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CONTINUOUS BASELINE STUDY

Project 1108-B

Program Report 65

to

FOURDRINER KRAFT BOARD INSTITUTE, INC

December 1, 1952

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

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FOURDRINIER KRAFT BOARD INSTITUTE, INC.

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Appleton, Wisconsin

In conjunction with the F.K.I. Continuous Baseline Study, ninety-five different sample lots of 42-lb. Fourdrinier kraft linerboard were submitted by twelve different F.K.I. mills to The Institute of Paper Chemistry for testing during the period November 1 through November 30. In addition to the 42-lb. kraft linerboard, three samples of special drum stock were also submitted for evaluation by one of the participating mills. The results on the special stock are tabulated separately in this report. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I
DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	8
B	16
C	8
D	8
E	5
F	11
G	10
H	7
I	3
J	6
K	0
L	4
M	<u>2</u>
	95

These sample lots were tested for basis weight, caliper, bursting strength, G. E. puncture, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 6. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. average includes all the results up to but not including the current period; the current period in the case of this report is November 1 through November 30. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 42.9 lb., and the cumulative F.K.I. average basis weight is 43.1 lb. Hence, the index for basis weight determined in per cent as indicated above is 99.5. This signifies that the current average basis weight is slightly lower than the cumulative average, which in this case covered the period from July 25, 1947, through October 31, 1952.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mills B and F have the highest average basis weight, it being 43.5 lb. or approximately 3.6% higher than the 42-lb. specification. On the other hand, Mill I has the lowest average basis weight, it being 42.3 lb., approximately 0.7% higher than the 42-lb. specification.

The amount by which the mills vary from the 42-lb. specification is as follows:

Mill Code	Per Cent
A	+2.1
B	+3.6
C	+2.9
D	+2.4
E	+1.0
F	+3.6
G	+1.9
H	+1.9
I	+0.7
J	+2.1
K	--
L	+1.4
M	+2.4

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicates that the basis weight results have remained the same.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the mill averages vary from a low of 12.3 for Mill H to a high of 14.8 for Mill C, the average being 13.4 which is somewhat lower than the cumulative average of 14.0.

The average bursting strength values obtained for each mill are presented graphically in Figure 3. It may be observed that the

average bursting strength values for the various mills range from a low of 102 for Mill F to a high of 113 for Mill H. The current F.K.I. average bursting strength is 108, only slightly higher than the cumulative average of 106.

The data of Table II and Figure 4 show that the average G. E. puncture result for all mills is 35 units. Mill F has the highest G. E. puncture average, 41 units, and Mill J has the lowest average, 29 units. The current F.K.I. G. E. puncture average of 35 units is slightly lower than the cumulative F.K.I. average which is 36 units.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 5 and 6. The data of Table II show that Mill F has the highest average machine direction tear value while Mill I has the lowest. Mill F also has the highest average cross-machine direction tear value, whereas Mill E has the lowest value. It may be noted that the current F.K.I. average machine and cross-machine direction tear results are lower than the cumulative averages.

A comparison of the F.K.I. indexes indicates that, for the current period, the current F.K.I. averages for basis weight, caliper, G. E. puncture, and Elmendorf tear are lower than the respective cumulative F.K.I. averages, whereas the current F.K.I. average for bursting strength is higher.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XV for Mills A to M, respectively. In addition to the current and cumulative averages, the mill factor and mill index are given for

each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill up to, but not including, the current average. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor } (\%)$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index } (\%)$$

The mill factor and the mill index serve as a ready means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. As the test data accumulate, the factors and indexes acquire added significance. The reports also contain a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry.

The results obtained on the special drum stock may be seen in Table XVI.

It may be noted in Tables III through XVI that the data have been separated on the basis of the sheet finish. The summarized results for the mills which submitted sample lots during the current period are as follows:

Mill Code	No. of Sample Lots		
	W.F.	D.F.	Misc.
A	8 ^a		
B	16 ^a		
C	8		
D	8		

(Continued on next page)

Mill Code	No. of Sample Lots		
	W.F.	D.F.	Misc.
E	5,	3 ^b	
F	10		1 ^c
G	10		
H	7 ^a		
I	3 ^a		
J			6 ^d
L			4 ^c
M	9		

^a One side only.

^b Drum linerboard.

^c Sheet finish not reported.

^d Semi-water finish.

The results indicate that a majority of the mills are using
a water finish on their 42-lb. linerboard.

TABLE II
SUMMARY OF COMPOSITE MILL AVERAGES--NOVEMBER 1 THROUGH NOVEMBER 30, 1952

Code No.	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	G. E. Puncture, units	Elmendorf Tear, g./sheet	In Direction Across Direction
A	42.9	13.0	110	35	344	396
B	43.5	12.9	107	32	364	390
C	43.2	14.8	107	36	373	414
D	43.0	13.3	112	38	386	432
E	42.4	14.3	110	32	363	361
F	43.5	14.5	102	41	403	439
G	42.8	12.4	107	35	340	390
H	42.8	12.3	113	36	357	410
I	42.3	13.3	105	31	337	398
J	42.9	13.5	110	29	350	375
K	No samples submitted.					
L	42.6	13.4	106	35	361	395
M	43.0	13.6	106	36	391	403
Current FKI Average:	42.9	13.4	108	35	364	400
Cumulative FKI Average:	43.1	14.0	106	36	373	406
FKI Index, %:	99.5	95.7	101.9	97.2	97.6	98.5

Figure 1

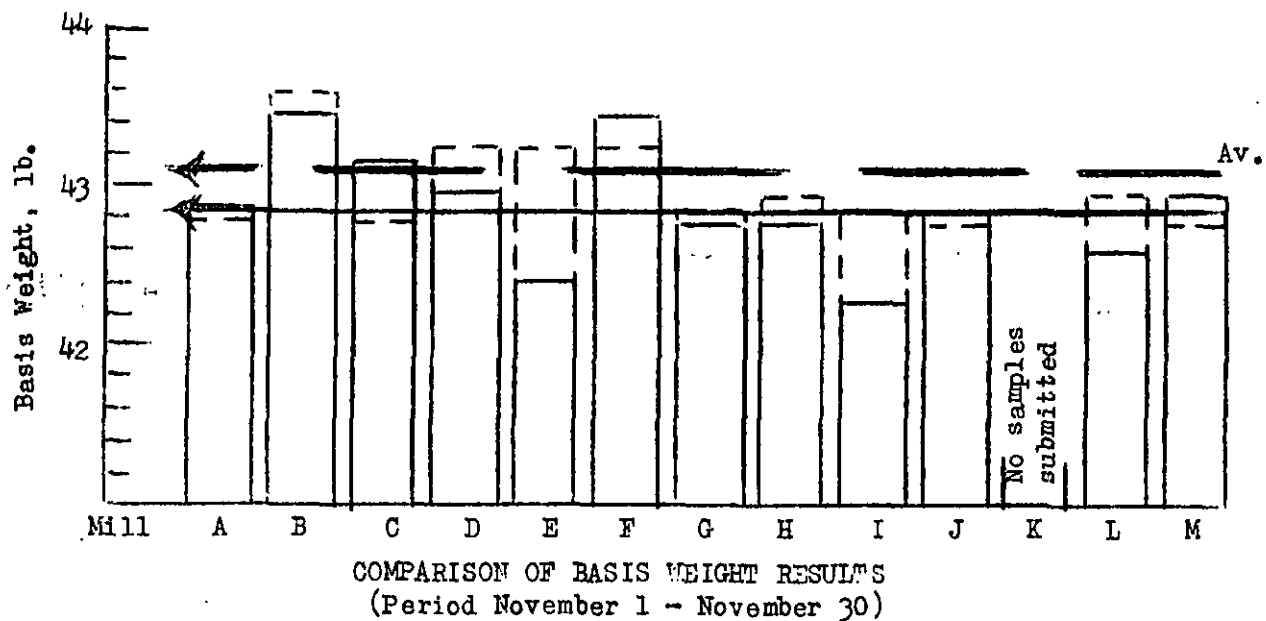
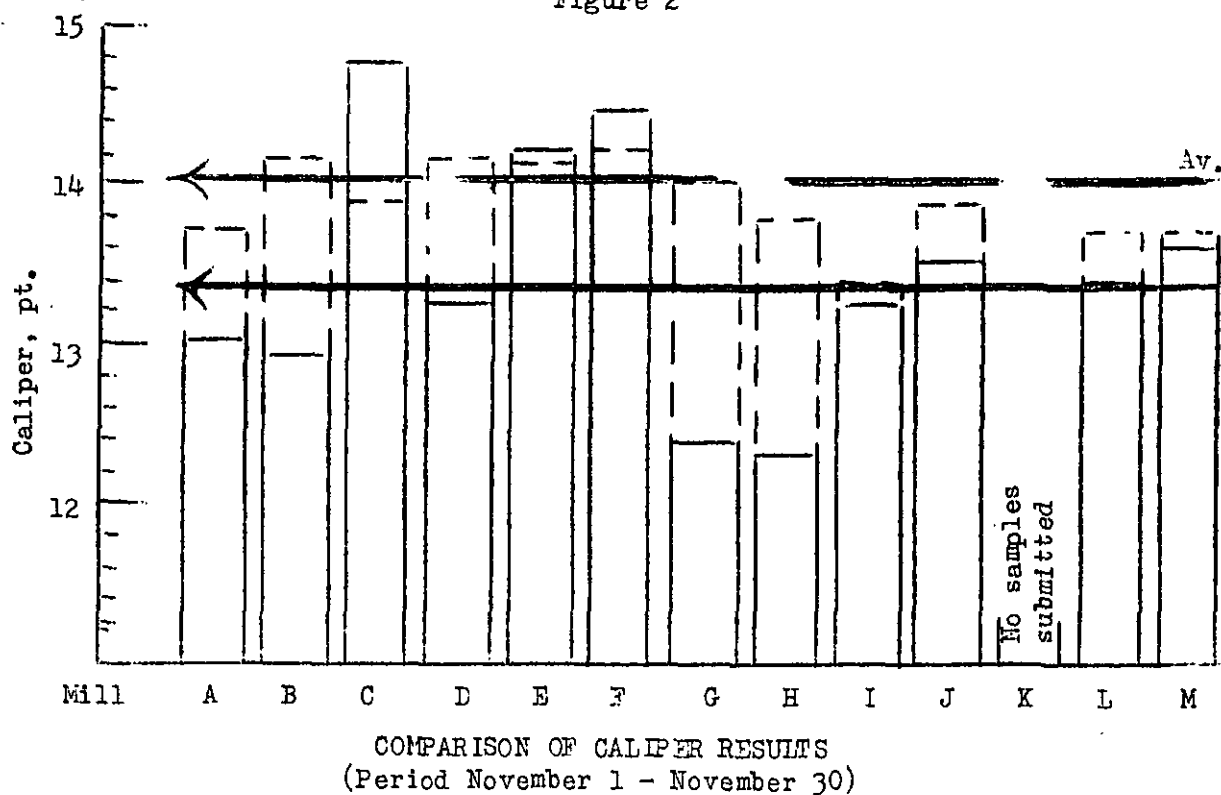


Figure 2



—— Current Mill Average
- - - - Cumulative Mill Average

Figure 3

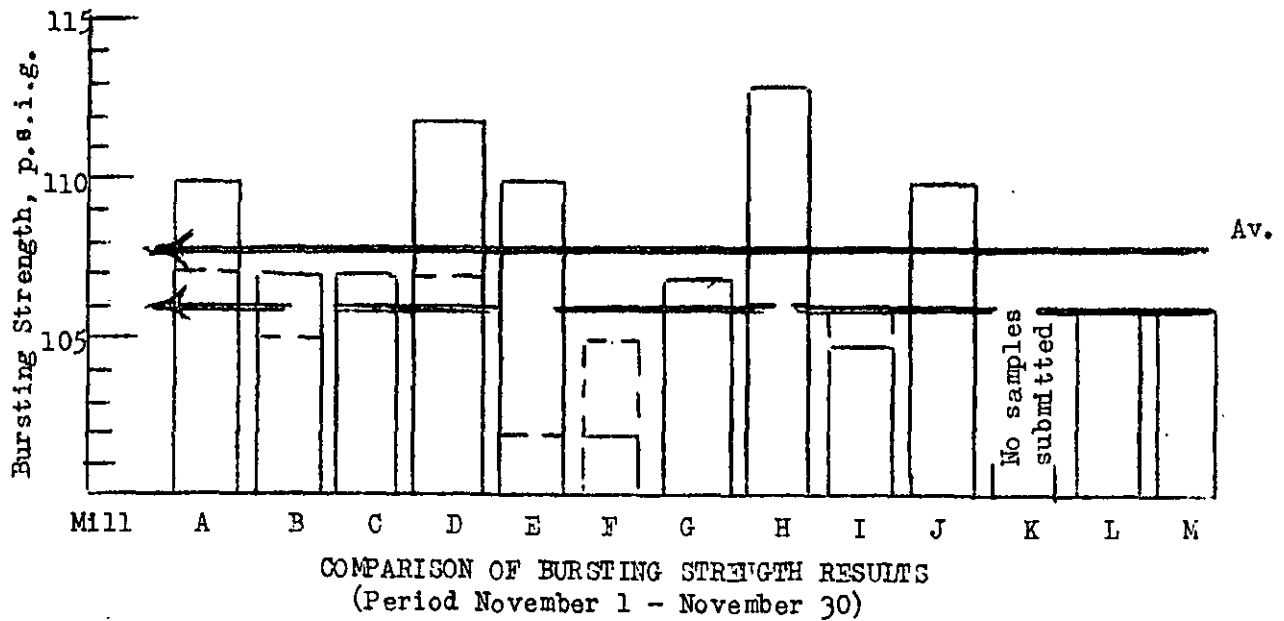


Figure 4

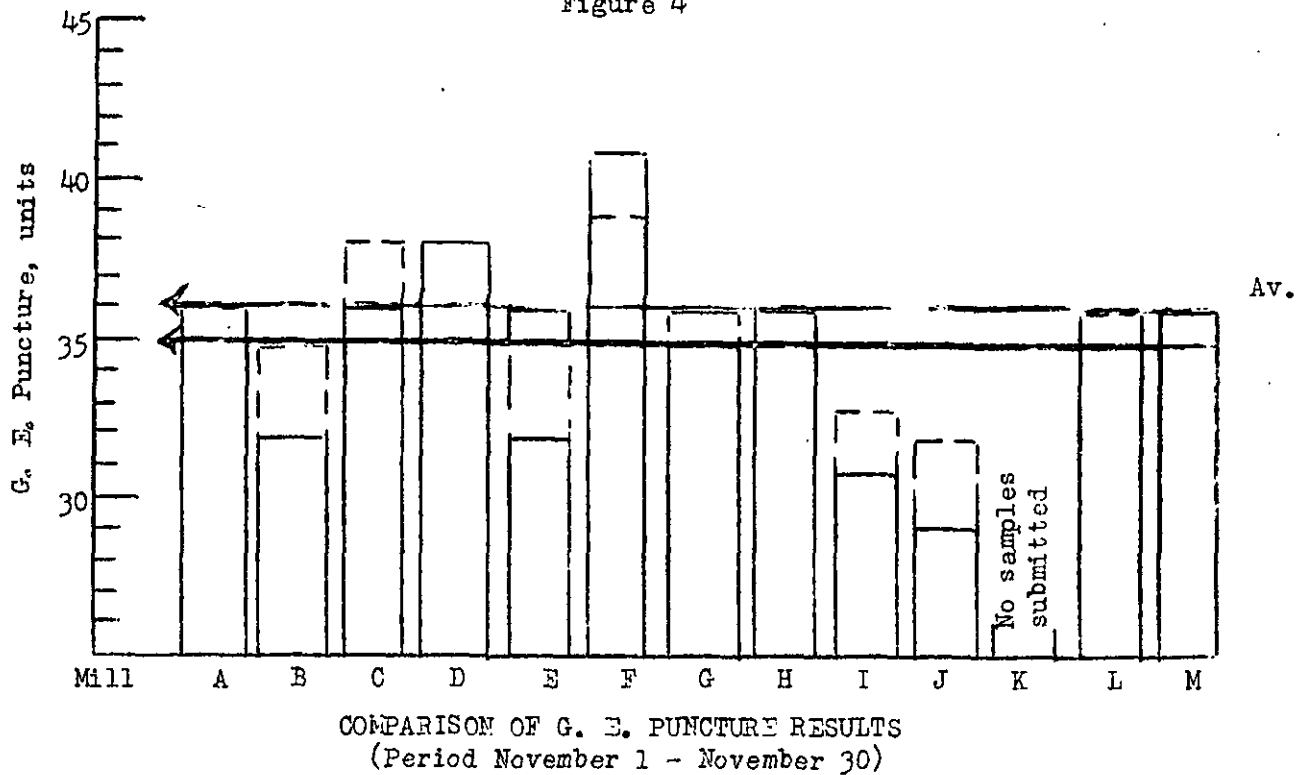
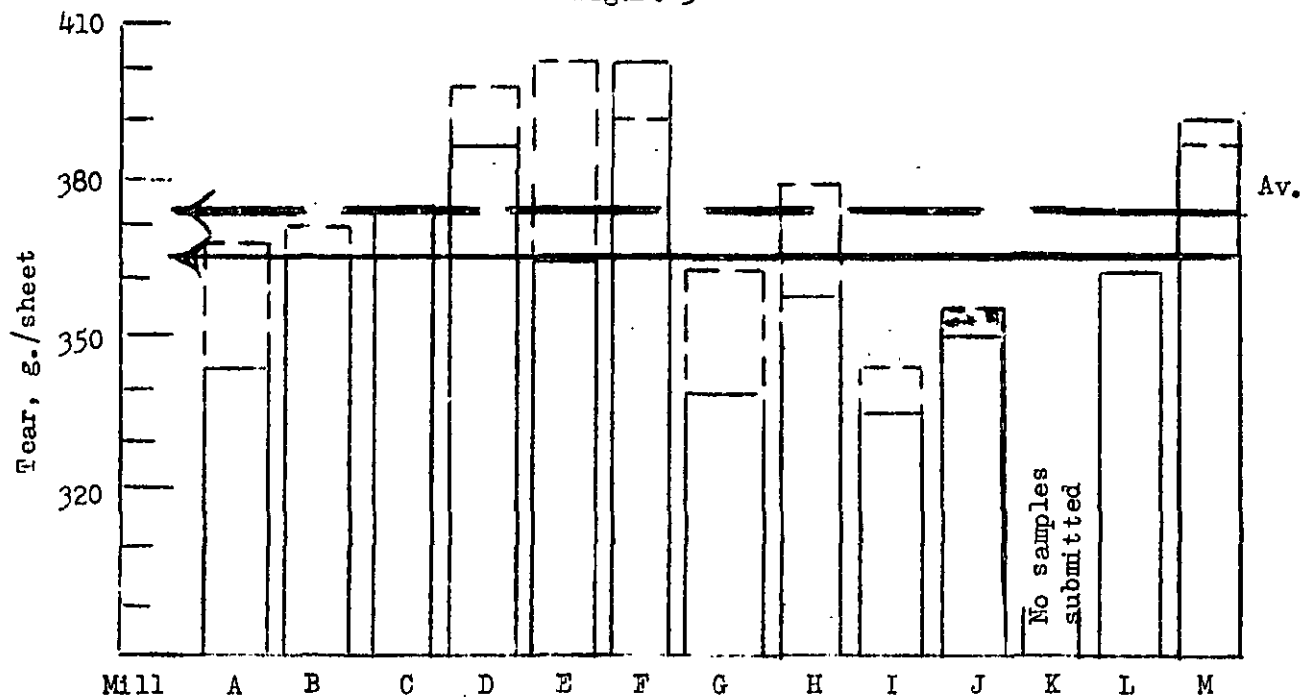
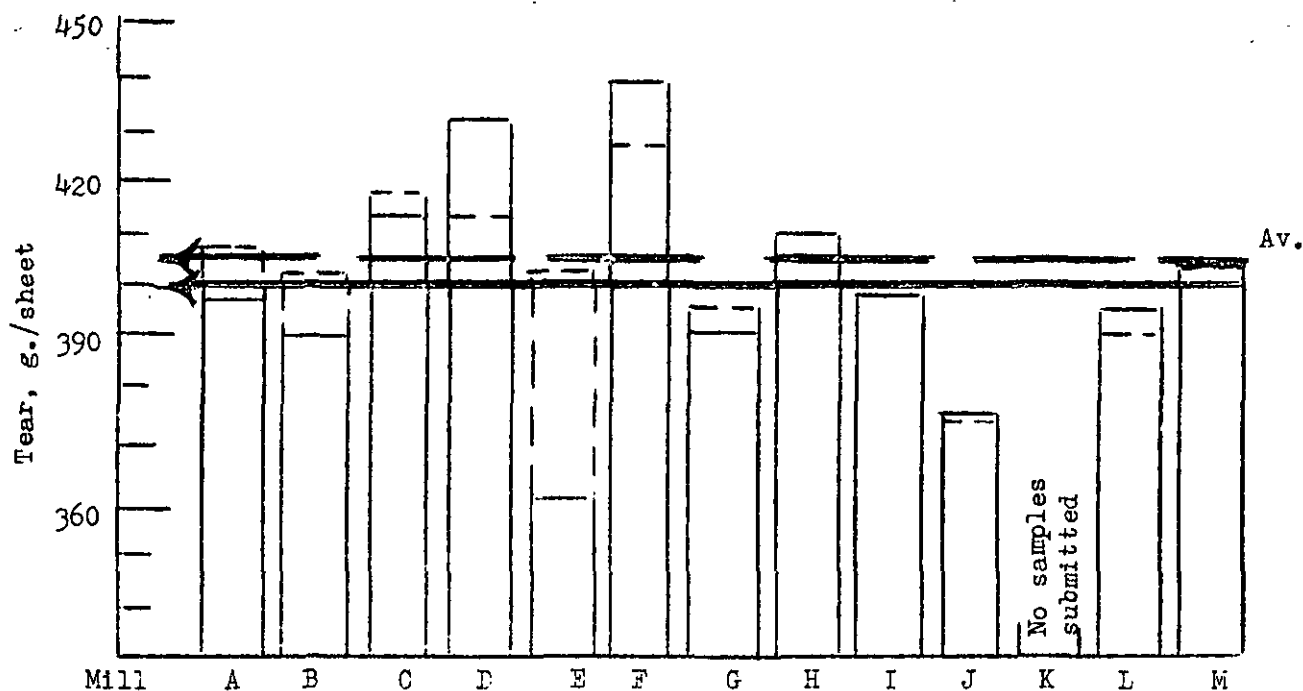


Figure 5



COMPARISON OF TEAR RESULTS, Machine Direction
(Period November 1 - November 30)

Figure 6



COMPARISON OF TEAR RESULTS, Across-machine Direction
(Period November 1 - November 30)

TABLE III

ARY. OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952

Basic Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage		G. E. Puncture, Units		Elmendorf Tear, g./sheet		Av.									
		Max.	Min.	Max.	Min.	Max.	Min.										
<u>Mill A---42-lb. Linerboard</u>																	
.8	42.2	42.8	13.7	12.5	13.0	131	96	114	35	31	33	424	304	349 ^a	424	360	391 ^a
.2	41.0	42.4	13.7	12.3	12.8	131	95	110	38	32	34	400	272	326 ^a	448	344	384 ^a
.2	42.6	43.4	13.8	12.8	13.2	131	92	111	37	33	36	432	304	343 ^a	464	368	401 ^a
.2	42.2	43.4	14.0	12.7	13.3	130	91	112	39	34	37	400	312	353 ^a	448	368	411 ^a
.6	41.6	42.4	13.1	12.3	12.8	125	84	107	35	30	33	400	304	351	456	360	391 ^a
.0	41.8	42.4	13.1	12.3	12.8	131	86	108	37	32	34	432	288	365	432	352	383 ^a
.6	42.4	43.0	13.8	12.4	13.1	131	86	108	41	36	38	392	288	335 ^a	448	352	393 ^a
.0	42.4	43.0	13.7	12.9	13.2	131	84	110	40	33	36	408	288	333 ^a	448	368	411 ^a
	42.9			13.0				110			35			344			396
	42.8			13.7				107			36			366			408
	100.2			94.9				102.8			97.2			94.0			97.1
	99.5			92.9				103.8			97.2			92.2			97.1

ore specimens which tore beyond the 3/8-inch limit.

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Av.	Caliper, points		Av.	Bursting Strength, p.s.i. gage		G. E. Puncture, Units			
						Max.	Min.		Max.	Min.		Max.	Min.	Max.	Min.	Av.	
<u>Mill A---42-lb. Linerboard</u>																	
152340	A-392	WFLS	11/ 6/52	10/26/52	2	43.8	42.2	42.8	13.7	12.5	13.0	131	96	114	35	31	33
152341	A-393	WFLS	11/ 6/52	10/29/52	2	43.2	41.0	42.4	13.7	12.3	12.8	131	95	110	38	32	34
152405	A-394	WFLS	11/13/ 52	11/ 7/52	2	44.2	42.6	43.4	13.8	12.8	13.2	131	92	111	37	33	36
152406	A-395	WFLS	11/13/52	11/ 5/52	1	44.2	42.2	43.4	14.0	12.7	13.3	130	91	112	39	34	37
152426	A-396	WFLS	11/19/52	11/ 9/52	2	43.6	41.6	42.4	13.1	12.3	12.8	125	84	107	35	30	33
152427	A-397	WFLS	11/19/52	11/ 9/52	2	43.0	41.8	42.4	13.1	12.3	12.8	131	86	108	37	32	34
152454	A-398	WFLS	11/24/52	11/16/52	2	43.6	42.4	43.0	13.8	12.4	13.1	131	86	108	41	36	38
152455	A-399	WFLS	11/24/52	11/16/52	1	44.0	42.4	43.0	13.7	12.9	13.2	131	84	110	40	33	36
Current Mill Average:						42.9			13.0			110			35		
Cumulative Mill Average:						42.8			13.7			107			36		
Mill Factor, %:						100.2			94.9			102.8			97.2		
Mill Index, %:						99.5			92.9			103.8			97.2		

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IV

INDIVIDUAL TEST LOTS---NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Fourdrinier Kraft Board Institute, Inc.
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Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across							
Max.	Min.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.				
<u>Mill B--42-lb. Linerboard</u>																	
44.2	42.6	43.6	13.4	11.8	12.6	131	77	105	36	29	32	400	320	357	432	304	359 ^a
45.2	42.8	43.9	13.7	11.5	12.8	133	85	108	35	27	31	432	320	361	496	304	390 ^a
45.0	43.0	44.0	13.5	11.9	12.6	131	82	105	35	29	32	464	312	358 ^a	432	320	377 ^a
44.8	42.6	43.9	13.5	12.0	12.6	137	75	106	36	29	32	432	312	369 ^a	448	360	395 ^a
44.4	42.4	43.7	13.0	12.0	12.5	129	93	109	34	28	32	408	272	360 ^a	424	328	381 ^a
44.6	42.6	43.8	13.0	12.1	12.7	129	69	104	35	27	32	384	272	343 ^a	480	336	401 ^a
46.0	43.0	44.2	13.0	12.2	12.7	126	91	110	36	28	31	464	320	380 ^a	576	288	398 ^a
45.0	43.6	44.4	13.0	12.0	12.6	130	75	106	34	28	32	448	336	387 ^a	512	336	408 ^a
43.8	42.0	43.0	13.8	12.9	13.4	131	72	107	37	32	34	464	320	391 ^a	464	384	421 ^a
44.0	41.8	43.0	13.5	13.0	13.3	133	88	110	38	32	35	448	352	391 ^a	480	360	415 ^a
43.2	41.6	42.4	14.0	13.0	13.6	119	76	99	40	32	34	464	368	409 ^a	480	376	408 ^a
43.8	41.6	42.4	14.0	12.5	13.4	126	81	108	39	33	36	448	304	391 ^a	464	392	422 ^a
44.0	42.0	43.3	13.6	13.0	13.2	133	80	106	34	26	31	400	272	340 ^a	432	344	384 ^a
44.0	42.2	43.4	13.5	13.0	13.1	141	83	110	34	28	31	424	272	338 ^a	424	320	366 ^a
43.8	42.2	43.1	13.5	11.9	13.0	139	82	107	33	27	30	400	280	319 ^a	400	320	353 ^a
44.2	42.4	43.3	13.7	11.6	12.5	135	89	114	33	28	31	400	280	327 ^a	416	304	355 ^a
43.5					12.9			107			32			364			390
43.6					14.2			105			35			369			402
99.8					90.8			101.9			91.4			98.6			97.0
100.9					92.1			100.9			88.9			97.6			96.1

c more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INDIVIDUAL TEST LOT3--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

T.BLE IV

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units						
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.			
Mill B-42-lb. Linerboard																		
152326	B-683	WFLS	11/ 4/52	10/25/52	1	44.2	42.6	43.6	13.4	11.8	12.6	131	77	105	36	29	32	400
152327	B-684	WFLS	11/ 4/52	10/25/52	1	45.2	42.8	43.9	13.7	11.5	12.8	133	85	108	35	27	31	432
152328	B-685	WFLS	11/ 4/52	10/25/52	1	45.0	43.0	44.0	13.5	11.9	12.6	131	82	105	35	29	32	464
152329	B-686	WFLS	11/ 4/52	10/25/52	1	44.8	42.6	43.9	13.5	12.0	12.6	137	75	106	36	29	32	432
152330	B-687	WFLS	11/ 4/52	10/25/52	1	44.4	42.4	43.7	13.0	12.0	12.5	129	93	109	34	28	32	408
152331	B-688	WFLS	11/ 4/52	10/25/52	1	44.6	42.6	43.8	13.0	12.1	12.7	129	69	107	35	27	32	384
152332	B-689	WFLS	11/ 4/52	10/25/52	1	46.0	43.0	44.2	13.0	12.2	12.7	126	91	110	36	28	31	464
152333	B-690	WFLS	11/ 4/52	10/25/52	1	45.0	43.6	44.1	13.0	12.0	12.6	130	75	106	34	28	32	448
152334	B-691	WFLS	11/ 4/52	10/27/52	3	43.8	42.0	43.0	13.8	12.9	13.4	131	72	107	37	32	34	464
152335	B-692	WFLS	11/ 4/52	10/27/52	3	44.0	41.8	43.0	13.5	13.0	13.3	133	88	110	38	32	35	448
152336	B-693	WFLS	11/ 4/52	10/27/52	3	43.2	41.6	42.4	14.0	13.0	13.6	119	76	99	40	32	34	464
152337	B-694	WFLS	11/ 4/52	10/27/52	3	43.8	41.6	42.4	14.0	12.5	13.4	126	81	108	39	33	36	448
152386	B-695	WFLS	11/10/52	11/ 3/52	1	44.0	42.0	43.3	13.6	13.0	13.2	133	80	106	34	26	31	400
152387	B-696	WFLS	11/10/52	11/ 3/52	1	44.0	42.2	43.4	13.5	13.0	13.1	141	83	110	34	28	31	424
152388	B-697	WFLS	11/10/52	11/ 3/52	1	43.8	42.2	43.1	13.5	11.9	13.0	139	82	107	33	27	30	400
152389	B-698	WFLS	11/10/52	11/ 3/52	1	44.2	42.4	43.3	13.7	11.6	12.5	135	89	114	33	28	31	400
Current Mill Average:						43.5			12.9		107					32		
Cumulative Mill Average:						43.6			14.2		105					35		
Mill Factor, %:						99.8			90.8		101.9					91.4		
Mill Index, %:						100.9			92.1		100.9					88.9		

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE V

INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

As Weight, lb. Min.	Av.	Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units		Elmendorf Tear, g./sheet		In Across					
		Max.	Min.	Av.	Min.	Max.	Av.	Max.	Min.	Av.	Max.	Min.	Av.		
Mill C--42-lb. Linerboard															
43.0	43.9	15.7	14.7	15.0	124	88	38	34	36	432	320	379	496	368	422 ^a
41.6	42.0	15.0	14.2	14.8	113	78	34	30	33	368	288	330 ^a	424	352	383 ^a
40.4	41.6	15.0	14.0	14.7	130	78	34	28	31	368	272	328	392	320	367 ^a
43.0	43.6	15.3	14.5	15.0	123	96	42	36	38	456	344	385 ^a	480	384	432 ^a
42.2	43.4	15.2	14.3	15.0	145	91	42	35	38	464	336	405 ^a	472	400	435 ^a
43.2	43.8	15.1	14.3	14.8	128	63	42	36	39	448	360	400 ^a	456	408	432 ^a
43.4	43.9	15.2	14.2	14.9	120	89	41	35	38	464	304	384 ^a	480	368	426 ^a
43.4	43.8	14.9	14.2	14.5	131	80	40	33	38	456	312	373	464	384	415 ^a
43.2				14.8			107		36			373			414
42.8				13.9			106		38			373			418
100.9				106.5			100.9		94.7			100.0			99.0
100.2				105.7			100.9		100.0			100.0			102.0

e specimens which tore beyond the 3/8-inch limit.

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (contin

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight,		Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units	
						Max.	lb. Min.	Av.	Max.	Min.	Av.	Max.	Min.
Mill C--42-lb. Linerboard													
152434	C-419	W.F.	11/21/52	11/ 6/52	1	44.6	43.0	43.9	15.7	14.7	15.0	106	36
152435	C-420	W.F.	11/21/52	11/11/52	1	42.4	41.6	42.0	15.0	14.2	14.8	100	33
152436	C-421	W.F.	11/21/52	11/11/52	1	42.0	40.4	41.6	15.0	14.0	14.7	103	31
152437	C-422	W.F.	11/21/52	11/12/52	1	44.0	43.0	43.6	15.3	14.5	15.0	110	38
152438	C-423	W.F.	11/21/52	11/12/52	1	44.2	42.2	43.4	15.2	14.3	15.0	111	38
152439	C-424	W.F.	11/21/52	11/13/52	1	44.2	43.2	43.8	15.1	14.3	14.8	108	39
152440	C-425	W.F.	11/21/52	11/13/52	1	44.2	43.4	43.9	15.2	14.2	14.9	108	38
152441	C-426	W.F.	11/21/52	11/14/52	1	44.4	43.4	43.8	14.9	14.2	14.5	106	38
Current Mill Average:								43.2			14.8	107	36
Cumulative Mill Average:								42.8			13.9	106	38
Mill Factor, %:								100.9			106.5	103.9	94
Mill Index, %:								100.2			105.7	100.9	100

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

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Weight, lb.	Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units		Elmendorf Tear, g./sheet									
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.				
Mill D---42-lb. Linerboard																
.0	43.1	13.3	12.1	12.9	145	86	111	42	34	39	432	304	383 ^a	520	384	451 ^a
.2	44.2	14.3	12.0	13.5	141	85	117	41	34	37	456	304	396 ^a	464	376	424 ^a
.8	41.3	13.8	12.3	13.0	135	93	113	38	32	34	432	320	373 ^a	480	376	408 ^f
.2	42.1	14.4	13.0	13.6	128	87	108	40	35	37	464	312	403 ^a	464	376	428 ^a
.2	44.2	14.5	13.1	13.7	127	92	111	43	35	39	456	352	402 ^a	520	400	454 ^a
.4	42.7	13.8	12.4	13.1	151	82	114	42	36	38	440	312	368 ^a	464	368	417 ^a
.6	42.2	14.9	12.5	13.4	149	80	108	41	34	36	432	320	365 ^a	472	384	420 ^a
.0	43.1	13.9	12.0	12.9	134	91	114	43	36	40	480	320	395 ^a	520	384	451 ^a
43.0			13.3				112		38				386			432
43.3			14.2				107		38				396			413
93.3			93.7				104.7		100.0				97.5			104.6
99.8			95.0				105.7		105.6				103.5			106.4

Mill E--42-lb. Innerboard

.8	42.9	16.6	15.1	15.7	123	87	104	36	32	34	432	312	365 ^a	400	320	369 ^a
.8	42.2	15.5	14.0	15.0	126	93	112	35	30	32	400	312	346 ^a	408	320	364 ^a
.0	41.8	14.3	13.5	14.0	136	100	113	34	28	30	432	320	359 ^a	368	320	341 ^a
.0	43.2	14.0	13.0	13.4	136	93	112	36	31	34	432	336	380 ^a	416	360	381 ^a
.4	41.7	14.2	13.0	13.6	121	90	110	32	26	29	400	328	363 ^a	392	296	349 ^a
	42.4		14.3				110			32			363			361
	43.3		14.2				102			36			403			401
	97.9		100.7				107.8			88.9			90.1			90.0
	98.4		102.1				103.8			88.9			97.3			88.9

specimens which tore beyond the 3/8-inch limit.

TABLE VI

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight,		Caliper,		Bursting		G.E.					
						lb.	Av.	points	Max.	Min.	Av.	Max.	Min.	Av.	M		
																Max.	Min.
Mill D---42-lb. Linerboard																	
152390	D-591	W.F.	11/10/52	11/ 6/52	4	44.2	42.0	43.1	13.3	12.1	12.9	86	111	42	34	39	4
152401	D-592	W.F.	11/12/52	11/ 7/52	4	45.0	42.2	44.2	14.3	12.0	13.5	85	117	41	34	37	4
152402	D-593	W.F.	11/12/52	11/ 8/52	4	42.4	40.8	41.3	13.8	12.3	13.0	93	113	38	32	34	4
152403	D-594	W.F.	11/12/52	11/ 9/52	4	44.0	42.2	42.1	14.4	13.0	13.6	87	108	40	35	37	4
152404	D-595	W.F.	11/13/52	11/10/52	4	44.8	43.2	44.2	14.5	13.1	13.7	92	111	43	35	39	4
152414	D-596	W.F.	11/17/52	11/12/52	4	43.6	41.4	42.7	13.8	12.4	13.1	82	114	42	36	38	4
152415	D-596	W.F.	11/17/52	11/13/52	4	42.0	41.6	42.2	14.9	12.5	13.4	80	108	41	34	36	4
152416	D-598	W.F.	11/17/52	11/14/52	4	43.8	42.0	43.1	13.9	12.0	12.9	91	114	43	36	40	4
Current Mill Average:						43.0		43.0			13.3	112			38		
Cumulative Mill Average:						43.3		43.3			14.2	107			38		
Mill Factor, %:						99.3		99.3			93.7	104.7			100.0		
						99.8					95.0	105.7			105.6		

TABLE VII

Mill E--42-lb. Linerboard

52310	E-374	W.F.	11/ 1/52	10/28/52	1	44.0	41.8	42.9	16.6	15.1	15.7	123	87	104	36	32	34
52313	E-375	W.F.	11/ 1/52	10/29/52	1	43.0	41.8	42.2	15.5	14.0	15.0	126	93	112	35	30	32
52342	E-376	W.F.	11/ 6/52	11/ 3/52	1	42.4	40.0	41.8	14.3	13.5	14.0	136	100	113	34	28	30
52411	E-379	W.F.	11/14/52	11/12/52	1	44.0	42.0	43.2	14.0	13.0	13.4	136	93	112	36	31	34
52458	E-381	W.F.	11/24/52	11/19/52	1	43.6	40.4	41.7	14.2	13.0	13.6	121	90	110	32	26	29
Current Mill Average:											14.3			110		32	
Cumulative Mill Average:											14.2			102		36	
Mill Factor, %:											100.7			107.8		88.9	
Mill Index, %:											102.1			103.8		88.9	

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VIII
DIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Weight, lb.	Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units		Elmendorf Tear, g./sheet				Av.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	In	Across						
<u>Mill F---42-lb. Linerboard</u>																
.2	43.4	15.5	14.1	14.8	118	90	103	42	36	38	464	320	392 ^a	480	376	433 ^a
.0	44.5	15.2	14.0	14.8	131	81	103	48	41	43	480	384	428 ^a	512	416	474 ^a
.4	43.5	15.0	14.0	14.5	119	80	101	42	36	39	448	344	391 ^a	480	384	423 ^a
.0	43.5	15.1	14.0	14.4	118	82	99	49	39	43	464	400	435 ^a	496	400	447 ^a
.6	44.1	15.0	14.0	14.5	118	82	102	46	38	43	512	400	447 ^a	512	416	467 ^a
.2	43.8	16.0	14.0	15.0	128	85	103	45	39	42	456	352	406 ^a	528	416	456 ^a
.0	43.9	15.7	13.5	14.7	126	83	103	46	38	41	432	352	391	496	400	435 ^a
.2	43.4	15.5	14.1	14.7	111	86	100	46	40	42	416	336	379 ^a	512	368	423 ^a
.8	42.7	15.1	13.8	14.4	129	73	98	45	39	42	432	352	408 ^a	480	384	427 ^a
.2	43.2	15.6	14.0	14.7	121	95	109	44	36	39	432	344	377 ^a	472	352	433 ^a
.8	42.9	14.1	12.8	13.6	111	79	96	43	35	39	424	352	376 ^a	464	352	410 ^a
43.5				14.5			102		41				403			439
43.3				14.3			105		39				389			428
100.5				101.4			97.1		105.1				103.6			102.6
100.9				103.6			96.2		113.9				108.0			108.1

specimens which tore beyond the 3/8 --inch limit.

TABLE VIII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units						
						Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
<u>Mill F---42-lb. Linerboard</u>																		
152314	F-69	W.F.	11/ 3/52	10/17/52	--	44.0	42.2	43.4	15.5	14.1	14.8	118	90	103	42	36	38	464
152315	F-70	W.F.	11/ 3/52	10/23/52	--	45.6	44.0	44.5	15.2	14.0	14.8	131	81	103	48	41	43	480
152338	F-71	W.F.	11/ 4/52	10/24/52	--	44.0	42.4	43.5	15.0	14.0	14.5	119	80	101	42	36	39	448
152339	F-72	W.F.	11/ 4/52	10/27/52	--	44.2	42.0	43.5	15.1	14.0	14.4	118	82	99	49	39	43	464
152316	F-73	W.F.	11/ 3/52	10/28/52	--	45.2	43.6	44.1	15.0	14.0	14.5	118	82	102	46	38	43	512
152398	F-74	W.F.	11/10/52	10/29/52	--	44.8	42.2	43.8	16.0	14.0	15.0	128	85	103	45	39	42	456
152417	F-75	W.F.	11/17/52	10/30/52	--	44.8	43.0	43.9	15.7	13.5	14.7	126	83	103	46	38	41	432
152418	F-76	W.F.	11/17/52	11/ 3/52	--	45.6	42.2	43.4	15.5	14.1	14.7	111	86	100	46	40	42	416
152419	F-77	W.F.	11/17/52	11/ 4/52	1	43.8	41.8	42.7	15.1	13.8	14.4	129	73	98	45	39	42	432
152456	F-78	W.F.	11/24/52	11/ 6/52	--	44.6	42.2	43.2	15.6	14.0	14.7	121	95	109	44	36	39	432
152457	F-79	---	11/24/52	11/12/52	--	43.6	41.8	42.9	14.1	12.8	13.6	111	79	96	43	35	39	424
Current Mill average:						43.5		14.5		102		41						
Cumulative Mill average:						43.3		14.3		105		39						
Mill Factor, %:						100.5		101.4		97.1		105.1						
Mill Index, %:						100.9		103.6		96.2		113.9						

¹ This average includes the readings for one or more specimens which tore beyond the 3/8 --inch limit.

TABLE IX

INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

asis Weight, lb.	Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units		Elmendorf Tear, g./sheet									
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.				
<u>Mill G--42-lb. Linerboard</u>																
43.4	43.8	13.9	11.0	12.2	133	85	114	38	32	35	368	296	330 ^a	432	352	391 ^a
41.8	42.4	13.6	11.0	12.1	148	97	116	35	32	33	352	288	321	440	344	397 ^a
42.0	42.5	13.4	12.1	12.7	131	83	115	38	32	35	384	320	345 ^a	448	368	405 ^a
42.0	42.7	12.6	12.0	12.2	139	82	111	39	34	36	400	304	351 ^a	456	368	393 ^a
42.0	42.1	12.8	12.0	12.1	131	77	106	38	32	35	352	272	321	400	336	372 ^a
42.0	43.0	12.5	12.0	12.1	118	69	97	38	32	35	368	288	330	408	336	375 ^a
42.6	43.7	14.2	12.2	13.0	141	72	100	38	31	35	416	304	359 ^a	432	352	391 ^a
42.4	43.0	13.2	12.2	12.6	121	86	104	3 8	29	35	384	296	353 ^a	448	344	389 ^a
41.0	42.0	13.1	11.5	12.4	131	77	102	38	32	35	416	304	344	432	336	389 ^a
42.0	42.9	13.2	12.0	12.5	123	80	102	40	34	37	384	304	345 ^a	416	384	400 ^a
42.8				12.4			107			35			340			390
42.9				14.0			107			36			362			395
99.8				88.6			100.0			97.2			93.9			98.7
99.3				88.6			100.9			97.2			91.2			96.1

specimens which tore beyond the 3/8-inch limit.

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (cont)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G.E. Puncture, units		
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
<u>Mill G---42-lb. Linerboard</u>																	
152306	G-446	WFL	11/1/52	10/18/52	1	44.8	43.4	43.8	13.9	11.0	12.2	133	85	114	38	32	35
152307	G-447	WFL	11/1/52	10/18/52	1	43.2	41.8	42.4	13.6	11.0	12.1	148	97	116	35	32	33
152343	G-448	WFL	11/6/52	10/29/52	1	43.2	42.0	42.5	13.4	12.1	12.7	131	83	115	38	32	35
152344	G-449	WFL	11/6/52	10/31/52	1	44.2	42.0	42.7	12.6	12.0	12.2	139	82	111	39	34	36
152399	G-450	WFL	11/12/52	11/8/52	1	42.4	42.0	42.1	12.8	12.0	12.1	131	77	106	38	32	35
152400	G-451	WFL	11/12/52	11/8/52	1	44.0	42.0	43.0	12.5	12.0	12.1	118	69	97	38	32	35
152423	G-452	WFL	11/18/52	11/14/52	1	44.8	42.6	43.7	14.2	12.2	13.0	141	72	100	38	31	35
152424	G-453	WFL	11/18/52	11/14/52	1	43.6	42.4	43.0	13.2	12.2	12.6	121	86	104	38	29	35
152462	G-454	WFL	11/25/52	11/18/52	1	42.4	41.0	42.0	13.1	11.5	12.4	131	77	102	38	32	35
152463	G-455	WFL	11/25/52	11/18/52	1	44.0	42.0	42.9	13.2	12.0	12.5	123	80	102	40	34	37
Current Mill Average:						42.8			12.4			107			35		
Cumulative Mill Average:						42.9			14.0			107			36		
Mill Factor, %:						99.8			88.6			100.0			97.2		
Mill Index, %:						99.3			88.6			100.9			97.2		

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE X

F INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Fourdrinier Kraft Board Institute, Inc.
Project 1108-BPage 17
Progress Report 65

Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across							
Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.				
Mill H--42-lb. Linerboard																	
33.0	42.0	42.5	12.8	11.2	12.1	141	86	113	37	32	35	368	280	327	432	320	383 ^a
33.0	42.0	42.6	13.0	11.9	12.4	135	97	114	39	32	35	448	320	377 ^a	456	376	424 ^a
34.0	42.4	43.2	12.8	12.2	12.4	130	93	113	38	33	36	440	296	359	440	360	404 ^a
34.0	42.4	43.2	12.9	12.1	12.4	146	92	116	38	32	35	448	272	359	464	360	417 ^a
33.2	42.0	42.6	12.4	12.0	12.1	132	90	110	39	32	35	432	280	345	448	368	405 ^a
33.6	42.0	42.8	12.5	12.0	12.1	145	86	111	38	32	35	400	288	350	472	352	403 ^a
33.8	42.0	42.6	13.0	12.0	12.5	142	84	112	42	35	37	448	304	382	544	352	433 ^a
		42.8			12.3			113			36			357			410
		43.0			13.8			106			36			379			406
		99.5			89.1			106.6			100.0			94.2			101.0
		99.3			87.9			106.6			100.0			95.7			101.0

TABLE XI

<u>Mill I--42-lb. Linerboard</u>																	
3.2	42.0	42.4	14.0	13.0	13.2	118	89	106	34	28	31	400	288	335	432	336	377 ^a
3.8	42.0	42.5	13.5	12.9	13.2	110	89	101	34	30	32	368	312	339	480	360	409 ^a
3.0	41.0	42.0	14.0	13.0	13.4	124	96	108	34	29	31	384	288	337	480	368	407 ^a
		42.3			13.3			105			31			337			398
		42.9			13.4			106			33			345			400
		98.6			99.3			99.1			93.9			97.7			99.5
		98.1			95.0			99.1			86.1			90.3			98.0

more specimens which tore beyond the 3/8-inch limit.

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continue)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units				
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.			
Mill H--42-lb. Linerboard																	
152308	H-354	WF1S	11/ 1/52	10/20/52	2	43.0	42.0	42.5	12.8	11.2	12.1	141	86	113	37	32	35
152309	H-355	WF1S	11/ 1/52	10/21/52	2	43.0	42.0	42.6	13.0	11.9	12.4	135	97	114	39	32	35
152372	H-356	WF1S	11/ 8/52	10/27/52	2	44.0	42.4	43.2	12.8	12.2	12.4	130	93	113	38	33	36
152373	H-357	WF1S	11/ 8/52	10/28/52	2	44.0	42.4	43.2	12.9	12.1	12.4	146	92	116	38	32	35
152408	H-358	WF1S	11/14/52	11/ 3/52	2	43.2	42.0	42.6	12.4	12.0	12.1	132	90	110	39	32	35
152409	H-359	WF1S	11/14/52	11/ 4/52	2	43.6	42.0	42.8	12.5	12.0	12.1	145	86	111	38	32	35
152433	H-360	WF1S	11/21/52	11/10/52	2	43.8	42.0	42.6	13.0	12.0	12.5	142	84	112	42	35	37
Current Mill Average:								42.8			12.3			113			36
Cumulative Mill Average:								43.0			13.8			106			36
Mill Factor, %:								99.5			89.1			106.6			100.0
Mill Index, %:								99.3			87.9			106.6			100.0

TABLE XI

Mill I--42-lb. Linerboard

152396	I-258	WF1S	11/10/52	11/ 3/52	1	43.2	42.0	42.4	14.0	13.0	13.2	118	89	106	28	31
152397	I-259	WF1S	11/10/52	11/ 4/52	1	43.8	42.0	42.5	13.5	12.9	13.2	110	89	101	34	32
152429	I-260	WF1S	11/20/52	11/12/52	1	43.0	41.0	42.0	14.0	13.0	13.4	124	96	108	34	31
Current Mill Average:								42.3			13.3			105		31
Cumulative Mill Average:								42.9			13.4			106		33
Mill Factor, %:								98.6			99.3			99.1		93.9
Mill Index, %:								98.1			95.0			99.1		86.1

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XII

INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

s Weight, lb. Min.	Caliper, points Max. Min.	Bursting Strength, p.s.i. gage Max. Min.		G.E. Puncture, units Max. Min.		Elmendorf Tear, g./sheet In Max. Min. Av.				Av.						
		Av.	Min.	Max.	Min.	Max.	Min.	Max.	Av.							
Mill J--42-lb. Linerboard																
42.0	43.2	14.0	13.0	13.5	123	79	106	33	26	29	416	288	345 ^a	464	360	395 ^a
41.8	43.1	14.0	13.1	13.7	129	97	112	33	26	29	400	280	333 ^a	440	344	382 ^a
42.0	42.4	13.4	12.9	13.1	130	94	113	32	26	29	384	320	341 ^a	464	352	393 ^a
42.0	42.3	13.5	13.0	13.1	127	90	110	32	26	29	400	296	352 ^a	464	320	364 ^a
42.2	42.8	14.1	13.5	13.9	131	91	108	31	26	29	416	320	364 ^a	400	320	357 ^e
43.0	43.4	14.0	13.0	13.7	136	86	114	32	28	29	448	304	361 ^a	440	320	363 ^a
42.9				13.5			110			29			350			375
42.8				13.9			106			32			354			374
100.2				97.1			103.8			90.6			98.9			100.3
99.5				96.4			103.8			80.6			93.8			92.4

TABLE XIII

Mill K--42-lb. Linerboard
No samples submitted.

TABLE XIV

Mill L--42-lb. Linerboard

41.0	42.4	14.1	12.1	13.3	132	92	107	35	31	33	448	352	379 ^a	432	368	401 ^a
42.0	42.8	14.6	12.4	13.5	122	85	105	35	31	34	384	312	345 ^a	424	344	389 ^a
41.8	42.6	14.0	12.0	13.3	126	89	106	40	36	38	400	312	361 ^a	456	352	397 ^a
41.6	42.5	14.1	12.7	13.4	135	91	107	38	34	36	424	320	353 ^a	448	360	392 ^a
42.6				13.4			106			35			361			395
43.0				13.7			106			36			361			390
99.1				97.8			100.0			97.2			100.0			101.3
98.8				95.7			100.0			97.2			96.8			97.3

specimens which tore beyond the 3/8-inch limit.

TABLE XII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continue)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units						
						Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.					
						Av.	Av.	Av.	Av.	Av.	Av.							
Mill J--42-lb. Linerboard																		
152394	J-387	B.F.	11/10/52	10/27/52	--	44.0	42.0	43.2	14.0	13.0	13.5	123	79	106	33	26	29	41.6
152395	J-388	B.F.	11/10/52	10/27/52	--	44.0	41.8	43.1	14.0	13.1	13.7	129	97	112	33	26	29	40.0
152420	J-389	B.F.	11/17/52	11/ 2/52	1	43.6	42.0	42.4	13.4	12.9	13.1	130	94	113	32	26	29	38.7
152421	J-390	B.F.	11/17/52	11/ 2/52	1	43.6	42.0	42.3	13.5	13.0	13.1	127	90	110	32	26	29	40.0
152431	J-391	B.F.	11/20/52	11/12/52	--	43.6	42.2	42.8	14.1	13.5	13.9	131	91	108	31	26	29	41.6
152432	J-392	B.F.	11/20/52	11/12/52	--	43.8	43.0	43.4	14.0	13.0	13.7	136	86	114	32	28	29	44.1
Current Mill Average:						42.9			13.5			110			29			
Cumulative Mill Average:						42.8			13.9			106			32			
Mill Factor, %:						100.2			97.1			103.8			90.6			
Mill Index, %:						99.5			96.4			103.8			80.6			

TABLE XIII

Mill K--42-lb. Linerboard
No samples submitted.

TABLE XIV

Mill L--42-lb. Linerboard

152444	L-127	11/22/52	10/ 5/52	1	44.0	41.0	42.4	14.1	12.1	13.3	132	92	35	31	33	44
152445	L-128	11/22/52	10/ 5/52	1	43.8	42.0	42.8	14.6	12.4	13.5	122	85	105	35	34	38
152446	L-129	11/22/52	10/11/52	1	43.4	41.8	42.6	14.0	12.0	13.3	126	89	106	40	38	40
152447	L-130	11/22/52	10/13/52	1	43.4	41.6	42.5	14.1	12.7	13.4	135	91	107	38	34	42
Current Mill Average:						42.6		13.4		106		35				
Cumulative Mill Average:						43.0		13.7		106		36				
Mill Factor, %:						99.1		97.8		100.0		97.2				
Mill Index, %:						98.8		95.7		100.0		97.2				

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XV

OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Basis Weight, lb.	Min.	Av.	Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units		Elmendorf Tear, g./sheet		Av.									
			Max.	Min.	Max.	Min.	Max.	Min.	In	Across										
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Av.						
Mill M---42-lb. Linerboard																				
6	39.8	42.3	13.2	12.2	12.7	138	83	107	36	30	32	392	288	336	440	368	401 ^a			
0	40.0	42.0	14.3	13.1	13.7	126	77	103	38	30	35	408	312	362 ^a	424	360	395 ^a			
6	42.2	43.8	14.1	13.1	13.7	130	80	109	41	32	36	496	336	413 ^a	544	368	445 ^a			
2	41.6	43.0	14.1	13.0	13.6	122	89	107	37	32	35	432	360	408 ^a	416	344	383 ^a			
0	41.8	43.1	14.1	13.2	13.7	125	93	110	40	33	35	448	368	406 ^a	424	320	387 ^a			
2	40.4	42.2	13.2	12.7	13.0	127	78	102	37	31	34	496	288	391 ^a	432	344	381 ^a			
8	42.8	43.6	14.5	13.3	14.1	111	80	96	40	35	38	496	400	425 ^a	480	352	407 ^a			
0	42.2	44.2	14.1	13.0	13.7	129	91	110	44	36	38	496	320	411 ^a	480	376	411 ^a			
4	40.6	42.6	15.1	13.2	14.0	125	86	105	41	36	38	432	288	372 ^a	480	368	421 ^a			
		43.0			13.6			106			36			391			403			
		42.8			13.7			106			36			388			403			
		100.5			99.3			100.0			100.0			100.8			100.0			
		99.8			97.1			100.0			100.0			104.8			99.3			

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TABLE XVI

Mill E--44/46-lb. Drum Linerboard

0	48.0	49.1	16.0	15.1	15.7	131	94	112	42	36	39	496	368	418 ^a	464	352	413 ^a
2	44.2	45.0	15.1	14.1	14.6	125	88	103	37	30	34	456	320	390 ^a	416	312	359 ^a
0	46.0	47.0	15.3	14.1	14.9	125	90	109	40	32	37	488	400	441 ^a	432	352	403 ^a
		47.0			15.1			108			37			416			392
		47.2			14.3			100			40			441			420
		99.6			105.6			108.0			92.5			94.3			93.3

are specimens which tore beyond the 3/8-inch limit.

TABLE XV

SUMMARY OF INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Strength, p.s.i. gage		G.E. Puncture, units					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.			
Mill M---42-lb. Linerboard																	
152311	M-124	W.	11/ 1/52	10/20/52	2	45.6	39.8	42.3	13.2	12.2	12.7	138	83	107	36	30	32
152312	M-125	W.	11/ 1/52	10/21/52	2	44.0	40.0	42.0	14.3	13.1	13.7	126	77	103	38	30	35
152367	M-126	W.	11/ 7/52	10/28/52	2	45.6	42.2	43.8	14.1	13.1	13.7	130	80	109	41	32	36
152392	M-127	W.	11/10/52	11/ 2/52	4	44.2	41.6	43.0	14.1	13.0	13.6	122	89	107	37	32	35
152393	M-128	W.	11/10/52	11/ 3/52	4	45.0	41.8	43.1	14.1	13.2	13.7	125	93	110	40	33	35
152442	M-129	W.	11/21/52	11/11/52	2	44.2	40.4	42.2	13.2	12.7	13.0	127	78	102	37	31	34
152443	M-130	W.	11/21/52	11/11/52	4	44.8	42.8	43.6	14.5	13.3	14.1	111	80	96	40	35	38
152460	M-131	W.	11/25/52	11/17/52	2	46.0	42.2	44.2	14.1	13.0	13.7	129	91	110	44	36	38
152461	M-132	W.	11/25/52	11/18/52	2	45.4	40.6	42.6	15.1	13.2	14.0	125	86	105	41	36	38
Current Mill Average:						43.0		13.6		106		36					
Cumulative Mill Average:						42.8		13.7		106		36					
Mill Factor, %:						100.5		99.3		100.0		100.0					
Mill Index, %:						99.8		97.1		100.0		100.0					

TABLE XVI

Mill E---44/46-lb. Drum Linerboard

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting strength, p.s.i. gage		G.E. Puncture, units	
						Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
152391	E-377	W.F.	11/10/52	11/ 6/52	1	50.0	48.0	49.1	16.0	15.1	15.7	131	94
152410	E-378	W.F.	11/14/52	11/10/52	1	46.2	44.2	45.0	15.1	14.1	14.6	125	88
152430	E-380	W.F.	11/20/52	11/17/52	1	48.0	46.0	47.0	15.3	14.1	14.9	125	90
Current Mill Average:						47.0		15.1		108		37	
Cumulative Mill Average:						47.2		14.3		100		40	
Mill Factor, %:						99.6		105.6		108.0		92.5	

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XVII, the atmospheric conditions used prior to and during the testing period varied considerably.

TABLE XVII

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temp., ° F.	Time, hr.	R.H., %	Temp., ° F.	Time, hr.
A		None		19-62	81-86	--
B	30-44	74	0.5	50	70	24-96
C	50	73	4 to 8 days	50	73	4
D	30-31	77-78	8	50-53	72-73	16
E		None		39-70	77-82	--
F		None		42-59	72-74	48
G		None		50	73	24-48
H		None		50	73	24
I		None		40-57	80-84	--
J		None		50	72-73	0.5
K		No samples submitted.				
L		None		50-63	86	--
M		None		29-54.5	72-81	--
E*		None		38-58	74-82	--

* Drum linerboard.

A summary of the mill comparisons for the current period as compared with the previous period may be seen in Tables XVIII and XIX,

respectively. The comparison for the various mills is given in Tables XX to XXXII, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XXXIII. In all the comparisons given in Tables XVIII to XXXIII, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XVIII and XIX indicates that in the majority of cases there is good agreement between the mill and Institute data. Table XVIII shows the average difference encountered in the comparison of Institute and mill results for the sample lots submitted by each mill for the current period, as well as the maximum difference encountered in comparing the Institute and mill test results for a given sample lot. In Table XIX, the average differences shown for each test in Table XVIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XIX that the maximum variation between the average basis weight results of the Institute and those of a given mill on corresponding samples is two per cent for the current period. This figure compares favorably with the maximum variation of two per cent for the preceding two periods. Further, it may be noted that the average basis weight results for Mills G, H, and J are higher than those for the Institute, whereas the results for Mills B, D, E, F, L, and M are lower and the results for Mills A, C, and I are the same. In general, the agreement in basis weight results is very good for the current period.

The maximum variation in caliper for the current period is nine per cent. Compared with the values for the Institute, the average results for Mills A, B, C, D, E, F, G, H, I, and M are lower while the average result for Mill L is higher, and the average result for Mill J is the same. The accord between Institute and mill caliper values is good with the exception of Mills E and M.

It may be noted in Table XIX that the bursting strength results exhibit a maximum variation of five per cent for the current period. The average results for Mills C, H, I, L and M are higher than those for the Institute, whereas the results for Mills B, D, E, F, G, and J are lower and the result for Mill A is the same. The agreement in bursting strength results is good except for Mill G.

The G. E. puncture results exhibit a maximum variation of thirty-nine per cent for the current period. Compared with the values for the Institute, the results for Mills G and J are higher, whereas the results for Mills A, B, C, F, H, I, and M are lower and the result for Mill E is the same. The agreement between the Institute and mill results is good with the exception of the variations for Mills B, G, I, and M.

It may be seen in Table XIX that the average machine direction tear result for Mill H is higher than that for the Institute, whereas the average results for the other mills are lower. The maximum variation for the current period is eighteen per cent. Only the differences encountered for Mills B, E, G, and M appear to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills C, D, H, and L are higher than those for the Institute whereas the average results for the other mills are lower. The maximum variation for the current period is twelve per cent. Only the differences encountered for Mills B, E, and M appear to be excessive.

TABLE XVIII
SUMMARY OF TEST RESULT COMPARISONS
(Average Mill and Institute Results)

	Mills*											
	A	B	C	D	E	F	G	H	I	J	L	M
Samples Compared	8	16	8	8	5	11	10	7	3	6	4	9
	<u>Basis Weight</u>											
Institute	42.9	43.5	43.2	43.0	42.4	43.5	42.8	42.8	42.3	42.9	42.6	43.0
Mill	42.9	43.2	43.2	42.8	42.3	43.0	43.0	43.7	42.3	43.2	42.2	42.2
v. Diff.**	0.0	-0.3	0.0	-0.2	-0.1	-0.5	+0.2	+0.9	0.0	+0.3	-0.4	-0.8
Max. Diff.***	-0.5	-0.6	+0.4	+1.8	+0.8	-1.2	+0.6	+1.4	+0.3	+1.0	-1.0	-1.9
	<u>Caliper</u>											
Institute	13.0	12.9	14.8	13.3	14.3	14.5	12.4	12.3	13.3	13.5	13.4	13.6
Mill	12.8	12.8	14.7	13.1	13.0	14.0	12.2	12.2	12.9	13.5	14.0	12.7
v. Diff.**	-0.2	-0.1	-0.1	-0.2	-1.3	-0.5	-0.2	-0.1	-0.4	0.0	+0.6	-0.9
Max. Diff.***	-0.4	+0.4	-0.3	-0.9	-2.0	-0.8	-0.5	-0.3	-0.5	-0.4	+0.9	-1.2
	<u>Bursting Strength</u>											
Institute	110	107	107	112	110	102	107	113	105	110	106	106
Mill	110	106	111	108	107	101	102	114	109	106	109	108
v. Diff.**	0	-1	+4	-4	-3	-1	-5	+1	+4	-4	+3	+2
Max. Diff.***	+5	+9	+7	-11	-10	+6	-12	+4	+6	-11	+8	+8
	<u>G. E. Puncture</u>											
Institute	35	32	36	38	32	41	35	36	31	29	35	36
Mill	34	29	35	--	32	39	38	35	27	31	--	22
v. Diff.**	-1	-3	-1	--	0	-2	+3	-1	-4	+2	--	-14
Max. Diff.***	-3	-4	-5	--	+1	-6	+4	-2	-6	+3	--	-20
	<u>Tearing Strength, in</u>											
Institute	344	364	373	386	363	403	340	357	337	350	361	391
Mill	334	307	365	381	297	372	305	371	333	324	347	334
v. Diff.**	-10	-57	-8	-5	-66	-31	-35	+14	-4	-26	-14	-57
Max. Diff.***	-41	-100	-24	-41	-87	-83	-51	+55	-24	-41	-33	-81
	<u>Tearing Strength, across</u>											
Institute	396	390	414	432	361	439	390	410	398	375	395	403
Mill	381	356	419	449	316	425	363	419	389	370	398	356
v. Diff.**	-15	-34	+5	+17	-45	-14	-27	+9	-9	-5	+3	-47
Max. Diff.***	-45	-75	+33	+47	-73	-48	-48	-38	-18	+36	+16	-74

* Comparison based on averages involves only those samples on which mill test data were submitted.

** Average difference is the difference between the Institute mill average and the mill average based on mill test data.

*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XIX
SUMMARY OF TEST RESULTS--COMPARISON BY PERIODS

	Basis Weight	Caliper	Average Difference, %		Tearing In	Strength Across
			Bursting Strength	G. E. Puncture		
Mill A						
Current period	0	-2	0	-3	-3	-4
64th period	-0.2	-0.8	+0.9	+3	+2	+2
63rd period	0	-0.8	+6	+3	+4	+1
Mill B						
Current period	-0.7	-0.8	-0.9	-9	-16	-9
64th period	+0.2	0	-5	-26	-6	-4
63rd period	-0.7	0	-2	-24	-8	-3
Mill C						
Current period	0	-0.7	+4	-3	-2	+1
64th period	+0.2	-2	+4	-8	-3	+3
63rd period	0	-0.7	0	-3	+1	+5
Mill D						
Current period	-0.5	-2	-4	--	-1	+4
64th period	-0.5	-5	+6	--	-1	+2
63rd period	-0.2	-5	+3	--	-2	+1
Mill E						
Current period	-0.2	-9	-3	0	-18	-12
64th period	+1	-8	-4	-3	-12	-9
63rd period	+0.5	-7	+2	0	-6	-5
Mill F						
Current period	-1	-3	-1	-5	-8	-3
64th period	+0.7	-4	+7	0	+0.2	+1
63rd period	-0.7	-3	+3	+2	-4	-2
Mill G						
Current period	+0.5	-2	-5	+9	-10	-7
64th period	+0.5	-2	-2	+6	-10	-6
63rd period	0	-3	-3	+11	-11	-8
Mill H						
Current period	+2	-0.8	+0.9	-3	+4	+2
64th period	+2	-2	+4	0	+6	+5
63rd period	+1	-0.8	+0.9	+6	+9	+10
Mill I						
Current period	0	-3	+4	-13	-1	-2
64th period	+0.7	-0.8	+4	-3	+4	+8
63rd period	+0.2	-4	+9	-3	+3	+9
Mill J						
Current period	+0.7	0	-4	+7	-7	-1
64th period	-0.9	+1	+2	0	-3	+1
63rd period	0	+3	-2	+3	-6	+2
Mill L						
Current period	-0.9	+4	+3	--	-4	+0.8
64th period	-2	--	+4	--	+0.5	+4
63rd period	-2	--	+0.9	--	+3	+4
Mill M						
Current period	-2	-7	+2	-39	-15	-12
64th period	-0.5	-5	+5	-36	-7	-6
63rd period	-1	-5	+3	-36	0	+2

OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952

Weight,	Caliper, points	Bursting Strength, p.s.i. gage	G. E.		Elmendorf Tear, g./sheet
			Puncture, units	In Across	
Diff. IPC	Mull Diff. IPC	Mill Diff. IPC	Mill Diff. IPC	Mill Diff. IPC	Mill Diff. IPC

<u>Mil. A---42-lb. Linerboard</u>																
1	+0.3	13.0	12.9	-0.1	114	112	- 2	33	35	+2	349 ^a	340	- 9	391 ^a	346	-45
5	+0.2	12.8	12.7	-0.1	110	108	- 2	34	31	-3	326 ^a	329	+ 3	384 ^a	352	-32
5	+0.2	13.2	12.8	-0.4	111	114	+ 3	36	36	0	343 ^a	339	- 4	401 ^a	400	- 1
5	-0.2	13.3	13.0	-0.3	112	109	- 3	37	34	-3	353 ^a	334	- 9	411 ^a	395	-16
5	+0.2	12.8	12.5	-0.3	107	110	+ 3	33	35	+2	351	326	-25	391 ^a	381	-10
3	+0.4	12.8	12.6	-0.2	108	113	+ 5	34	34	0	365	324	-41	383 ^a	390	+ 7
5	-0.5	13.1	12.8	-0.3	108	109	+ 1	38	35	-3	335 ^a	330	- 5	393 ^a	395	+ 2
5	-0.4	13.2	13.1	-0.1	110	108	- 2	36	34	-2	333 ^a	342	+ 9	411 ^a	392	-19
5	0.0	13.0	12.8	-0.2	110	110	0	35	34	-1	344	334	-10	396	381	-15

more specimens which tore beyond the 3/8-inch limit.

culated from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952

TABLE XX

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G. E. Puncture, units						
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.					
<u>Mill A---42-lb. Linerboard</u>																	
152340	A-392	WF1S	10/26/52	2	42.8	43.1	+0.3	13.0	12.9	-0.1	114	112	- 2	33	35	+2	349 ^a
152341	A-393	WF1S	10/29/52	2	42.4	42.6	+0.2	12.8	12.7	-0.1	110	108	- 2	34	31	-3	326 ^a
152405	A-394	WF1S	11/ 7/52	2	43.4	43.6	+0.2	13.2	12.8	-0.4	111	114	+ 3	36	36	0	343 ^a
152406	A-395	WF1S	11/ 3/52	1	43.4	43.2	-0.2	13.3	13.0	-0.3	112	109	- 3	37	34	-3	353 ^a
152426	A-396	WF1S	11/ 9/52	2	42.4	42.6	+0.2	12.8	12.5	-0.3	107	110	+ 3	33	35	+2	351
152427	A-397	WF1S	11/ 9/52	2	42.4	42.8	+0.4	12.8	12.6	-0.2	108	113	+ 5	34	34	0	365
152454	A-398	WF1S	11/16/52	2	43.0	42.5	-0.5	13.1	12.8	-0.3	108	109	+ 1	38	35	-3	335 ^a
152455	A-399	WF1S	11/16/52	1	43.0	42.6	-0.4	13.2	13.1	-0.1	110	108	- 2	36	34	-2	333 ^a
Current Mill Average:					42.9	42.9	0.0	13.0	12.8	-0.2	110	110	0	35	34	-1	344

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Caliper, points	Bursting Strength, p.s.i. gage	G.E. Puncture, units	Klendorf Tear, g./sheet	In Across
IPC Mill	Diff.	IPC Mill Diff.	IPC Mill Diff.	IPC Mill Diff.

Mill B-42-lb. Linerboard															
0	12.6	12.6	0.0	105	100	-5	32	29	-3	357	309	-48	359 ^a	327	-32
5	12.8	12.6	-0.2	108	105	-3	31	29	-2	361	305	-56	390 ^a	350	-40
4	12.6	12.5	-0.1	105	104	-1	32	29	-3	358 ^a	302	-56	377 ^a	352	-25
4	12.6	12.5	-0.1	106	103	-3	32	29	-3	369 ^a	310	-59	395 ^a	355	-40
1	12.5	12.5	0.1	109	104	-5	32	28	-4	360 ^a	288	-72	381 ^a	322	-59
1	12.7	12.6	-0.1	104	105	+1	32	28	-4	343 ^a	291	-52	401 ^a	335	-06
6	12.7	12.6	-0.1	110	102	-8	31	28	-3	380 ^a	282	-98	398 ^a	323	-75
6	12.6	12.6	0.0	106	103	-3	32	28	-4	387 ^a	287	-100	408 ^a	353	-55
3	13.4	13.2	-0.2	107	108	+1	34	32	-2	391 ^a	351	-40	421 ^a	391	-30
2	13.3	13.3	0.0	110	108	-2	35	31	-4	391 ^a	338	-53	415 ^a	394	-21
1	13.6	13.4	-0.2	99	108	+9	34	32	-2	409 ^a	345	-64	408 ^a	391	-17
0	13.4	13.3	-0.1	108	105	-3	36	32	-4	391 ^a	343	-48	422 ^a	388	-34
1	13.2	13.0	-0.2	106	107	+1	31	29	-2	340 ^a	298	-42	384 ^a	348	-36
2	13.1	12.9	-0.2	110	110	0	31	28	-3	338 ^a	284	-54	366 ^a	364	-2
0	13.0	12.9	-0.1	107	108	+1	30	28	-2	319 ^a	284	-35	353 ^a	354	+1
0	12.5	12.9	+0.4	114	109	-5	31	28	-3	327 ^a	289	-38	365 ^a	343	-22
3	12.9	12.8	-0.1	107	106	-1	32	29	-3	364	307	-57	390	356	-34

specimens which tore beyond the 3/8-inch limit.

i from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units				
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill
Mill B-42-lb. Linerboard															
152326	B-683	WFLS	10/25/52	1	43.6	43.6	0.0	12.6	12.6	105	100	32	29	-3	357
152327	B-684	WFLS	10/25/52	1	43.9	43.4	-0.5	12.8	12.6	108	105	31	29	-2	361
152328	B-685	WFLS	10/25/52	1	44.0	43.6	-0.4	12.6	12.5	105	104	32	29	-3	358 ^a
152329	B-686	WFLS	10/25/52	1	43.9	43.5	-0.4	12.6	12.5	106	103	32	29	-3	369 ^a
152330	B-686	WFLS	10/25/52	1	43.7	43.6	-0.1	12.5	12.5	109	104	32	28	-4	360 ^a
152331	B-688	WFLS	10/25/52	1	43.8	43.7	-0.1	12.7	12.6	104	105	32	28	-4	343 ^a
152332	B-689	WFLS	10/25/52	1	44.2	43.6	-0.6	12.7	12.6	110	102	31	28	-3	380 ^a
152333	B-690	WFLS	10/25/52	1	44.4	43.8	-0.6	12.6	12.6	106	103	32	28	-4	387 ^a
152334	B-691	WFLS	10/27/52	3	43.0	42.7	-0.3	13.4	13.2	107	108	34	32	-2	391 ^a
152335	B-692	WFLS	10/27/52	3	43.0	42.8	-0.2	13.3	13.3	110	108	35	31	-4	391 ^a
152336	B-693	WFLS	10/27/52	3	42.4	42.3	-0.1	13.6	13.4	99	108	34	32	-2	409 ^a
152337	B-694	WFLS	10/27/52	3	42.4	42.4	0.0	13.4	13.3	108	105	36	32	-4	391 ^a
152386	B-695	WFLS	11/ 3/52	1	43.3	43.4	+0.1	13.2	13.0	106	107	31	29	-2	340 ^a
152387	B-696	WFLS	11/ 3/52	1	43.4	43.2	-0.2	13.1	12.9	110	110	31	28	-3	338 ^a
152388	B-697	WFLS	11/ 3/52	1	43.1	43.1	0.0	13.0	12.9	107	108	30	28	-2	319 ^a
152389	B-698	WFLS	11/ 3/52	1	43.3	43.3	0.0	12.5	12.9	114	109	31	28	-3	327 ^a
Current Mill Average:					43.5	43.2	-0.3	12.9	12.8	107	106	32	29	-3	364

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIII

INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

f.	Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units		Elmendorf Tear, g./sheet		IPC Mill Diff.		IPC Mill Diff.		IPC Mill Diff.		IPC Mill Diff.	
	IPC	Mill	IPC	Mill	IPC	Mill	IPC	Mill	IPC	Mill	IPC	Mill	IPC	Mill	IPC	Mill
Mill C-42-lb. Linerboard																
.1	15.0	14.8	-0.2	106	110	+ 4	36	35	- 1	379	359	-20	422 ^a	411	-11	-11
.1	14.8	14.6	-0.2	100	103	+ 3	33	32	-1	330 ^a	337	+ 7	383 ^a	387	+ 4	+ 4
.4	14.7	14.6	-0.1	103	107	+ 4	31	31	0	328	338	+10	367 ^a	400	+33	+33
.4	15.0	14.9	-0.1	110	117	+ 7	38	38	0	385 ^a	377	- 8	432 ^a	435	+ 3	+ 3
.3	15.0	14.8	-0.2	111	116	+ 5	38	38	0	405 ^a	381	-24	435 ^a	436	+ 1	+ 1
.0	14.8	14.5	-0.3	108	110	+ 2	39	34	- 5	400 ^a	389	-11	432 ^a	438	+ 6	+ 6
.1	14.9	14.7	-0.2	108	113	+ 5	38	38	0	384 ^a	378	- 6	426 ^a	424	- 2	- 2
.2	14.5	14.2	-0.3	106	110	+ 4	38	34	- 4	373	366	- 7	415 ^a	421	+ 6	+ 6
.0	14.8	14.7	-0.1	107	111	+ 4	36	35	- 1	373	365	- 8	414	419	+ 5	+ 5

specimens which tore beyond the 3/8-inch limit.

ed from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight,		Caliper,		Bursting Strength,		G.E. Puncture,							
					lb.	IPC	Diff.	IPC	Diff.	points	IPC	Diff.	p.s.i. gage	IPC	Diff.	units	IPC	Diff.
<u>Mill C-42-lb. Linerboard</u>																		
152434	C-419	W.F.	11/ 6/52	1	43.9	44.0	+0.1	15.0	14.8	-0.2	106	110	+ 4	36	35	- 1	379	35
152435	C-420	W.F.	11/11/52	1	42.0	42.1	+0.1	14.8	14.6	-0.2	100	103	+ 3	33	32	-1	330 ^a	33
152436	C-421	W.F.	11/11/52	1	41.6	42.0	+0.4	14.7	14.6	-0.1	103	107	+ 4	31	31	0	328	33
152437	C-422	W.F.	11/12/52	1	43.6	43.2	-0.4	15.0	14.9	-0.1	110	117	+ 7	38	38	0	385 ^a	37
152438	C-423	W.F.	11/12/52	1	43.4	43.1	-0.3	15.0	14.8	-0.2	111	116	+ 5	38	38	0	405 ^a	38
152439	C-424	W.F.	11/13/52	1	43.8	43.8	0.0	14.8	14.5	-0.3	108	110	+ 2	39	34	- 5	400 ^a	38
152440	C-425	W.F.	11/13/52	1	43.9	43.8	-0.1	14.9	14.7	-0.2	108	113	+ 5	38	38	0	384 ^a	37
152441	C-426	W.F.	11/14/52	1	43.8	43.6	-0.2	14.5	14.2	-0.3	106	110	+ 4	38	34	- 4	373	36
Current Mill Average:					43.2	43.2	0.0	14.8	14.7	-0.1	107	111	+ 4	36	35	- 1	373	36

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

Caliper, points	IPC	Mill	Diff.	Bursting Strength, p.s.i. gage		IPC	Mill	Diff.	G.E. Puncture, units		IPC	Mill	Diff.	Elmendorf Tear, g./sheet		IPC	Mill	Diff.
				IPC	Mill				IPC	Mill				In	Across			
<u>Mill D--42-lb. Linerboard</u>																		
12.9	12.9		0.0	111	114	+ 3	39	383 ^a	367	-16	451 ^a	437	-14	383 ^a	367	-16	451 ^a	-14
13.5	13.5		0.0	117	106	-11	37	396 ^a	387	- 9	424 ^a	445	+21	396 ^a	387	- 9	424 ^a	+21
13.0	13.5		+0.5	113	108	- 5	34	373 ^a	389	+16	408 ^a	435	+27	373 ^a	389	+16	408 ^a	+27
13.6	12.7		+0.9	108	106	- 2	37	403 ^a	362	-41	428 ^a	419	- 9	403 ^a	362	-41	428 ^a	- 9
13.7	13.4		-0.3	111	112	+ 1	39	402 ^a	385	-17	454 ^a	457	+ 3	402 ^a	385	-17	454 ^a	+ 3
13.1	12.9		-0.2	114	105	- 9	38	368 ^a	384	+16	417 ^a	464	+47	368 ^a	384	+16	417 ^a	+47
13.4	13.4		0.0	108	105	- 3	36	365 ^a	380	+15	420 ^a	453	+33	365 ^a	380	+15	420 ^a	+33
12.9	12.8		-0.1	114	108	- 6	40	395 ^a	393	- 2	451 ^a	484	+33	395 ^a	393	- 2	451 ^a	+33
13.3	13.1		-0.2	112	168	- 4	38	386	381	- 5	432	449	+17	386	381	- 5	432	+17

TABLE XXIV

Mill E--42-lb. Linerboard																
15.7	14	-1.7	104	100	- 4	34	365 ^a	278	-87	369 ^a	296	-73	365 ^a	278	-87	369 ^a
15.0	13	-2.0	112	110	- 2	32	346 ^a	263	-83	364 ^a	298	-66	346 ^a	263	-83	364 ^a
14.0	13.4	-0.6	113	116	+ 3	30	359 ^a	282	-77	341 ^a	284	-57	359 ^a	282	-77	341 ^a
13.4	12.4	-1.0	112	110	- 2	34	380 ^a	336	-44	381 ^a	333	-48	380 ^a	336	-44	381 ^a
13.6	12.4	-1.2	110	100	-10	29	363 ^a	327	-36	349 ^a	369	+20	363 ^a	327	-36	349 ^a
14.3	13.0	-1.3	110	107	- 3	32	363	297	-66	361	316	-45	363	297	-66	361

cimens which tore beyond the 3/8-inch limit.
rom the totals of the individual readings.

TABLE XIV

INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

Caliper, points	IPC Mill Diff.	Pursting Strength, p.s.i. gage	G.E.		Puncture, units		Elmendorf Tear, g./sheet		IPC Mill Diff.	In		Across		IPC Mill Diff.	
			IPC Mill Diff.	p.s.i. gage	IPC Mill Diff.	units	IPC Mill Diff.	g./sheet		IPC Mill Diff.	In	Across			
Mill F---1/2-lb., Linerboard															
.2	14.8	14.1	-0.7	103	101	- 2	38	41	+ 3	392 ^a	377	-15	433 ^a	423	+10
.0	14.8	14.6	-0.2	103	103	0	43	42	- 1	428 ^a	389	-39	474 ^a	451	-23
.0	14.5	14.1	-0.4	101	99	- 2	39	35	- 4	521 ^a	327	-64	423 ^a	375	-48
.2	14.4	13.6	-0.8	99	98	- 1	43	38	- 5	435 ^a	352	-83	447 ^a	419	-28
.6	14.5	13.9	-0.6	102	104	+ 2	43	40	- 3	447 ^a	373	-74	467 ^a	425	-42
.2	15.0	14.6	-0.4	103	104	+ 1	42	44	+ 2	403 ^a	409	+ 3	456 ^a	460	+ 4
.6	14.7	14.4	-0.3	103	101	- 2	41	39	- 2	391	389	- 2	435 ^a	455	+20
.5	14.7	14.1	-0.6	100	100	0	42	38	- 4	379 ^a	373	- 6	423 ^a	421	- 2
.9	14.4	13.7	-0.7	98	98	0	42	36	- 6	403 ^a	357	-51	427 ^a	392	-35
.3	14.7	14.0	-0.7	109	106	- 3	39	39	0	377 ^a	379	+ 2	433 ^a	433	0
7	13.6	12.9	-0.7	96	102	+ 6	39	39	0	376 ^a	371	- 5	410 ^a	421	+11
5	14.5	14.0	-0.5	102	101	- 1	41	39	- 2	403	372	-31	439	425	-14

specimens which tore beyond the 3/8-inch limit.

d from the totals of the individual readings.

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SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (c)

TABLE XIV

Institute Data versus Mill Data

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Pursting Strength, p.s.i. gage		G.E. Puncture, units						
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.					
Mill F---/2-lb. Linerboard																	
152314	F-69	W.F.	10/17/52	--	43.4	43.2	-0.2	14.8	14.1	-0.7	103	101	38	41	+ 3	3	
152315	F-70	W.F.	10/23/52	--	44.5	44.5	0.0	14.8	14.6	-0.2	103	103	43	42	- 1	4	
152338	F-71	W.F.	10/24/52	--	43.5	42.5	-1.0	14.5	14.1	-0.4	101	99	39	35	- 4	5	
152339	F-72	W.F.	10/27/52	--	43.5	42.3	-1.2	14.4	13.6	-0.8	99	98	43	38	- 5	4	
152316	F-73	W.F.	10/28/52	--	44.1	43.5	-0.6	14.5	13.9	-0.6	102	104	43	40	- 3	4	
152398	F-74	W.F.	10/29/52	--	43.8	44.0	+0.2	15.0	14.6	-0.4	103	104	42	44	+ 2	1	
152417	F-75	W.F.	10/30/52	--	43.9	43.3	-0.6	14.7	14.4	-0.3	103	101	41	39	- 2	3	
152418	F-76	W.F.	11/ 3/52	--	43.4	42.9	-0.5	14.7	14.1	-0.6	100	100	42	38	- 4	3	
152419	F-77	W.F.	11/ 4/52	1	42.7	41.8	-0.9	14.4	13.7	-0.7	98	98	42	36	- 6	4	
152456	F-78	W.F.	11/ 6/52	--	43.2	42.9	-0.3	14.7	14.0	-0.7	109	106	39	39	0	3	
152457	F-79	---	11/12/52	--	42.9	42.2	-0.7	13.6	12.9	-0.7	96	102	39	39	0	3	
Current Mill Average:					43.5	43.0	-0.5	14.5	14.0	-0.5	102	101	-1	41	39	- 2	4

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

[illegible]

specimens which tore beyond the 3/8-inch limit.

ded from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (contin.

TABLE XVI

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units				
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.			
Mill G--42-lb. Linerboard															
152306	G-446	WFL	10/18/52	1	43.8	-0.3	12.2	12.3	114	106	- 8	35	37	+ 2	330 ^a
152307	G-447	WFL	10/18/52	1	42.4	+0.5	12.1	11.9	116	113	- 3	33	36	+ 3	321
152343	G-448	WFL	10/29/52	1	42.5	-0.1	12.7	12.5	115	103	-12	35	38	+ 3	345 ^a
152344	G-449	WFL	10/31/52	1	42.7	+0.6	12.2	11.7	111	110	- 1	36	38	+ 2	351 ^a
152399	G-450	WFL	11/ 8/52	1	42.1	+0.2	12.1	12.0	106	97	- 9	35	38	+ 3	321
152400	G-451	WFL	11/ 8/52	1	43.0	+0.1	12.1	11.8	97	94	- 3	35	37	+ 2	330
152423	G-452	WFL	11/14/52	1	43.7	+0.1	13.0	12.6	100	97	- 3	35	39	+ 4	359 ^a
152424	G-453	WFL	11/14/52	1	43.0	+0.3	12.6	12.5	104	97	- 7	35	39	+ 4	353 ^a
152462	G-454	WFL	11/18/52	1	42.0	+0.1	12.4	12.2	102	102	0	35	37	+ 2	344
152463	G-455	WFL	11/18/52	1	42.9	+0.2	12.5	12.3	102	100	- 2	37	39	+ 2	345 ^a
Current Mill average:					42.8	+0.2	12.4	12.2	107	102	- 5	35	38	+ 3	340

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: "11 "current mill average" data are calculated from the totals of the individual readings.

INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

Lot	Caliper, points	IPC	Diff.	Bursting Strength, p.s.i. gage		IPC	Mill	Diff.	G.E. Puncture, units		IPC	Mill	Diff.	Elmendorf Tear, g./sheet		IPC	Mill	Diff.
				IPC	Diff.				IPC	Diff.				In	Across			
Mill H--42-lb. Linerboard																		
12.1	12.1	12.2	+0.1	113	112	- 1	35	36	+ 1	327	382	+55	383 ^a	417	+34			
12.4	12.4	12.1	-0.3	114	114	0	35	36	+ 1	377 ^a	391 ^a	+14	424 ^a	448	+24			
12.4	12.4	12.2	-0.2	113	116	+ 3	36	35	- 1	359	359	0	404 ^a	420	+16			
12.4	12.4	12.1	-0.3	116	116	0	35	35	0	359	366	+ 7	417 ^a	399	-18			
12.1	12.1	12.1	0.0	110	110	0	35	35	0	345	380	+35	405 ^a	423	+18			
12.1	12.1	12.2	+0.1	111	115	+ 4	35	35	0	350	372	+22	403 ^a	433	+30			
12.5	12.5	12.5	0.0	112	114	+ 2	37	35	- 2	382	347	-35	433 ^a	395	-38			
12.3	12.3	12.2	-0.1	113	114	+ 1	36	35	- 1	357	371	+14	410	419	+ 9			

T.BLE XXVIII

Mill I--42-lb. Linerboard

13.2	12.9	-0.3	106	109	+ 3	31	25	- 6	335	311	-24	377 ^a	373	- 4
13.2	12.9	-0.3	101	107	+ 6	32	28	- 4	339	343	+ 4	409 ^a	391	-18
13.4	12.9	-0.5	108	110	+ 2	31	29	- 2	337	345	+ 8	407 ^a	404	- 3
13.3	12.9	-0.4	105	109	+ 4	31	27	- 4	337	333	- 4	398	389	- 9

specimens which tore beyond the 3/8-inch limit.

from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST RESULTS NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continue)

TABLE XXVII

<u>Mill I--42-lb. Linerboard</u>																	
152396	I-258	WFLS	11/ 3/52	1	42.4	42.3	-0.1	13.2	12.9	-0.3	106	109	+ 3	31	25	- 6	335
152397	I-259	WFLS	11/ 4/52	1	42.5	42.4	-0.1	13.2	12.9	-0.3	101	107	+ 6	32	28	- 4	339
152429	I-260	WFLS	11/12/52	1	42.0	42.3	+0.3	13.4	12.9	-0.5	108	110	+ 2	31	29	- 2	337
Current Mill Average:					42.3	42.3	0.0	13.3	12.9	-0.4	105	109	+ 4	31	27	- 4	337

1. This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: .11 "current mill average" data are calculated from the totals of the individual readings.

INDIVIDUAL TEST LOGS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

IPC	Caliper, points	IPC	Diff.	Bursting Strength, p.s.i. gage	IPC	Mill	Diff.	G.E. Puncture, units	IPC	Mill	Diff.	IPC	Mill	Diff.	Elmendorf Tear, g./sheet		IPC	Mill	Diff.
															In	Across			
Mill J--42-lb. Linerboard																			
13.5	13.7		+0.2	106	106		0	29	30		+ 1	345 ^a	307		-38	395 ^a	359		-36
13.7	13.9		+0.2	112	104		- 8	29	31		+ 2	333 ^a	311		-22	382 ^a	369		-13
13.1	13.1		0.0	113	108		- 5	29	30		+ 1	341 ^a	323		-18	393 ^a	370		-23
13.1	13.0		-0.1	110	108		- 2	29	31		+ 2	352 ^a	311		-41	364 ^a	367		+ 3
13.9	13.5		-0.4	108	108		0	29	32		+ 3	364 ^a	341		-23	357 ^a	393		+36
13.7	13.6		-0.1	114	103		-11	29	31		+ 2	361 ^a	350		-11	363 ^a	362		- 1
13.5	13.5		0.0	110	106		- 4	29	31		+ 2	350	324		-26	375	370		- 5

TABLE XXX

Mill K--42-lb. Linerboard

No samples submitted.

TABLE XXXI

Mall L--42-lb. Linerboard														
13.3	13.9	+0.6	107	106	- 1	33	379 ^a	346	-33	401 ^a	392	- 9		
13.5	13.5	0.0	105	113	+ 8	34	345 ^a	354	+ 9	389 ^a	397	+ 8		
13.3	14.2	+0.9	106	109	+ 3	38	361 ^a	357	- 4	397 ^a	413	+16		
13.4	14.3	+0.9	107	109	+ 2	36	358 ^a	333	-25	392 ^a	390	- 2		
13.4	14.0	+0.6	106	109	+ 3	35	361	347	-14	395	398	+ 3		

specimens which tore beyond the 3/8-inch limit.
from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (cont'd)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units	
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill

Mill J--42-lb. Linerboard

152394	J-387	B.F.	10/27/52	--	43.2	43.8	+0.6	13.5	13.7	+0.2	106	106	0	29	30	+ 1	345 ^a	30
152395	J-388	B.F.	10/27/52	--	43.1	43.5	+0.4	13.7	13.9	+0.2	112	104	- 8	29	31	+ 2	333 ^a	31
152420	J-389	B.F.	11/ 2/52	1	42.4	43.4	+1.0	13.1	13.1	0.0	113	108	- 5	29	30	+ 1	341 ^a	32
152421	J-390	B.F.	11/ 2/52	1	42.3	43.1	+0.8	13.1	13.0	-0.1	110	108	- 2	29	31	+ 2	352 ^a	31
152431	J-391	B.F.	11/12/52	--	42.8	43.0	+0.2	13.9	13.5	-0.4	108	108	0	29	32	+ 3	364 ^a	34
152432	J-392	B.F.	11/12/52	--	43.4	42.6	-0.8	13.7	13.6	-0.1	114	103	-11	29	31	+ 2	361 ^a	35
Current Mill average:					42.9	43.2	+0.3	13.5	13.5	0.0	110	106	- 4	29	31	+ 2	350	32

TABLE XXX

Mill K--42-lb. Linerboard

No samples submitted.

TABLE XXXI

Mill L--42-lb. Linerboard

152444	L-127		10/ 5/52	1	42.4	42.0	-0.4	13.3	13.9	+0.6	107	106	- 1	33			379 ^a	34
152445	L-128		10/ 5/52	1	42.8	41.8	-1.0	13.5	13.5	0.0	105	113	+ 8	34			345 ^a	35
152446	L-129		10/11/52	1	42.5	42.6	+0.1	13.3	14.2	+0.9	106	109	+ 3	38			361 ^a	35
152447	L-130		10/13/52	1	42.5	42.6	+0.1	13.4	14.3	+0.9	107	109	+ 2	36			358 ^a	33
Current Mill average:					42.6	42.2	-0.4	13.4	14.0	+0.6	106	109	+ 3	35			361	34

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

INDIVIDUAL TEST LOTS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

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Caliper, points	Bursting Strength, p.s.i. gage		G.E. Puncture, units		IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.		
	IPC	Diff.	IPC	Diff.									IPC	Diff.
Mill M--42-lb. Linerboard														
12.7	12.2	-0.5	107	107	0	32	20	-12	336 ^a	299	-37	401 ^a	333	-68
13.7	12.8	-0.9	103	104	+ 1	35	18	-17	362 ^a	313	-49	395 ^a	351	-44
13.7	12.5	-1.2	109	110	+ 1	36	16	-20	413 ^a	357	-56	445 ^a	379	-66
13.6	12.5	-1.1	107	109	+ 2	35	19	-16	408 ^a	327	-81	383 ^a	309	-74
13.7	12.7	-1.0	110	109	- 1	35	19	-16	406 ^a	341	-65	387 ^a	347	-40
13.0	12.1	-0.9	102	104	+ 2	34	22	-12	391 ^a	318	-73	381 ^a	352	-29
14.1	13.0	-1.1	96	104	+ 8	38	25	-13	425 ^a	372	-53	407 ^a	369	-38
13.7	13.3	-0.4	110	115	+ 5	38	30	- 8	411 ^a	350	-61	411 ^a	379	-32
14.0	13.2	-0.8	105	110	+ 5	38	27	-11	372 ^a	332	-40	421 ^a	385	-36
13.6	12.7	-0.9	106	108	+ 2	36	22	-14	391	334	-57	403	356	-47

TABLE XXXIII

Mill E--44/46-lb. Drum Linerboard

15.7	14	-1.7	112	110	- 2	39	33	- 6	418 ^a	286	-132	413 ^a	321	-92
14.6	12.9	-1.7	103	97	- 6	34	38	+ 4	390 ^a	312	-78	359 ^a	314	-45
14.9	13.7	-1.2	109	108	- 1	37	36	- 1	441 ^a	411	-30	403 ^a	354	-49
15.1	13.5	-1.6	108	105	- 3	37	36	- 1	416	336	-80	392	330	-62

specimens which tore beyond the 3/8-inch limit.

from the totals of the individual values.

SUMMARY OF INDIVIDUAL TEST LOGS—NOVEMBER 1 THROUGH NOVEMBER 30, 1952 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. gage		G.E. Puncture, units	
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill

Mill M-42-lb. Linerboard

152311	M-124	W.	10/20/52	2	42.3	41.6	-0.7	12.7	12.2	-0.5	107	107
152312	M-125	W.	10/21/52	2	42.0	41.5	-0.5	13.7	12.8	-0.9	103	104
152367	M-126	W.	10/28/52	2	43.8	41.9	-1.9	13.7	12.5	-1.2	109	110
152392	M-127	W.	11/ 2/52	4	43.0	42.1	-0.9	13.6	12.5	-1.1	107	109
152393	M-128	W.	11/ 3/52	4	43.1	41.7	-1.4	13.7	12.7	-1.0	110	109
152442	M-129	W.	11/11/52	2	42.2	40.9	-1.3	13.0	12.1	-0.9	102	104
152443	M-130	W.	11/11/52	4	43.6	42.6	-1.0	14.1	13.0	-1.1	96	104
152460	M-131	W.	11/17/52	2	44.2	44.8	+0.6	13.7	13.3	-0.4	110	115
152461	M-132	W.	11/18/52	2	42.6	42.8	+0.2	14.0	13.2	-0.8	105	110
Current Mill Average:					43.0	42.2	-0.8	13.6	12.7	-0.9	106	108
											+ 2	36
												22
												-14

TABLE XXXIII

Mill E-44/46-lb. Drum Linerboard

152391	E-377	W.F.	11/6/ 52	1	49.1	46.4	-2.7	15.7	14	-1.7	112	110
152410	E-378	W.F.	11/10/52	1	45.0	44.4	-0.6	14.6	12.9	-1.7	103	97
152430	E-380	W.F.	11/17/52	1	47.0	47.0	+0.1	14.9	13.7	-1.2	109	108
Current Mill Average:					47.0	46.0	-1.0	15.1	13.5	-1.6	108	105
											- 3	37
												36
												- 1

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual values.