.271	0.668	2.13	4.004	0.429	1.51
X9JJJM		3.251	-0.352	-1.12	3.466	-0.109	-0.38
XAYMFZ		4.131	0.528	1.69	4.007	0.432	1.52
YA9CTW		2.923	-0.680	-2.17	3.188	-0.387	-1.36
YDUVYZ		3.334	-0.269	-0.86	3.451	-0.124	-0.44
YRNLUX		3.738	0.135	0.43	3.861	0.287	1.01
ZEJG8H		3.435	-0.168	-0.54	3.423	-0.152	-0.53

Summary Statistics	Sample NP37	Sample NP38
Grand Means	3.60 kN/m	3.57 kN/m
Stnd Dev Btwn Labs	0.31 kN/m	0.28 kN/m

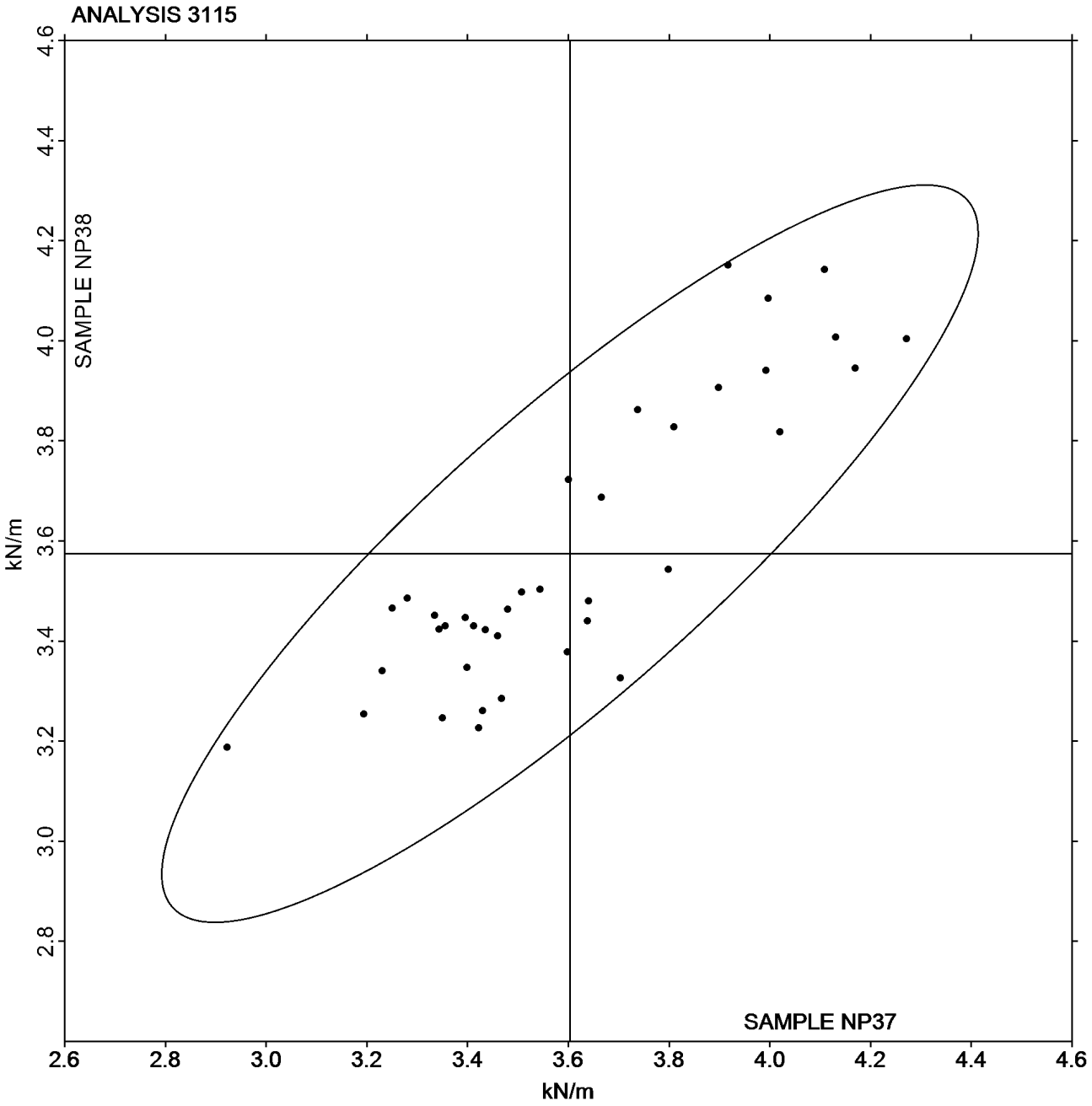
Statistics based on 38 of 39 reporting participants.

Comments on Assigned Data Flags for Test #3115

TBKZR2 (X) - Extreme Data.

Grand Mean Sample NP37 = 3.6031 kN/m

Grand Mean Sample NP38 = 3.5746 kN/m



Paper & Paperboard Interlaboratory Testing Program

Analysis 3116

Tensile Energy Absorption - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample NP37 Lab Mean	Sample NP37 Diff from Grand Mean	Sample NP37 CPV	Sample NP38 Lab Mean	Sample NP38 Diff from Grand Mean	Sample NP38 CPV
2JUWCZ		38.31	-2.09	-0.44	39.05	-0.38	-0.08
3DZEBT		31.03	-9.38	-1.98	27.22	-12.21	-2.55
3FPNMF		46.37	5.97	1.26	44.57	5.14	1.07
6VR6LD		32.84	-7.57	-1.60	34.24	-5.19	-1.08
7YBJPD		39.27	-1.13	-0.24	39.45	0.02	0.00
8LTJ7P		38.03	-2.37	-0.50	35.23	-4.20	-0.88
8LUB2C		39.37	-1.03	-0.22	36.85	-2.57	-0.54
A3QH7N		41.71	1.30	0.28	36.38	-3.04	-0.63
AUX6AA		39.55	-0.85	-0.18	37.51	-1.92	-0.40
AWP4M9		36.49	-3.91	-0.83	34.92	-4.51	-0.94
DZU49N		38.43	-1.97	-0.42	38.12	-1.31	-0.27
HNQ93G		37.29	-3.11	-0.66	35.14	-4.29	-0.89
HTHJDE		34.15	-6.25	-1.32	39.20	-0.23	-0.05
JEVQ4Y		46.74	6.34	1.34	44.15	4.72	0.98
KX66WD	X	0.07	-40.33	-8.52	0.07	-39.36	-8.21
LFZXHB		36.86	-3.54	-0.75	36.60	-2.83	-0.59
LNU3BC		36.50	-3.90	-0.82	38.81	-0.62	-0.13
R222L6		41.14	0.74	0.16	39.63	0.20	0.04
T7RXN2		44.48	4.08	0.86	42.03	2.60	0.54
TBKZR2		37.89	-2.51	-0.53	37.44	-1.99	-0.41
TMXXYQ	*	53.86	13.46	2.84	54.96	15.53	3.24
UE3GK7		40.30	-0.10	-0.02	39.70	0.27	0.06
UFBU38		43.48	3.07	0.65	43.42	4.00	0.83
V6RFY6	*	49.46	9.06	1.91	39.72	0.30	0.06
W27AHL		42.47	2.07	0.44	41.40	1.97	0.41
W4Q3R3		37.76	-2.64	-0.56	37.23	-2.19	-0.46
X64THY		43.03	2.63	0.56	44.30	4.87	1.02
X66LDL		41.99	1.58	0.33	36.06	-3.37	-0.70
X9JJJM		40.81	0.41	0.09	42.34	2.91	0.61
XAYMFZ		41.04	0.64	0.13	44.39	4.96	1.04
YRNLUX		41.41	1.00	0.21	42.75	3.32	0.69

Summary Statistics	Sample NP37	Sample NP38
Grand Means	40.40 Joules/sq m	39.43 Joules/sq m
Stnd Dev Btwn Labs	4.73 Joules/sq m	4.80 Joules/sq m

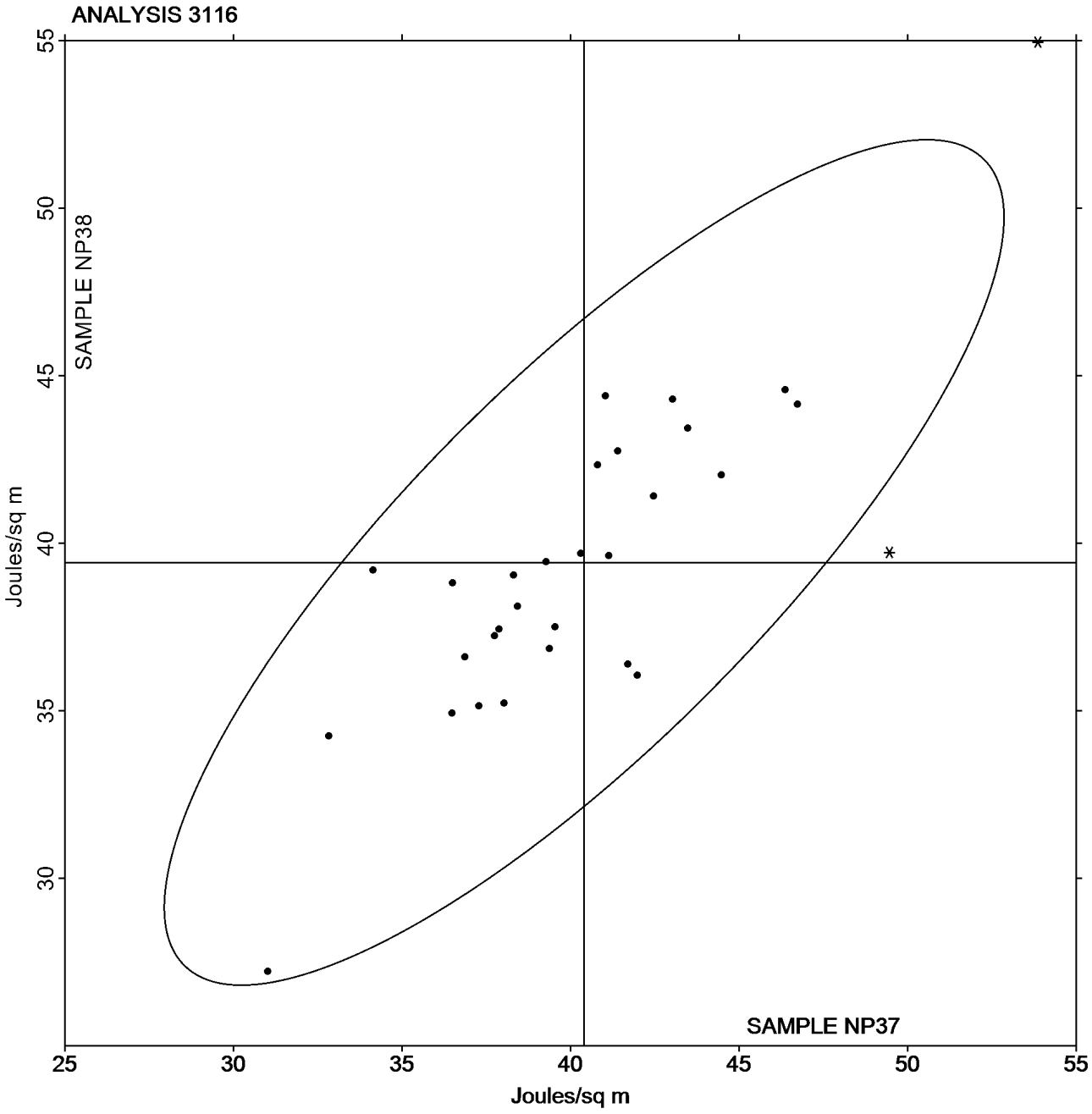
Statistics based on 30 of 31 reporting participants.

Comments on Assigned Data Flags for Test #3116

KX66WD (X) - Extreme Data.

Grand Mean Sample NP37 = 40.402 Joules/sq m

Grand Mean Sample NP38 = 39.427 Joules/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 3117

Elongation to Break - Printing Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample NP37 Lab Mean	Sample NP37 Diff from Grand Mean	Sample NP37 CPV	Sample NP38 Lab Mean	Sample NP38 Diff from Grand Mean	Sample NP38 CPV
2JUWCZ		1.736	-0.023	-0.11	1.719	-0.010	-0.05
3DZEBT		2.126	0.367	1.73	1.865	0.136	0.70
3FPNMF		2.099	0.340	1.60	2.069	0.340	1.74
6VR6LD		1.505	-0.254	-1.20	1.501	-0.228	-1.17
7YBJPD		1.720	-0.039	-0.19	1.710	-0.019	-0.10
8LTJ7P		1.736	-0.023	-0.11	1.621	-0.108	-0.55
8LUB2C	*	2.385	0.626	2.94	2.337	0.608	3.12
A3QH7N		1.751	-0.008	-0.04	1.619	-0.110	-0.56
AUX6AA		2.041	0.282	1.33	1.834	0.105	0.54
AWP4M9		1.679	-0.080	-0.38	1.632	-0.097	-0.50
DZU49N		1.694	-0.065	-0.31	1.703	-0.026	-0.13
HNQ93G		1.569	-0.190	-0.90	1.566	-0.163	-0.83
HTHJDE		1.605	-0.154	-0.73	1.703	-0.026	-0.13
JEVQ4Y		2.036	0.277	1.30	2.042	0.314	1.61
KX66WD	X	2.450	0.691	3.25	2.591	0.863	4.42
LFZXHB		1.615	-0.144	-0.68	1.571	-0.158	-0.81
LNU3BC		1.912	0.153	0.72	2.082	0.353	1.81
R222L6		1.597	-0.162	-0.76	1.550	-0.179	-0.92
R87ZVA		1.766	0.007	0.03	1.602	-0.127	-0.65
T7RXN2		1.936	0.177	0.83	1.943	0.214	1.10
TBKZR2		1.680	-0.079	-0.37	1.678	-0.051	-0.26
TMXXYQ	X	3.639	1.880	8.84	3.431	1.702	8.73
UE3GK7		1.667	-0.092	-0.43	1.552	-0.177	-0.91
UFBU38		1.648	-0.111	-0.52	1.707	-0.022	-0.11
V6RFY6		1.995	0.236	1.11	1.788	0.059	0.30
W27AHL		1.570	-0.189	-0.89	1.590	-0.139	-0.71
W4Q3R3		1.627	-0.132	-0.62	1.681	-0.047	-0.24
X64THY		1.791	0.032	0.15	1.788	0.059	0.30
X66LDL		1.611	-0.148	-0.70	1.430	-0.299	-1.53
X9JJJM		1.886	0.127	0.60	1.870	0.141	0.73
XAYMFZ		1.439	-0.320	-1.51	1.581	-0.148	-0.76
YDUVYZ		1.486	-0.273	-1.29	1.636	-0.093	-0.47
YRNLUX		1.662	-0.097	-0.46	1.657	-0.072	-0.37
ZEJG8H		1.728	-0.031	-0.15	1.688	-0.041	-0.21

Summary Statistics	Sample NP37	Sample NP38
Grand Means	1.76 Percent	1.73 Percent
Stnd Dev Btwn Labs	0.21 Percent	0.20 Percent

Statistics based on 32 of 34 reporting participants.

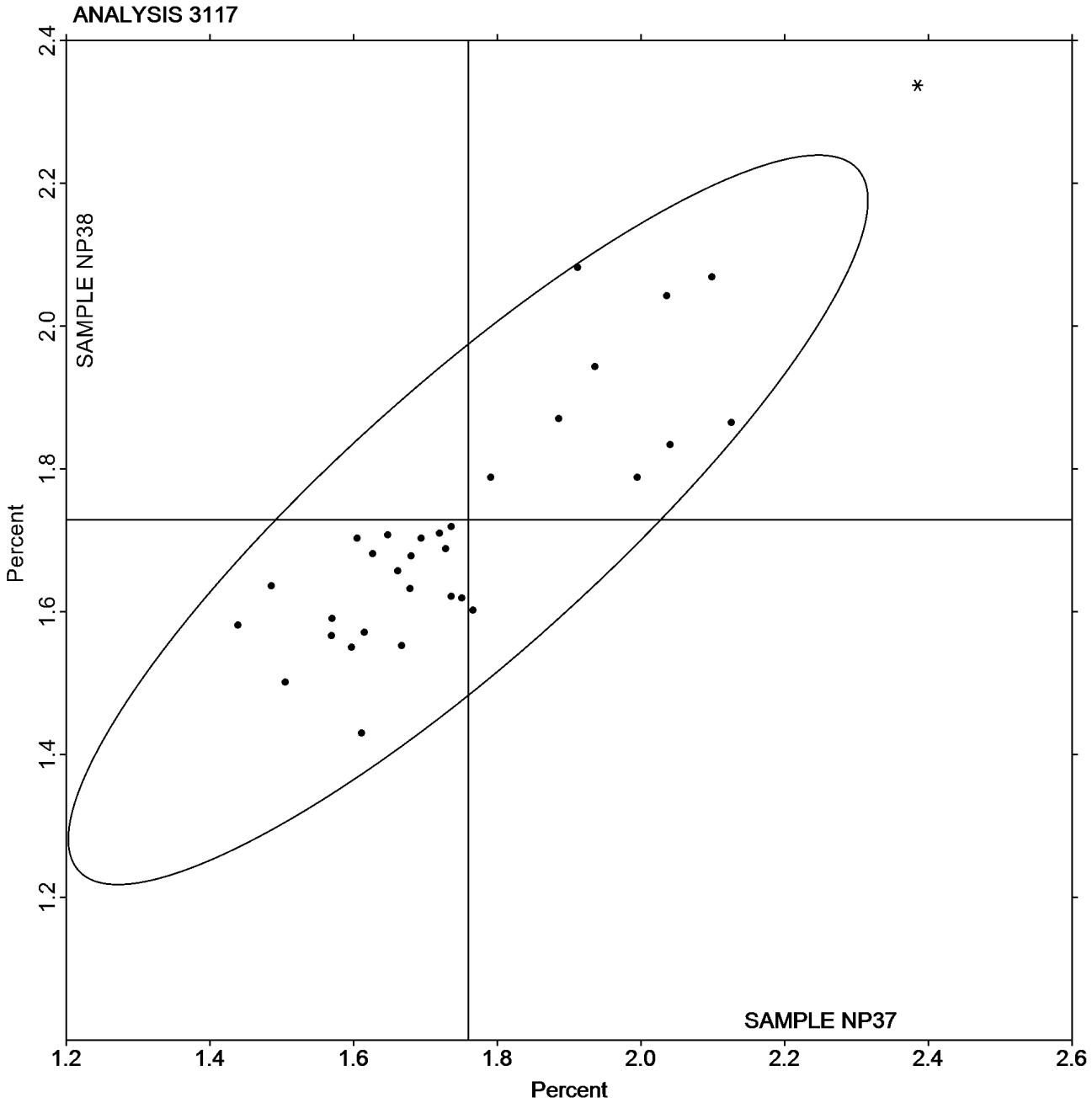
Comments on Assigned Data Flags for Test #3117

KX66WD (X) - Data for both samples are high. Possible Systematic Error.

TMXXYQ (X) - Extreme Data.

Grand Mean Sample NP37 = 1.7593 Percent

Grand Mean Sample NP38 = 1.7286 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 3121
Air Resistance - Gurley Oil Type
TAPPI Official Test Method T460

WebCode	Data Flag	Sample PP37 Lab Mean	Sample PP37 Diff from Grand Mean	Sample PP37 CPV	Sample PP38 Lab Mean	Sample PP38 Diff from Grand Mean	Sample PP38 CPV
3FPNMF		10.264	0.563	1.25	10.008	0.253	0.50
79DY9Q		9.403	-0.298	-0.66	9.755	0.000	0.00
7JWBMP		9.750	0.049	0.11	9.830	0.075	0.15
7YBJPD		9.190	-0.511	-1.13	8.680	-1.075	-2.12
8LUB2C		9.660	-0.041	-0.09	9.420	-0.335	-0.66
8NJKAR		10.100	0.399	0.88	10.000	0.245	0.48
9NY7JU		9.734	0.033	0.07	9.635	-0.120	-0.24
AUX6AA		10.352	0.651	1.44	10.560	0.805	1.59
DZU49N		10.264	0.563	1.25	10.037	0.282	0.56
FCJKCF		8.770	-0.931	-2.06	8.850	-0.905	-1.79
FDE3EG		10.222	0.521	1.15	10.347	0.592	1.17
HTHJDE		9.650	-0.051	-0.11	10.120	0.365	0.72
JEVQ4Y		9.901	0.200	0.44	10.126	0.371	0.73
KHN8TX		9.910	0.209	0.46	10.280	0.525	1.03
KX66WD	X	7.340	-2.361	-5.22	7.490	-2.265	-4.47
KX8WTZ		9.046	-0.655	-1.45	9.215	-0.540	-1.07
NCRLD7		9.450	-0.251	-0.55	9.530	-0.225	-0.44
R87ZVA		9.988	0.287	0.64	10.212	0.457	0.90
T7RXN2		10.055	0.354	0.78	10.045	0.290	0.57
TBKZR2		9.402	-0.299	-0.66	9.238	-0.517	-1.02
TMW734		9.494	-0.207	-0.46	10.216	0.461	0.91
UBFXF2		10.040	0.339	0.75	10.090	0.335	0.66
V6RFY6		9.715	0.014	0.03	9.514	-0.241	-0.48
W4Q3R3		9.740	0.039	0.09	9.980	0.225	0.44
WMKVEL		9.905	0.204	0.45	9.838	0.083	0.16
X66LDL		9.547	-0.154	-0.34	9.857	0.102	0.20
Y9Y34K		10.010	0.309	0.68	10.190	0.435	0.86
YDUVYZ		10.254	0.553	1.22	10.020	0.265	0.52
YKDY74	*	8.510	-1.191	-2.63	8.630	-1.125	-2.22
ZEHPBV		9.200	-0.501	-1.11	8.950	-0.805	-1.59
ZFULFZ		9.490	-0.211	-0.47	9.490	-0.265	-0.52

Summary Statistics	Sample PP37	Sample PP38
Grand Means	9.70 sec/100 cc	9.76 sec/100 cc
Stnd Dev Btwn Labs	0.45 sec/100 cc	0.51 sec/100 cc

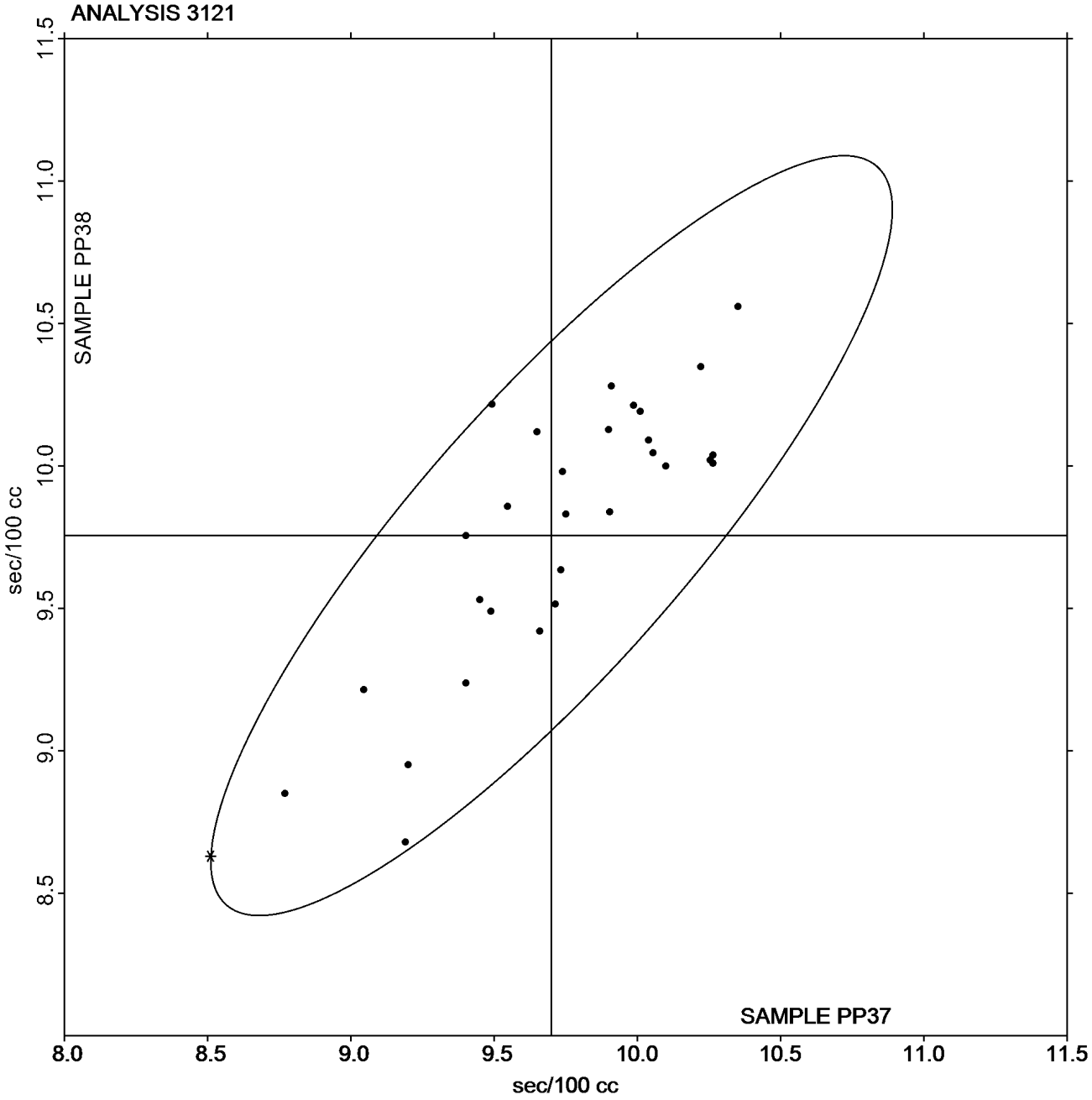
Statistics based on 30 of 31 reporting participants.

Comments on Assigned Data Flags for Test #3121

KX66WD (X) - Data for both samples are low. Possible Systematic Error.

Grand Mean Sample PP37 = 9.7005 sec/100 cc

Grand Mean Sample PP38 = 9.7554 sec/100 cc



Paper & Paperboard Interlaboratory Testing Program

Analysis 3123

Porosity - Sheffield Type - Sheffield Units for 3/4 inch Diameter Orifice

TAPPI Official Test Method T547

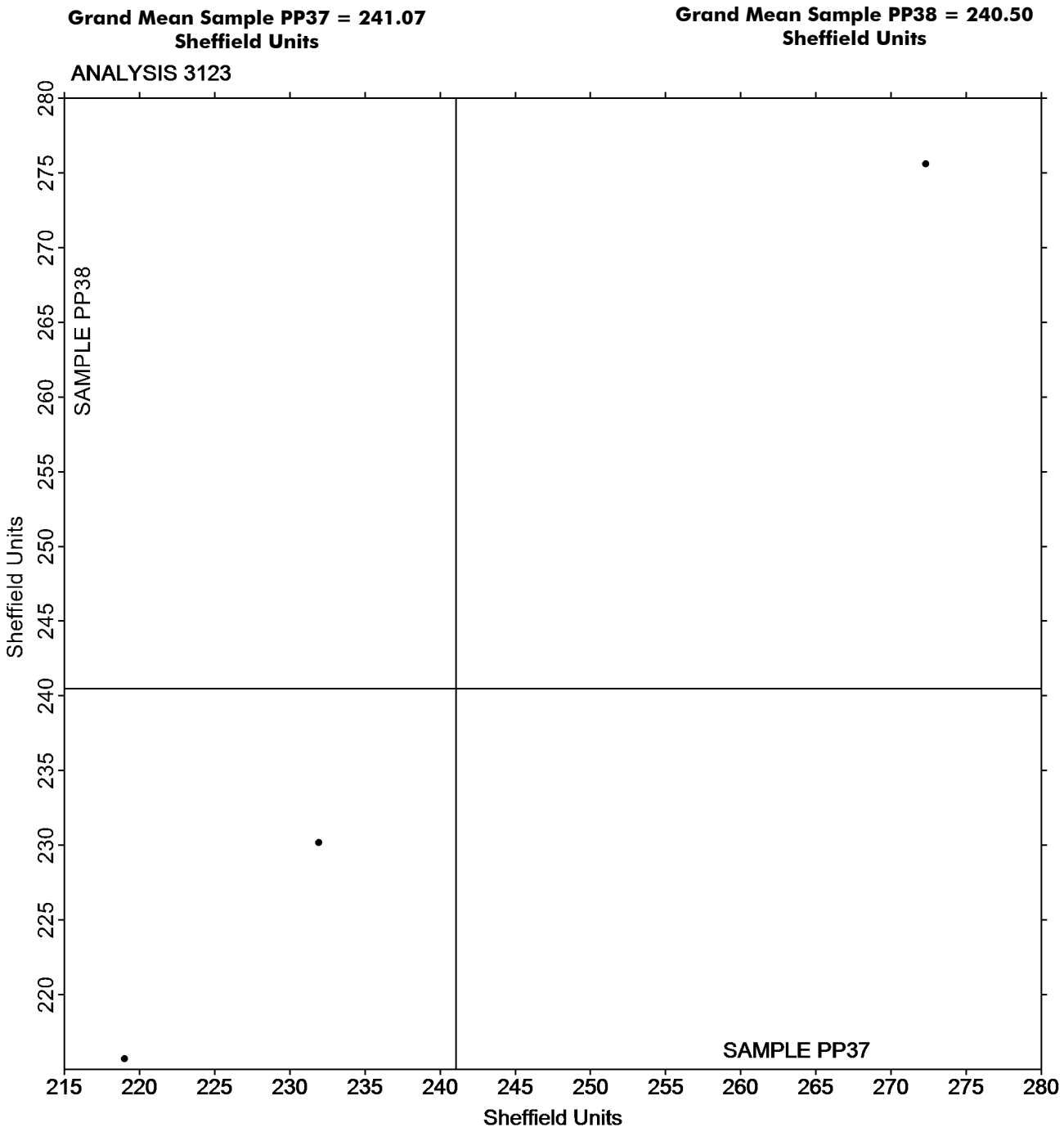
WebCode	Data Flag	Sample PP37 Lab Mean	Sample PP37 Diff from Grand Mean	Sample PP37 CPV	Sample PP38 Lab Mean	Sample PP38 Diff from Grand Mean	Sample PP38 CPV
8NJKAR		219.0	-22.1	-0.79	215.7	-24.8	-0.79
FDE3EG		231.9	-9.2	-0.33	230.2	-10.3	-0.33
YGT8WL	X	17.8	-223.3	-8.03	18.3	-222.2	-7.11
YRNLUX		272.3	31.2	1.12	275.6	35.1	1.12

Summary Statistics	Sample PP37	Sample PP38
Grand Means	241.07 Sheffield Units	240.50 Sheffield Units
Stnd Dev Btwn Labs	27.80 Sheffield Units	31.25 Sheffield Units

Statistics based on 3 of 4 reporting participants.

Comments on Assigned Data Flags for Test #3123

YGT8WL (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 3131

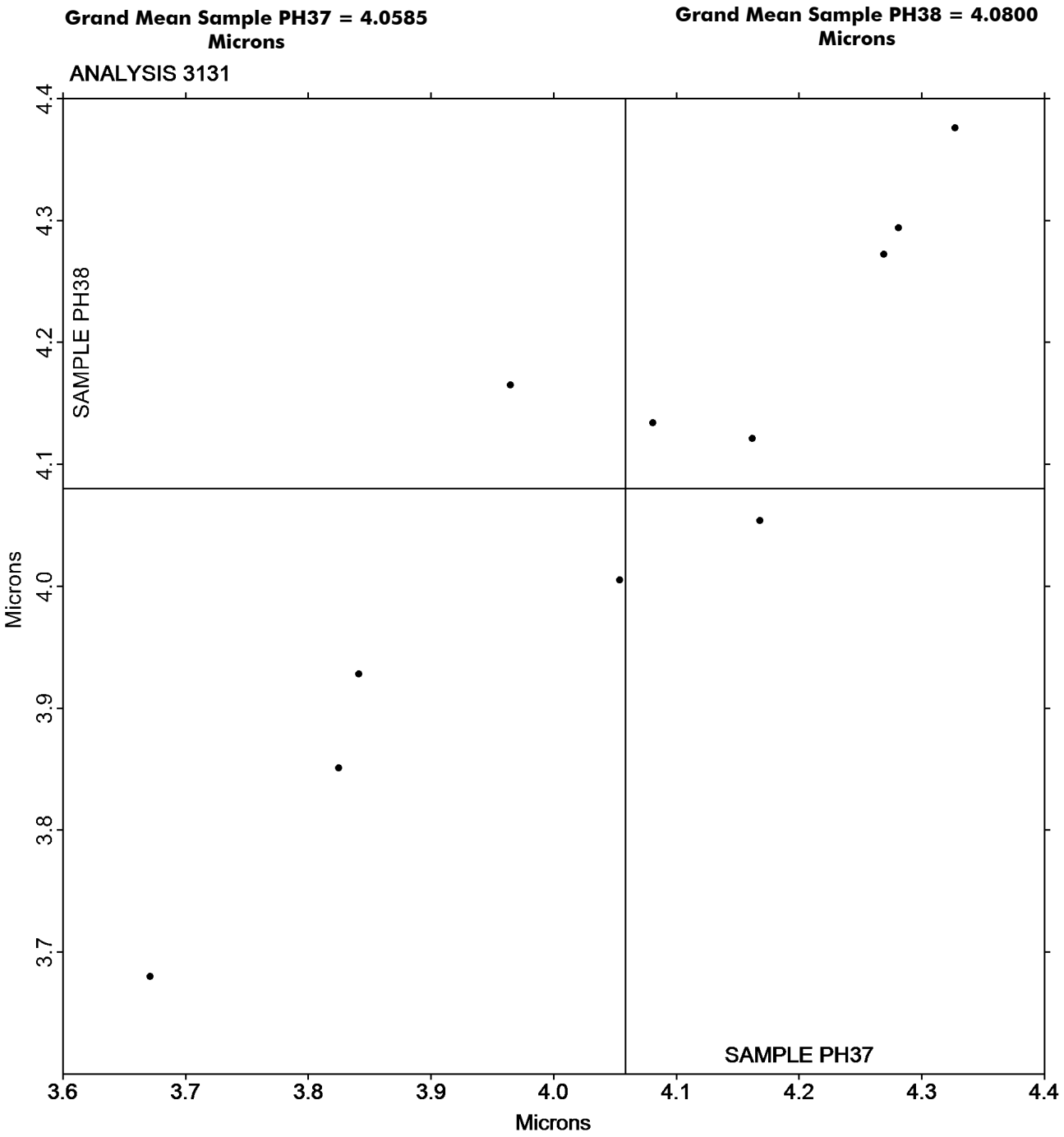
Roughness - Print Surf Method - 2.5 to 6.0 Microns

TAPPI Official Test Method T555

WebCode	Data Flag	Sample PH37 Lab Mean	Sample PH37 Diff from Grand Mean	Sample PH37 CPV	Sample PH38 Lab Mean	Sample PH38 Diff from Grand Mean	Sample PH38 CPV
8LTJ7P		3.825	-0.234	-1.10	3.851	-0.229	-1.11
9NY7JU		4.168	0.109	0.52	4.054	-0.026	-0.13
FLQJN3		4.269	0.210	0.99	4.272	0.192	0.93
LFZXHB		4.281	0.222	1.05	4.294	0.214	1.04
NCRLD7		3.965	-0.094	-0.44	4.165	0.085	0.41
PK6VGT		4.162	0.103	0.49	4.121	0.041	0.20
T7RXN2		4.327	0.268	1.27	4.376	0.296	1.44
TEL4G3		4.081	0.022	0.11	4.134	0.054	0.26
W4Q3R3		3.841	-0.218	-1.03	3.928	-0.152	-0.74
XAYMFZ		4.054	-0.005	-0.02	4.005	-0.075	-0.36
YXEV4V		3.671	-0.388	-1.83	3.680	-0.400	-1.94

Summary Statistics	Sample PH37	Sample PH38
Grand Means	4.06 Microns	4.08 Microns
Stnd Dev Btwn Labs	0.21 Microns	0.21 Microns

Statistics based on 11 of 11 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 3133

Roughness - Sheffield Type

TAPPI Official Test Method T538

WebCode	Data Flag	Sample SR37 Lab Mean	Sample SR37 Diff from Grand Mean	Sample SR37 CPV	Sample SR38 Lab Mean	Sample SR38 Diff from Grand Mean	Sample SR38 CPV
26AFLG		211.9	18.4	1.32	197.8	6.7	0.46
3FPNMF		182.8	-10.7	-0.77	180.3	-10.9	-0.76
6VR6LD	X	443.6	250.1	17.97	441.8	250.6	17.40
6ZLYJE		197.4	3.9	0.28	201.1	9.9	0.69
8HELZN		197.2	3.7	0.27	182.3	-8.9	-0.61
8LTJ7P		195.4	1.9	0.14	196.9	5.7	0.40
8LUB2C		187.2	-6.3	-0.45	182.4	-8.8	-0.61
8NJKAR		172.2	-21.3	-1.53	168.3	-22.9	-1.59
8ZVMXB		195.0	1.5	0.11	188.7	-2.4	-0.17
9NY7JU		186.1	-7.4	-0.53	199.6	8.4	0.59
AUX6AA		190.9	-2.6	-0.19	180.1	-11.1	-0.77
FCY7LH		209.3	15.8	1.14	200.0	8.8	0.61
FDE3EG		193.2	-0.3	-0.02	191.3	0.2	0.01
HTHJDE		174.0	-19.5	-1.40	178.7	-12.5	-0.87
JEVQ4Y		201.2	7.7	0.55	195.8	4.6	0.32
KX8WTZ		204.5	11.0	0.79	211.5	20.3	1.41
LFZXHB		195.6	2.1	0.15	202.2	11.0	0.76
LNU3BC	X	41.2	-152.3	-10.94	42.5	-148.7	-10.32
M77AYD		187.5	-6.0	-0.43	178.0	-13.2	-0.91
NCRLD7		227.5	34.0	2.44	224.5	33.4	2.32
PK6VGT		189.6	-3.9	-0.28	187.9	-3.3	-0.23
R87ZVA		182.4	-11.1	-0.80	183.7	-7.5	-0.52
RJGBM7		182.8	-10.7	-0.77	197.5	6.4	0.44
T7RXN2		194.1	0.6	0.04	185.2	-5.9	-0.41
T9G3G9		204.7	11.2	0.80	202.5	11.3	0.79
TBKZR2		211.4	17.9	1.29	214.9	23.8	1.65
TGADTP		181.7	-11.8	-0.85	179.4	-11.8	-0.82
TMW734		188.7	-4.8	-0.35	191.5	0.3	0.02
TYU7F8	*	231.9	38.4	2.76	210.4	19.2	1.33
V6RFY6		187.3	-6.2	-0.45	183.5	-7.7	-0.53
W4Q3R3		161.5	-32.0	-2.30	155.5	-35.7	-2.48
WMKVEL		195.4	1.9	0.14	180.4	-10.8	-0.75
XAYMFZ		183.7	-9.8	-0.70	172.1	-19.1	-1.32
Y9Y34K		178.4	-15.1	-1.09	184.5	-6.7	-0.46
YDUVYZ		188.2	-5.3	-0.38	192.5	1.3	0.09
YGT8WL		181.0	-12.5	-0.90	165.1	-26.0	-1.81
YRNLUX		190.0	-3.5	-0.25	190.3	-0.9	-0.06
YXEV4V		200.1	6.6	0.47	201.0	9.8	0.68
ZFULFZ		211.4	17.9	1.29	207.5	16.3	1.13
ZV7ZXX		196.7	3.2	0.23	204.1	13.0	0.90

Paper & Paperboard Interlaboratory Testing Program

Analysis 3133

Roughness - Sheffield Type

TAPPI Official Test Method T538

WebCode	Data Flag	Sample SR37 Lab Mean	Sample SR37 Diff from Grand Mean	Sample SR37 CPV	Sample SR38 Lab Mean	Sample SR38 Diff from Grand Mean	Sample SR38 CPV
ZXTJ42		196.9	3.4	0.24	206.3	15.1	1.05

Summary Statistics	Sample SR37	Sample SR38
Grand Means	193.51 Sheffield	191.16 Sheffield
Stnd Dev Btwn Labs	13.92 Sheffield	14.40 Sheffield

Statistics based on 39 of 41 reporting participants.

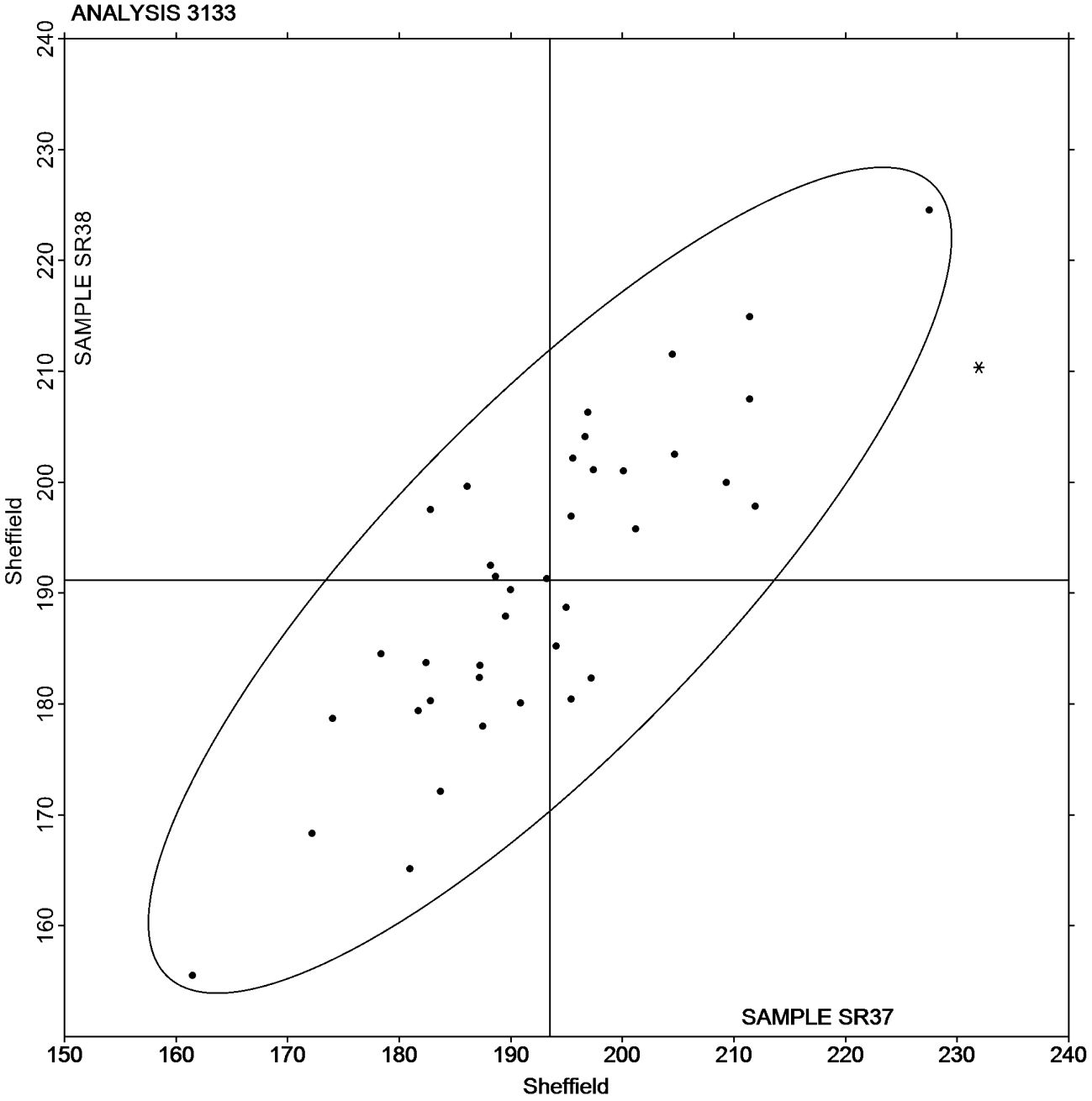
Comments on Assigned Data Flags for Test #3133

LNU3BC (X) - Extreme Data.

6VR6LD (X) - Extreme Data.

Grand Mean Sample SR37 = 193.51
Sheffield

Grand Mean Sample SR38 = 191.16
Sheffield



Paper & Paperboard Interlaboratory Testing Program

Analysis 3135

Grammage (Mass per Unit Area)

TAPPI Official Test Method T410

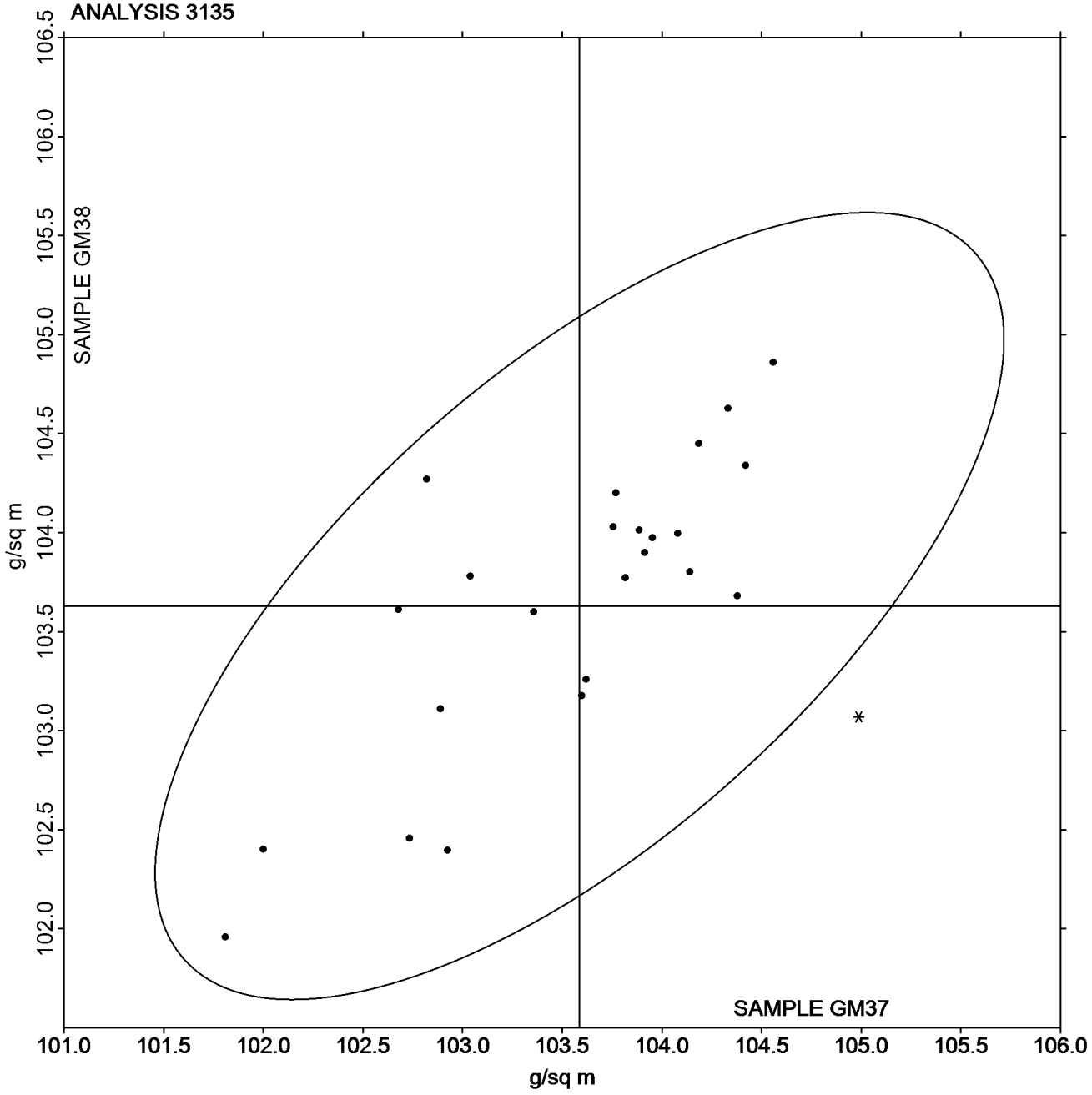
WebCode	Data Flag	Sample GM37 Lab Mean	Sample GM37 Diff from Grand Mean	Sample GM37 CPV	Sample GM38 Lab Mean	Sample GM38 Diff from Grand Mean	Sample GM38 CPV
26AFLG		102.9	-0.7	-0.87	103.1	-0.5	-0.70
2JUWCZ		104.0	0.4	0.46	104.0	0.3	0.46
7YBJPD		103.0	-0.5	-0.69	103.8	0.2	0.20
AWP4M9		104.1	0.6	0.69	103.8	0.2	0.23
CK87TN		104.1	0.5	0.62	104.0	0.4	0.49
DPW3X6		102.8	-0.8	-0.96	104.3	0.6	0.86
EXM3P3		103.9	0.3	0.38	104.0	0.4	0.52
FDE3EG		103.6	0.0	0.02	103.2	-0.5	-0.61
FNBBWJ		103.8	0.2	0.21	104.0	0.4	0.54
G4KEWJ		104.3	0.7	0.94	104.6	1.0	1.34
HTHJDE		103.4	-0.2	-0.29	103.6	0.0	-0.04
NDBBZ8		103.8	0.2	0.23	104.2	0.6	0.77
PBFABV		103.9	0.3	0.41	103.9	0.3	0.36
PEEK8V	*	105.0	1.4	1.76	103.1	-0.6	-0.75
R87ZVA		104.4	0.8	1.00	103.7	0.1	0.07
TBKZR2		104.2	0.6	0.75	104.5	0.8	1.11
TMXXYQ		102.7	-0.9	-1.07	102.5	-1.2	-1.58
TUZAT2		102.0	-1.6	-1.99	102.4	-1.2	-1.65
UE3GK7		103.8	0.2	0.29	103.8	0.1	0.19
W2MAX6		102.9	-0.7	-0.83	102.4	-1.2	-1.66
YDUVYZ		103.6	0.0	0.04	103.3	-0.4	-0.50
YGT8WL		101.8	-1.8	-2.23	102.0	-1.7	-2.25
YRNLUX		102.7	-0.9	-1.14	103.6	0.0	-0.03
ZEJG8H		104.6	1.0	1.22	104.9	1.2	1.66
ZNL6WU		104.4	0.8	1.05	104.3	0.7	0.96

Summary Statistics	Sample GM37	Sample GM38
Grand Means	103.59 g/sq m	103.63 g/sq m
Stnd Dev Btwn Labs	0.80 g/sq m	0.74 g/sq m

Statistics based on 25 of 25 reporting participants.

Grand Mean Sample GM37 = 103.59 g/sq m

Grand Mean Sample GM38 = 103.63 g/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 3141

Opacity (89% Reflectance Backing) - Fine Papers

TAPPI Official Test Method T425

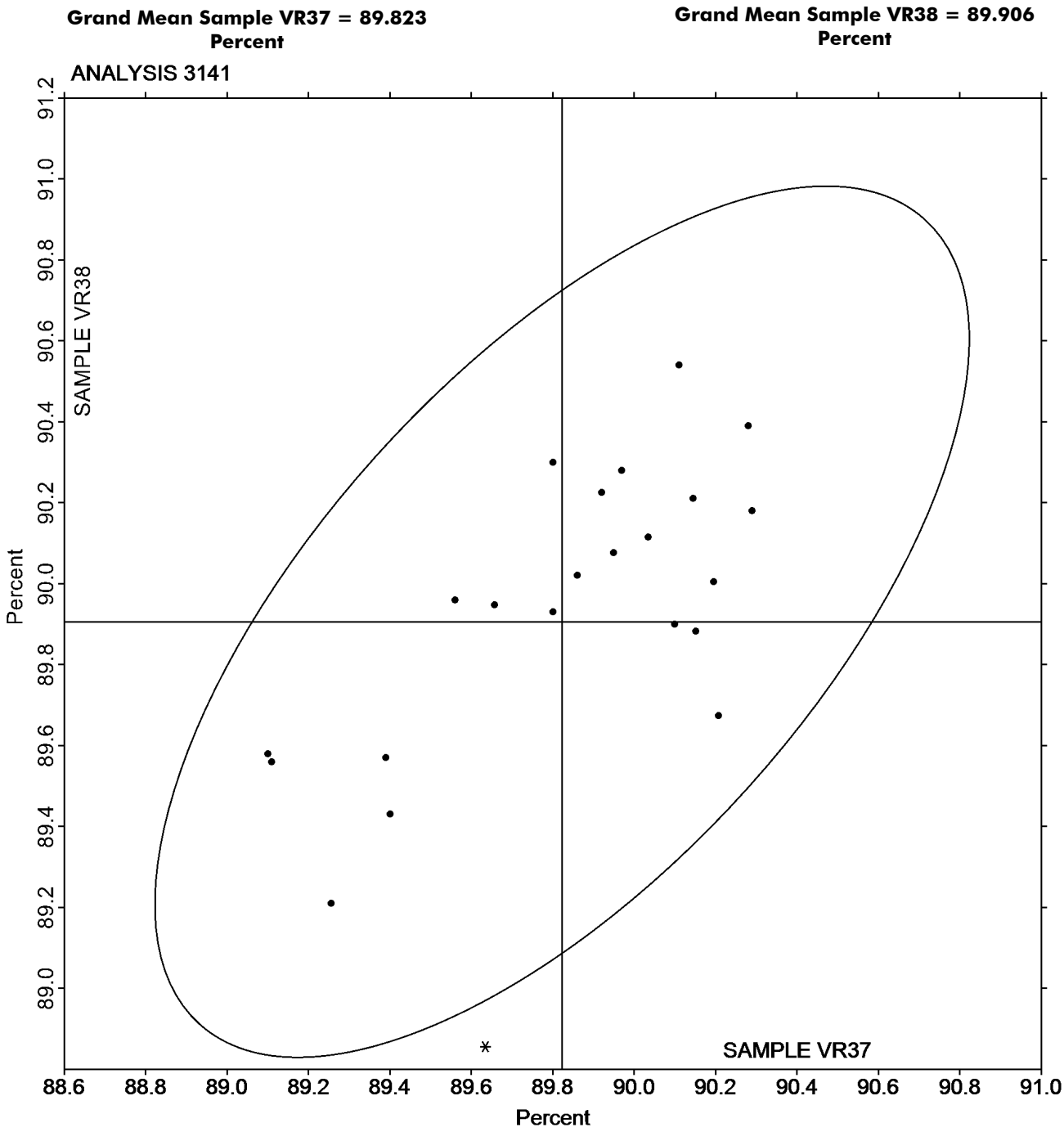
WebCode	Data Flag	Sample VR37 Lab Mean	Sample VR37 Diff from Grand Mean	Sample VR37 CPV	Sample VR38 Lab Mean	Sample VR38 Diff from Grand Mean	Sample VR38 CPV
26AFLG		90.11	0.29	0.77	90.54	0.63	1.59
3DZEBT		90.21	0.38	1.04	89.67	-0.23	-0.58
3FPNMF		89.95	0.13	0.34	90.08	0.17	0.43
8HELZN		90.29	0.47	1.26	90.18	0.27	0.69
8LUB2C		89.39	-0.43	-1.17	89.57	-0.34	-0.84
8NJKAR		90.15	0.33	0.89	89.88	-0.02	-0.06
8ZVMXB		90.28	0.46	1.23	90.39	0.48	1.21
AUX6AA		90.15	0.32	0.87	90.21	0.30	0.76
FDE3EG		89.40	-0.42	-1.14	89.43	-0.48	-1.19
FNBBWJ		89.66	-0.17	-0.45	89.95	0.04	0.10
HTHJDE		89.80	-0.02	-0.06	89.93	0.02	0.06
KX8WTZ		89.10	-0.72	-1.95	89.58	-0.33	-0.82
LFZXHB	*	89.63	-0.19	-0.51	88.86	-1.05	-2.63
PK6VGT		90.03	0.21	0.57	90.12	0.21	0.52
R87ZVA		89.86	0.04	0.10	90.02	0.11	0.29
T7RXN2		90.20	0.37	1.01	90.00	0.10	0.25
TBKZR2		89.80	-0.02	-0.06	90.30	0.39	0.99
TMW734		89.92	0.10	0.26	90.23	0.32	0.80
UFBU38		89.97	0.15	0.39	90.28	0.37	0.94
W27AHL		90.10	0.28	0.75	89.90	-0.01	-0.02
YDUVYZ		89.11	-0.71	-1.92	89.56	-0.35	-0.87
YGT8WL		89.26	-0.57	-1.53	89.21	-0.70	-1.74
YRNLUX		89.56	-0.26	-0.71	89.96	0.05	0.14

Summary Statistics	Sample VR37	Sample VR38
Grand Means	89.82 Percent	89.91 Percent
Stnd Dev Btwn Labs	0.37 Percent	0.40 Percent

Statistics based on 23 of 23 reporting participants.

Analysis Notes:

PK6VGT - One determination removed from the Lab Mean of Sample VR37 per Grubb's Test at 1% risk (TAPPI 1205).



Paper & Paperboard Interlaboratory Testing Program

Analysis 3143

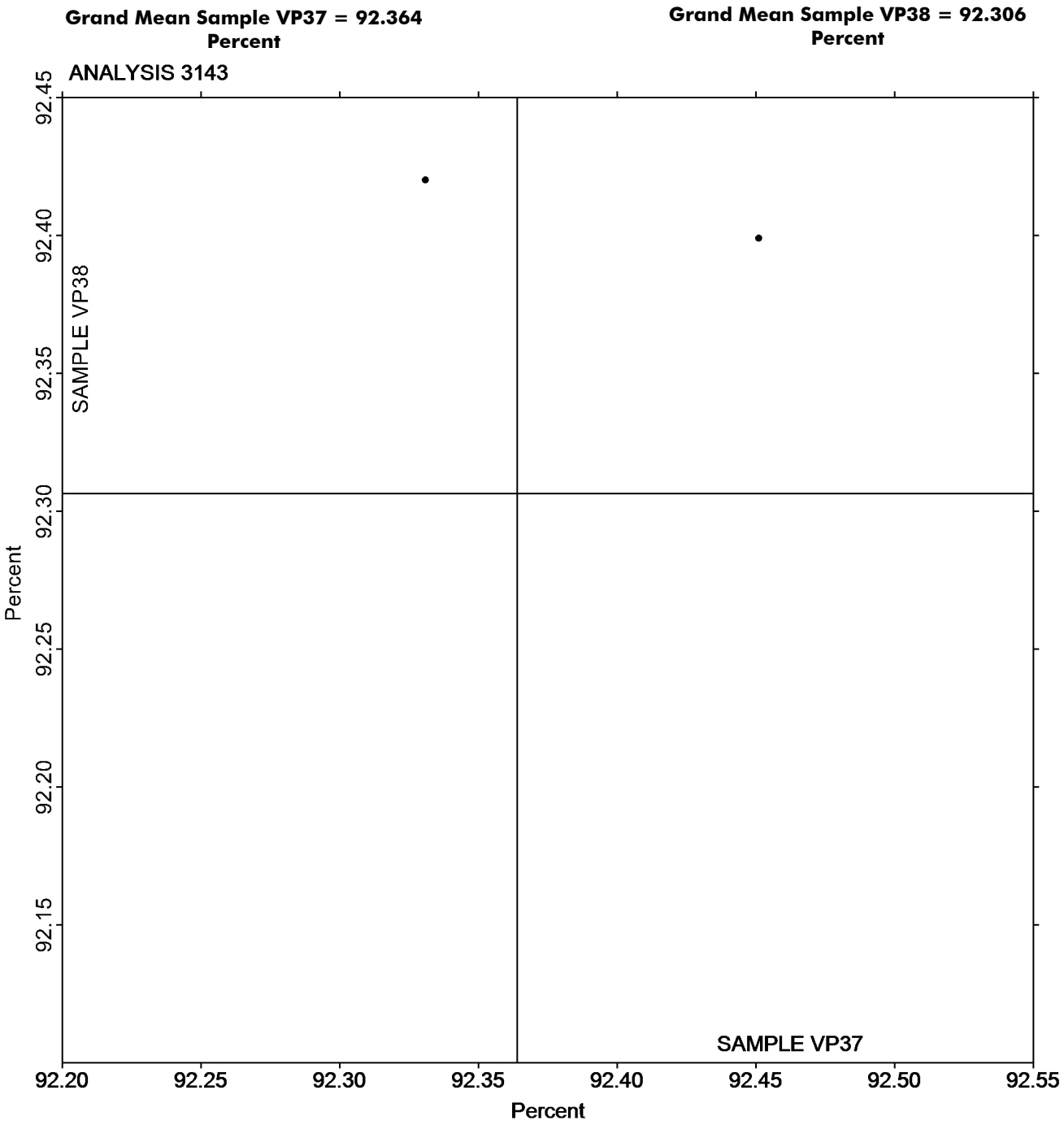
Opacity (Paper Backing) - Fine Papers and Newsprint

TAPPI Official Test Method T519

WebCode	Data Flag	Sample VP37 Lab Mean	Sample VP37 Diff from Grand Mean	Sample VP37 CPV	Sample VP38 Lab Mean	Sample VP38 Diff from Grand Mean	Sample VP38 CPV
7YBJPD		92.31	-0.05	-0.71	92.10	-0.21	-1.15
DZU49N		92.45	0.09	1.14	92.40	0.09	0.52
UE3GK7		92.33	-0.03	-0.43	92.42	0.11	0.64

Summary Statistics	Sample VP37	Sample VP38
Grand Means	92.36 Percent	92.31 Percent
Stnd Dev Btwn Labs	0.08 Percent	0.18 Percent

Statistics based on 3 of 3 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 3145

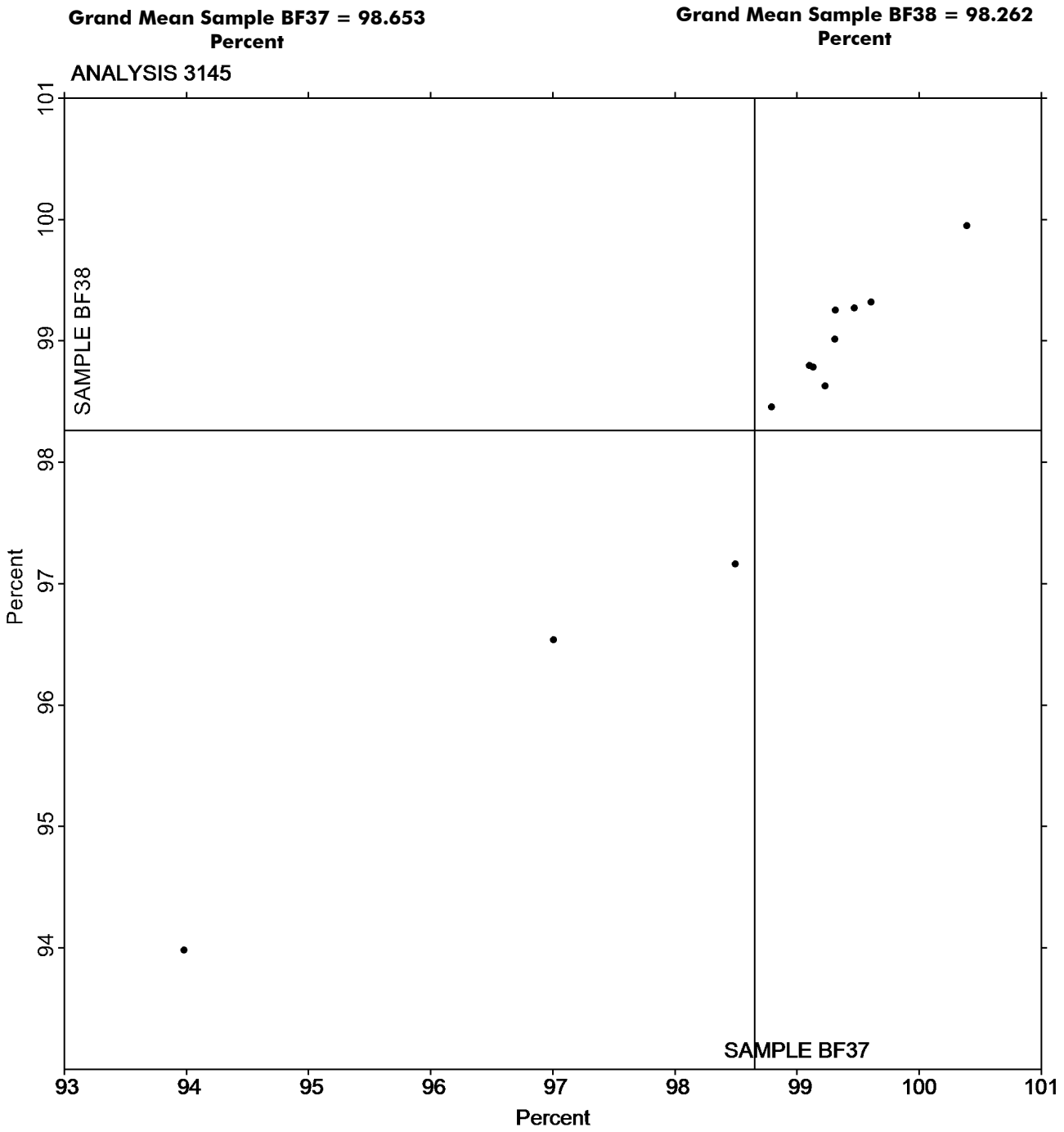
Directional Brightness of Fluorescent Samples

TAPPI Official Test Method T452

WebCode	Data Flag	Sample BF37 Lab Mean	Sample BF37 Diff from Grand Mean	Sample BF37 CPV	Sample BF38 Lab Mean	Sample BF38 Diff from Grand Mean	Sample BF38 CPV
3DZEBT		99.13	0.48	0.29	98.78	0.52	0.32
8LUB2C		98.79	0.14	0.08	98.45	0.19	0.12
AUX6AA		99.31	0.66	0.39	99.01	0.75	0.46
C6TXV7		93.98	-4.67	-2.79	93.98	-4.28	-2.60
FNBBWJ		97.01	-1.65	-0.98	96.54	-1.72	-1.05
HTHJDE		99.23	0.58	0.35	98.63	0.36	0.22
LNU3BC		98.49	-0.16	-0.09	97.16	-1.10	-0.67
PK6VGT		100.39	1.74	1.04	99.95	1.69	1.03
T7RXN2		99.32	0.66	0.40	99.25	0.99	0.60
TMW734		99.61	0.95	0.57	99.32	1.06	0.64
UFBU38		99.47	0.82	0.49	99.27	1.01	0.61
YGT8WL		99.10	0.45	0.27	98.80	0.54	0.33

Summary Statistics	Sample BF37	Sample BF38
Grand Means	98.65 Percent	98.26 Percent
Stnd Dev Btwn Labs	1.67 Percent	1.65 Percent

Statistics based on 12 of 12 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 3146

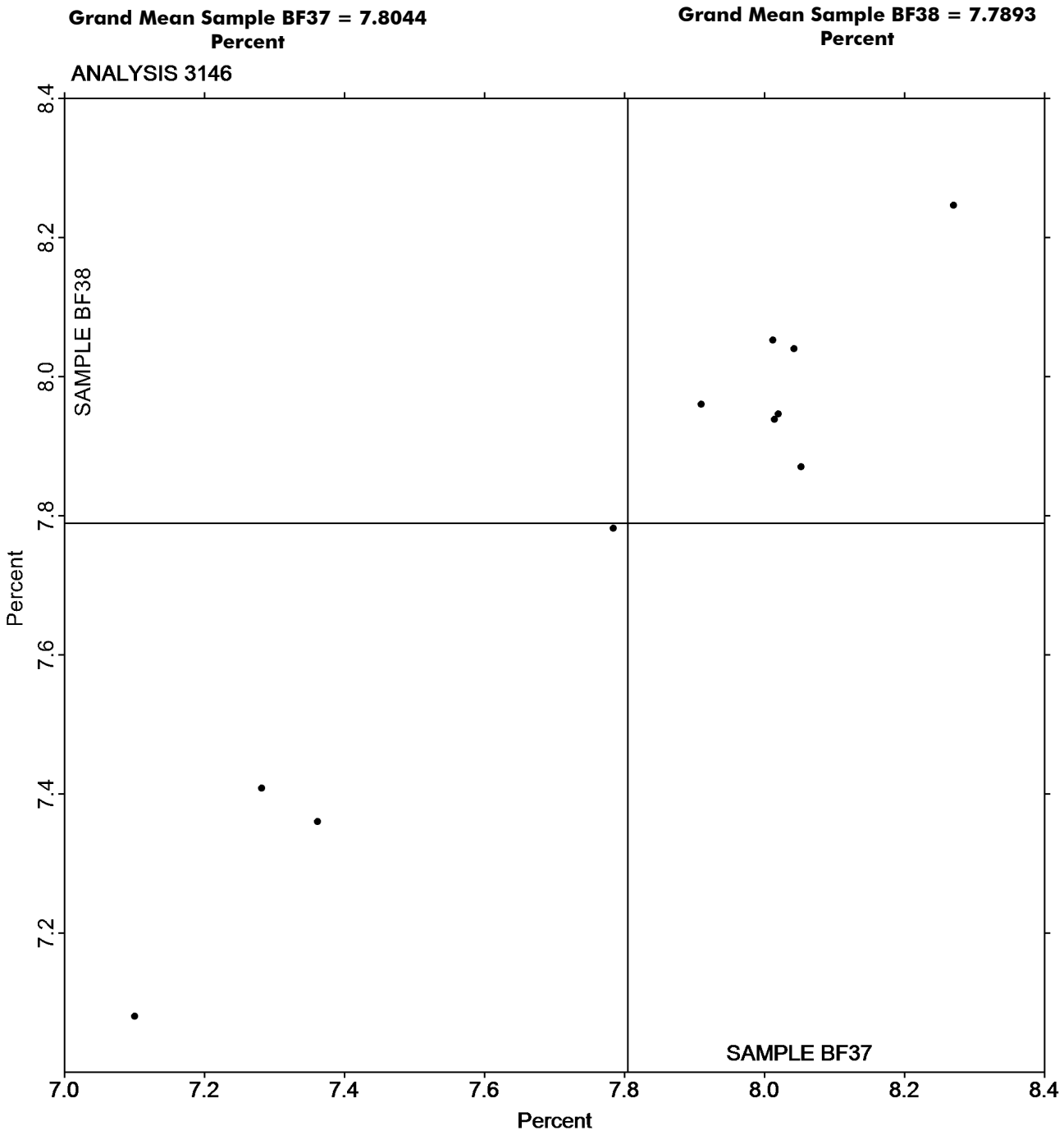
Fluorescent Component of Directional Brightness

TAPPI Official Test Method T452

WebCode	Data Flag	Sample BF37 Lab Mean	Sample BF37 Diff from Grand Mean	Sample BF37 CPV	Sample BF38 Lab Mean	Sample BF38 Diff from Grand Mean	Sample BF38 CPV
3DZEBT		8.020	0.216	0.57	7.946	0.157	0.44
8LUB2C		8.014	0.210	0.55	7.938	0.149	0.42
AUX6AA		8.012	0.208	0.55	8.052	0.263	0.74
C6TXV7		7.100	-0.704	-1.85	7.080	-0.709	-2.00
HTHJDE		8.052	0.248	0.65	7.870	0.081	0.23
LNU3BC		7.282	-0.522	-1.37	7.408	-0.381	-1.08
PK6VGT		8.042	0.238	0.63	8.040	0.251	0.71
T7RXN2		8.270	0.466	1.23	8.246	0.457	1.29
TMW734		7.784	-0.020	-0.05	7.782	-0.007	-0.02
UFBU38		7.362	-0.442	-1.16	7.360	-0.429	-1.21
YGT8WL		7.910	0.106	0.28	7.960	0.171	0.48

Summary Statistics	Sample BF37	Sample BF38
Grand Means	7.80 Percent	7.79 Percent
Stnd Dev Btwn Labs	0.38 Percent	0.35 Percent

Statistics based on 11 of 11 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 3201

Bending Resistance, Taber Type - 0 to 10 Units

TAPPI Official Test Method T566

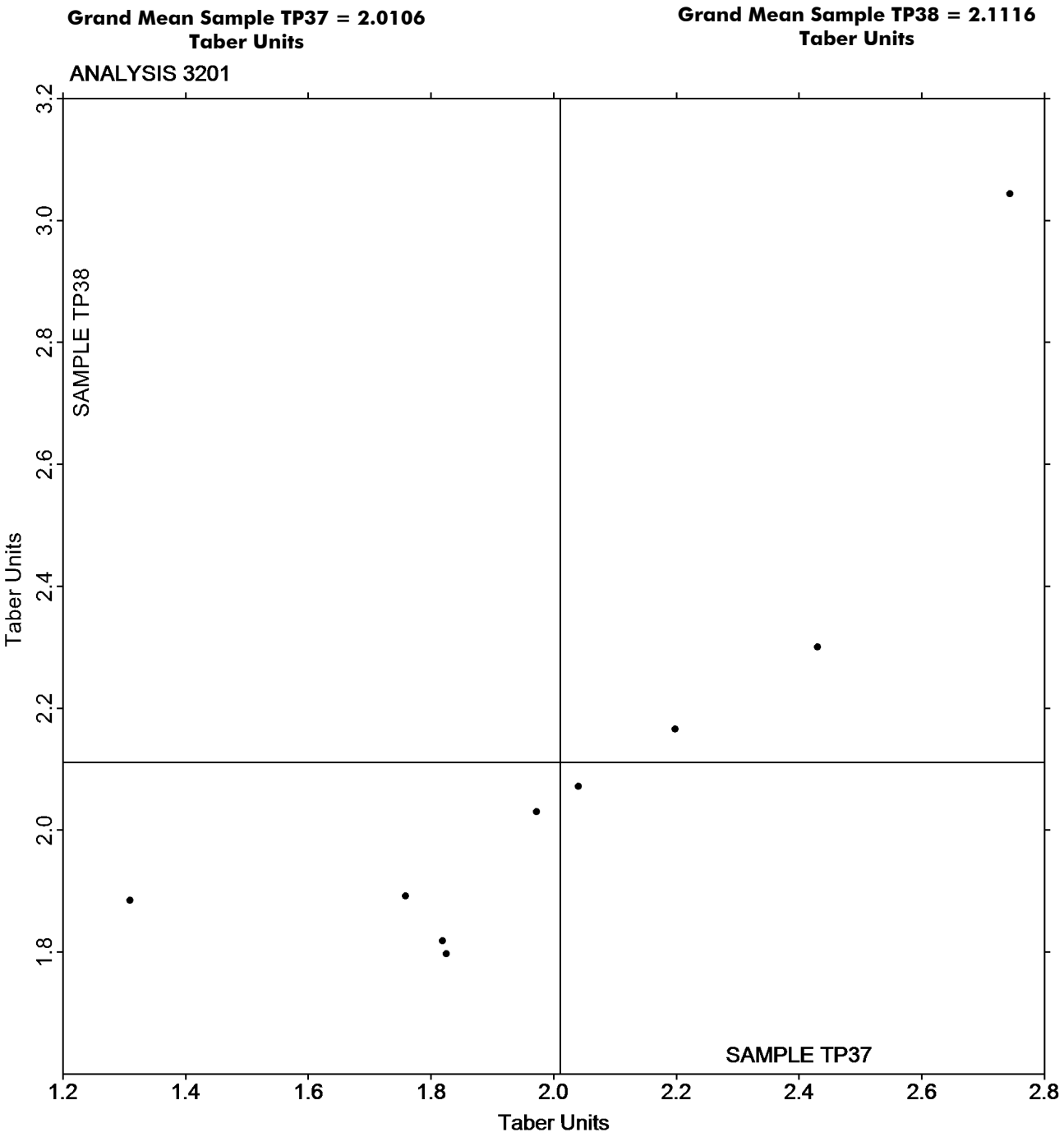
WebCode	Data Flag	Sample TP37 Lab Mean	Sample TP37 Diff from Grand Mean	Sample TP37 CPV	Sample TP38 Lab Mean	Sample TP38 Diff from Grand Mean	Sample TP38 CPV
26AFLG		1.972	-0.039	-0.09	2.030	-0.082	-0.21
8LUB2C		1.309	-0.702	-1.69	1.885	-0.227	-0.58
8NJKAR		2.430	0.419	1.01	2.300	0.188	0.49
8ZVMXB		2.198	0.187	0.45	2.166	0.054	0.14
AUX6AA		1.825	-0.186	-0.45	1.797	-0.315	-0.81
T7RXN2		1.819	-0.192	-0.46	1.818	-0.294	-0.76
TMW734		1.759	-0.252	-0.61	1.892	-0.220	-0.57
X64THY		2.040	0.029	0.07	2.072	-0.040	-0.10
YGT8WL	X	141.300	139.289	335.59	139.800	137.688	355.39
YRNLUX		2.744	0.733	1.77	3.044	0.932	2.41

Summary Statistics	Sample TP37	Sample TP38
Grand Means	2.01 Taber Units	2.11 Taber Units
Stnd Dev Btwn Labs	0.42 Taber Units	0.39 Taber Units

Statistics based on 9 of 10 reporting participants.

Comments on Assigned Data Flags for Test #3201

YGT8WL (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 3203

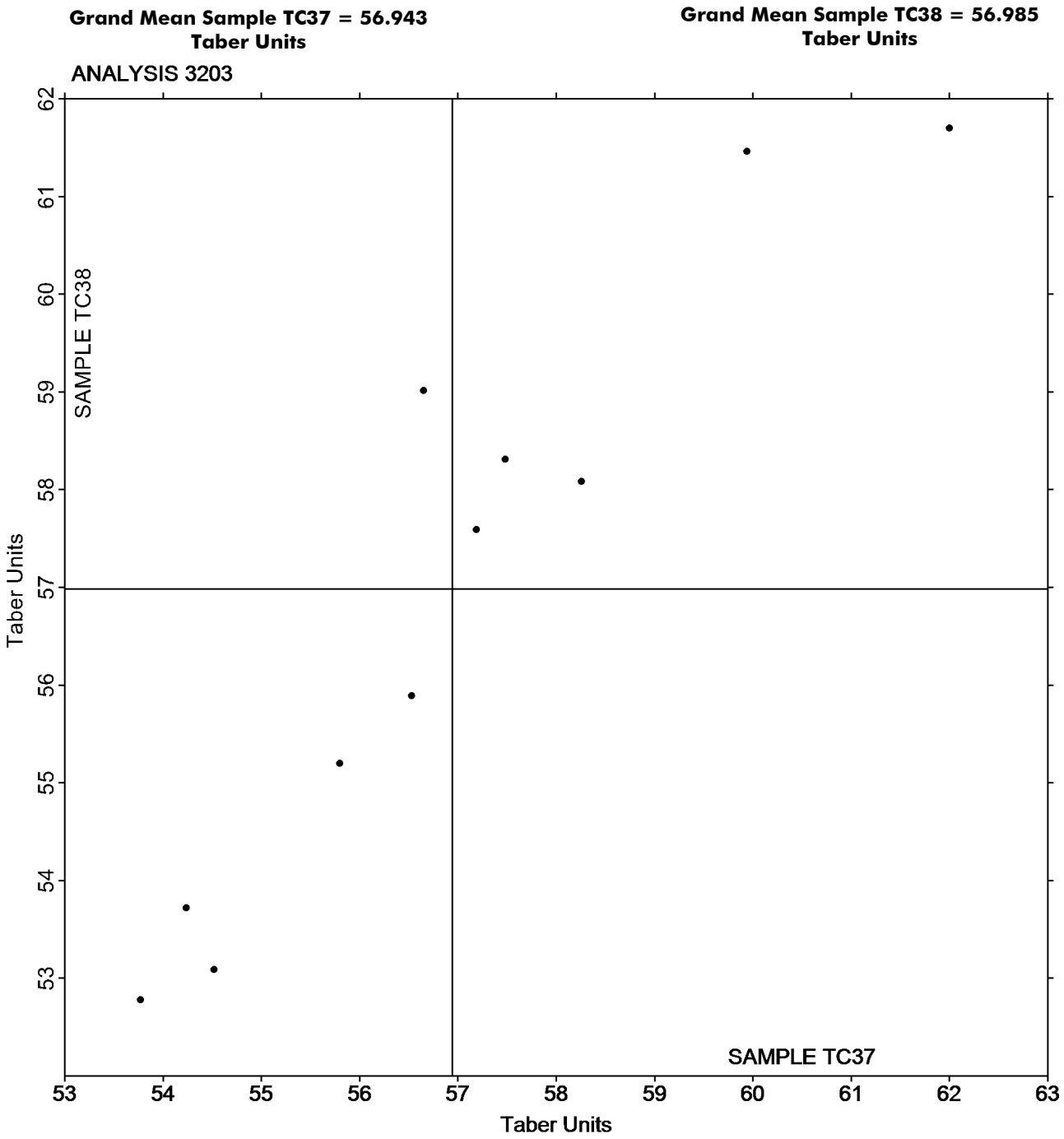
Bending Resistance, Taber Type - 10 to 100 Taber Units

TAPPI Official Test Method T489

WebCode	Data Flag	Sample TC37 Lab Mean	Sample TC37 Diff from Grand Mean	Sample TC37 CPV	Sample TC38 Lab Mean	Sample TC38 Diff from Grand Mean	Sample TC38 CPV
8LTJ7P		56.53	-0.41	-0.17	55.89	-1.10	-0.35
8LUB2C		57.48	0.54	0.22	58.31	1.32	0.42
FCY7LH		62.00	5.06	2.04	61.70	4.71	1.51
GV7TP2		53.77	-3.17	-1.28	52.78	-4.21	-1.35
HTHJDE		54.24	-2.70	-1.09	53.72	-3.27	-1.05
NCRLD7		55.80	-1.14	-0.46	55.20	-1.79	-0.57
TEL4G3		54.52	-2.42	-0.98	53.09	-3.90	-1.25
W4Q3R3		56.65	-0.29	-0.12	59.02	2.03	0.65
XAYMFZ		58.26	1.31	0.53	58.08	1.10	0.35
ZEJG8H		57.19	0.25	0.10	57.59	0.60	0.19
ZV7ZXX		59.94	3.00	1.21	61.46	4.47	1.43

Summary Statistics	Sample TC37	Sample TC38
Grand Means	56.94 Taber Units	56.99 Taber Units
Stnd Dev Btwn Labs	2.48 Taber Units	3.12 Taber Units

Statistics based on 11 of 11 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 3205

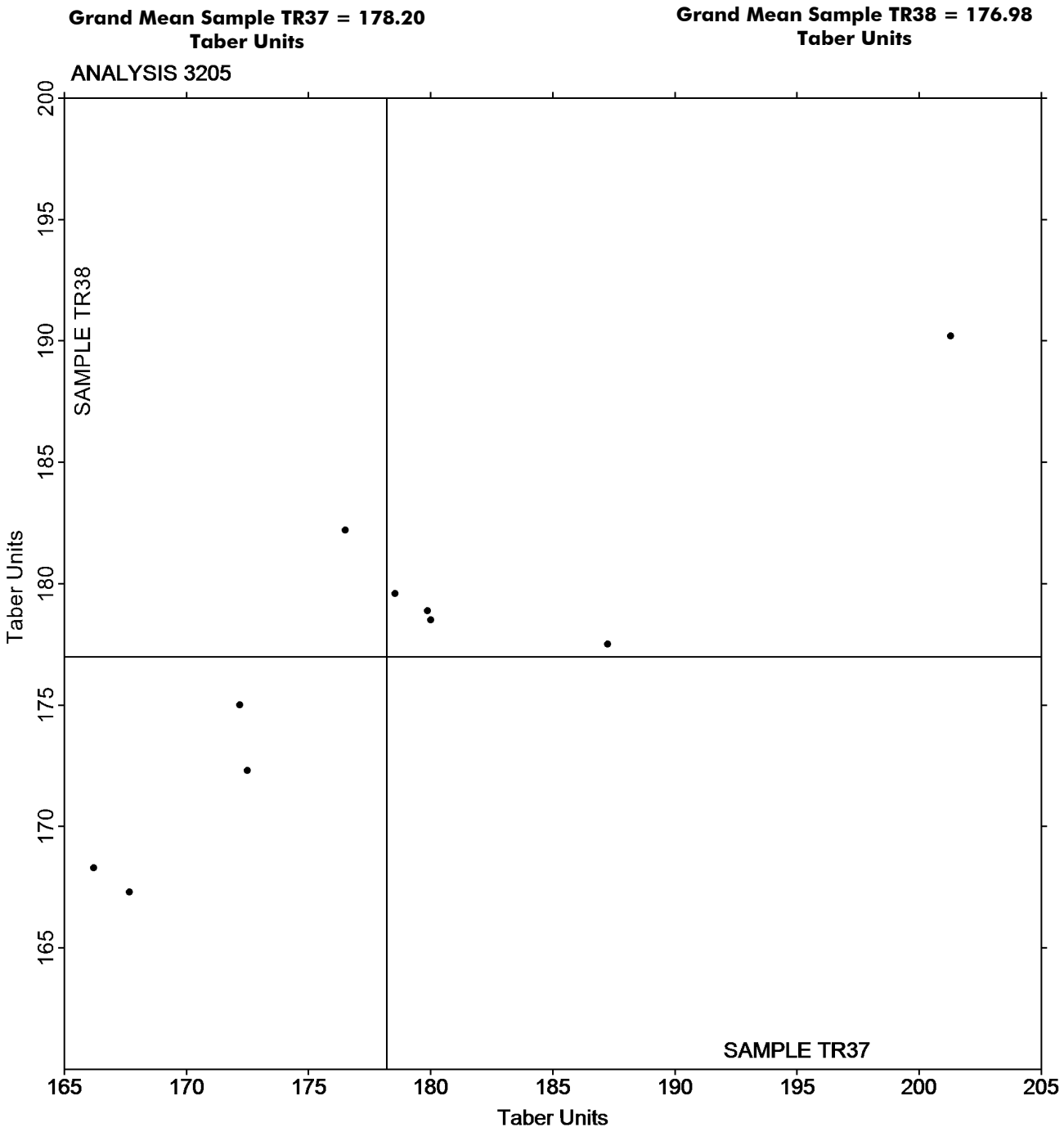
Bending Resistance, Taber Type - 50 to 500 Taber Units - Recycled Paperboard

TAPPI Official Test Method T489

WebCode	Data Flag	Sample TR37 Lab Mean	Sample TR37 Diff from Grand Mean	Sample TR37 CPV	Sample TR38 Lab Mean	Sample TR38 Diff from Grand Mean	Sample TR38 CPV
6ZLYJE		172.5	-5.7	-0.56	172.3	-4.7	-0.69
8HELZN		167.7	-10.5	-1.03	167.3	-9.7	-1.43
8LTJ7P		172.2	-6.0	-0.59	175.0	-2.0	-0.29
9NY7JU		166.2	-12.0	-1.17	168.3	-8.7	-1.29
JD23JH		187.3	9.0	0.88	177.5	0.5	0.08
RJGBM7		176.5	-1.7	-0.17	182.2	5.2	0.77
RQHP98		180.0	1.8	0.18	178.5	1.5	0.23
T9G3G9		201.3	23.1	2.25	190.2	13.2	1.96
W4Q3R3		179.9	1.7	0.16	178.9	1.9	0.28
XAYMFZ		178.5	0.3	0.03	179.6	2.6	0.39

Summary Statistics	Sample TR37	Sample TR38
Grand Means	178.20 Taber Units	176.98 Taber Units
Stnd Dev Btwn Labs	10.27 Taber Units	6.75 Taber Units

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 3207
Z-Direction Tensile, Recycled Paperboard
TAPPI Official Test Method T541

WebCode	Data Flag	Sample ZR37 Lab Mean	Sample ZR37 Diff from Grand Mean	Sample ZR37 CPV	Sample ZR38 Lab Mean	Sample ZR38 Diff from Grand Mean	Sample ZR38 CPV
447QTW		49.20	-3.65	-0.84	49.78	-2.72	-0.69
6DA4PQ		59.68	6.83	1.57	60.72	8.22	2.08
6RQ2UQ		50.00	-2.85	-0.66	50.00	-2.50	-0.63
6ZLYJE		50.38	-2.47	-0.57	50.12	-2.38	-0.60
7JWBMP		57.54	4.69	1.08	57.84	5.34	1.35
82UV2N		49.24	-3.61	-0.83	48.06	-4.44	-1.12
8HELZN		46.32	-6.53	-1.50	49.52	-2.98	-0.75
8LTJ7P		58.38	5.53	1.27	56.80	4.30	1.09
9NY7JU		51.60	-1.25	-0.29	50.80	-1.70	-0.43
9WU7XL		60.48	7.63	1.76	59.62	7.12	1.80
DA66UP		53.88	1.03	0.24	52.74	0.24	0.06
JD23JH		47.09	-5.76	-1.33	47.04	-5.45	-1.38
JVGCKH		55.14	2.29	0.53	55.70	3.20	0.81
QH92WU		50.20	-2.65	-0.61	49.50	-3.00	-0.76
RJJ4JT		47.65	-5.20	-1.20	48.05	-4.44	-1.13
RQHP98		49.80	-3.05	-0.70	50.80	-1.70	-0.43
TGADTP		57.20	4.35	1.00	55.20	2.70	0.68
W4Q3R3		56.23	3.37	0.78	53.32	0.82	0.21
YKDY74	X	38.22	-14.63	-3.37	48.01	-4.49	-1.14
YXEV4V		52.40	-0.45	-0.10	52.00	-0.50	-0.13
ZX93MY		54.62	1.77	0.41	52.34	-0.16	-0.04

Summary Statistics	Sample ZR37	Sample ZR38
Grand Means	52.85 psi	52.50 psi
Stnd Dev Btwn Labs	4.35 psi	3.95 psi

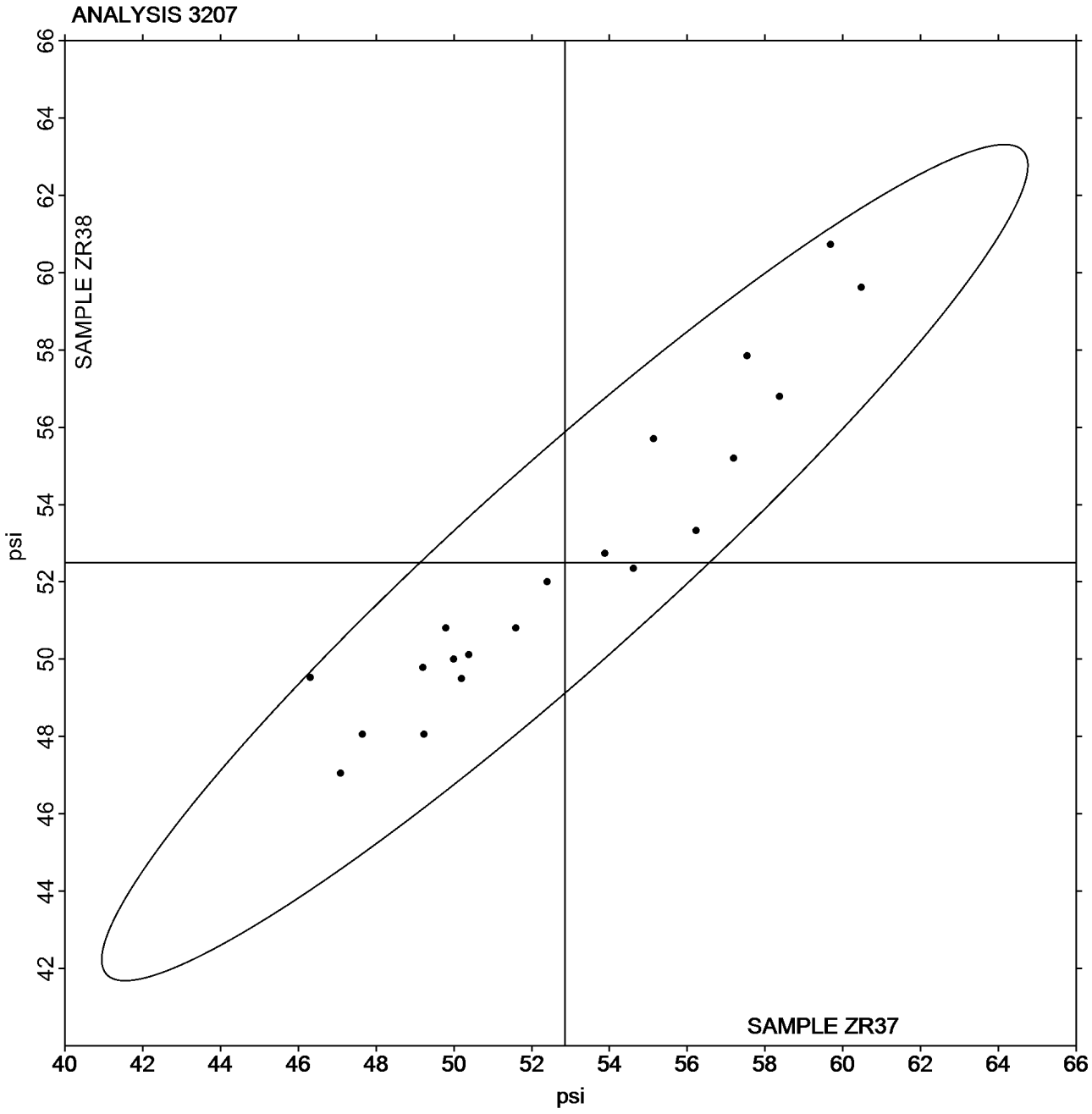
Statistics based on 20 of 21 reporting participants.

Comments on Assigned Data Flags for Test #3207

YKDY74 (X) - Data for sample ZR37 are low. Inconsistent within the determinations of both samples.

Grand Mean Sample ZR37 = 52.851 psi

Grand Mean Sample ZR38 = 52.498 psi



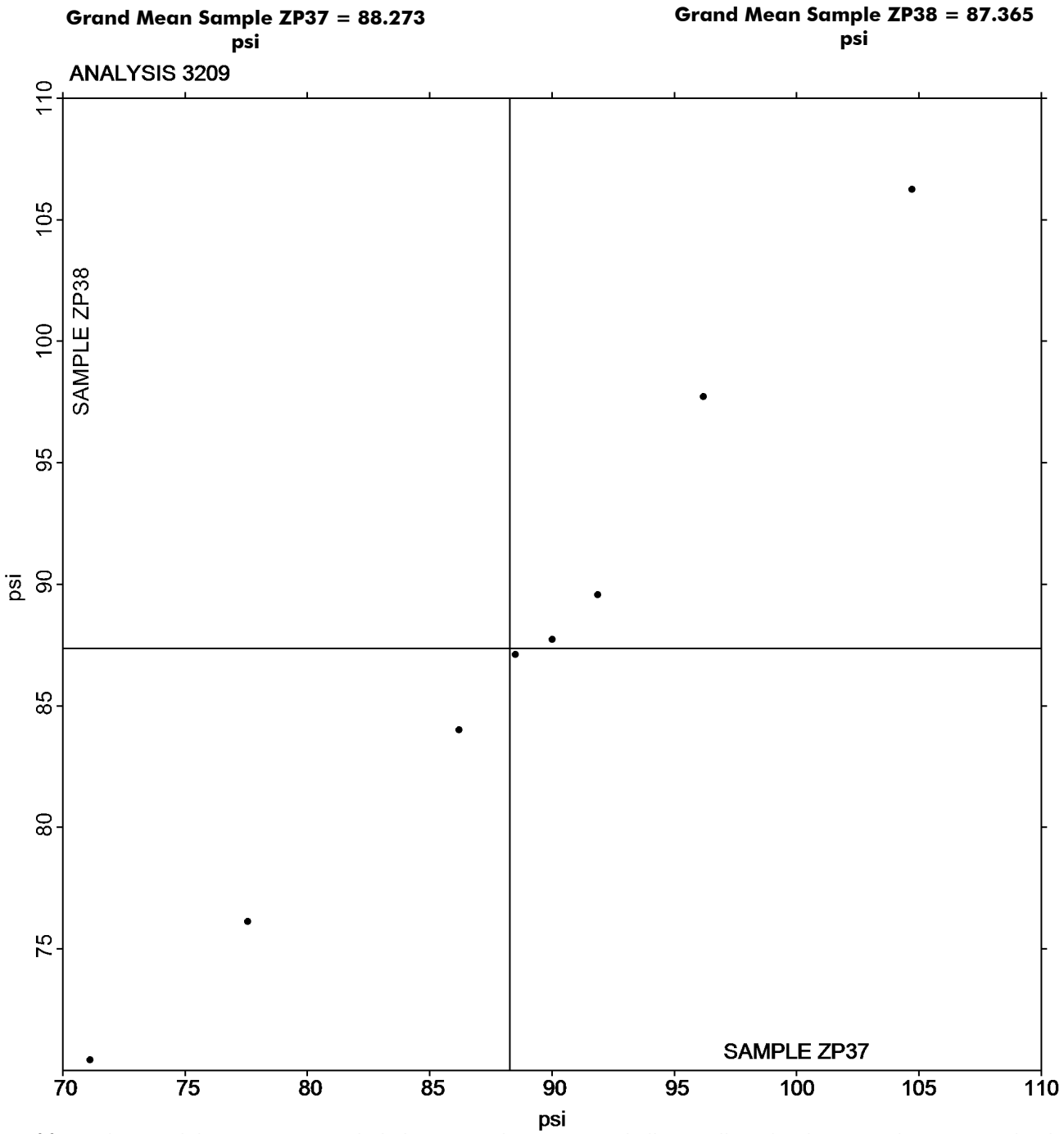
Paper & Paperboard Interlaboratory Testing Program

Analysis 3209
Z-Direction Tensile
TAPPI Official Test Method T541

WebCode	Data Flag	Sample ZP37 Lab Mean	Sample ZP37 Diff from Grand Mean	Sample ZP37 CPV	Sample ZP38 Lab Mean	Sample ZP38 Diff from Grand Mean	Sample ZP38 CPV
8LTJ7P		104.72	16.45	1.58	106.24	18.87	1.67
FCY7LH		90.00	1.73	0.17	87.72	0.36	0.03
GV7TP2		88.50	0.23	0.02	87.12	-0.25	-0.02
RJGBM7		77.56	-10.71	-1.03	76.12	-11.24	-1.00
RM4VRA		86.20	-2.07	-0.20	84.00	-3.36	-0.30
T9G3G9		96.20	7.93	0.76	97.72	10.35	0.92
TEL4G3		71.12	-17.15	-1.64	70.44	-16.93	-1.50
ZV7ZXX		91.88	3.61	0.35	89.56	2.19	0.19

Summary Statistics	Sample ZP37	Sample ZP38
Grand Means	88.27 psi	87.37 psi
Stnd Dev Btwn Labs	10.44 psi	11.29 psi

Statistics based on 8 of 8 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 3211

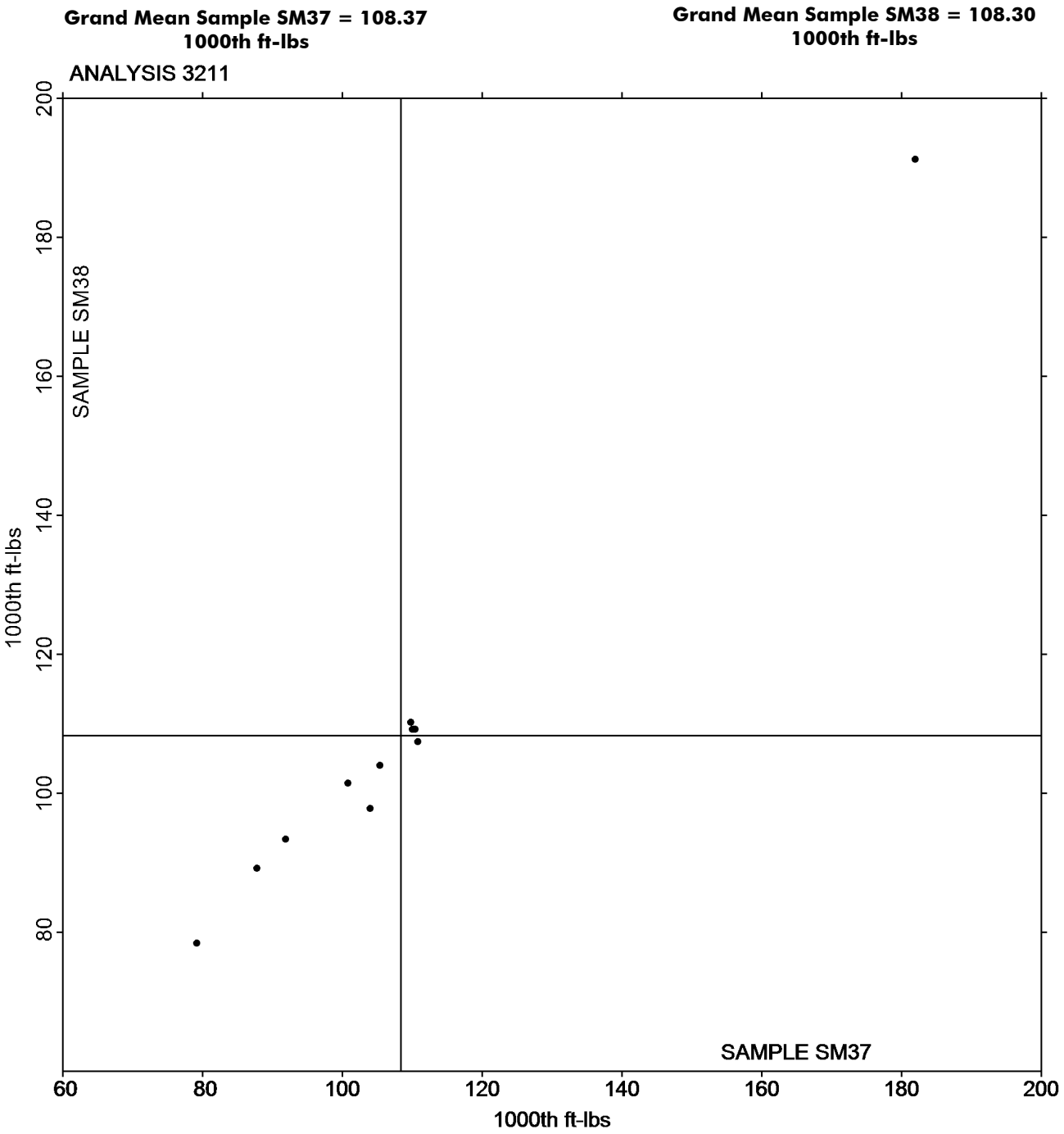
Internal Bond Strength - Modified Scott Mechanics

TAPPI Provisional Test Method T569

WebCode	Data Flag	Sample SM37 Lab Mean	Sample SM37 Diff from Grand Mean	Sample SM37 CPV	Sample SM38 Lab Mean	Sample SM38 Diff from Grand Mean	Sample SM38 CPV
3FPNMF		104.0	-4.4	-0.16	97.8	-10.5	-0.36
8LTJ7P		110.4	2.0	0.08	109.2	0.9	0.03
9NY7JU		105.4	-3.0	-0.11	104.0	-4.3	-0.15
C6TXV7		182.0	73.6	2.77	191.2	82.9	2.84
FCY7LH		110.0	1.6	0.06	109.2	0.9	0.03
GV7TP2		100.8	-7.6	-0.28	101.4	-6.9	-0.24
T9G3G9		79.2	-29.2	-1.10	78.4	-29.9	-1.02
V6RFY6		109.8	1.4	0.05	110.2	1.9	0.06
X64THY		91.9	-16.5	-0.62	93.3	-15.0	-0.51
YGT8WL		87.8	-20.6	-0.77	89.2	-19.1	-0.65
ZV7ZXX		110.8	2.4	0.09	107.4	-0.9	-0.03

Summary Statistics	Sample SM37	Sample SM38
Grand Means	108.37 1000th ft-lbs	108.30 1000th ft-lbs
Stnd Dev Btwn Labs	26.58 1000th ft-lbs	29.22 1000th ft-lbs

Statistics based on 11 of 11 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 3213

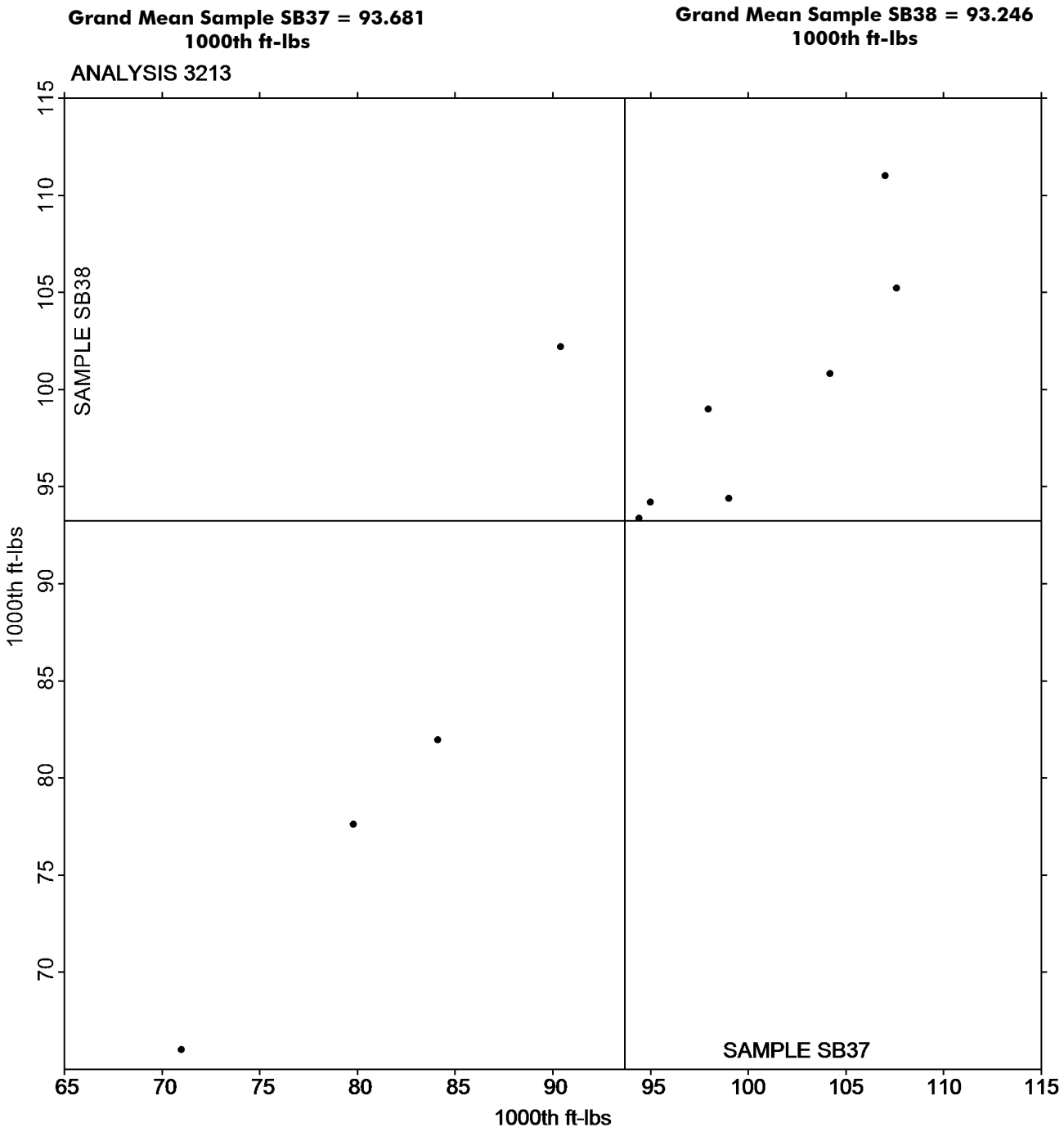
Internal Bond Strength - Scott Bond Models

TAPPI Provisional Test Method T569

WebCode	Data Flag	Sample SB37 Lab Mean	Sample SB37 Diff from Grand Mean	Sample SB37 CPV	Sample SB38 Lab Mean	Sample SB38 Diff from Grand Mean	Sample SB38 CPV
3FPNMF		79.80	-13.88	-1.20	77.60	-15.65	-1.18
8LUB2C		95.00	1.32	0.11	94.20	0.95	0.07
AUX6AA		107.00	13.32	1.15	111.00	17.75	1.34
NCRLD7		97.96	4.28	0.37	98.98	5.73	0.43
RL9CQ9		84.12	-9.56	-0.83	81.96	-11.29	-0.85
T7RXN2		104.20	10.52	0.91	100.80	7.55	0.57
UE3GK7		94.41	0.73	0.06	93.36	0.12	0.01
W27AHL		107.60	13.92	1.20	105.20	11.95	0.90
WMKVEL		99.00	5.32	0.46	94.40	1.15	0.09
Y9Y34K		71.00	-22.68	-1.96	66.00	-27.25	-2.06
YKDY74		90.40	-3.28	-0.28	102.20	8.95	0.68

Summary Statistics	Sample SB37	Sample SB38
Grand Means	93.68 1000th ft-lbs	93.25 1000th ft-lbs
Stnd Dev Btwn Labs	11.58 1000th ft-lbs	13.21 1000th ft-lbs

Statistics based on 11 of 11 reporting participants.



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-