

#### Institute of Paper Science and Technology Central Files

# **CONTINUOUS BASELINE STUDY**

Project 1108-13

Progress Report 165

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

January 1, 1961

# THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

# CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 165

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FOURDRINIER KRAFT BOARD INSTITUTE, INC.

January 1, 1961

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#### THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

#### SUMMARY

The objective of the continuous baseline study on linerboard is twofold. The first objective is to provide an indication of the quality of the 42-lb. fourdrinier kraft linerboard being produced by each of the participating mills and by the industry as a whole. The second objective is to provide a procedure whereby the mills have the opportunity to compare their test results with those obtained at the Institute on similar materials, thus providing a convenient system of instrument verification. The first objective is implemented by the weekly sampling of the product of each machine manufacturing 42-1b。 kraft linerboard and submitting these weekly samples to The Institute of Paper Chemistry where they are evaluated for basis weight, caliper, bursting strength, and Elmendorf tearing strength. The second objective of the continuous baseline study--namely, to provide a convenient system of instrument verification--is achieved by the testing of analogous samples by the mill and the Institute. The mill data are sent to the Institute, and a comparison of Institute and mill test results is included in the monthly reports. In addition to fulfilling the two prime objectives described above, the baseline study is accumulating an invaluable ever-growing reserve of background information essential for the intelligent evaluation of specifications of any kind.

During the month of December, one hundred and four sample lots of 42-1b. fourdrinier kraft linerboard representing the production of seventeen mills were evaluated at The Institute of Paper Chemistry. Shown below are the maximum and minimum current mill average for each test (the current

mill average is the average of the results obtained on all sample lots of linerboard submitted from a given mill during the current period); also shown for each test is the current  $F_{\circ}K_{\circ}I_{\circ}$  average which is determined by averaging the current mill averages and is indicative of the test level being maintained by the industry as a whole to the degree that the industry is represented by the participating mills:

	Maximum Current Mill Av。	Minimum Current Mill Av。	Current F.K.I. Av.
Basis weight, lb.	45°2	43°1	43.8
Caliper, pt.	13.5	12.1	12.7
Bursting strength, p.s.i. gage	117	103	110
Machine direction Elmendorf Tear, g./sheet	375	277	333
Cross-machine direction Elmendorf tear, g./sheet	414	339	377

As mentioned previously, the study provides a procedure whereby the mills have the opportunity to compare their test results with those obtained on corresponding sample lots of linerboard at the Institute so that a convenient system of instrument verification is readily available to all participants. A summary of the agreement obtained in the comparisons of Institute and mill test results for the current period is shown below. The tabulated data show the number of mills (and the percentage of all mills which this number represents) whose average test results for the month of December fall within the designated percentages from the average test results obtained at the Institute on corresponding materials.

Fourdrinier Kraft	Board	Institute;	Inc。
Project 1108-13		•	

<u>-10</u>				14 16 87°5 100°0	16 100°0
<b>• • •</b>				8	100
 		0°001	17 100°0	9 56 <b>°2</b>	14 87°5
Institute and Mill Test Results $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$		16 94°1	15 88 <b>.2</b>	9 56 <b>.2</b>	13 81 <b>°2</b>
Mill Tes		16 94.°1	15 88 <b>°2</b>	9 56 <b>°2</b>	11 68,8
situte and		14 82.44	13 76°5	7 43。8	9 56 <b>°2</b>
	17 100.0	۲1 11	10 58°8	37°5	6 37°5
구 +	7 7 41°2	5°9	2 11。8	31 <b>°2</b>	31°2
±0°5	2 11.8	0°0	0°0	6°2	4 25.0
	Basis weight Number of mills Percentage of all mills	Caliper Number of mills Percentage of all mills	Bursting strength Number of mills Percentage of all mills	Tearing strength, in Number of mills Percentage of all mills	Tearing strength, across Number of mills Percentage of all mills

#### INTRODUCTION

The objective of the continuous baseline study on linerboard is twofold. One objective is to provide an indication of the quality of the 42-lb. fourdrinier kraft linerboard being produced by each of the participating mills and by the industry as a whole. Another objective is to provide a procedure whereby the mills have the opportunity to compare their test results with those obtained at the Institute on similar materials. thus providing a convenient system of instrument verification. The first objective mentioned above is implemented by the weekly sampling of the product of each machine manufacturing 42-1b。 kraft linerboard and submitting these weekly samples to The Institute of Paper Chemistry where they are evaluated for basis weight, caliper, bursting strength, and Elmendorf tearing strength. The second objective of the continuous baseline study -- namely, to provide a convenient system of instrument verification---is achieved by the testing of analogous samples by the mill and the Institute. The mill data are sent to the Institute, and a comparison of Institute and mill test results is included in the monthly reports. In addition to fulfilling the two prime objectives which have been described, the baseline study is accumulating an invaluable ever-growing reserve of background information essential for the intelligent evaluation of specifications of any kind.

The dual objectives of the continuous baseline study on linerboard have been described in the preceding paragraph. The remainder of the report presents the test results for the linerboard samples which were evaluated during the month of December. In line with the dual nature of

the study, the presentation is divided into two parts. Part I presents the results obtained at The Institute of Paper Chemistry, and Part II presents a comparison of results obtained at the Institute with those obtained at the mills. It should be noted that the same code letters are not used to identify the same participants in these reports from month to month. Each participant is privately advised of his own code. Attention is directed to the fact that the bursting strength results presented in these reports have been obtained, beginning in April, with the "new" diaphragm. By "new" diaphragm is meant the composition and style (fillet filled in) introduced by B. F. Perkins and Son, Inc. The same diaphragm distension characteristics, namely, 40-45 p.s.i. at 1.8 cm. distension were used.

# PART I: PRESENTATION AND DISCUSSION OF RESULTS OBTAINED AT THE INSTITUTE OF PAPER CHEMISTRY

During the month of December, one hundred and four different sample lots of 42-lb. fourdrinier kraft linerboard from seventeen different F.K.I. mills were evaluated at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the current mill averages for the various tests, Table II also shows the current FoKoIo averages, the cumulative FoKoIo averages, and the FoKoIo indexes. The current FoKoIo average represents the average of the current mill averages, whereas the cumulative FoKoIo average represents the average of the current FoKoIo averages for the previous twelve months excluding the current period. Hence, in the case of the current report, the cumulative FoKoIo average covers the period from December 1, 1959, to November 30, 1960. The FoKoIo indexes are obtained as follows:

 $\frac{\text{current } F_{\circ}K_{\circ}I_{\circ} \text{ average}}{\text{cumulative } F_{\circ}K_{\circ}I_{\circ} \text{ average}} \times 100 = F_{\circ}K_{\circ}I_{\circ} \text{ index (\%)}$ 

The F<sub>0</sub>K<sub>0</sub>I<sub>0</sub> index provides a ready means of comparing the current quality with previous results. For example, the current F<sub>0</sub>K<sub>0</sub>I<sub>0</sub> average basis weight is 43.8 lb<sub>0</sub>, and the cumulative F<sub>0</sub>K<sub>0</sub>I<sub>0</sub> average basis weight is 43.6 lb<sub>0</sub> Hence, the F<sub>0</sub>K<sub>0</sub>I<sub>0</sub> index for basis weight determined in per cent as previously described is 100<sub>0</sub>5 and indicates that the current

F.K.I. average basis weight is higher than the cumulative F.K.I. average.

## TABLE I

## NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL

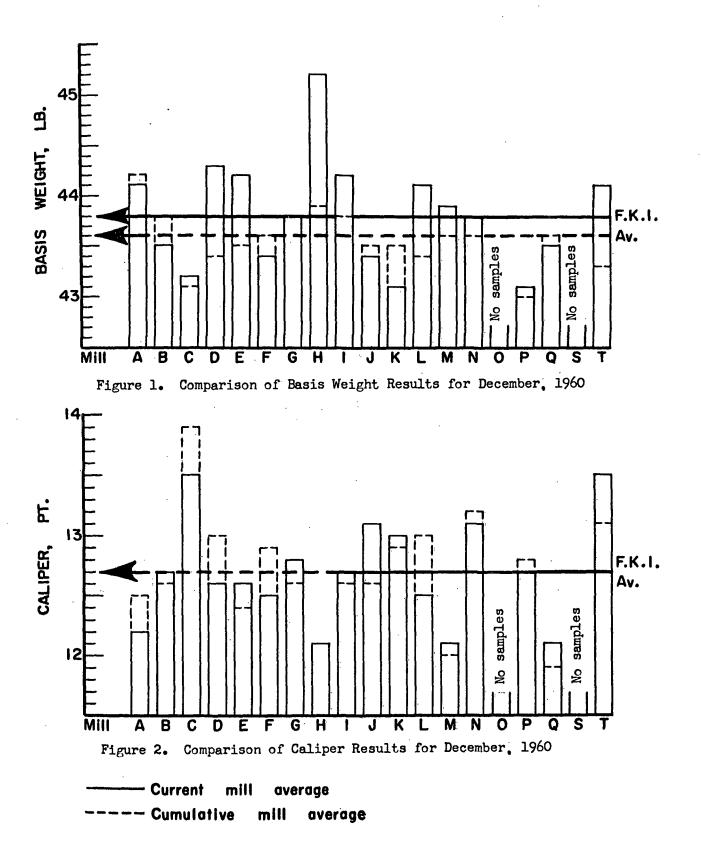
Mill Code	Number
A	4
B	8
C	6
D	5
E	8
F	9
G	9
H	1
I	4
J	2
K	8
L	8
M	4
N	9
O	0
P	7
Q	8
S	0
T	-4
Total	104

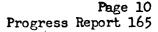
Ħ	
TABLE	

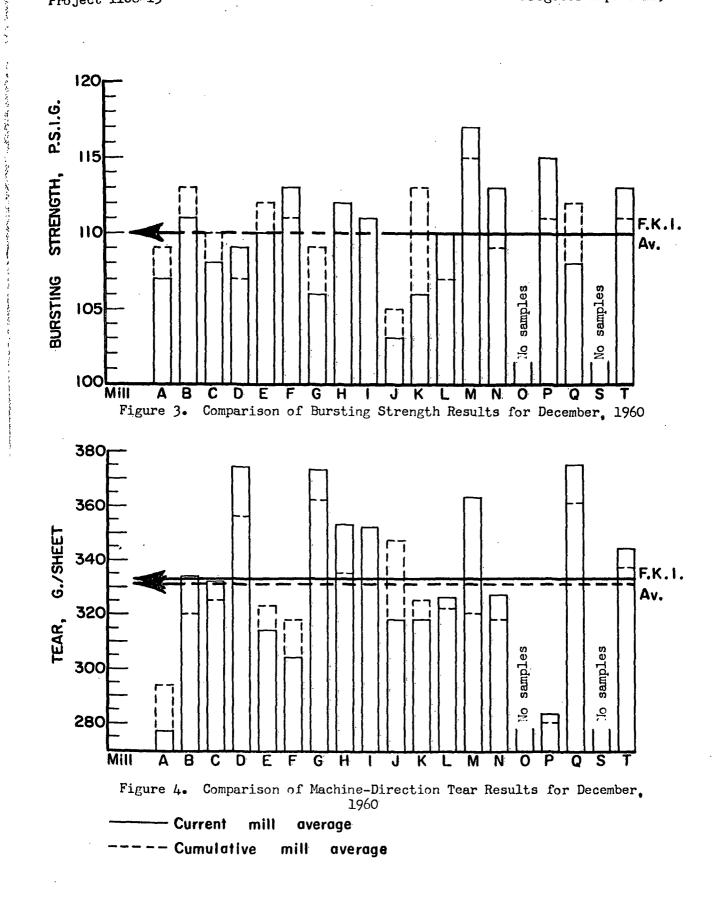
SUMMARY OF COMPOSITE MILL AVERAGES -- DECEMBER 1 THROUGH DECEMBER 31, 1960

			Bursting	Elmend	Elmendorf Tear,
	Basis Weight,	Caliper,		Ta Waching.	g./sheet Cross Machine
TTIM	-1D-	sautod	p.s.e.l. Bage		
A	1.14	12.2	LOT	277	341
; рс	43.5	12.7	ਜ	334	355
	43.2	13.5	108	332	366
ЭA	まい	12.6	60'T	374	614
1 (21)	14.2	12.6	011	314	375
· حر)	43.4	12.5	ส	5 0	374
Ċ	43.8	12.8	106	373	405 205
Н	45.2	12.1	112	353	397
н	王.2	12.7		352	373
<b>.</b>	43.4	13.1	εī.	318	377
К	±3.1	0°£T	106	318	361
Ч	上・上	12.5	011	326	370
M	43.9	12.1	711	363	014
N	43.8	13.1	fi	327	372
0	G	submitted.			
ሲ	43.1	7.21	112 21	283	339
Ø	43.5	1.21	108	375	<del>1</del> 1
ς ν		submitted.			
- <b>L</b>	1-1-	13.5	fr fr	ŧ	372
Current FKI Average:	43.8	12.7	OTT	333	377
Cumulative FKI Average:	43.6	८-टा	οτι	331	374
FKI Index, %	100.5	100.0	100.0	100.6	100.8

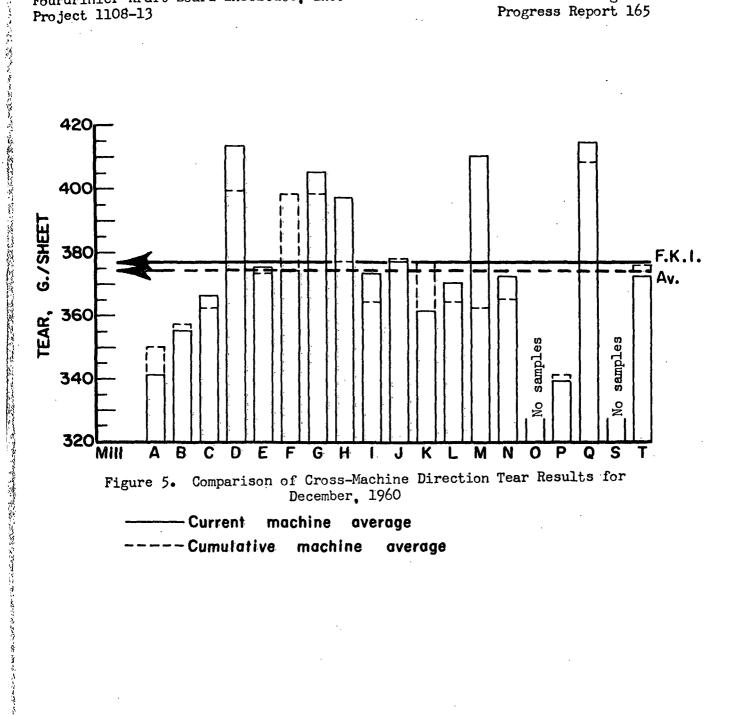
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A comparison of the current mill averages in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mill H had the highest average basis weight of 45.2 lb., which was approximately 7.6% higher than the 42lb. specification. The lowest average basis weight of 43.1 lb. was associated with Mills K and P and was 2.6% higher than the 42-lb. specification. The amount by which the mills vary from the 42-lb. specification is shown in Table II-A. A comparison of the current F.K.I. basis weight average for this period with that for the previous period shows that basis weight has increased slightly from 43.6 lb. to 43.8 lb.

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A comparison of the average caliper values for the various mills (see Figure 2) shows that the current mill averages varied from a low of 12.1 points for Mills H, M, and Q to a high of 13.5 points for Mills C and T. The current F.K.I. caliper average was 12.7 points, which was the same as the cumulative F.K.I. average of 12.7 points.

The average bursting strength values given in Table II for each mill are graphically presented in Figure 3. It may be observed in Table II and Figure 3 that the current mill averages for bursting strength ranged from a low of 103 for Mill J to a high of 117 for Mill M. The current F.K.I. bursting strength average was 110 p.s.i. gage, which was the same as the cumulative F.K.I. average of 110 p.s.i. gage.

The Elmendorf tear results shown in Table II for the various mills are presented graphically in Figures 4 and 5. From these presentations it may be observed that Mill Q had the highest machine direction

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## TABLE II-A

## PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT

#### SPECIFICATION

Mill Code

# Per Cent

A	+5°0
B	+3°6
C	+2°9
D	+2°5
E	+5°2
F	+3°3
G	+4°3
H	+7°6
I	+5°2
J	+3°3
K	+2°6
L	+5°0
M N O P	+4.05 +4.03 +2.06
Q	+3°6
S	
T	+2°0

tear average of 375 g<sub>o</sub>/sheet, and Mill A had the lowest average of 277 g<sub>o</sub>/ sheet. It may be further noted that the highest cross-machine direction tear average of 414 g<sub>o</sub>/sheet was associated with Mill Q and that the lowest average of 339 g<sub>o</sub>/sheet was associated with Mill P<sub>o</sub> It may be observed also in Table II and Figures 4 and 5 that the current  $F_{o}K_{o}I_{o}$  averages for machine direction and cross-machine direction Elmendorf tear are slightly higher than their respective cumulative  $F_{o}K_{o}I_{o}$  averages.

A comparison of the  $F_{\circ}K_{\circ}I_{\circ}$  indexes indicates that, for the current period, the current  $F_{\circ}K_{\circ}I_{\circ}$  averages for caliper and bursting strength are the same as their cumulative  $F_{\circ}K_{\circ}I_{\circ}$  averages, and the current  $F_{\circ}K_{\circ}I_{\circ}$  averages for basis weight, machine direction and cross-machine direction Elmendorf tear are higher than their respective cumulative  $F_{\circ}K_{\circ}I_{\circ}$  averages.

In order to compare the variation within a given mill, the test results for the participating mills have been tabulated in Table III to XXI alphabetically. In addition to the current and cumulative average, a mill factor and mill index are given for each mill. The current mill average represents the average test result obtained for all samples evaluated from a given mill during the current period. The cumulative mill average for each test, on the other hand, represents the average of the current mill averages for the previous twelve months excluding the current period. The mill factor and the mill index are obtained as follows:

> <u>current mill average</u> x 100 = mill factor (%) cumulative mill average

> <u>current mill average</u> x 100 = mill index (%) cumulative F<sub>0</sub>K<sub>0</sub>I<sub>0</sub> average

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The mill factor and the mill index are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative  $F_{\circ}K_{\circ}I_{\circ}$  results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that information is included about the sheet finish. A review of the tables for the mills which supplied this information indicates that some kind of water finish is being used by all. SUMMARY OF INSTITUTE DATA-DECEMBER 1 THROUGH DECEMBER 31, 1960

TABLE III

MILL A -- 42-LB. LINERBOARD

	I.•	ന്ന്ന്. ന്. ന്			<b>.</b>	2
S	. Av	362a 362a 362a 362a	Ę.	350	ħ° 26	91.2
ar, Across	Max. Min.	33 & 83 & 8 3 & 5 & 8 & 8 3 & 5 & 8 & 8 & 8 & 8 & 8 & 8 & 8 & 8 & 8				
rf Te heet	Мах	392 360 400				
Elmendorf Tear, g./sheet Ac	Av.	277 255 <sup>a</sup> 289 <sup>a</sup> 287 <sup>a</sup>	277	29 <del>4</del>	94 °2	83.7
а Н	Min.	248 216 240 240				
	Max	£ <u>\$</u> 333				
ing gth, gage	AV.	101	107	109 109	98.2	6.79
Bursting Strength, p.s.i. gage	Max. Min. Av	<u> </u>				
щ 0, °	Мах	130 119 128 138				
•	Av.	<u>ខ្ល</u> ំខ្លួន ខ្លួន	12.2	2•2 <u>1</u>	9°-26	8.1
aliper, points	Min.	1111 8.8.6.8.				
0	Max.	6-21 				
ght,	Αν.	まむまま らすよい	L. #	2° †‡	99.8	1.101
Basis Weight lb.	Min.	43.8 44.6 42.2 43.4 43.0 44.4 43.4 44.4				
Bas	Max.	46.0 44 6.6 6.6 7.6				
Mch.	.oN	нннн				
.0.	Made	1/ 1/60 2/6/21 2/6/21 2/60 2/6/21				
Ļ ,	We	नेनेनेने				
Date	Recd.	12/ 1/60 12/22/60 12/28/60 12/28/60	erage:	Cumulative Mill Average:		
	Finish	ы К. К. К. К. К.	Current Mill Average:	LILM OVI	itor, \$	lex, %
File	No.	187859 188044 188271 188272	Current	Cumula ti	Nill Factor, \$	Mill Index, §

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

SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

TABLE IV

MILL B -- 42-LB. LINERBOARD

h,         g./sheet         Across           Av.         Max. Min. Av.         Max. Min. Av.           Av.         Max. Min. Av.         Max. Min. Av.           113         344         296         320 <sup>4</sup> 392         312         363 <sup>4</sup> 110         352         286         324 <sup>4</sup> 376         312         363 <sup>4</sup> 110         352         296         324 <sup>4</sup> 376         323         354 <sup>4</sup> 111         352         296         324 <sup>4</sup> 376         323         357 <sup>4</sup> 112         424         288         356 <sup>4</sup> 376         328         377 <sup>4</sup> 112         424         288         356 <sup>4</sup> 368         312         344 <sup>a</sup> 105         368         320         349 <sup>4</sup> 357 <sup>4</sup> 357 <sup>4</sup> 111         334         384         328         357 <sup>4</sup> 357 <sup>4</sup> 113         320         342 <sup>3</sup> 384         357 <sup>4</sup> 357 <sup>4</sup> 113         320         324         328         357 <sup>4</sup> 357 <sup>4</sup> 113         320         340 <sup>3</sup> 384         3	
In     g./sheet       In     F./sheet       Max. Min. Av.     Max.       344     296     3203       336     280     3063     400       352     296     3243     376       368     276     3243     376       368     275     3353     392       424     288     3563     3663       368     320     3663     368       368     320     3433     384       368     320     3433     384       368     320     3433     384       376     3763     3263     368       368     320     3433     384       376     3703     3433     384       376     320     3433     384       376     320     3433     384       376     320     3433     384       376     320     3433     384       376     320     3433     384	
In E. She Max. Min. Av. 344 296 3204 352 296 3204 352 296 324 368 272 3354 424 288 3264 368 320 3664 368 320 3664 368 320 3664 368 320 3434 368 320 3664 374 374 35 374 35 376 37 376	
Max. Min. Max. Min. FI 3336 2880 3336 2880 3326 368 320 350 320 320 320 320 320 320 320 320 320 32	
Max. Min. Max. Min. 336 288 358 288 368 288 368 288 368 320 368 320 368 320	
88858882333 E	2.06 100.9
• 914 H888093395 H H H	100.9
	Ă.
Strength. Min. All 99 99 99 99 99 99 99 99 99 99 99 90 90	
Strength, P.5.1. Eage Max. Min. Av. Max. Min. Av. 128 95 113 130 99 118 131 89 112 126 96 110 126 96 110 116 90 105 111 111 111	
	100.0
Min Av Min Av Min Av Bin Vice Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin Bin	Ş Ğ
ent. Av. Av. Av. 44.0.000 and 4000 and 40000 and 4000 and 40000 and 4000 and 4000 and 4000 and 4000 and 4000 and 4000 an	99 <b>.</b> 8
is War 10, 11 10, 12 10, 10	
Bast Bast Coolor 200 Coolor	
Mch. No.	
Date Made 11/30/60 12/1/60 12/15/60 12/15/60 12/15/60	
ष <sup>क</sup> <u>र</u> ्भुमेन्न्रस्य	
Date Recd. 12/5/60 12/5/60 12/12/60 12/12/60 12/22/60 12/22/60 12/22/60 12/22/60 12/22/60 12/22/60 12/22/60	
erage: Avera	
File Date No. Finish Becd. B87873 W.F. 12/5/6 B87874 W.F. 12/5/6 B87934 W.F. 12/5/6 B87936 W.F. 12/12/6 B8046 W.F. 12/12/6 B88046 W.F. 12/22/6 B88046 W.F. 12/22/6 B88046 W.F. 12/22/6 B88046 W.F. 12/22/6	lex, %
File No. 187873 187874 187934 187934 187935 187935 188046 188046 188046 Current Current	Mill Index, %

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

Elmendorf Tear,

Bursting

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ed)	
(continu	
1960	
<del>ب</del> ر	
DECEMBER	
THROUGH	
E DATADECEMBER 1 THROUGH DECEMBER 31, 1960	
INSTITUT	
Ч	
SUMMARY	

TABLE V

MILL C - 42-LB. LINERBOARD

											н	6
		S	AA.	19 5 5	399	3908	3678	352 <sup>a</sup>	366	362	I.IOI	6.79
с Н		Across	Max. Min. Av.	25	100	352	336	328				
f Tea	leet		Max.	368 368	12	424	392	100				
Elmendorf Tear,	g./sheet		Min. Av.	310a 317a	357ª	345a	25	313ª	332	325	102.2	100.3
ы		Ľ		288 272	320	272	d n o	256				
			Max.	ĘĘ	100	108	400	368				
ឆ្ល	Ч	age	AV.	108	201	ß	109	fT	108	011	98.2	98 <b>.</b> 2
Bursting	Strength,	1. E	Max. Min. Av.	ም ይ	3	\$	6	8				
ñ	ŝ	D•S	Max.	521 130	221	122	722	2य				
			AV.	13.2 13.2	2.51	ר <u>י</u> ה	13.4	13.7	13.5	13.9	1.72	L06.3
	Caliper,	points	Min.	8.21 9.0	ר <b>י</b> בי	13.0	9.0 0	13.0				-
	ö		Max.	14.1 13.6	14.0	1.41	14.1	74 °5				
	ght,		Av.	43.2 42.5	43.8	43.1	43.1	4°C4	43.2	43.1	100.2	99.1
	Basis Weight,	q T	Min	42.0 42.0	43.4	42.2	42 °4	4°24				
	Bas		Max.	14 10 10 10 10 10 10 10 10 10 10 10 10 10	8.11	7.71	43.6	0.#				
		Mch.	No.	20 20	2	2	~	2				
		Date	Made	11/25/60 11/26/60	09/T /ZT	09/E /ZI	12/ 4/60	09/ <i>5</i> /2T				
		Date	Recd.	12/ 5/60 12/ 5/60	19/60/21	19/61/21	09/61/21	09/61/21	itage:	Average:		
			Finish	WF1S WF1S	WFIS	WFLS	WFIS	WFIS	Current Mill Average:	Cumulative Mill Average:	stor, \$	lex, \$
		File	.ov	187878 187879	168018	188019	188020	168021	Current	Cumulati	· Mill Factor, \$	Mill Index, 🖇

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

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SUMMARY OF INSTITUTE DATA-DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

TABLE VI

MILL D -- 42-LB. LINERBOARD

		5	. 40 G	ы а	n et	9	6	103.5	4°01	
	Across	n. A	0 430 <sup>a</sup>			413	399	ŢŎ	й	
ear,		Max. Min.	4 400 400							
Elmendorf Tear, g./sheet			4 2 2 2 2 2					ч	0	
lmend z./		Av.	352 <sup>a</sup> 367 <sup>a</sup>	4039	363 <sup>a</sup>	374	356	105.1	113.0	
퍼	Ц	Max. Min.	283 283	320	328					
		Мах.	9174 9174	96 <del>1</del>	\$ <del>3</del>					
കെട	e a	Av.	81 1	106	ខ្ម	109	107	6°101	1.96	
Bursting Strength.	p.s.i. gage	Max. Min. Av.	888				••			
st Bu	p.s.	Max.	130	130	ae Ae					
-		AV.	<u>८</u> .स	त १.२	2 2 7	12.6	13.0	6.96	99.2	
aliper,	points	Min.	२. २. २.	202	1.1 1.1					
U		Max.	า. กล	5. 2.	រះ					
ght,		Av.	43.8 141.6	53 52	1	₽°.3	43.4	102.1	10 <b>1.</b> 6	
Basis Weight,	1р.	Min.	43.0 43.6	ま 5 5 5 5	43.4					
Bas		Max.	4 7 7 7	45.2 45.2	45.0					
	Mch.	No.	2 5	~ ~	i Ni					
	Date	Made	09/6 /21 09/12/11	12/12/60 12/13/60	15/60					
	Date	Recd.	12/ 1/60 12/19/60	12/19/60 12/20/60	09/12/21	erage:	Cumulative Mill Average:			
		Finish	WFIS WFIS	VF1S VF1S	NF1S	Current Mill Average:	ive Mill	ctor, 🖇	dex, 🖗	
	File	No.	187861 168012	158013 168033	168041	Current	Cumulat:	Mill Factor, §	Mill Index, 🖇	

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

						2	~	
		S. Av	355a 364a 364a 364a 364a 355a 355a 355a 355a 355a 355a	375	373	100.5	100.3	
		Tear, et Across Max, Min.	3,7,5,5,5,5,8,9,7,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5					
		heet Max.	\$\$\$\$\$\$\$\$\$\$					
		Elmendorf Tear, g./sheet Av. Max. M	322ª 3253ª 301ª 301ª 303ª 303ª	314	323	97.2	6.46	
		E] Min.	272 272 288 256 256 288 255 288 264 255 288					
		I Max. Min	368888 36888 368888 368888 376888 376888 3768888 3768888 3768888 3768888 3768888 3768888 3768888 3768888 3768888 3768888 376888 3768888 376888 3768888 376888 376888 37688 376888 376888 37688 37688 376888 37688 37688 37688 37688					
		Åv.		οτι	211	98.2	100.0	
		Bursting. Strength, <u>P.s.i. gage</u> Max. Min. Av	88 102 83 88 102 83 88 102 83					
	-	P.S.	ក្ខន្មភ្នំភ្នំភ្នំភ្នំភ្នំភ្នំភ្នំភ្នំភ្នំភ្នំ					
	ARD	AV.		12.6	<b>†</b> • 21	<b>9.</b> 101	99.2	
	INERBC	Caliper, points Min.	22211121 2.022400			Ч		
TABLE VII	-E. I	Ga Max.	222222222 240422222					
TAB	MILL E 42-LB. LINERBOARD	1.	23323333 8.0.0.8.0. <i>0</i> .8.0.	2° <del>11</del>	43.5	<b>9.</b> 101	4° TOT	
	ILL E	Basis Weight, lò. X. Mín. Av	222322233 0018000 233232000 2332333333	Ŧ	, <del>,</del> ,	10	10	
	24	Basis ] X. Mi						
		EM M	<u> </u>					
		Mch. No.	~~~					
		Date Made	9/60   9/60   7/60  30/60					
		ÄŽ	व्यवययवत्					
		Date Recd.	12/19/60 12/19/60 12/19/60 12/19/60 12/19/60 12/20/60 12/20/60		age:			
		ێ ٽ	ลลลลลลลล	rerage	Aver			
		Finish		Current Mill Average: Cumulative Mill Average:		or, %	x, %	
			157994 157995 187995 187996 187998 188029 188029 188029	rent M	ulativ	Mill Factor, %	Mill Index, %	
		File No.	7811 7811 7811 7811 7811 7811 7811 7811	Cur	Cum C	N11	Mil	

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

Fourdrinier Kraft Board Institute, Inc. Project 1108-13

SURMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

r, bonce	Max. Min. Av.	296 355 <sup>a</sup> 328 365 <sup>a</sup> 365					774	398	o Ŧ	100.0
Elmendorf Tear, g./sheet		500 1732 1732 1732 1732 1732 1732 1732 1732				-			9	æ
Elmer In S	14	248 293 <sup>a</sup> 264 297 <sup>a</sup> 220 209a					3 <b>6</b> t	318	95.6	91.8
a	Av. Max.	336 336 336				-	~	<b>ı</b> .	to1.8	102.7
Bursting Strength, D.S.i. gage	Max. Min. A	<b>90</b> 112 97 113 98					ELI	н	101	102
ρ	AV. Max.	201 4.21 201 4.21 201 4.21					12.5	12.9	6	· <b>†</b>
aliper, points	Min. A	21 8.11 21 4.11 21					ង	21	6•96	98.4
U I	Max.	13.0								
Basis Weight, lb.	.n. Av.	43.8 44.6 42.2 43.3 42.4 43.6					43.4	43,6	<b>99.5</b>	<b>9</b> •5
Basis	Max. Min.	46.0 43 44.0 42 44.0 42						•	-	
Mch.	No.		н н	-H -		ч			•	
Date	Made	09/11/11 09/12/11 09/12/11	12/29/60 12/5/60	09/8/21	09/91/21	09/02/21				
Date	Recd.	12/ 1/60 12/ 1/60 22/ 5/60	09/hI/ZI	12/28/60	12/28/60	09/82/2T	rage:	Average:		
	Finish	WFIS WFIS WFIS	WF1S WF1S	NF1S ST71	WFIS	WFIS	Current Mill Average:	Cumulative Mill Average:	Mill Factor, \$	dex, %
File	No.	187858 187863 187877	187957 187958	188278 188270	188280	188281	Current	Cumulat	Mill Fa	Mill Index, §

SUMMARY OF INSTITUTE DATA-DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

2,

TABLE VIII

MILL F -- 42-LB. LINERBOARD

Fourdrinier Kraft Board Institute, Inc. Project 1108-13

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

												• ·	061	
	g	Av.	403 <sup>a</sup> 387 <sup>a</sup>	405a	50 1 1	4174		397ª	418 <sup>a</sup>	405	398	101.8	108.3	
	r, Acros	Min	368 360	368	80	376	d d d d d d d d d d d d	3,8 8	392					
	f Tea leet	Max.	432 432	118	\$	171		34	5					
	mendoi g./sh	AV.	382 <sup>a</sup> 371 <sup>a</sup>	384 8	377	353	2708	376ª	366ª	373	362	103.0	7.211	
	El In	Min.	336 320	352	ģ	272	220	328	336					
		Max.	8171 8176	11	408	#32	0 1 1 1 1	8 7 7 7 7 7	륦					
	8 C 9	Av.	501	형	106	66	35	25	5	100	109	97.2	96 <b>.</b> 4	
	rstin rengti	Min.												
	D Str	Max.	121	्रि	77	ត្ត		125	811		•			
ARD		AV.	12.9	8.21	2.21	ດ. ເ		7 0 7 0	5.51	8.51	9.21	01.6	00.8	
INERBO	Liper, cints	î.										Ā	A	
н Н	Ц Д													
42										8.8	3.8	0.0	.5	
til G	veight o.									4	4	10(	10(	
£	is <b>i</b> s v Il	2												
	Ba	Max	33	1	±	₹:	\$ . \$	£ ₹	1					
	Mch.	No.	t i	i II	Ŀ	ŀ	1	r t	Ŀ					
	Date	Made	09/92/TL	09/22/tt	09/72/LL	12/ 5/60	12/ 6/60	00/00/2T	12/ 6/60					
	Date	Recd.	09/61/21 09/01/21	09/61/21	09/61/21	09/61/21	12/19/60	09/61/21	09/61/61	rage:	Average:			
·	Finişh		4- 4 M	ы н. М. Н.	W.F.	W.F.	W F	× 12 3 3	W F.	MILL AVe	LVe Mill	stor, \$	iex, \$	
	File	No.	188001 188001	188003	188004	188005	188006	188007	188009	Current	Cumilati	Mill Fac	MI LLIM	
	MILL G 42-LB. LINERBOARD	MILL G 42-LB. LINERBOARD Bursting Elmendorf Basis Weight, Caliper, Strength, g./she Date Mch. lb. points p.s.i.gage In	MILL G 42-LB. LINERBOARDMILL G 42-LB. LINERBOARDBurstingElmendorf Tear, g./sheetDateNch.Basis Weight, g./sheetCaliper, bointsBursting strength, g./sheetDateNch.Mat.Min.Av.Max. Min.Av.FinishRecd.MadeNo.Max. Min.Av.Max. Min.Av.	MTLL G 42-LB. LINERBOARDMILL G 42-LB. LINERBOARDBurstingElmendorf Tear,Basis Weight,Caliper,BurstingElmendorf Tear,DateDateNch.BurstingElmendorf Tear,BurstingBurstingElmendorf Tear,Basis Weight,Caliper,DatestingDateDateNch.Basis Weight,Caliper,DateDateNch.BurstingElmendorf Tear,BurstingElmendorf Tear,BurstingElmendorf Tear,Basis Weight,Caliper,DateDateNacNin.NacossNacossW.F.12/19/6011/26/60444.8W.F.12,0DateNoW.F.12,0DateNoMax.Min.Max.	MTLL G 42-LB. LINERBOARD         Bursting         Elmendorf Tear,           Basis Weight,         Caliper,         Bursting         Elmendorf Tear,           Date         Date         No.         Basis Weight,         Caliper,         Strength,         Elmendorf Tear,           Finish         Date         No.         Max. Min. Av.         Max. Min. Av.         Max. Min. Av.         Max. Min. Av.           W.F.         12/19/60         11/26/60         -         44.4         3.5         12.9         91         103         44.8         368           W.F.         12/19/60         11/26/60         -         44.4         368         44.8         368	MTLL G 42-LB. LINERBOARD         Bursting         Elmendorf Tear,           Finish         Date         Made         Weight,         Caliper,         Bursting         Elmendorf Tear,           Finish         Date         Made         No.         Max. Min. Av.         Max. Min. Av.         Max. Min. Av.         Max. Min. Av.           W.F.         12/19/60         11/26/60         -         44.6         3.6         38.2         44.8         368           W.F.         12/19/60         11/26/60         -         44.4         3.5         12.0         12.8         120         304         368           W.F.         12/19/60         11/27/60         -         44.4.4         43.4         13.5         12.0         12.8         100         44.4         368           W.F.         12/19/60         11/27/60         -         44.4.4         368         44.4         368           W.F.         12/19/60         11/27/60         -         44.3.4         13.5         12.0         12.7         124         89         106         44.4         368           W.F.         12/19/60         11/27/60         -         44.3.4         13.5         12.7         124         89	MTLL G -= 42-LB. LINERBOARD         Bursting         Elmendorf Tear.           Pate         Date         Mode         No.         Basis Weight,         Caliper,         Bursting         Elmendorf Tear.           Finish         Date         Made         No.         Max. Min. Av.         Mav. Min	MTLL G 42-LB. LINERBOARD         Bursting         Elmendorf Tear,           Finish         Date         Nch.         Basis Weight,         Caliper,         Strength,         Elmendorf Tear,           Finish         Recd,         Nade         Nch.         Jb.         Doints         D.         Elmendorf Tear,           Finish         Recd,         Nade         Nch.         Av.         Max. Min.         Av.         Max. Min.         Av.           N.F.         12/19/60         11/26/60         -         Wu.g.         13.3         12.3         12.9         121         91         103         448         368           W.F.         12/19/60         11/27/60         -         Wu.e.         13.5         12.0         12.8         129         98         101         440         368           W.F.         12/19/60         11/27/60         -         Wu.e.         13.5         12.0         12.7         124         89         106         449         368           W.F.         12/19/60         12/12/10         -         Wu.e.         13.5         12.0         12.9         12.9         12.9         12.9         368         104         44.9         326         388	MTL G 42-LB. LINERBOARD         Bursting         Elmendorf Tear,           Date         Date         Nch.         Basis Weight,         Caliper,         Strength,         Elmendorf Tear,           Date         Date         Nch.         Basis Weight,         Caliper,         Strength,         Elmendorf Tear,           Pate         Date         Nch.         Basis Weight,         Caliper,         Strength,         Elmendorf Tear,           Pate         Nch.         Basis Weight,         Caliper,         Strength,         Strength,         L.           Date         Nch.         Basis Weight,         Caliper,         Strength,         Strength,         L.           Date         Nch.         Max, Min. Av.         Max, Min. Av.         Max, Min. Av.         Max, Min.         Av.           W.F.         12/19/60         11/26/60         -         Wu.g. 12.9         12.9         12.9         12.9         12.9         12.9         12.9         12.9         12.9         13.0         12.0         12.7         13.0         12.9         12.9         10.9         14.0         368         14.9         368           W.F.         12/19/60         11/27/60         -         Wu.g. 12.9         12.9         12.9	MTL G 42-LB. LINERBORD         Bursting         Elmendorf Tear, gursting         Bursting         Elmendorf Tear, gursting         Bursting         Elmendorf Tear, gursting           Finish         Date         Nat         Nat.         Nin.         Av.         Strength, max. Min.         Bursting         Elmendorf Tear, gursting           Pate         Nat.         Nat.         Nat.         Nat.         Nat.         Nat.         Nat.         Nat.           Nat.         Nat.         Nat.         Nat.         Nat.         Nat.         Nat.         Nat.         Nat.           Nat.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	MTL G 42-LB. LINERBOARD           MTL G 42-LB. LINERBOARD           Finish         Date         Date         New         Bursting         Elmendorf         Tear.           Finish         Redd,         Nade         No.         Hasts weight,         Di.         Strength,         Elmendorf         Tear.           W.F.         12/19/60         11/25/60         -         Hu.e         Ho.         Nax. Min.         Av.         Max. Min.         Av.           W.F.         12/19/60         11/25/60         -         Hu.e         Ho.         Joints         Dist.         Arross         Min.         Arross           W.F.         12/19/60         11/27/60         -         Hu.e         473         213         120         120         140         326         366         4448         368           W.F.         12/19/60         11/27/60         -         Hu.e         473         200         227         361         449         368           W.F.         12/19/60         11/27/60         -         Hu.e         473         228         377         449         368           W.F.         12/19/60         12/26/60         -         Hu.e	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

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

Fourdrinier Kraft Board Institute, Inc. Project 1108-13

SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

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							~	4	
			AV.	397 <sup>a</sup>	397	377	105.3	106.1	
		ar, Across	Max. Min.	440 328 397 <sup>a</sup>					
		Elmendorf Tear, g./sheet					•		
		lmendc g./s	Max. Min. Av.	432 304 353 <sup>a</sup>	353	335	105.4	106.6	
		ן א א	Min	3 <b>G</b>					
			Max	432				~	
		ng th,	AV.	દ્યા	สา	211	100.0	101.8	
		Bursting Strength,	P.S.1. Bage Max. Min. Av.	211 62 961					
		д 01	a xaw	136					
	OARD		Av.	1.21	12.1	1 दा	100.0	95.3	
	LINERB	Caliper,	Max. Min.	1.21 8.11 8.21				· .	
TABLE X	2-LB.	Ŭ	Max.	32.8					
Ę-i.	MTLL H 42-LB. LINERBOARD	ht,	Av.	45.2	45.2	43.9	103.0	103.7	
	MILL	Basis veight,	lin.	46.0 43.8 45.2			Ч	ч	
		Basis	Max. Min.	• • • •					
			Mch. No. M	3					
				/60					
			Date Made	09/ננ/ננ					
			Date Recd.	12/ 8/60		: 9			
			Dat Re	) /ZT	Current Mill Average:	Cumulative Mill Average:			
			Finish	۲.	JI AVE	TITN	Г. 8	58 58	
				187904 M.F.	ent Mi	lative	All Factor, &	Mill Index, &	
			File No.	1879	Curri	Cumu	IIE	LL EN	

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

Fourdrinier Kraft Board Institute, Inc. Project 1108-13 Е,

Α**ν**.

Across Min. 328 352 352 Elmendorf Tear, Max. 73 7 4 68 7 7 7 6 8 g./sheet 100.0 106.3 Av. 325a 372a 372a 372a 372a 352 352 Max. Min. អ £ 33,52 gg 416 4103 368 416 7368 100.0 100.9 AV. 83389 H H Bursting Strength, p.s.i. gage Max. Min. ¥%%% ភិតិតិតំ Av. 2.2 9•दा 100.8 100.0 Caliper, points Min. 1.ध <u>਼</u> ਸ਼ੁਸ਼ 11.2 Max. 8.0.1.U 8.0.1.0. 3323 0.9-1-1 AV. 5,1 43.8 100.9 101.4 Basis Weight, 5513 8660 Min. ਕ 5347 0.087 Max. Mch. No. I

> 09/07/TT 09/07/TT 09/07/TT 09/07/TT

> 09/61/21 09/1 /21 09/1 /21

N F N F N F

187852 187853 188014

188015

Cumulative Mill Average:

Mill Factor, \$

Mill Index, \$

Current Mill Average:

Date Made

Date Recd.

Finish

File No. 365<sup>a</sup> 371<sup>a</sup> 369<sup>a</sup> 388<sup>a</sup>

ğ 33

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

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SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

TABLE XI

# MILL I -- 42-LB. LINERBOARD

# nc.

102.5 99.7

				Av.	379 <sup>a</sup> 374a	377	378	6.9	100.8	
			r. Across	Max. Min. Av.	328 3#4					
			lendorf Tea g./sheet	Max.	432 400					
			Elmendorf Tear, g./sheet	Max. Min. Av.	318 <sup>a</sup> 317 <sup>a</sup>	318	347	91.6	96.1	
			ម្ពី ដ	Min.	280 280					
(pənı				Max	3 <b>68</b> 3 <b>68</b>					
(contir			ng th, age	Av.	104	103	105	98.1	93.6	
1960			Bursting Strength,	Max. Min. Av.	79 102 88 104					
131,			ت میں م	Max	221					
ECEMBER		OARD	•	AV.	12.9 13.2	ા.દા	12.6	104.0	103.1	
DUGH D	<b>ц</b>	LINERB	Caliper, points	Max. Min. Av.	13.5 12.0 12.9 13.8 12.2 13.2					
L THR	TABLE XII	2-IB. ]	8 -	Max.	13.5 13.8					
INSTITUTE DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)	TA	MILL J 42-LB. LINERBOARD	ght,	AV.	42.5 44.3	4°C4	43 <b>.</b> 5	8.66	<b>90.</b> 5	
TAD		MELL	Basis Weight, 1b.	Min.	41.0 42.0					
rute da			Basi	Max. Min. Av.	44.6 41.0 42.5 45.8 42.0 44.3					
LISNI			Mch.	No.	~~					
SUMMARY OF			Tate	Made	09/12/11 09/12/11					
			6 + 1	Recd.	12/ 9/60 12/15/60	rage:	Cumulative Mill Average:			
				Finish	S.F. S.F.	MLLL AVE	Ve Mill	tor, %	ex, s	
			, At J		187917 187959	Current Mill Average:	Cumulati	MIII Factor, &	M11 Index, 🖇	

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

Fourdrinier Kraft Board Institute, Inc. Project 1108-13 •••

 			•									11081000 1101
σ N	AV.	359 <sup>a</sup> 354a	3753	383	350°	202	3548		361	377	95.8	96.5
r, Across	Max. Min. Av.	328	Ę,	336	320	200	336	1				
f Tea: eet	Max.	392 384	4 <b>1</b> 6	£32	đ đ		5 5 5 5 5 5					
Elmendorf Tear, g./sheet 1	Av.	322 <sup>a</sup> 310	(£	321	319	301-	267		318	325	97.8	96.1
LE EL	Max. Min. Av.	280										
	Max.	365										
ge, age	Av.	108	106	Ч С	108	50	201 102	2	106	ផ	93.8	96 <b>.</b> 4
Bursting Strength, .s.i. gage	Max. Min. Av.	8 f	- 28	82	<u>8</u>	88	5°8	;				
a s St a	Max.	132	អង	คุ	5	53						
_	AV.	8.21	 	н. С.С.	13.2	<b>†</b>	2.5 2.5	1	0.61	6'रा	100.8	t, 201
Caliper, points	Min.	1.51	* ? * ?	6.21	12.5	6.11	22. 2. 21	2				
8-	Max. Min.	13.8	14 14	13 <b>.</b> 9	74 °O	н 1	0°21					
sht,	Av.	42.5	43.9	43.6	43.3	42.2	42 <b>.</b> 9		43.1	43.5	1.66	98,9
Basis Weight, lb.	Min.	41.0	41°0	42.4	42.0	<b>7°0</b> †	42°2					
, Bag	Max. Min.	0.11	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.11	0. 1	43.6	4° 4 4° 4					
Meh.	No.	្ក	┥┍┥	h H	Ч	Ч	~ <b>1</b> ~	4				
Date	Made	10/ 6/60	10/26/60	10/23/60	10/25/60	10/ 8/60	09/11/01	nolliilint				
er ter ter	Recd.	09/6 /ZT	12/ 9/60 15/ 0/60	09/6 /ZT	12/ 9/60	09/61/21	09/02/21	00/KT/ZT	rage:	Average:		
	Finish						1 1 1		current Mill Average:	Cumulative Mill Average:	stor, %	åex, %
0 1 1	No.	187910	187911	187913	187914	158016	188032	Ταρατ	Gurrent	Cumulati	Will Factor, &	Xill Index, %

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

Fourdrinier Kraft Board Institute, Inc. Project 1108-13

SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

TABLE XIII

.

MILL K -- 42-LB. LINERBOARD

						TIIN	L - 4	MILL L 42-LB. LINERBOARD	INERBO	ARD										
File		Date	Date	Mch.	Bas	Basis Weight, lb.	žht,	C C	Caliper, points	F	Bursting Strength, P.S.i. gage	Bursting Strength,			TE UT	Elmendorf Tear, g./sheet	Tear set	r, Across	]:	
• NO	nstnra	• noon	apen	° ON	•XEN	•un	AV.	Y BU	·UTN	AV.	Max.		AV.	XEN	urw	• <b>V</b> •	-ULM -XEW		AV.	
187930		09/21/21 09/21/21	09/91/11 09/91/11	н н г	45.6 46.2	<u>まま</u> ま 0000	4 2 2 2 2 2 2	13.5 2.51 2.81	द्धाः २.स.	8.21 13.1	131	8998	511	808 108 108 108 108	32 SG	318 <sup>a</sup> 365 <sup>a</sup> 2014a	432 1432	3433	366 <sup>a</sup> 387 <sup>a</sup> 301 <sup>a</sup>	
187933 187933		09/21/21	11/27/60	-1 r-1·	2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	15°0	<del>1</del> 1 2 2	1 <b>?</b> 7 27	222	8 7 7 8			33			821 <sup>a</sup>	2 2 2 2 2 2	28	362 <sup>a</sup>	
188265 188265		12/27/60 12/27/60	12/ 4/60 12/ 3/60	-1	45°2	43.8 40.8	Ξ. - -	2.2	9.11.8 2.11.8	4°21	•••					327 <sup>a</sup> 328 <sup>a</sup>	424 148	336	377 <sup>a</sup> 388 <sup>a</sup>	
188267 188268	ы. Б. Р. М. Р.	12/27/60 12/27/60	12/1/60 12/1/60	1 M M	5 5 8 9	42.0 42.8	12.9 12.9	200	2.2	र श			ដង			85	400	320 328	341a	
Current	Current Mill Average:	erage:					t• #			12.5		-	011			326			370	
Cumulat	tite Mil	Cumulative Mill Average:					4°E4			0.51		-	707		с <b>у</b> .	322			364	
TLAN FE	Mill Factor, &						9"TOT			96.2		-	102.8		Π	2.101			9'l01	
I TTW	Mill Index, %						101.1			4•86		-	100 <b>.</b> 0			98 <b>.</b> 5			98 <b>.</b> 9	
		•																		
i		:	:					•	•			•	:							
s This a	werage i	"This average includes the readings for	readings fo		OL LO	re spec	suemt:	one or more specimens which tore beyond the 3/8-inch limit.	ore be	yond ti	1e 3/8-	inch	Hant.							

SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

TABLE XIV

Fourdrinier Kraft Board Institute, Inc. Project 1108-13

Page 27 Progress Report 165

SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

<u>ن</u>

TABLE XV

MILL M -- 42-LB, LINERBOARD,

	ß	Av.	374a 437a 425a 403a	014	362	113.3	109.6	
ŗ.	Across	Max. Min. Av.	28 28 28 28 28 28 28 28 28 28 28 28 28 2					
ef Tea:	leet .	Max.	392 480 432					
Elmendorf Tear,	g./sheet	Max. Min. Av.	338 389 347a 377a	363	320	4°ETT	109.7	
ы	Ц	Min.	328 328 312					
		Max.	38 E E 38					
ទួក	th, age	Av.	ងដង្ក	717	2115	101.7	106.4	
Bursting	Strength,	Max. Min. Av.	88 01 01 88 01 01					
ф	is q	Max	55558 8					
	•	Av.	इ.र.ज.स.	ા સ	0'रा	100.8	95.3	
	Caliper, points	Min. Av.	2.21 2.11 4.21 2.21 1.21 2.21 2.21 2.21 2.21 2.21 8.11 8.21					
	3	Max.	40.24 40.24					
	ght,	Av.	5355 5255	43.9	43.6	100.7	100 <b>.</b> 7	
	Basis Weight,	Nin.	43.6 43.6 43.6 43.6				1-4	
	Bas	Max.	0,0,0,0 EEEE					
	qox	No.	4 0 0 0					
	+ 0 -	Made	11/28/60 12/1/60 2/60 1/60 12/21/60					
		La ce Recd.	12/19/60 12/19/60 12/22/60	erage:	Cumulative Mill Average:			
		Finish	V.F. V.F. V.F.	Current Mill Average:	ILLM 941	ctor, %	dex, \$	
	ŗ	.oN	188010 188011 188047 188048	Current	Cumulat:	Mill Factor, %	Mill Index, §	

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

		Av.	3366 3366 3366 387 3866 3866 387 384 286 387 286 386 386 386 386 386 386 386 386 386 3	2	5	<b>6.</b> 101	<b>5.</b> 66	
		ဟ	336 36 336 36 3376 39 3376 39 3776 30 3776 30 37776 30 3776 30 3776 30 3776 30 3776 30 3776 30 3776 30 3776 37	372	365	10	ۍ ۲	
		Tear, et Acros Max, Min.	666839999997 66683999999 66689999999 6668999999 66699999 669999 66999 66999 66999 66999 669990 66990 66990 66990 669900 6					
		Elmendorf Tear, g./sheet . Av. Max. M	3333 3333 3333 3333 3333 3333 3333 3333 3333	. ~	00	102.8	98 <b>.</b> 8	
		Elme In g		327	318	TO	ð	
		E In Max. Min.	2850 2988 2386 2988 2386 2988 2387 2088 2850 2080 2850 2080 2850 2080 2850 2080 2850 2080 2850 2080 2850 2080 2850 2080 2850 2080 200000000000000000000000000000000				·	
		1.			~	<b>2</b> •3	2	
		Bursting Strength, .s.i. gage		fi	109	103.7	102.7	
		Bursting Strength, <u>P.S.i. gage</u> Max. Nin. Av	40000000000000000000000000000000000000	÷				
		12-4	22222222222222222222222222222222222222	ч	~	N	4	
	<b>LBOARD</b>	s. Av.	2222222222 2222222222 2222222222222222	13.1	13.2	99.2	1.601	
ħ	LINE	Caliper, points Min.						
TABLE XVI	-2-IB.	Max.	¥222222222 •••••••••					
TA	MILL N 42-LB, LINERBOARD	cht. Av.	5555555555 565555555 58588288	43.8	43.6	100 <b>.</b> 5	100.5	
	MILL	Basis Weight, 1b. X. Min. Av	444444444 98999999999999999999999999999			-1	-1	
		Basi Max.	222222222 22222222 2222222222 22222222					
		Mch. No.	********					
			000000000000000000000000000000000000000					
		Date Made	11/12/60 11/22/60 11/26/60 11/26/60 12/25/60 12/15/60 12/15/60					
		0 7			••			
		Date Recd,	12/28/60 12/2/60 12/2/60 12/26/60 12/26/60 12/28/60 12/28/60	ងខ្លួន:	Cumulative Mill Average:			
		ish	संस्थाय स्वयं स्वयं	Current Mill Average:	A LLEM	\$	R	
		Finish	M.F. WFLS WFLS WFLS WFLS WFLS WFLS	t MII	tive l	actor	ndex,	•
		File No.	187862 187876 187903 187915 187915 188269 188269 188269 188270	Curren	Cumula	Mill Factor,	Mill Index, %	
				-	-		-	

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

Fourdrinier Kraft Board Institute, Inc. Project 1108-13

SUMMARY OF INSTITUTE DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

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TABLE XVII

MILL 0 -- 42-LB. LINERBOARD

	s Av.				339 <sup>a</sup> 329 <sup>a</sup>	905 109 109	338ª 236ª		339	清	<b>†°6</b> 6	90.6
. <b>.</b>	Acros Min.				312 296	5 %	320	ž H				
f Teal	<b>1</b> .				368 352	322	å S	360				
lmendor:	1				273 <sup>a</sup> 295 <sup>a</sup>	280 <sup>a</sup> 280 <sup>a</sup>	320 <sup>a</sup>	267 267	283	280	101.10	85.5
E	Nin.				240 248	258	288	232				
	Max.			MILL P 42-IB. LINERBOARD	296 352	336	352	5 5 3 5 3 5 3 5				
ле Л	gage Av.					ц Ц	911	FF FF	115	H	103.6	104.5
ursti	Min				<u> </u>	ዲ ዊ	36	88			·	
щс	D.,				ĘĘ	57 27 27	ECT	ខ្លួក				
	AV.	•'			8.ध 8.ध	िंस १.स	2.21	9.1 13.1	12.7	8°21	99.2	0.001
;	auper points Min.	es submitted.	Ħ		भूम भूम	2.21 12.8	0.21	ដដ ខ.។				
(	Max.		ILE XVI		13.0 8.21	13.6 1.41	12.9	4.CA 4.0				
	ght, Av.	o sampl	TAF		43.9 42.5	0.64	43.0	42.8 43.1	43.1	43.0	100.2	98.9
	is Weil lb. Min.	N			43.4 42.0	42.0	12.4	42.2 42.0				
I	Bas Max.				0°64	8.C <sup>4</sup> 8.C <sup>4</sup>	1	53.8 至 0.5				
	Mch. No.				4-	I ~I ~		44				
	Date Made				10/24/60 10/28/60	2/60 2/60	09/01/II	03/21/11 18/60	•			
	Date Recd.				07/1 /21 07/1 /21	09/T /ZT	12/28/60	12/28/60 12/28/60	rage:	tverage:	0	
	Finish				4 <b>1</b> 4	4 64 6 6 57 ;	ц (л. 19 (м.	н. М (1)	MILL Ave.	We Kill	tor 3	dex, 3
	File No.				187854	167656	162221	168275 168276	Current	Gumu'at	ET LE	Xill Index, \$
	Bursting Elu	BurstingElmendorf Tear,Basis Weight,Caliper,Strength,Elmendorf Tear,DateDateNch,Ib.Caliper,Strength,g./sheetFinishRecd,FaceNax. Nin. Av.Max. Min. Av.Max. Min. Av.Max. Min. Av.	Bursting     Elmendorf Tear,       Date     Date     Mcn.     Basis Weight,     Caliper,     Strength,     Elmendorf Tear,       Pate     Mcn.     ID.     D.     Distributer,     Strength,     In     g./sheet       Finish     Recd.     Max.     Min.     Av.     Max.     Min.     Av.     Max.     Min.     Av.       No samples submitted.     No samples submitted.     No     Strength,     Strength,     Strength,     Strength,     Strength,     Av.     Max.     Min.     Av.	Finish     Date Date Nch, Nat. Min. Av.     Bursting Elmendorf Tear, Strength, Strength, g./sheet       Pate Nch, Yade No. Nav. Min. Av.     Nav. Min. Av.     Nav. Min. Av.       Recd, Yade No. Nav. Min. Av.     Nav. Min. Av.     Nav. Min. Av.       No samples submitted,     TABLE XVIII	Finish     Date Date Nch.     Basis Weight, Strength, Strengt, Strength	FinishDateDateDateElmendorfTear,PrinishDateDateDateDateDateElmendorfTear,RinishRecd,RateNo.Nin.Av.Nin.Av.Nin.Av.RinishRecd,RateNo.Nin.Av.Nin.Av.Nin.Av.Nosamples submitted,Nax.Nin.Av.Nin.Av.Max.Min.Av.Recd,RateNo.Nin.Av.Nin.Av.Nin.Av.Min.Recd,RateNo.Nin.Av.Nin.Av.Nin.Av.Min.Recd,RateNo.Nin.Av.Nin.Av.Nin.Av.Min.NoRecd,Nax.Nin.Av.Nin.Av.Nin.Av.AcrossNoRecd,RateNin.Av.Nin.Av.Nin.Av.Min.NoRecd,Nax.Nin.Av.Nin.Nin.Av.Min.Av.NoRecd,Nax.Nin.Av.Nin.Nin.Av.Min.Av.NoRecd,Nax.Nin.<	Date         Date         Net         Bursting         Elmendorf         Tear.           Finish         Date         Date         No.         Basis Weight,         Caliper,         Strength,         In         g./sheet         Across           Finish         Recd,         Fade         No.         Nin.         Av.         Nin.         Av.         Strength,         In         g./sheet         Across           Finish         Recd,         Fade         No.         Nin.         Av.         Nin.         Av.         Max. Min.         Av.         Across           Recd,         Fade         No.         Nax. Min.         Av.         Nax. Min.         Av.         Max. Min.         Av.         Av.         Max. Min.         Av.	Parte         Date         Date         Date         Bursting         Elmendorf         Tear,           Finish         Recd,         Fate         No.         Basis Weight,         Caliper,         Strength,         g, sheet           Finish         Recd,         Fade         No.         Na.         Min.         Av.         Bursting         Elmendorf         Far,           Recd,         Fade         No.         Na.         Min.         Av.         Max.         Min.         Av.         Max.         Min.         Av.         Barsting         g, sheet         Across           Recd,         Fade         No.         Max.         Min.         Av.         Max.         Max.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Pate         Date         Date         Marsting         Elmendorf         Tear.           Finish         Recd.         Fade         No.         Nax.         Min.         Av.         Strength.         Elmendorf         Fear.           Finish         Recd.         Fade         No.         Nax.         Min.         Av.         Strength.         Elmendorf         Fear.           No         Samples submitted.         Nax.         Min.         Av.         Nax.         Min.         Av.         Nax.         Min.         Av.         Marsting         Elmendorf         Fear.           No         samples submitted.         Nax.         Nin.         Av.         Nax.         Min.         Av.         Mar.         Mar.         Min.         Av.         Mar.         Min.         Av.         Mar.         Min.         Av.         Mar.         Mar. <t< td=""></t<>

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

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SUMMARY OF I

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

Elmendorf Tear,	g./sheet In Across	Av.	420 <sup>a</sup> 412 <sup>a</sup> 412 <sup>a</sup> 391 <sup>a</sup> 412 <sup>a</sup> 412 <sup>a</sup> 412 <sup>a</sup> 408 408 408 101.5	
		Min.	328 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
		Max. Min.	+64 + 480 + 496 +	
		AV.	403 <sup>a</sup> 393 367 <sup>a</sup> 367 <sup>a</sup> 367 <sup>a</sup> 365 <sup>a</sup> 365 <sup>a</sup> 361 103.9	
		.uiM	336 3336 3336 3336 3336 3336 3336 3336	
		Max. Min	36052300222	
	th, are	Av.	98.4 98.4	
	Strength, p.s.i. gage	Młn	332538848	
		Max	2222222222	
	Caliper, points	Av.	1212 1212 1212 1212 1212 1212 1212 121	
		Min.	8.9.7.6.1.68.	
		Max		
	sht,	AV.	6, 54 4, 64 4, 64 6, 54 6, 54 7, 64 7, 64 8, 69 8, 88 8, 89 8, 89 8, 89 8, 80 8, 80	
	Basis Weight, lb.	Min.	89999999999999999999999999999999999999	
		Max.	444422224 6406464	
	Mch.	No.		
		Made	18/11/11/12/11/12/11/22/12/12/12/22/22/22/	
Date Finish Recd.		Recd.	187902 W.B. 12/7/60 187928 W.B. 12/12/60 187929 W.B. 12/12/60 188031 W.B. 12/12/60 188049 W.B. 12/19/60 188043 W.B. 12/19/60 188043 W.F. 12/21/60 188043 W.F. 12/21/60 188043 W.F. 12/21/60 Mill Average: Current Mill Average: Mill Factor, \$	
		Finish	187902 W.B. 12/ 187928 W.B. 12/ 187929 W.B. 12/ 188031 W.B. 12/ 188042 W.B. 12/ 188045 W.B. 12/ 18/ 180045 W.B. 12/ 18/ 180045 W.B. 12/ 18/ 180045 W.B. 12/ 18/ 18/ 18/ 18/ 18/ 18/ 18/ 18/ 18/ 18	
	Rt lo	.ov	187902 W.B. 187928 W.B. 187929 W.B. 188031 W.B. 188043 W.B. 188043 W.F. 188043 W.F. 188043 W.F. 188043 W.F. 188043 W.F. 188043 W.F. N.F. Current Mill Current Mill Mill Factor, %	

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

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TABLE XX

NILL S -- 42-LB. LINERBOARD

								6
a a	Åν		•		351 <sup>a</sup> 398 <sup>a</sup> 393 <sup>a</sup>	372	376	98.9
r. Across	Max. Mir.				352 358 358 358 358 358 358 358 358 358 358			
f Teal eet	Max.		384 4328 4328					
Elmendorf Tear, g./sheet ·	AV.				321 <sup>a</sup> 331 <sup>a</sup> 363 <sup>a</sup> 363 <sup>a</sup>	344	337	102.1
E E	Max. Min.				288 320 312			
	Max.				535 88 535 88 535 88			
цв th,	Av.				នងងង	CTT .	II	101,8
Bursting Strength, p.s.i. gage	Max. Min.				\$888			
Br St St St	Nax.				134 134 137 138 137 138 137 137 137 137 137 137 137 137 137 137			
·	Av.			ARD	13.9 13.8 13.1	13.5	13,1	103.1
Caliper, points	Min.	itted.		INERBC	1.51 1.51 1.51 1.51 1.51 1.51 1.51 1.51			101.8
C.	Max.	No samples submitted.	TABLE XXI	MILT 42-LB. LINERBOARD	445 13.65 8.65 8.65			
ght,	AV.	o samplı	TAI	1 1 1	3333 0101	1.44	43.3	
Basis Weight, lb.	Min.	Ň		TIIM	443.6 43.8 43.8			
Basi	Max.				年 5,5 5,5 5,5 5,5 5,5 5,5 5,5 5,5 5,5 5,			
Mch.	No.				чччч			
Date	Made				11/13/60 11/16/60 11/27/60 28/60	-		
	Recd.				12/1 1/60 12/1 12/1 12/1 12/1 12/1 12/1 12/1	rage:	Average:	
	Finish				SLTU SLTU SLTU	Current Mill Average:	Cumulative Mill Average:	Fill Factor, &
Т. Т.	•oN				187857 187860 187905	Current	Cumulat	ET LLE

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

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103.9

102.7

106.3

1.101

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### PART II: COMPARISON OF RESULTS OBTAINED AT THE INSTITUTE OF PAPER CHEMISTRY WITH THOSE OBTAINED AT THE MILLS

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. Mill test conditions are shown in Table XXII, where it may be noted that the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the preconditioning and conditioning time periods varied considerably.

A summary of the Institute and mill test results for the current period is shown in Table XXIII, and a comparison of percentage differences between Institute and mill test results is given in Table XXIV for the curtent period and the two previous periods.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. In Table XXIII the overall average difference between Institute and mill results is shown for each of these tests based on the current mill averages--i.e., based on the data for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the over-all average differences shown for each test in Table XXIII 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. TABLE XXII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

	Time. hr.	24 16	24	51	24	24	3 24	24	1	48	ł
ning	Temperature, •F.	73 72-73 <sup>More</sup>	73	73 70-74	73 73	73 Nore	73	73 70-72	s submitted. 75-84	71-72	22-78
Conditioning	Relative Humidity.	50 48-52	20	50 55-58	50 50	50	50 50	,	No samples 30-76	45-46 M2 20mm] 64	42-53
	Time. hr.	0.5	44	54	84	ĉ	585	120			
reconditioning	Temperature. •F.	67-78 77-78	None	73 72	74-75 None	None	222	None 70-72	None	None	None
Precondi	Relative Humidity.	35-44	20	50 70 70	44-52	5	<u> </u>	ک			
	Mill Code		υÞ	म म	ч С H	н	ъ×ч	M N	0 4	Q	ທ H

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

	۴	t-		44 - 1 43 - 0 - 1 - 3 - 1 - 3		13.5 0.6 0.6		4 4 4 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		344 336 -8 -64		372 371 -1 +55	particular mill.
	S	0		10 (0.0 10									ticul
	ð	œ		2400 800 800 800 800 800 800 800 800 800		21100		44 1 1 2 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 7 8 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1		375 338 -37		7077	
	۵.	2		43.1 42.2 -0-9 -1-7		12.7		111 7 11 7 7 7 7 7		283 257 -26 -65		339 350 +11 +29	bmitted. rage based on mill test data. for any sample submitted by that
	0	0											test itte
	N	6		43.8 1-1-0 8.0 1-1-0 8.0 1-1-0		13.1 13.3 10.2		<b>7 7</b> E E		327 294 -33		372 386 +14 +70	r mill e subm
•	W	-4		-0.4 -0.7 -0.7		12. 11. 0. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.		117 - <b>6</b>		363 347 -24		410 391 -19 -28	data were submitted. the mill average based on mill test data. 11 average for any sample submitted by t
	ц	¢		400 800 800		12.5 12.7 12.7		9177°		326 338 +12 +28		370 398 +28 +48	ubmitte erage t for an
	М	¢		43.1 43.1 0.0		12.6		106 211 54		318 292 14-		361 361 14	data were submitted. the mill average bas il average for any
	5	<b>N</b>		43.04 43.04 -0.64		0.0		103 + + 6 109	되	318 292 -26 -26	across	377 352 -25 -27	st data nd the mill a
)	н	4	RUL	4400		22200	Strength	1677	Strength, i	321232	Strength, a	373 375 ±2 ±11	mill te erage a and the
•	н	1	DASIS WEIGHT	-00 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0	Caliper	1688 <u>8</u>	Bursting S	7077 1117 1117		353 358 +5 +5		397 418 +21 +21	which mill av verage
	Ⴊ	6	윕	43.8 42.8 -1.0		12.8 -0.4 -0.4	Bur	106 108 42 45	Tearing	373 374 +1 -30	Tearing	401 1601 1601	only those samples on which mill test between the Institute mill average and paring the Institute average and the mi
	Įr.	6		43.4 42.6 1.3 8		25 20 20 20 20 20 20 20 20 20 20 20 20 20		113 108 -5		457 305 305		374 362 -12	ose sam the Ins he Inst
	ស	ά		44.2 43.5 -0.7 -1.4		1015 1015 1015 1015		9117¥		316 316 316		375 390 +15 +36	only those between the baring the I
	Q	Ś		44 43 -1-0 -1-0 -1-0		2112 600 100 100		113 54 113		374		111	wolved srence t in comp
i	U	9		47.5 6.5 6.5 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		13. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.		108 105 -2		332 292 -172		366 355 -11 -28	ages ir 1e diffe 1ntered
	μΩ,	œ		43.5 43.5 -1.2 -1.2		0.0		111 11 11 12 12 12 12 12 12 12 12 12 12		334 -43 -83 -83 -83		355 29 -70	on aver te is th te encou
	A	-7		43.4 43.4 -1-1		0 0 0 0 0 0 0 0 0 0		110 110 110 110		277 280 +3 +8		14 17 17 17 17 17 17 17 17 17 17 17 17 17	based Eferenc Eferenc
	*siliy	No. of Samples Compared		Institute Mill Av. Diff.** Max. Diff.**	·	Institute Mill Av, Diff,** Mex, Diff,***		Institute Mill Av. Diff.** Max. Diff.**		Institute Mill Av. Diff.** Max, Diff.**		Institute Mill Av. Diff.** Max. Diff.**	* Comparison based on averages involved only those samples on which mill test data were ** Average difference is the difference between the Institute mill average and the mill a *** Maximum difference encountered in comparing the Institute average and the mill average

XXIV	
TABLE	

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS

st I.	108-13								TIOELO	as nopor	0 107
	Tear, across	9 8 0 8 0 9 0	\$ <sup>4</sup> 1, 5	ኯ፝፞፞፞፞፟፞፞፞፞፟፟፟፟ጚ	777 777	119	£4	νųο.	F I I	6 5 5 7 7 7 7	
	Tear, in	8 0 Y	\$\$\$	-2° -2° -2°	-10  -6	†	٩ <u>٢</u>	986 1		ሳ ጥርት ት	
	Bursting Strength	\$ \$ \$	0°0 40°9	6°4 7°7	497 6	117	90	÷49		ድድድ	
	Cali- per	644	<sup>88</sup> 0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	<u>~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	44¢	115	991	ጥጥጥ የ		499	
cent	Basis Weight	644		የግሳ	999	119	441	777		999	
Average Difference, Per cent	Period	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	
Differ	LLiM	К	ы	W	N	o	ር በ	đ	S	F1	·
Average	Tear, across	0 +4 +0 <b>•</b> 8	890 198	ኯ፝፞ኯ፟፟፟ቚ		9¢¢	ά‡ <del>,</del>	40°2	÷   i	ት እ ት	445
	Tear. Éin	ተይል	-12 -12	-13 -22 -0-9		9 9 9 9	4 <i>5</i> ,7	<b>0</b> 0 0 0 0 0 0 0 0	7   9	$\tilde{\omega}\tilde{\kappa}\tilde{v}\tilde{v}$	<sup>8</sup> 6년
	Bursting Strength	ፚኯ፟ፙ	ų o ņ	997	4 <i>20</i> 4	ο φ ο φ	404	ဖုံ့င္ဝ	6 • 0 • 0	ሳታሳ ባ	9 4 4 4 4 4
	Cali- per	404	490		667	69 8 7 9 7	hoh	ያ የየጉ	የተግ	ଷ ଷ ୦୦ ୦୦:୦	8 9 9 9 7 9
	Basis Weight	999	0 9 9 9 9	6 9 9 9 9 9 9 9	4 4 Y	9 7 9	997 9	999	-0 -0 -0 -0	0 0 0 0 1	0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-
	Period	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd	Current 164th 163rd
	ILIM	æ	ß	U	A	ម	Бт	Ċ	#	· ••	5

Fourdrinier Kraft Board Institute, Inc. Project 1108-13 Page 36 Progress Report 165

It may be noted in Table XXIV that for the current period the largest average percentage difference between the average basis weight results of the Institute and those of a given mill on corresponding samples was two per cent. By comparison, the largest average percentage difference noted for the previous two periods was three per cent. Further, it may be noted that the average basis weight result for Mill K was the same as that for the Institute, whereas the average basis weight results for the other mills were lower than the corresponding results for the Institute. In general, agreement between Institute and mill basis weight results was good.

The maximum variation in caliper for the current period was seven per cent. This was higher than the maximum variation of six per cent for the previous two periods. Compared with the Institute's results, the average test results for Mills L and N were higher and the average test results for the other mills were lower. Agreement was very good for the majority of comparisons of Institute and mill caliper results. Only the variation for Mill D appeared to be excessive.

It may be noted in Table XXIV that the bursting strength results exhibited a maximum variation of six per cent for the current period. The maximum variation for the two preceding periods was eleven per cent. The average bursting strength results for Mills  $A_{\sigma}^{-} B_{\sigma}^{-} D_{\sigma}^{-} E_{\sigma}^{-} G_{\sigma}^{-} J_{\theta}^{-} K_{\sigma}^{-} L_{\sigma}^{-} Q$  and T were higher than those for the Institute, and the average results for the other mills were lower. Agreement between Institute and mill results was very good with the exception of the variations noted for Mills J and K.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills  $A_{,}^{-} E_{,}^{-} G_{,}^{-} H$  and L were higher than those for the Institute, and the average results for the other mills were lower. The maximum variation for the current period was thirteen per cent which was lower than the maximum variation of seventeen per cent associaged with the two preceding periods. Agreement between the Institute and mill results was generally good. However, the variations for Mills  $B_{,}^{-} C_{,}^{-} N_{,}^{-}$  and Q appeared to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills E, H, I, L, N, and P were higher than those for the Institute, the average results for Mills A and K were the same as those for the Institute, and the average results for the other mills were lower. The maximum variation for the current period was eight per cent, which was lower than the maximum variation of twelve per cent for the two preceding periods. As in the case of the machine direction results, agreement between Institute and mill results was generally good.

The comparisons of Institute and mill data for individual sample lots are given alphabetically in Tables XXV to XLIII for the various mills. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

The reader's attention is directed to page 3 of this report where the comparison of Institute and mill test data is summarized to show the number of mills (and the percentage of all mills which this number represents) whose average test results for the month of December fall within designated percentages from the average test results obtained at the Institute.

				Diff.	رە 1 +	91+		0
		_	Across	IPC MLI DIFF.	350 309	359	345	341
		Elmendorf Tear, g./sheet	ł	IPC	314 <sup>a</sup> 314 <sup>a</sup>	343ª	362	341
		llmendorf Te g./sheet	-   -	DAff.	φ¥	ጥ	ş	ţ
		н	In	IPC Mill	285 261	286	289	280
				21	277 2558	2894	2874	277
		ъс сh	age Age	Diff.	ፍዳ	Ŷ	0	ዋ
		Bursting. Strength.	5.1. ga	IPC MAIL DAFF.	108	112	211	סנד
	TABLE XXV MILL A 42-LB. LINERBOARD	- ••	Q	IPC	105	107	112	107
XXX			S	IPC MIL DIFF.	12.2 11.9 -0.3	<u>م</u> ٩	2. 9	-0-5
TABLE XXV		Calipe:	point	MLIM	6° म 1	6.11	1.51	0'21 2'21
	A LILL			IPC D	2.21	12.2	12.3	
	24	ieht.		DI LL.	8 V 0 0	9	-1.1	-0.7
		Basis Weight.	16.	IPC MAIL DAFF.	8 CT 1			41°I 13°H
		Ba		IPC	9°7	1.1	г. Т	נ <b>י</b> <del>זו</del> ו
			Mch.	No.	4-	•	Ч	
			Date	Made	09/1 /11	12/ 5/60	09/6 /ZT	:ទវិទរ
				Finish	ы. F.	W.F.	W.F.	Current Mill Average:
			File	No.	187859 1880//L	188271	198272	Current

COMPARISON OF INSTITUTE AND MILL DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960

<sup>a</sup>This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit. "current mill average" data are calculated from the totals of the individual readings. Ę Note:

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TABLE XXVI

MILL B -- 42-LB. LINERBOARD

		Diff.	-28	~ '	+18	-29	-29	5-	ĥ	2 -	-29
-	Across	11.121	335	347	369	ũ	328	317	<u>ц</u>	287	326
f Tear leet		BI	363 <sup>a</sup>	354 <sup>a</sup>	351ª	342 <sup>a</sup>	357ª	37 <sup>a</sup>	3443	357 <sup>a</sup>	355
llmendorf Tear g./sheet		Diff.	f	ς Γ	-20	Ϋ́	62 P	ရာ	たー	97	Ŧ
щ	H	TLIM	307	303	30t	281	22	267	292	303	291
		21	320 <sup>a</sup>	306 <sup>a</sup>	324 <sup>a</sup>	326 <sup>a</sup>	335 <sup>a</sup>	350 <sup>a</sup>	366 <sup>a</sup>	343 <sup>a</sup>	334
Bursting Ştrength,	lge	Diff.	q	q	Ŧ	7	¥	գ	ዊ	Ŧ	Ŷ
Burstir Strengt	5.1. ge	TLIM	H	106	17	17	5 1 1 8	71	8Ц	108	ELI J
	đ	IPC	<u>611</u>	108	118	סדו	сц	51	011	105	Ħ
		Diff.	۰ د	9	۲. 9	9.0	о Л	9 9	۳. م	<u>د.</u> ٩	<b>د.</b> 0
Caliper	points	TLIN	12.4	12.4	12.2	12.1	12.0	12.5	12.3	12.1	12.2
Ū		IPC	6°21	6.21	12.4	12.7	र य	רי בי	9°21	12.4	12.7
ight,		Diff.	4. 9	9. 8. 9	ч. 9	<u></u>	-0.2	-1.2	4. 1	-0-7	-0.4
sis Wei	lò.	LLIM	43.7	43.2	43.7	42.4	<del>1</del> 3.4	42.6	43 <b>.</b> 8	41.7	43,1
Ba		1 R	1 11	0.11	£3 <b>.</b> 6	42.7	43.6	43 <b>.</b> 8	5.2	42 °4	43.5
	Mch.	No.	ı	t	t	1	1.	ı	I	I	
	Date	Made	05/0E/TT	12/ 1/60	12/2/60	12/ 7/60	12/ 8/60	09/6 /ZT	12/15/60	12/16/60	rage:
		Finish	W.F.	Current Mill Average:							
	File	No.	187873	137874	187875	187934	187935	187936	198045	188046	Current

<sup>a</sup>This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit. All "current mill average" data are calculated from the totals of the individual readings. Note:

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TABLE XXVII

MILL C -- 42-LB. LINERBOARD

	1.•	
	Diff	1 000000
• ∆rr0ss	T R	35 250 230 250 250 230 250 250 230 250 250 250 250 250 250 250 250 250 250 250 250 250
lmendorf Tear g./sheet	IPC	347 <sup>a</sup> 341 <sup>a</sup> 399 <sup>a</sup> 399 <sup>a</sup> 357 <sup>a</sup> 352 <sup>a</sup>
Elmendorf T g./sheet	Diff.	
2 H	L H	272 290 320 308 208 283 283
	IPC	3179 3179 3179 3179 3179 3179 3179 3179
845 19	Mill Diff.	040044 4
Bursting Strength,	W111	103 103 103 104 110
ш 03 ( (		108 1107 1103 1103 1113 1108
•	Diff.	00000000000000000000000000000000000000
aliper	Mill Di	2922222 2922222 2922222 292222 29222 29222 29222 29222 29222 29222 29222 29222 29222 29222 29222 29222 29222 292222 292222 292222 292222 2922222 2922222 2922222 29222222
0	IPC	5.5.5.5 5.5.5 5.5 5.5 5.5 5.5 5.5 5.5 5
ght,	Diff.	600000 0 4224 4
asis Weigh	WELLO.	42.0 42.0 42.7 42.7 42.7 42.0 42.8 42.7 42.0 42.0 42.0 42.0 42.0
Ba:	IPC	5555555 5.595555 5.59555 5.5955 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.5555 5.55555 5.55555 5.55555 5.55555 5.555555
	Mch. No.	N N N N N N
	Date Made	11/25/60 12/26/60 12/3/60 12/3/60 12/4/60 12/5/60
	Finish	87878 WFIS 11/2 87879 WFIS 11/26 88013 WFIS 12/2 199019 WFIS 12/2 189020 WFIS 12/2 189021 WFIS 12/2 189021 WFIS 12/2 89021 WFIS 12/2
	File No.	187378 137879 188015 193019 138020 138020 188021 188021

<sup>a</sup>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.

(pen			Elmendorf Tear, g./sheet Across Diff. IPC Mill Diff.	408a 430a 401a 413a 411a	£14		
contin			IL IN	{			
) 0961	•		IPC	352a 367a 363a 363a	374	ich lim adings	
я э1,			ring gth, <u>gage</u> Diff.	፟፟፟፟፟፟፟፟፟፟፟፟፟ጟኯ፟	‡	3/8-in	
ECEMBE			Bursting Strength, <u>P.s.i. gage</u> C Mill Di	1100	TŢ	id the ndivid	
d Hono		OARD	IPC.	100 110 105	109	beyon the i	
er 1 The	IIIAX	MLL D 42-LB. LINERBOARD	, Diff.	00404 20404	6•0 <del>-</del>	ich tore otals of	
DECEMEN	TABLE XXVIII	42-J.B.	Caliper, ooints Mill D	२०१८ वननन	л.7	ens whi the t	
DATA	н	г р <mark>-</mark>	IRC	२. २. २. २. २. २. २. २. २. २. २. २. २. २	9.21	sọecim đ from	
COMPARISON OF INSTITUTE AND MILL DATA DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)		MIL	ight, Diff.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-1 <b>.</b> 0	for one or more specimens which tore beyond the 3/8-inch limit. ta are calculated from the totals of the individual readings,	
TUTE A			Basis Weight, 1b. Y Mill Diff	<u> </u>	43.3	r one are c	
LLSNI			Ba	54444 10008	t <b>t</b> .3		
SON OF			ich. No	~~~~		: readi	
CONFARI			Date <i>M</i> ade	11/21/60 12/13/60 12/13/60 12/13/60 12/15/50	: age :	<sup>a</sup> This average includes the readings for one or more specimens which tore beyond the 3/8-inch lim. Note: All "current mill average" data are calculated from the totals of the individual readings	•
			Finish	MFIS MFIS MFIS MFIS MFIS	Current Mill Average:	verage it All "curr	
			elii	187861 183012 188013 138033 188041	Current	<sup>a</sup> This a Note:	

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TABLE XXIX

MILL E -- 42-LB. LINERBOARD

		Diff	+28	ft t	f2	~ +	רי +		₽, ʻ	0	<del>1</del> 36	١	+15	•
Across	Across	Π₩	60 <del>1</del>	425	601	27	362		ရွိ	391	395		390	
leet		IPC	375 <sup>a</sup>	4129	386	364 <sup>a</sup>	361ª	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	391	359 <sup>a</sup>	Ň	375	
Elmendorf Tear g./sheet		Diff.	<del>1</del> 31	-14	۲ ۲	ה +	α		0' I	9	+10	Ì	+ 2	1
	ដ	MLLI	353	329	332	900 900	Š		275	307	319	ì	316	Ì
		IPC	322 <sup>a</sup>	3434	325 <sup>a</sup>	299 <sup>a</sup>	301 <sup>a</sup>		Jor More	3134	209		わいと	
ċh.	lge	Diff.	0	7	ヰ	Ŧ	5	1	Ŷ	‡	¥	2	F	1
Strengt	3.i. 26	TLW	108	107	107	2112	5	1	Ħ	Ĥ	אוו		ווו	1
ມ ເ <u>ບ</u> ຊ	0.	B	108	106	106	9TT -				109	OLL	Ì	011	1
	points	Dìff.	-1.2	<b>1</b> 9	0.0	6 9		•	ግ ዓ	۲ <b>.</b> ۹			() ()	2
aliper		LLIM	6 <b>.</b> 11	12.8	12.9	12.8			0 <b>°</b> टा	12.4	, c [	1 1	יי כר	1
0		IPC	1.ព	12.7	12.9	6.11		7	с <b>.</b> С	12.7	5 0 5		7 0 1	0.21
ght.	,	Diff.	-0 -8	۳. 9	1- 1- 1-	с С			<b>†</b> • 1	-0-6	-	7	с с	2
sis Wei	J.b.	Щ. Н	43 <b>.</b> 0	43.7	43.6	, L		V. 14	43.1	141.2		<b>;</b>	1 (	<del>.</del>
Ва		IPC	43.8	0.11	0.44	12 8			44.5	141.8			0 	2.1
	Mch	No.	· 01	2	2	1	4 -	-1		~	) (	N		
	Date	Made	12/ 9/60	12/ 9/60	09/0 /21	09/0/01		09/12. /21	12/ 7/60	09/08/ 11		N9/0£/TT		rage:
		Finish	Ч. Ч.	E B	L L	- 1- 1-1 1-1	4	W.F.	W.F.	5		W.F.		Current Mill Average:
	ور:ت	. oN	187994	187005	YODGAL		166101	187998	188028	1 880.20	C TOOOT	188030		Current
	ght, Caliper, Strength, g./sheet	Basis Weight, Caliper, Strength, g./sheet Date Mch Th points p.s.i.gage In Across	Basis Weight,Caliper,Strength,DateMch.10.10.000000000000000000000000000000000	Basis Weight, Caliper, Strength, g./sheet Date Mch. <u>1b. points points b.s.i.gage In g./sheet Across</u> Finish Made No. <u>IPC Mill Diff. IPC Mill Diff. IPC Mill Diff. IPC Mill D</u> WF 12/9/60 2 43.8 43.0 -0.8 13.1 11.9 -1.2 108 108 0 322 <sup>a</sup> 353 +31 375 <sup>a</sup> 403	Basis Weight,       Caliper,       Strength,       g./sheet         Date       Mch.       1b.       p.       p.s.i.gage       In       Across         Finish       Made       No.       IPC       Mill       Diff.       IPC       Across         W.F.       12/9/60       2       43.0       -0.8       13.1       11.9       -1.2       108       0       322 <sup>a</sup> 353       +31       375 <sup>a</sup> 403         W.F.       12/9/60       2       44.0       43.7       -0.3       12.7       12.8       40.1       106       107       +1       343 <sup>a</sup> 329       -14       412 <sup>a</sup> 425	Basis Weight,         Caliper,         Strength,         gt, strength,         g, strength,           Date         Mch.         1b.         1b.         p.s.i.gage         In         Across           Finish         Made         No.         IPC         Mill         Diff.         IPC         Mill         Across           Finish         Made         No.         IPC         Mill         Diff.         Mill         Diff.         Mill         Diff.         IPC         Mill         Diff.         IPC         Mill         Diff.         Mill         Diff.         Mill         Diff.         Mill         Diff.         Mill         Mill         Milll	Basis Weight,         Caliper,         Strength,         Evength,         g./sheet           Date         Mch.         1b.         p.s.i.gage         In         g./sheet           Finish         Made         No.         IPC         Mill         Diff.         IPC         Across           Finish         Made         No.         IPC         Mill         Diff.         MO         MO         MO         MO         MO         MO         MO <td>Date         Mch.         Basis Weight,         Caliper,         Strength,         Strength,         g./sheet           Pinish         Date         Nch.         Ib.         Ib.         Doints         Desii, gage         In         Across           W.F.         12/9/60         2         W3.0         -0.8         13.1         11.9         -1.2         108         108         0         32.3         331         375a         403           W.F.         12/9/60         2         W4.0         U3.7         -0.3         12.7         11.9         -1.2         108         108         0         322a         353         +31         375a         403           W.F.         12/9/60         2         W4.0         U3.7         -0.3         12.9         10.0         106         107         1         343a         329         -14         412a         425           W.F.         12/9/60         2         W4.0         10.0         106         107         1         329         -14         412a         425           W.F.         12/9/60         1         W3.6         0.0         106         107         1         329         -14         412a         <t< td=""><td>Date Mch.         Basis Weight,         Caliper,         Strength,         g./sheet           Date Mch.         Ib.         Ib.         p.s.i. gage         In         g./sheet           Rinish Nade No.         IPC Mill Diff.           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         10         322<sup>a</sup>         353         431         375<sup>a</sup>         403           W.F.         12/9/60         2         44.0         43.7         -0.3         12.7         12.8         40.1         106         107         +1         325<sup>a</sup>         332         +7         386<sup>a</sup>         409           W.F.         12/9/60         2         44.0         42.9         10.0         106         107         +1         325<sup>a</sup>         332         +7         386<sup>a</sup>         409           W.F.         12/9/60         1         43.6         -0.4         12.2         12.9         0.0         106         107         +1         325<sup>a</sup>         300         +1         36<sup>a</sup>         409           W.F.         12/7/60         <td< td=""><td>Basis Weight,         Caliper,         Strength,         Ethength,         g./sheet           Date         Mch.         Ib.         D.         P.s.i.gage         In         g./sheet           Rinish         Made         No.         IPC         Mill         Diff.         Diff.&lt;</td><td>Date Mch.         Basis Weight,         Caliper,         Strength,         Strength,         g./sheet           Pinish         Nade         No.         ID.         Diff.         IP.         Diff.         IP.         Across           Finish         Nade         No.         IP.         Diff.         IP.         Diff.         IP.         Across           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         108         0         32.3         311         37.5           W.F.         12/9/60         2         44.0         43.5         11.0         -1.2         106         107         1         34.3         329         -14         42.5           W.F.         12/9/60         2         44.0         57.2         30.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         2         44.0         57.2         50.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         1         49.0         106         107         1         22.9         30.9</td><td>Date Mch.         Basis Weight,         Caliper,         Strength,         Etheit,         Lb.         Caliper,         Strength,         g./sheet         Across           Finish         Ide         No.         IFC         Mill         Diff.         Diff.         Diff.         Diff.         Diff.         Mill         Diff.         Diff.</td><td>Date         Mch.         Ib.         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,</td><td>te Mch. Basis Weight, Caliper, Strength, E./sheet <math>\frac{10}{10}</math>, ID <math>\frac{10}{10}</math>, Caliper, Strength, E./sheet <math>\frac{10}{10}</math>, ID <math>\frac{10}{10}</math>, IP <math>\frac{10}{10}</math>, Mill Diff. IPC Mill Diff. IPC Mill Diff. Provential <math>\frac{10}{10}</math>, <math>\frac{10}{1</math></td></td<></td></t<></td>	Date         Mch.         Basis Weight,         Caliper,         Strength,         Strength,         g./sheet           Pinish         Date         Nch.         Ib.         Ib.         Doints         Desii, gage         In         Across           W.F.         12/9/60         2         W3.0         -0.8         13.1         11.9         -1.2         108         108         0         32.3         331         375a         403           W.F.         12/9/60         2         W4.0         U3.7         -0.3         12.7         11.9         -1.2         108         108         0         322a         353         +31         375a         403           W.F.         12/9/60         2         W4.0         U3.7         -0.3         12.9         10.0         106         107         1         343a         329         -14         412a         425           W.F.         12/9/60         2         W4.0         10.0         106         107         1         329         -14         412a         425           W.F.         12/9/60         1         W3.6         0.0         106         107         1         329         -14         412a <t< td=""><td>Date Mch.         Basis Weight,         Caliper,         Strength,         g./sheet           Date Mch.         Ib.         Ib.         p.s.i. gage         In         g./sheet           Rinish Nade No.         IPC Mill Diff.           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         10         322<sup>a</sup>         353         431         375<sup>a</sup>         403           W.F.         12/9/60         2         44.0         43.7         -0.3         12.7         12.8         40.1         106         107         +1         325<sup>a</sup>         332         +7         386<sup>a</sup>         409           W.F.         12/9/60         2         44.0         42.9         10.0         106         107         +1         325<sup>a</sup>         332         +7         386<sup>a</sup>         409           W.F.         12/9/60         1         43.6         -0.4         12.2         12.9         0.0         106         107         +1         325<sup>a</sup>         300         +1         36<sup>a</sup>         409           W.F.         12/7/60         <td< td=""><td>Basis Weight,         Caliper,         Strength,         Ethength,         g./sheet           Date         Mch.         Ib.         D.         P.s.i.gage         In         g./sheet           Rinish         Made         No.         IPC         Mill         Diff.         Diff.&lt;</td><td>Date Mch.         Basis Weight,         Caliper,         Strength,         Strength,         g./sheet           Pinish         Nade         No.         ID.         Diff.         IP.         Diff.         IP.         Across           Finish         Nade         No.         IP.         Diff.         IP.         Diff.         IP.         Across           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         108         0         32.3         311         37.5           W.F.         12/9/60         2         44.0         43.5         11.0         -1.2         106         107         1         34.3         329         -14         42.5           W.F.         12/9/60         2         44.0         57.2         30.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         2         44.0         57.2         50.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         1         49.0         106         107         1         22.9         30.9</td><td>Date Mch.         Basis Weight,         Caliper,         Strength,         Etheit,         Lb.         Caliper,         Strength,         g./sheet         Across           Finish         Ide         No.         IFC         Mill         Diff.         Diff.         Diff.         Diff.         Diff.         Mill         Diff.         Diff.</td><td>Date         Mch.         Ib.         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,</td><td>te Mch. Basis Weight, Caliper, Strength, E./sheet <math>\frac{10}{10}</math>, ID <math>\frac{10}{10}</math>, Caliper, Strength, E./sheet <math>\frac{10}{10}</math>, ID <math>\frac{10}{10}</math>, IP <math>\frac{10}{10}</math>, Mill Diff. IPC Mill Diff. IPC Mill Diff. Provential <math>\frac{10}{10}</math>, <math>\frac{10}{1</math></td></td<></td></t<>	Date Mch.         Basis Weight,         Caliper,         Strength,         g./sheet           Date Mch.         Ib.         Ib.         p.s.i. gage         In         g./sheet           Rinish Nade No.         IPC Mill Diff.           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         10         322 <sup>a</sup> 353         431         375 <sup>a</sup> 403           W.F.         12/9/60         2         44.0         43.7         -0.3         12.7         12.8         40.1         106         107         +1         325 <sup>a</sup> 332         +7         386 <sup>a</sup> 409           W.F.         12/9/60         2         44.0         42.9         10.0         106         107         +1         325 <sup>a</sup> 332         +7         386 <sup>a</sup> 409           W.F.         12/9/60         1         43.6         -0.4         12.2         12.9         0.0         106         107         +1         325 <sup>a</sup> 300         +1         36 <sup>a</sup> 409           W.F.         12/7/60 <td< td=""><td>Basis Weight,         Caliper,         Strength,         Ethength,         g./sheet           Date         Mch.         Ib.         D.         P.s.i.gage         In         g./sheet           Rinish         Made         No.         IPC         Mill         Diff.         Diff.&lt;</td><td>Date Mch.         Basis Weight,         Caliper,         Strength,         Strength,         g./sheet           Pinish         Nade         No.         ID.         Diff.         IP.         Diff.         IP.         Across           Finish         Nade         No.         IP.         Diff.         IP.         Diff.         IP.         Across           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         108         0         32.3         311         37.5           W.F.         12/9/60         2         44.0         43.5         11.0         -1.2         106         107         1         34.3         329         -14         42.5           W.F.         12/9/60         2         44.0         57.2         30.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         2         44.0         57.2         50.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         1         49.0         106         107         1         22.9         30.9</td><td>Date Mch.         Basis Weight,         Caliper,         Strength,         Etheit,         Lb.         Caliper,         Strength,         g./sheet         Across           Finish         Ide         No.         IFC         Mill         Diff.         Diff.         Diff.         Diff.         Diff.         Mill         Diff.         Diff.</td><td>Date         Mch.         Ib.         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,</td><td>te Mch. Basis Weight, Caliper, Strength, E./sheet <math>\frac{10}{10}</math>, ID <math>\frac{10}{10}</math>, Caliper, Strength, E./sheet <math>\frac{10}{10}</math>, ID <math>\frac{10}{10}</math>, IP <math>\frac{10}{10}</math>, Mill Diff. IPC Mill Diff. IPC Mill Diff. Provential <math>\frac{10}{10}</math>, <math>\frac{10}{1</math></td></td<>	Basis Weight,         Caliper,         Strength,         Ethength,         g./sheet           Date         Mch.         Ib.         D.         P.s.i.gage         In         g./sheet           Rinish         Made         No.         IPC         Mill         Diff.         Diff.<	Date Mch.         Basis Weight,         Caliper,         Strength,         Strength,         g./sheet           Pinish         Nade         No.         ID.         Diff.         IP.         Diff.         IP.         Across           Finish         Nade         No.         IP.         Diff.         IP.         Diff.         IP.         Across           W.F.         12/9/60         2         43.8         43.0         -0.8         13.1         11.9         -1.2         108         108         0         32.3         311         37.5           W.F.         12/9/60         2         44.0         43.5         11.0         -1.2         106         107         1         34.3         329         -14         42.5           W.F.         12/9/60         2         44.0         57.2         30.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         2         44.0         57.2         50.0         106         107         1         32.9         -14         42.5           W.F.         12/9/60         1         49.0         106         107         1         22.9         30.9	Date Mch.         Basis Weight,         Caliper,         Strength,         Etheit,         Lb.         Caliper,         Strength,         g./sheet         Across           Finish         Ide         No.         IFC         Mill         Diff.         Diff.         Diff.         Diff.         Diff.         Mill         Diff.         Diff.	Date         Mch.         Ib.         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,         Caliper,         Strength,         Lass weight,         Lass weight,	te Mch. Basis Weight, Caliper, Strength, E./sheet $\frac{10}{10}$ , ID $\frac{10}{10}$ , Caliper, Strength, E./sheet $\frac{10}{10}$ , ID $\frac{10}{10}$ , IP $\frac{10}{10}$ , Mill Diff. IPC Mill Diff. IPC Mill Diff. Provential $\frac{10}{10}$ , $\frac{10}{1$

<sup>a</sup>This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit. Mote: All "current mill average" data are calculated from the totals of the individual readings.

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COMPARISON OF INSTITUTE AND MILL DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (cont
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TABLE XXX

Mill F -- 42-LB. LINERBOARD

		Diff	££	-78	83	121	9	1	10	1 ( 1	1-1-	-27		7	
-	Across	TIM	388	337	288	60 <del>1</del>	369	3.6		23	369	27	1	362	:
rf Tear, leet	4	IPC	355 <sup>a</sup>	365 <sup>a</sup>	375 <sup>a</sup>	382 <sup>a</sup>	375a	2628		100	3864	3983		374	ŀ
Elmendorf Tear g./sheet		Diff.	- 424	77	¥	9T+	~، +	<u> </u>	46	27-	ۍ +	00-	2	+ 	
	H	TI in	317	283	246	315	1016		1	202	<u>5</u>	202	Š	300	•
		IPC	.293 <sup>a</sup>	297a	288a	299	50%			3304	296	2278	740	304	1
ng th,	a <i>r</i> e	Diff.	7	9	<u>م</u>	ŝ	7	5	<u> </u>	ŧ	7	ç	7	۲ ۱	
Bursting Strength	5. 1. 2	Mi 11	ц	107	108	106			TUS	601	님			108	
, F4 01	0.	IPC	211	ETT	011	211			÷	Ĥ	17			511	ì
·		Diff.	ч ф	0.0	10-	q	10	2		ጥ የ	۰ م	, c		د م	
aliper	points	Mi LI M	12.5	12.3	10			7	12,2	12.4	12.2		12.1	с сг	1 C
U		IPC	12.4	12.3	10			2.71	12.6	12.7	12.7		12°.	2 C F	<u>.</u>
aht.	0	Diff.	-1-3						0°1	-1.1	ب		 	0	
sis Weizht	- 4 - 4	TI W	5 51	12				#5 · 3	42.4	42.5	10		42.3		0.14
Ba	í	IPC	9 1717	2 ° °	55			43.0	4°C4	43.6	11 21		75 7	- - -	4°04
	Mak	No.	~	1 -	<b>1</b> . ⊢	-1 r	-1	Ч	Ч	-		4	н		
	Dote	Nade Made	07/61/11				ng/62/11	12/ 5/60	12/ 8/60	09/01/01	07/74/74	no/or/yr	12/20/60		rage:
		Finish	STOT:		CT IM		STAN	WFIS	WFIS	LIFT C			AFTS		MILL AVE
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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.

				1.•												
				Diff.	404 7 7 7 7 7 7 7 7	0.4	50	27	129	1			<b>1</b> 21	121		
				MI LI	417 396 236	121	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		£ 60	104			418	418		
			Elmendorf Tear, g./sheet	IPC	403a 387a	100g	5014 5014		397ª 418ª	405			397 <sup>a</sup>	397		
(þe			Elmendo g./s	Diff.	112	0 y + +	ą,	n ŶŶ	9 7 +	+			<del>,</del>	ţ		
n tí nu				UT IN	393 259	28 89	365	¥60	357 369	374			358	358		
.960 (co			F	IPC	382 <sup>a</sup> 371 <sup>a</sup>	3778	353 <sup>a</sup>	3704	376 <sup>a</sup> 366 <sup>a</sup>	373			353 <sup>a</sup>	353	3/8-inch limit.	dings.
31, 1			a r	Diff.	\$ <b>7</b> 5	まむ	<u> </u>	すか	7¥	ç			N · I	2	3/8-ind	al rea
CEMBER			Bursting Strength,	C Mill Di	901 901	81	5 2 2 2	601 108	501 601	108			OTT	on	the	dividu
ad Houc	TABLE XXXI TABLE XXXI 42-LB, LINERBOARD Bu Caliper, St	щv	IPC .s		104 106	107	Pot Fot	701 Cot	90T		BOARD	211	211	beyond	the in	
R L THR			Diff.	999 999	• ? ?	2.0-	99 0,0	99	<b>†</b> 0-	XXII	42-LB, LINERBOARD	-0,2	-0.2	specimens which tore beyond	tals of	
ECEMBE	TABLE XXXI	42-LB.	Caliper,	points Mill 1	12.5	มม วัง	8°21	12.2	12.0	<b>η.</b> ΣΙ	TABLE XXXII	- 42-11	6"II	6.11	ins whi	the to
DATAD	-	5	C ·	JPC	12.9	इ. ट. ट.	0.EL	12.7	12.5 12.5	12.8		MILL H	12.1	12.1	specime	d from
AND MILL DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)		MILL	ght,	Diff.	-0.6	ο ο ο	0.1-	44	ရ ရ ဂို ဂို	-1 <b>.</b> 0			-0.9	6.0-	or more	are calculated from the totals of the individual readings.
TUTE AD			sis Weight,	-qT WHII	42.8 42.2	42.0 43.0	43.0	42.9 42.9	42.8 43.2	42.8			é trt	ۥ <del>1</del> 11	r one c	are ca
I III SNI			Bas	IPC	49.04 49.04	5 4 6 7	5.0	• 5 5 5	5.5 0 0	43 <b>.</b> 8			45.2	45.2		r data
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				Finish	М. F. М. F.	х х н н	W F	N F N F	14 14 75 75	Current Mill Average			И. Н.	Current Mill Average	reraza it	ull "curr
				File No.	188001 138002	188003	188005	188006 188007	188008 188008	Current			187904	Current	a phis av	Note:

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	ing Elmendorf Tear, gth, g./sheet Across Diff. IPC Mill Diff. IPC Mill Diff.	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-2 352 341 -11 373 375 +2		+7 318a 294 -24 379 <sup>a</sup> 357 -22 +4 317a 290 -27 374 <sup>a</sup> 347 -27	4 43.0 -0.4 13.1 12.8 -0.3 103 109 +6 318 292 -26 377 352 -25 for one or more specimens which tore beyond the 3/8-inch limit.	All measure will average" data are calculated from the totals of the individual readings.
	stin engt	105 112 109	109		109 108	109 1 the 3	uhi vidu.
BOARD	Bur Str <u>2.5.1</u> IPC Mi	109 211 011 109		BOARD	102 104	103 beyond	tha ir
TABLE XXXIII 42-LB, LINERBOARD	Diff.	00000	1.0-	TABLE XXXIV MILL J 42-LB. LINERBOARD	4.0° 9.6	-0.3 ch tore	tale of
TABLE XXXIII 42-LB. LL <sup>3</sup>	Caliper, points Mill D	13.0 12.5 12.5	12.6	TABLE XXXIV - 42-LB. LI	12.8 12.9	12.8 ens whi	04 + 04+
- I TIIN	IPC	13.0 12.2 12.9	1.21	r 1	12.9 13.2	13.1 specim	mont be
Ŵ	kht. Diff.	6.1.1.0 6.1.1.0	-0-2	R	0 0 0	-0 .4 or more	, + c L L
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	Ba	53-1-0 53-5-0 53-1-0 53-1-0 1-0 1-0 1-0 1-0 1-0 1-0 1-0 1-0 1-0	14.2		42 S 44 3		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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	Date Made	09/01/11 09/01/11 09/02/11 09/62/11	:age:		09/2 /ZI 09/72/TI	Current Mill Average: 43 <sup>a</sup> This average includes the readings	0 [[]- 4
	Finish	ы К К К К К К	Current Mill Average:		ល ល មាម	<b>Current Mill Average:</b> <sup>a</sup> This average include	
•	File No.	137852 187853 188014 188014	rent		187917 187959	rrent nis av	

COMPARISON OF INSTITUTE AND MILL DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

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COMPARISON OF INSTITUTE AND MILL DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (con
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## TABLE XXXV

# MILL K -- 42-LB. LINERBOARD

			Diff.		5. I	t- 1	- 2	- C - T		Ţ	t. +	ΨLT	5	n I		¢	>	
		<b>I</b> Cross	ЦŴ		320	350	368			363	366	346	3	122		5,5	100	
f Tear,	leet	4	B	6	359	354ª	3753	200 BCBC		3504	3628	2020	200	3.4	1	ç	701	
lmendor!	g./st		Diff.		-24	21-	5	1 1	<u>(</u> )	-29	HC-		07-	-27		ì	-26	
ш		ភ	TLAN		298	307			062	290	500		ñ	264			292	
			1 R		322 <sup>a</sup>	319	Ì	ŧ	321	910	8100	100	331-	192			318	
a B	.h.	lge	Di ff.		¥	q	2 2	ę۰	ę	ч Н	54	ŧ	£	ፍ	2	,	φ	•
Burstir	Strength,	si. ge	Mill Dif							511	1:	Ê	ĥ	טונ	1		112	
щ	03	0	E C	,	103			90T	104			52	108 1	COL			106	
			Diff		200		<b>?</b> -	7. 0	۲. م		; ?	+ -0	ن ٩	0 0			7 7	•
	aliper	onints			7 2			2	12.8		י א ג	12.0	12.7	0	2		7 01	2
	Ö		B		מינ		1.	<b>г.</b> С	5.51		13.2	75.4	13.2		13.2		С С Г	
	zht.		ni f f		Y V	2 r		ې. م			-0-	2. 9	۲ q		<b>1</b> •0			<b>.</b>
•	asis Weig	, , ,			רכי	÷.	42.6	5.0	112 0		5°5	42.0	7 27		0. ‡		с <u>с</u> 4	+J•L
	Bas		Ja I		2		42.7	6.04	7 61		<del>[</del> ]	42.2	112 0		43.9		- 01	4.54
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				ustuti						÷	****				1	•		Current Mill Average:
			File	• ON		137910	187911	CL0C81	÷12/01	187913	187914	J LODG L	OTACCT	1850.32	188017			Current

<sup>a</sup> 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.

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COMPARISON OF INSTITUTE AND MILL DATADECEMBER 1 THRC
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TABLE XXXVI

MILL -- 42-LB. LINERBOARD

		Diff.	++++++++++++++++++++++++++++++++++++++	+28
	Across	LLiM	414 404 400 337 339 339 339	398
f Tear	leer	IPC	366 <sup>a</sup> 386 <sup>a</sup> 382 <sup>a</sup> 377 <sup>a</sup> 377 <sup>a</sup> 388 <sup>a</sup> 351 <sup>a</sup> 351 <sup>a</sup>	370
Ilmendorf Tear	g./sneer	Diff.	85 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	21+
E	អ	IIBN	*****	338
		IPC	318 <sup>a</sup> 365 <sup>a</sup> 321 <sup>a</sup> 3028 <sup>a</sup> 3028 <sup>a</sup> 3012	326
<u>ы</u>	ch, Pre	Diff	2000q	Ţ
durstir	Strength, D.s.i. gage	Mil	100 100 110 100 111 100 111 100 111 100 111 100 111 100 111 100 111 1000 1000 1000 1000000	111
щ	, p	IPC		011
	-	Di ff.	もささらささらも ゖ゙ゕ゙ゕ゚ゖ゚゚゙ヸ゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚	<del>1</del> 0 <b>.</b> 2
	Caliper, noints	Mi li	222222222 800222222	7.21
	U	IPC	8.1.9.8.7.21 8.1.9.8.7.21 8.1.21	12.5
	ght,	DLFF.	66660660 4 222000000000000000000000000000000000	С•0-
	sis Vei Th	Mi 11	& & & & & & & & & & & & & & & & & & &	43.8
	Bas	B	<b>またまむまむみむ</b> いいいいすいいの。	1,44
	4 CM	No.	аналала	
	Po to	Made	11/13/60 11/13/60 11/23/60 11/23/60 12/4/60 12/3/60 12/3/60 12/3/60	rage:
		Finish	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Current Mill Average:
	1	File No.	187930 187930 187932 187933 187933 188265 188265 188265 188266	Current

<sup>a</sup>rhis 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. COMPARISON OF INSTITUTE AND MILL DATA--DECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

	20 20	• 1110	-11 -15 -28 -20
	Across		363 422 397 383 383
f Tear heet			374 437 437 4237 4237 4237 4237 4237 423
llmendorf Tear, g./sheet		Diff.	-12 -2,23 -16
ы ы	H	Mi l'I	326 354 323 323 323
,		21	338 389 <sup>a</sup> 347 <sup>a</sup> 347 <sup>a</sup> 363
л£ сh.	age	piff.	609999
Bursting Strength.	3.i. 8	Mill	
	Q	IPC	116 112 112 119 119
	-	Diff.	0.2
"aliner	points	IPC MIL Diff.	२ २ २ २ २ २ २ २ २ २ २ २ २ २ २ २ २ २ २
	,	R	11.8 12.5 12.5 12.5 12.0 11.9 12.1 11.9
4	۲. ۲.	Diff.	0010 C
	Jh Jh	IPC Mill Diff.	5555 265 265 26 26 26 26 26 26 26 26 26 26 26 26 26
Ĺ	080	R	43.7 44.0 44.0 44.0
	Ч UN	No.	<b>420</b>
	Do 4 o	Made	11/28/60 12/ 1/60 12/2/60 12/1/60 12/1/60
		Finish	L83010 W.F. 11/28 183011 W.F. 12/ 183047 W.F. 12/ 183048 W.F. 12/ 183048 W.F. 12/ 12/ 183048 W.F. 12/1 Current Mill Average:
		No.	188010 188011 188047 189048 189048 Current

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

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

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(continued)
1960
31,
DECEMBER
THROUGH
COMPARISON OF INSTITUTE AND MILL DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (con
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COMPARISON

TABLE XXXVIII

MILL N -- 42-LB. LINERBOARD

Across		a 380 + 4					, .	∩ +	ر م	24				4 <u>7</u>	
Across		• •		<u>5</u>	0										
	2 2 1 2	a a			39	5		t 2 1	364	E12		2		386	1
f Tear leet		376 <sup>a</sup>	366	360	3678	8 7 8 7 8 7 8	101	399	BOAF	200	4 10 C	t N		372	
llmendorf Tear g./sheet	Diff.	ŧ	-27	ሳ የ	, i -		ł	-36	-27	55		-15	•	-33	
u LI	TIM	282	304	302	20X		002	322	800		207	296		102	2
	SIL	331 <sup>a</sup>	33,	353			225	3,58			້	3112		327.	Ĩ
ng th, age	Diff.	0		5		1	Ŧ	Ŷ	į	<b>?</b> '	7	ግ	•	ſ	1
Bursting Strength s.i.gag	IN TIM	108	108	601	ì	3	ŧ	ווו		51	3	212	}	נינ	1
	B	108	115	אנר			Ê	o C C			112	115	ì	511	Ì
	Diff.	4 9	40 °2	ç	1	2.0	r ç	ר ק	2	0	<b>2</b> 9	4	2	с с	<b>2</b>
Caliper, points	TLİM	13.1	12.9		29	0. 1	Ъ.5	, c , c		13.2	0°77	7 21		0	1.1
	IR	13.5	12.7		74.7	0. 1	5.CI	0 0 0		13 <b>.</b> 2	ຕ ຕ	C C L	2.04	, , ,	1.11
ght,	Diff.	9 0 -0				-1.1	-1.3		2	-1 <b>-</b> 2	0.1-	0		, ,	0°7-
sis Wei Th		6.01			1	42.6	42.5		4 <b>,</b> ,4	42.9	42.8	0 02	τ <u></u>	0	45°8
Ba	IPC	8 64			τ, α ( †	5.2	113.8		4 <b>,</b> α	ч Т	43.8	5	4.2.4		43 <b>.</b> 8
, A CM	No.	0	10	4	2	~	~	1	2	2	2	1	N		
	Made	טאן כיו רי		no/nz/11	11/26/60	11/27/60	09/86/11	22/22/14	12/ 5/60	09/11/21	09/21/21		12/15/60		rage:
	Finish	6 2	N	CT.MM	WFIS	WFIS	LIFTS		WFIS	WFIS	NFTS.		WFIS		Current Mill Average:
	File No.	0,000,0	200/01	0/.9/.9T	187903	187915		OTAJOT	187979	188269	183270	2 Janot	188277		Current

<sup>a</sup>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.

			Diff.				+ + + + + + + + + + + + + + + + + + +	+ + + +	ŢŢ	
			• <u>Across</u> hi 11				337 337 368 368 339 339	345 345	350	
			f Tear eet IPC				339 <sup>a</sup> 339 <sup>a</sup> 339 <sup>a</sup> 339 <sup>a</sup> 338 <sup>a</sup>	341 <sup>a</sup> 341 <sup>a</sup>	339	
(1			Elmendorf Tear, g./sheet <u>A</u> Diff. IPC					-22	-26	
ntinuec			E LIN				247 253 282 282 274 255	245 246	257	.;
960 (co			IPC				273 <sup>a</sup> 295 <sup>a</sup> 280 <sup>a</sup> 320 <sup>a</sup>	267 267	283	beyond the 3/8-inch limit. the individual reachings.
31, 19			ting ngth, <u>gage</u> Diff.				ያሪተያኒ	††	ş	3/8-inc
<b>CENBER</b>			ភ្លេស				212,21	211	113	d the 3 ndividu
end Houo		BOARD	Burst Stren IPC Mill	G		BOARD	1111111 11111111	116	115	beyon:
TITUTE AND MILL DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (continued)	MILL O 42-LB, LINERBOARD	Diff.	bmitte XL	XL	TINER	00000 01001	0.0 2.0	6,0-	for one or more specimens which tore ta are calculated from the totals of	
	ABLE XY	42-I.B.	Caliper, points Will D	No samples submitted	TABLE XL	42-I.B. IINERBOARD	2021 2021 2021	1.21 12.4	<b>12.</b> 4	ans white to
	Ęđ		IPC			ρ.	12.21 12.9 1.21 1.21 1.21 1.21	13.1	7.21	specime d from
י. אנרר נ		MEI	ght. Diff.			TIIN	40000 6 22000	1.1	6.0-	, more . culate
TTE AND			Basis Weight, 1b. C Will Diff				42.2 42.0 42.5 42.5 42.5	42.0	42.2	one cr are cal
UL II SNI			Basi IPC				6,0,0,0 6,0,0,0 1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1		1 1.64	igs for data
ON OF			lich. No							readir /erage"
COTFAILSON OF INS		Date Nade	Finish Made	10/24/60 10/28/60 11/2/60 11/7/60	12.51	: อร์ยน	<sup>a</sup> This average incluces the readings for one or more specimens which tore beyond the 3/8-inch lim Mote: All "current mill average" data are calculated from the totals of the individual readings			
		Finish						स्य स्य स्य स्य स्य स्य	H H	Current Mill Average:
		9 	·			187854 187855 187855 187855 187355	198275 193275 193275	Current	aThis av Mote: 2	

		Diff.	4 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +	01-
TABLE XLI MILL 2 42-L3. LINERBOARD		Cross Mill	408 389 389 389 389 389 408 389 389 389 389 389 408	101
		PC	420 <sup>a</sup> 412 <sup>a</sup> 421 <sup>a</sup> 421 <sup>a</sup> 391 <sup>a</sup> 420 <sup>a</sup> 420 <sup>a</sup> 420 <sup>a</sup>	<b>Ψ</b> Γ <b>μ</b>
		llmendorf T g./sheet Diff. I	*41*54**	-37
		In In International Internationa International International Internation	222 222 222 222 222 222 222 222 222 22	338
		IR	403 <sup>a</sup> 367 <sup>a</sup> 367 <sup>a</sup> 365 <sup>a</sup> 365 <sup>a</sup> 365 <sup>a</sup>	5 42.9 -0.6 12.1 11.7 -0.4 108 111 +3 375 for one or more specimens which tore beyond the 3/8-inch limit. ta are calculated from the totals of the individual readings.
		ting ngth, <u>gage</u> Diff.	ヸゟヸまѽヸ゚゚゚゚゚゚ゟ゚	5 42.9 -0.6 12.1 11.7 -0.4 108 111 +3 375 for one or more specimens which tore beyond the 3/8-inch limi ata are calculated from the totals of the individual readings
		Bursting Strength, <u>P.S.i. gage</u> C Mill Di	1100951124 110092124	LLL d the ndivić
	RBOARD			108 e beyon f the i
	B. LUNE	biff.	៰៰៰៰៰៰៰ ៰៲ <i>៴</i> ៹ <i>៷៰</i> ៷៰	-0,4 Lch tor
	42-L	Caliper, points Mill D	8.1.2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	L1.7 lens whi i the to
	C)	DGI	100108113 100108113	12.1 specim
	4	ght. Diff.	<u> </u>	-0.6 or morè alculat
		Basis Weight, 1b. 7 Mill Diff	\$\$\$\$\$\$\$\$\$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	42.9 r one -
		Bas IPC	55555555555555555555555555555555555555	•
		Nch. No.		readi
		Da te Made	11/18/60 11/22/60 11/25/60 12/ 2/60 12/10/60 12/11/60 12/11/60	t Mill Average: 43. average includes the readings All "current mill average" d
		Finish	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Current Mill Average: <sup>a</sup> This average include Note: All "current π
		File	197902 187928 187929 183031 183000 183042	Current aThis an Note:

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		3	\$ <del>2</del> 2 <del>2</del> <del>2</del>
		r, Across Mill	33 3352
		f Tean leet IPC	351 <sup>a</sup> 347 <sup>a</sup> 393 <sup>a</sup> 372
G		Elmendorf Tear, g./sheet A Diff. IPC	66644 <b>1</b>
נו הדנומב		E UI W	336 239
<b>31, 1960 (c</b> or		IPC	MILL T 42-LB. LINERBOARD WILL T 42-LB. LINERBOARD 0 43.1 -0.9 13.9 13.3 -0.5 111 113 +2 331 <sup>a</sup> 1 43.4 -0.7 13.8 13.3 -0.5 111 113 +2 331 <sup>a</sup> 0 42.8 -1.2 13.2 12.5 -0.6 115 118 +3 363 <sup>a</sup> 1 42.6 -1.1 13.5 12.9 -0.6 113 116 +3 344 1 43.0 -1.1 13.5 12.9 -0.6 113 116 +3 344 for one or more specimens which tore beyond the $3/8$ -inch limit. ta are calculated from the totals of the individual readings.
		B. Diff.	al rea
ਮਰਹਮਜ਼		stin angt Ll	113 113 116 116 116 116 116
CONPARISON OF INSTITUTE AND MILL DATADECEMBER 1 THROUGH DECEMBER 31, 1960 (continued) TABLE XLII	<b>IOARD</b>		SOARD LLL LLL LLL Deyond the in
	TABLE XLII 42-LB. LINERBOARD	Caliper, points C Mill Diff. samples submitted TABLE XLIII	42-LB. LINERBOARD 13.3 -0.5 111 13.3 -0.5 111 12.5 -0.6 115 12.5 -0.6 115 12.9 -0.6 113 12.9 -0.6 113 mens which tore beyo
	ABLE X 42-LB.	Caliper, <u>points</u> Will Diff mples submi	42-LB, 13.3 13.3 12.5 12.5 12.5 12.5 12.5 the to
	S	L IPC I	MILL T 42-LB. LINERBOARD 43.1 -0.9 13.9 13.3 -0.6 111 113 +2 321 <sup>a</sup> 43.4 -0.7 13.8 13.3 -0.5 111 113 +2 331 <sup>a</sup> 42.8 -1.2 13.2 12.5 -0.7 115 118 +3 363 <sup>a</sup> 43.0 -1.1 13.5 12.9 -0.6 113 116 +3 344 43.0 -1.1 13.5 12.9 -0.6 113 116 +3 344 are calculated from the totals of the individual readings
	TIW	ght. Diff.	MILL -0.9 ]] -0.7 ]] -1.2 ]] -1.1 ]] -1.1 ]] -1.1 ]] -1.1 ]] -1.1 ]] -1.1 ]] -1.1 ]] -1.1 ]]
		Basis Weight, 1b, 1b, C Mill Diff	43.1 43.1 42.8 42.8 42.8 42.8 42.8 42.8 42.8 42.8
		Basi IPC	
		Mch. No.	erage"
CONTRALIS		Late Made	187857 WFIS 11/13/60 1 44.0 187850 WFIS 11/16/60 1 44.0 187905 WFIS 11/26/60 1 44.0 187906 WFIS 11/27/60 1 44.0 187906 WFIS 11/28/50 1 44.0 Current Mill Average: 44.0 Current Mill Average: 44.0 Mote: All "current mill average" da
		Finish	WFIS 1 WFIS 1 WFIS 1 WFIS 1 WFIS 1 WFIS 1 MFIS 1 MF
		Rile No. I	187857 WFIS 11/1 187860 WFIS 11/2 187905 WFIS 11/2 187905 WFIS 11/2 187905 WFIS 11/2 187905 WFIS 11/2 arris average include Note: All "current m

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#### THE INSTITUTE OF PAPER CHEMISTRY

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Kee

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