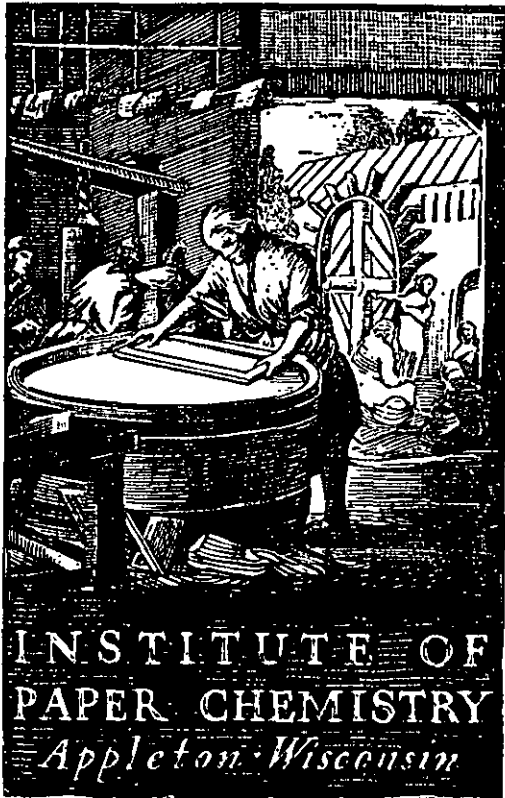


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CONTINUOUS BASELINE STUDY

Project 1108-13

Report 179

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

October 1, 1962

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

INTRODUCTION

As requested by the Technical Committee of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous baseline study on 42-lb. Fourdrinier kraft linerboard are now being prepared by The Institute of Paper Chemistry on a bimonthly basis instead of the previous monthly basis. This new system was initiated on August 1, 1961. This report is the seventh under the new system and presents results obtained during the months of August and September, 1962.

PRESENTATION AND DISCUSSION OF TEST RESULTS

Each sample lot received for evaluation during August and September was evaluated for basis weight, caliper, bursting strength, and Elmendorf tearing strength. The average strength results for each mill may be seen in Table I and are graphically presented in Fig. 1 to 5. In addition to a comparison of the current mill averages for the various tests, Table I also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F K I. indexes. For each test, the current mill average represents the average obtained on all sample lots evaluated during a given period, the current F K.I. average represents the average of the current mill averages, and the cumulative F.K.I. average represents the average of the current F.K.I. averages for the previous twelve months excluding the current period. The F.K.I. index expressed in per cent is the ratio of the current F.K.I. average to the cumulative F.K.I. average.

In Table II, a tabulation of the number of sample lots submitted by each mill during August and September is shown.

Supplementary to the basis weight data given in Table I, a tabulation is given in Table III of the amount by which the basis weight average for each mill varies from the 42-lb. specification set forth in Rule 41.

Shown below from Table I are the maximum and minimum current mill averages for each test and also the current and cumulative F K.I. averages

TABLE I
 SUMMARY OF COMPOSITE MILL AVERAGES--AUGUST AND SEPTEMBER, 1962

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	In Machine Cross Machine	Elmendorf Tear, g./sheet
A	41.8	12.6	97	316	367
B	No samples submitted.				
C	No samples submitted.				
D	43.1	11.7	107	355	396
E	42.2	13.3	107	263	315
F	42.7	12.3	107	301	352
G	43.2	12.9	110	318	389
H	42.2	12.4	107	324	369
I	42.4	13.3	108	313	375
J	42.5	12.9	116	327	357
K	43.3	12.2	104	371	404
L	42.7	11.8	108	281	336
M	43.7	12.7	103	374	418
N	43.3	12.7	106	325	385
O	No samples submitted.				
P	43.4	12.9	110	347	387
Q	43.3	11.9	113	316	343
S	42.2	12.0	107	317	340
T	43.7	13.5	106	319	361
U	43.4	12.8	113	321	361
V	42.7	13.4	111	290	354
Current FKI Average	42.9	12.6	108	321	367
Cumulative FKI Average	42.9	12.7	111	323	370
FKI Index, %	100.0	99.2	97.3	99.4	99.2

TABLE II

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL
DURING AUGUST AND SEPTEMBER, 1962

Mill Code	Number of Sample Lots
A	2
B	0
C	0
D	8
E	8
F	16
G	12
H	5
I	5
J	8
K	4
L	7
M	6
N	5
O	0
P	8
Q	8
S	4
T	11
U	8
V	<u>7</u>
Total	132

TABLE III
PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT
SPECIFICATION

Mill Code	
A	-0.5
B	--
C	--
D	+2.6
E	+0.5
F	+1.7
G	+2.9
H	+0.5
I	+1.0
J	+1.2
K	+3.1
L	+1.7
M	+4.0
N	+3.1
O	--
P	+3.5
Q	+3.1
R	+0.5
S	+4.0
T	+3.3
U	+1.7

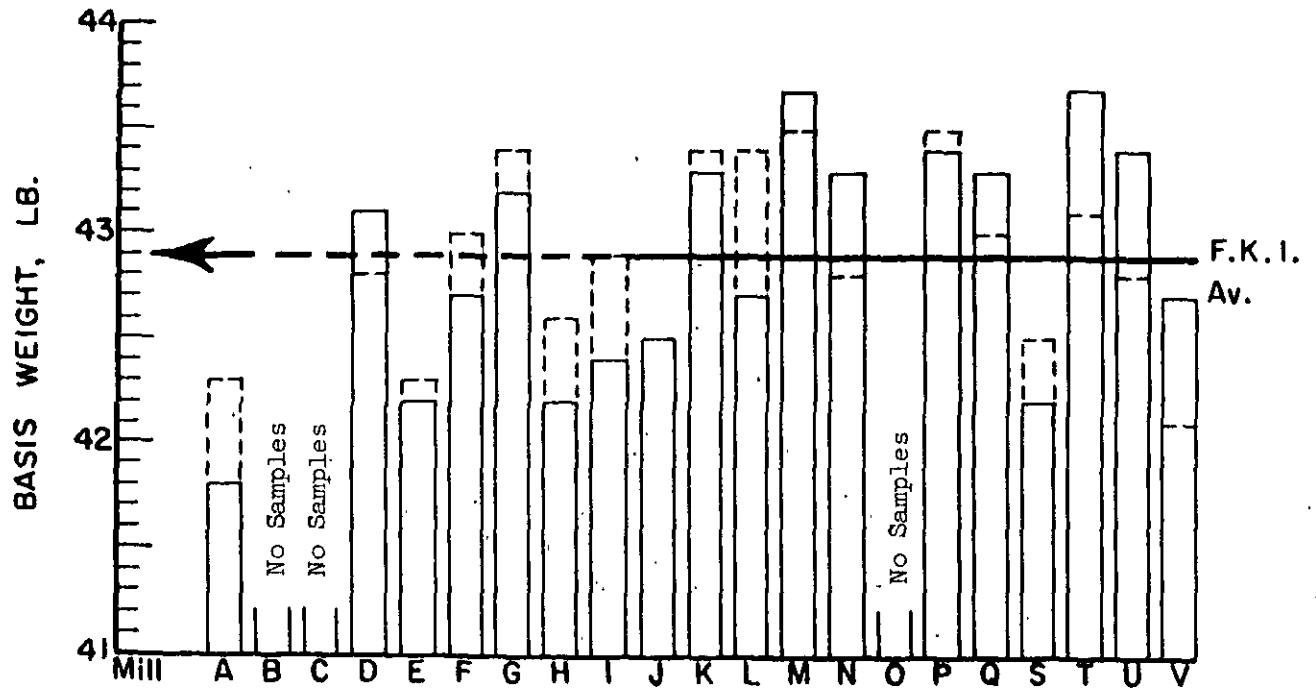


Figure 1. Comparison of Basis Weight Results

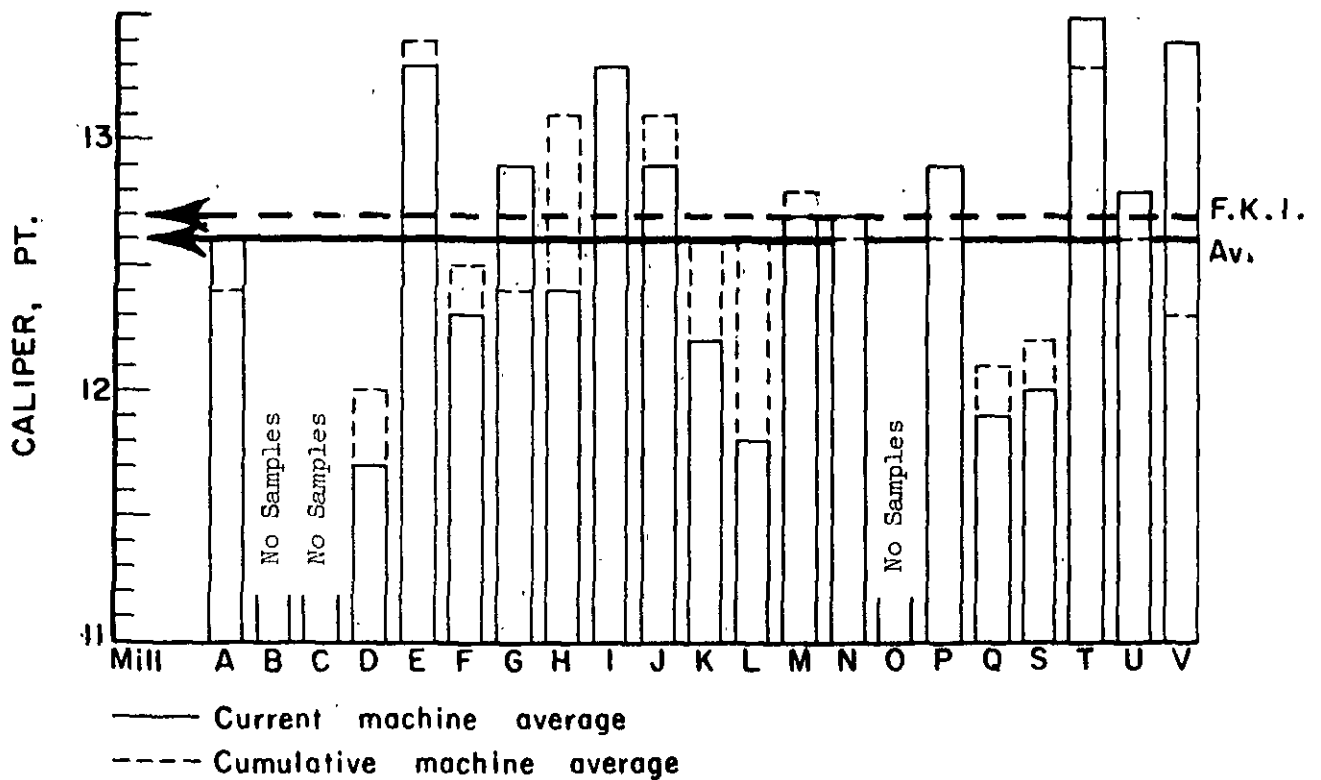


Figure 2. Comparison of Caliper Results

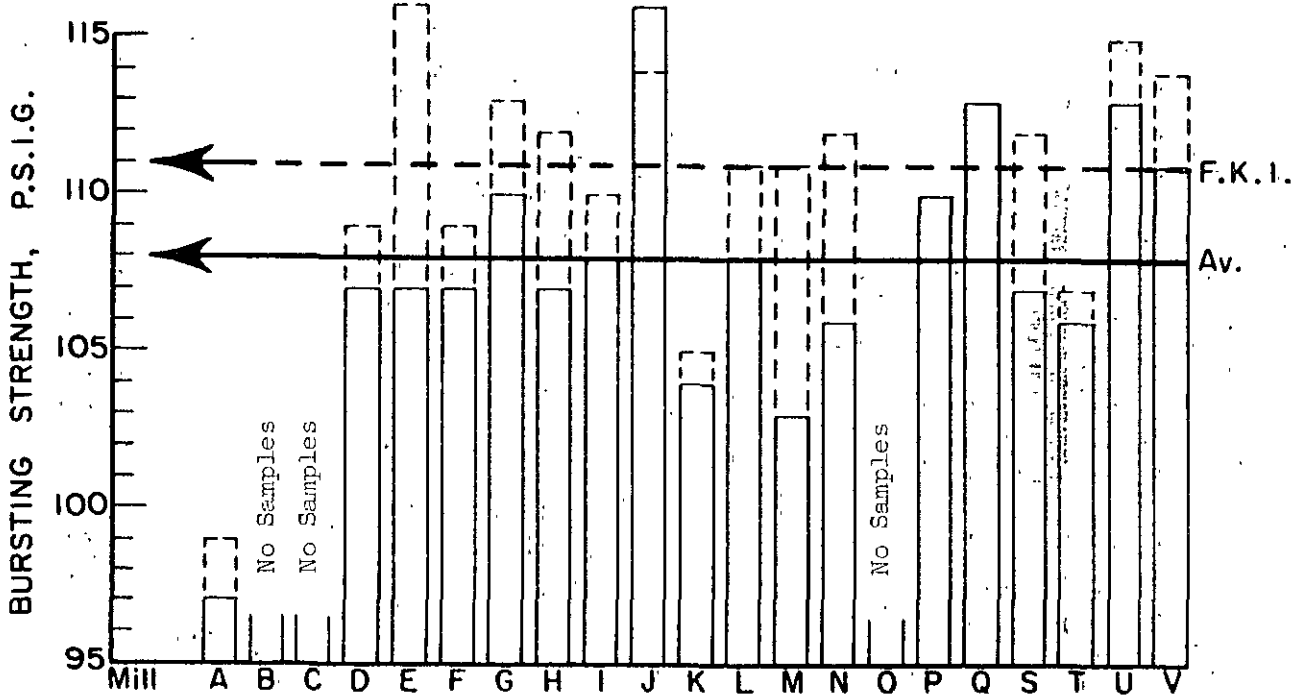


Figure 3. Comparison of Bursting Strength Results

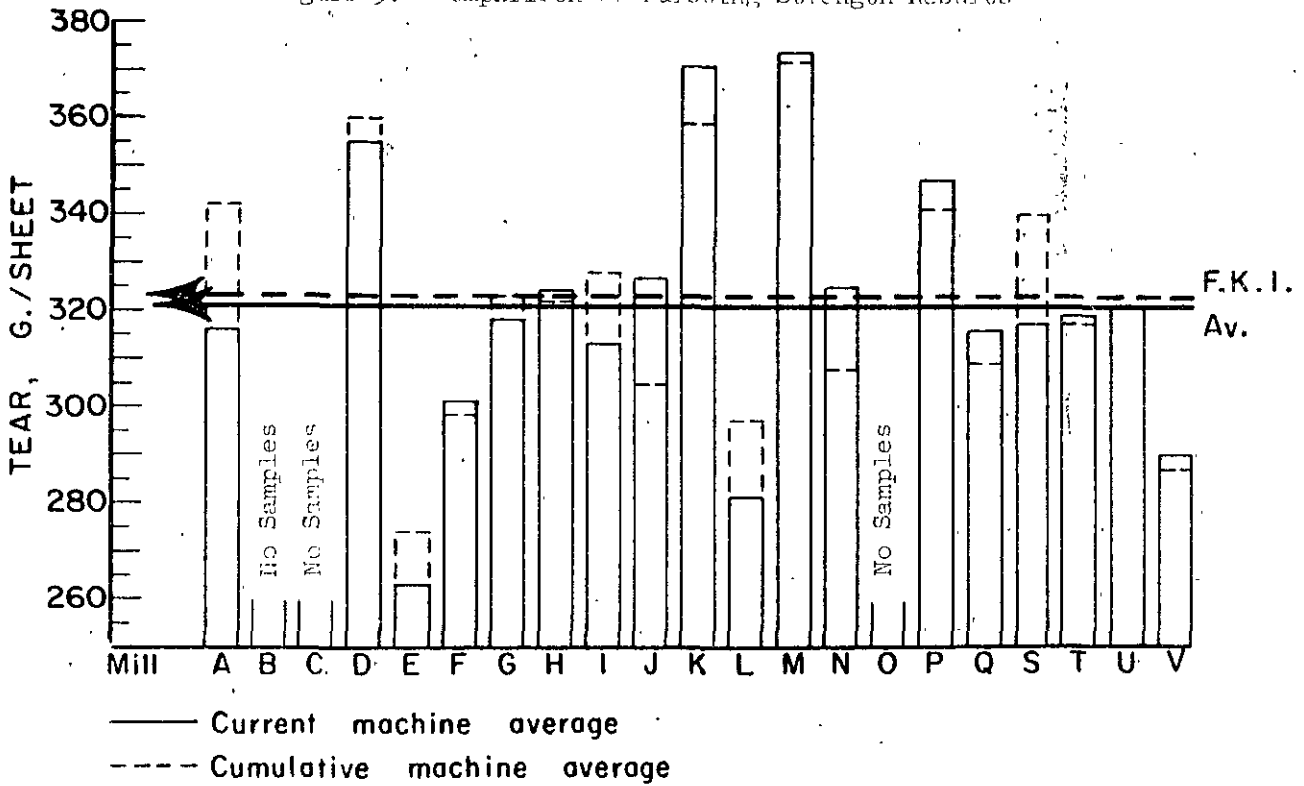


Figure 4. Comparison of Machine-Direction Tear Results

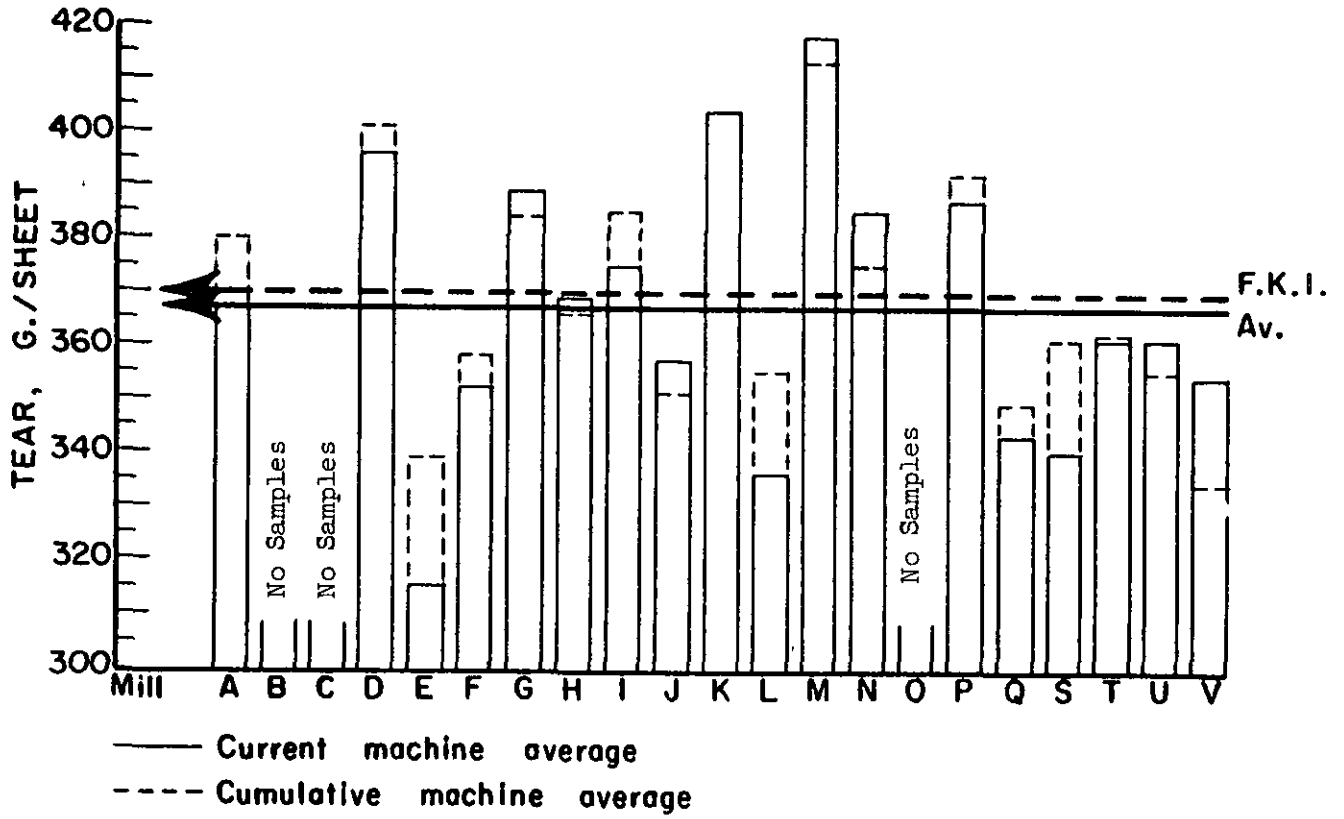


Figure 5. Comparison of Cross-Machine Direction Tear Results

Test	Current Mill Averages		F.K.I. Averages	
	Max.	Min.	Current	Cumulative
Basis weight, lb.	43.7	41.8	42.9	42.9
Caliper, points	13.5	11.7	12.6	12.7
Bursting strength, p.s.i. gage	116	97	108	111
Machine direction Elmendorf tear, g./sheet	374	263	321	323
Cross-machine direction Elmendorf tear, g./sheet	418	315	367	370

The test results obtained at the Institute and at the mill during August and September are given alphabetically in Tables IV to XXIV for each mill. Included in each of these tables are the maximum, minimum and average test data obtained at the Institute on each sample lot of linerboard. The data obtained at the Institute include also for each test the calculation of (1) a current mill average that represents the mean of the averages obtained on the individual sample lots of linerboard evaluated during the current period, (2) a cumulative mill average that represents the mean of the current mill averages for the previous twelve months excluding the current period, (3) a mill factor expressed in per cent that represents the ratio of the current mill average to the cumulative mill average, and (4) a mill index expressed in per cent that represents the ratio of the current mill average to the cumulative F.K.I. average. The term "mean" in the preceding discussion is synonymous with the simple arithmetic average. As mentioned above, the results presented in Tables IV to XXIV also include data obtained at the mills. The mill data include for each test (1) the average result obtained on each sample lot of linerboard and (2) a current mill average (calculated at the Institute) that represents the mean of the averages obtained on the individual sample lots of linerboard. In addition to the presentations of Institute and mill data described above, Tables

TABLE IV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL A
August and September, 1962

Date Made	Mch. No.	Finish	Basis Weight, lb./Mill			Caliper, Points/Mill			Bursting Strength, P.S.I./Sheet			Elmendorf Tear, g./sheet															
			Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.													
S-8-62	7	S.F.	42.4	40.0	41.2	41.2	0.0	12.9	11.9	12.4	11.8	-0.6	119	82	101	107	+6	352	272	303	317	+14	384	320	347 ^a	366	-19
8-23-62	7	S.F.	43.8	41.6	42.4	42.0	-0.4	13.2	12.2	12.8	12.3	-0.5	118	77	92	98	+6	384	264	329	344	+15	416	352	387 ^a	381	+6
Current Mill Average:			41.8	41.6	41.6	41.6	-0.2	12.6	12.0	12.6	12.0	-0.6	97	103	103	+6	316	331	331	331	+15	367	373	373	373	+6	
Cumulative Mill Average:			42.3					12.4					99					342					380				
Mill Factor, %			98.8					101.6					98.0					92.4					96.6				
Mill Index, %			97.4					99.2					87.4					97.8					99.2				

TABLE V
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL B
No samples submitted.

TABLE VI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C
No samples submitted.

^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.

TABLE VII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL D
August and September, 1962

Date Made	Finish No.	Veh.	Basis Weight, lb.			Caliper, Points			Bursting Strength, P.s.i. Range			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
			Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Diff.			
7-22-62	A.B.	-	41.6	42.2	43.5	41.0	-0.5	13.0	11.2	11.6	11.3	-0.5	125	88	107	107	0	408	352	373	367	-6	432	360	395 ^a	424	-29
7-25-62	A.B.	-	42.2	42.6	42.9	42.2	-0.3	12.1	11.0	11.4	11.0	-0.4	127	94	109	114	+5	352	272	326	319	-7	392	336	371 ^a	361	+10
7-31-62	A.B.	-	44.2	42.0	43.2	43.1	-0.1	12.6	10.1	11.7	11.2	-0.5	127	86	107	110	+3	416	304	347	353	+6	408	360	385 ^a	404	+15
8-15-62	A.B.	-	44.0	42.0	42.8	42.6	0.0	12.2	11.0	11.4	11.0	-0.4	124	92	108	107	-1	400	320	343	332	-11	448	336	389 ^a	396	+7
8-15-62	A.B.	-	44.0	42.5	43.6	43.0	-0.6	12.2	11.7	11.7	11.2	-0.5	127	94	105	106	+3	408	320	366 ^a	346	-20	448	368	407 ^a	386	-19
8-20-62	-	-	44.0	42.0	42.6	42.6	0.0	11.6	10.9	11.3	11.1	-0.2	129	80	108	107	-1	432	304	364 ^a	344	-20	448	376	422 ^a	405	-7
9-9-62	A.B.	-	44.0	42.0	42.9	42.9	0.0	12.0	11.0	11.6	11.4	-0.2	125	93	107	110	+3	366	296	333	321	-12	456	368	409 ^a	405	-4
9-15-62	A.B.	-	44.4	43.6	44.0	43.2	-0.6	12.6	11.6	12.2	11.7	-0.5	130	80	104	106	+4	464	320	387 ^a	356	-31	464	344	397 ^a	412	+15
Current Mill Average:			43.1	42.9	42.9	42.9	-0.2	11.7	11.2	11.2	11.2	-0.5	107	109	109	109	+2	355	342	360	342	-13	396	402	402	402	-6
Cumulative Mill Average:			42.8					12.0					109					360						401			
Mill Factor, %			100.7					97.5					98.2					98.6						98.6			
Mill Index, %			100.5					98.1					96.4					109.9						107.0			

^a This average includes the readings for one or more specimens which were beyond the 3/16-inch limit.

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

TABLE VIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL E
August and September, 1962

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, P.S.I., g/s			Elmendorf Tear, g./sheet																
		Institute Max. Min. Av.	Mill Av.	Diff.	Institute Max. Min. Av.	Mill Av.	Diff.	Institute Max. Min. Av.	Mill Av.	Diff.	Institute Max. Min. Av.	Mill Av.	Diff.														
7-17-62	----	42.6	41.8	42.0	42.2	+0.2	14.0	13.0	13.4	13.0	-0.4	126	89	107	115	+8	288	224	255	313	+56	368	288	323 ^a	385	+62	
7-25-62	----	43.2	42.0	42.2	42.2	0.0	13.1	12.4	12.9	12.3	-0.6	125	88	109	114	+5	352	240	271	318	+47	336	296	319 ^a	376	+57	
8-2-62	----	43.6	41.8	42.2	42.2	0.0	13.8	12.6	13.0	12.5	-0.5	131	88	107	115	+8	280	240	259	317	+58	328	280	309 ^a	354	+45	
8-6-62	----	43.2	41.4	42.0	42.2	+0.2	14.0	13.0	13.4	12.8	-0.6	121	86	102	107	+5	304	216	262 ^a	329	-67	352	280	324 ^a	358	+44	
8-13-62	----	42.2	41.8	42.0	42.2	+0.2	13.0	12.1	12.7	12.3	-0.4	126	84	109	115	+6	288	216	253 ^a	302	+45	352	280	307 ^a	343	+36	
8-21-62	----	43.4	41.2	42.2	42.3	+0.1	14.1	13.0	13.7	13.1	-0.6	119	83	105	114	+9	320	256	283 ^a	309	+26	352	304	320 ^a	357	+37	
8-30-62	----	43.4	42.0	42.4	42.9	+0.5	13.9	12.3	13.2	12.9	-0.3	134	90	110	119	+9	328	240	271	310	-39	344	288	315 ^a	391	+76	
9-6-62	----	43.4	41.8	42.3	42.5	+0.2	14.1	13.2	13.7	13.1	-0.6	130	88	107	116	+9	304	224	252	324	-72	368	288	316 ^a	352	+36	
Current Mill Average:				42.2	42.3	+0.1		13.3	12.8	13.3	-0.5		107	114	116	+7				263	315	+52			315	365	+50
Cumulative Mill Average:				42.3			13.4					116							274						339		
Mill Factor, f				99.8			99.3					92.2								96.0						92.9	
Mill Index, f				98.4			104.7					96.4								81.4						85.1	

^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.

TABLE X
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL G
August and September, 1962

Date Made	Mch. Finish No.	Basis Weight, lb.			Calliper, points			Bursting Strength, P.S.I. Range			Elmendorf Tear, g./sheet in Machine			Elmendorf Tear, g./sheet Cross Machine													
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Diff.							
6-29-62	2	43.8	42.0	42.5	43.4	+0.9	12.4	11.0	11.7	11.5	+0.1	121	76	108	110	+2	400	272	331 ^a	345	-14	408	344	369 ^a	405	+36	
6-1-62	2	43.6	42.0	42.7	43.2	+0.5	13.3	12.2	12.8	12.6	-0.2	132	89	113	113	0	360	248	321	335	+14	416	328	372 ^a	416	+44	
6-2-62	2	43.8	42.0	42.8	43.2	+0.4	13.5	12.0	12.8	12.8	0.0	137	95	109	112	+3	360	240	303 ^a	335	+32	448	368	403 ^a	407	+4	
6-6-62	2	44.8	42.6	43.9	43.5	-0.4	13.8	13.0	13.3	13.1	-0.2	126	87	110	109	-1	400	272	318 ^a	332	+34	512	360	412 ^a	408	-4	
6-8-62	2	44.6	42.2	43.5	43.7	+0.2	13.7	12.9	13.2	13.2	0.0	120	91	106	111	+5	360	288	317 ^a	311	-6	416	336	373 ^a	388	+15	
6-9-62	2	44.8	42.6	43.7	43.7	0.0	13.4	12.1	12.8	12.9	+0.1	134	96	110	111	+1	368	272	318 ^a	317	-1	432	368	397 ^a	396	-1	
6-14-62	2	44.4	42.0	43.5	44.0	+0.5	13.9	12.2	12.8	12.9	+0.1	130	95	111	110	-1	392	312	335 ^a	333	-2	400	344	378 ^a	394	+16	
6-17-62	2	44.4	43.0	43.9	43.4	-0.5	13.2	12.4	12.8	12.7	-0.1	131	96	112	111	-1	384	240	311	321	+10	528	352	416 ^a	409	-7	
6-19-62	2	44.2	43.6	43.9	43.7	-0.2	13.0	12.4	12.8	12.8	0.0	137	58	111	114	+3	368	272	308 ^a	328	+20	432	368	395 ^a	401	+6	
6-22-62	2	44.2	42.2	42.9	43.0	+0.1	13.9	13.1	13.5	13.2	-0.3	128	90	111	112	+1	416	256	333	320	-13	472	344	387 ^a	395	+8	
6-27-62	2	43.6	42.0	42.8	42.9	+0.1	13.9	12.9	13.4	13.2	-0.2	123	87	110	112	+2	360	272	311	326	+15	416	336	371 ^a	392	+21	
6-28-62	2	43.6	42.4	42.9	43.1	+0.2	14.0	12.7	13.4	13.2	-0.2	132	91	113	114	+1	336	288	309 ^a	341	+32	448	360	399 ^a	413	+34	
Current Mill Average:				43.2	43.4	+0.2		12.9	12.9	12.9	0.0		110	112	112	+2			318	329	+11		389	402	402	+13	
Cumulative Mill Average:				43.4			12.4						113					323				384					
Mill Factor, %				99.5			104.0						97.3														
Mill Index, %				100.7			101.6						99.1														

^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.

TABLE XI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL B
August and September, 1962

Date	Ycn. No.	Finlon No.	Basis Weight, lb.			Caliber, Points			Sursting Strength, P.s.i. @ 2%			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine										
			Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.								
5-21-62		WF15	42.8	42.7	-0.1	13.0	11.8	12.3	12.0	-0.3	121	61	105	108	+3	392	296	338a	364	+46	424	320	377a	419	+42
7-12-62		WF15	42.6	42.5	+0.2	12.6	11.5	12.1	12.3	+0.2	125	93	110	111	+1	352	256	310	338	+28	400	312	346a	378	+32
8-16-62		WF15	42.2	42.2	+0.6	14.0	12.5	13.0	13.0	0.0	131	81	106	113	+7	366	288	327a	352	+25	416	304	377a	407	+30
8-25-62		WF15	41.4	42.1	+0.7	13.1	11.5	12.3	12.0	-0.3	130	90	106	123	+17	368	280	325	352	+27	416	336	371a	406	+35
8-25-62		WF15	41.9	42.1	+0.2	12.6	11.3	12.0	11.9	-0.1	130	88	107	107	0	376	256	321	353	+32	448	320	377a	399	+22
Current Mill Average:			42.2	42.5	+0.3	12.4	12.2	12.2	12.2	-0.2	107	112	112	+5	324	356	332	356	+32	369	402	366	402	+33	
Cumulative Mill Average:			42.6			13.1					112														
Mill Factor, %			99.1			94.7					95.5														
Mill Index, %			96.4			97.6					96.4														

* This average includes the readings for one or more specimens which were beyond the 3/8-inch limit.
Note All "current mill average" data are calculated from the totals of the individual readings.

TABLE VII
SUMMARY OF TESTS AND MILL DATA FOR MILL I
August and September, 1962

Date	Time	Vol. %	Tensile Strength		Bursting Strength		Elongation		Slendroff Tear, g./sheet		Cross Machine								
			AV. ST. STRENGTH	ST. DIFF.	AV. STRENGTH	ST. DIFF.	AV. ELONG.	ST. DIFF.	AV. STRENGTH	ST. DIFF.	AV. STRENGTH	ST. DIFF.							
7-27-62	17:15	2	+2.5	-0.5	122	83	101	106	-5	592	272	315	352	-37	448	320	369 ^a	431	-62
7-28-62	17:15	2	+3.0	-0.5	122	85	105	106	-1	336	246	295 ^a	357	-90	+00	336	363 ^a	428	-65
7-29-62	17:15	2	+2.0	0.0	122	82	109	106	-2	344	272	309	352	-13	416	344	381 ^a	432	-51
7-30-62	17:15	2	+3.2	+0.2	129	86	109	115	+6	376	256	311	361	-50	424	344	379 ^a	446	+67
8-31-62	17:15	2	+2.4	-0.1	145	95	116	115	-2	376	268	335	355	-20	432	352	385 ^a	442	-57
Current Mill Average			+2.4	-0.1	133.9	101.0	110.0	110.0	-2	333	261	313	361	-45	375	305	365	436	-61
Summative Mill Average			+2.9		131.3	110.0	110.0	110.0		328									
Mill Factor, f			98.6		100.0	98.2				95.4									
Mill Index, f			98.6		104.7	97.3				96.9									

^aThis average includes the readings for one or more specimens which were beyond the 3/8-inch limit.
Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J
August and September, 1962

Date Make	Vch. No.	Finish	Basis Weight, lb.			Caliber, Points			Bursting Strength, P.S.I. Pcs			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
			Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Diff.						
7-26-62		WFLS	44.4	42.8	43.6	44.2	+0.6	12.9	12.0	12.3	12.3	0.0	139	110	122	126	+4	392	280	341	359	+18	384	296	353 ^a	413	+60
8-1-62		WFLS	42.6	42.0	42.3	43.3	+1.0	12.8	12.0	12.4	12.4	0.0	137	85	115	120	+5	400	256	325 ^a	332	+7	384	288	349 ^a	429	+80
8-7-62		WFLS	42.4	41.8	42.0	42.7	+0.7	13.8	12.8	13.1	12.8	-0.3	134	88	113	120	+7	344	256	299 ^a	327	+28	416	328	355 ^a	386	+31
8-11-62		WFLS	44.2	42.0	43.2	42.8	-0.4	13.2	12.8	13.0	12.7	-0.3	142	86	112	123	+11	368	272	327 ^a	347	+20	376	304	332 ^a	354	+22
9-1-62		WFLS	42.4	41.6	42.0	43.0	+1.0	13.9	12.5	13.2	13.0	-0.2	144	93	119	114	-5	384	272	321 ^a	331	+10	392	312	357 ^a	381	+24
9-8-62		WFLS	43.8	41.6	42.1	42.0	-0.1	14.1	12.9	13.5	13.0	-0.5	145	76	113	112	-1	384	304	344 ^a	311	-33	432	352	383 ^a	413	+30
9-15-62		WFLS	43.6	42.2	42.7	43.3	+0.6	12.9	12.0	12.4	12.4	0.0	140	88	119	128	+9	400	304	347 ^a	351	+4	400	352	367 ^a	413	+46
9-19-62		WFLS	42.2	41.5	42.0	43.0	+1.0	13.6	12.5	13.0	12.9	-0.1	144	77	113	124	+11	368	256	312 ^a	317	+5	416	304	358 ^a	378	+20
Current Mill Average:			42.5	43.0	42.5	43.0	+0.5	12.9	12.7	12.7	12.7	-0.2	116	121	121	+5	327	334	334	334	+7	357	396	396	413	+39	
Cumulative Mill Average:			42.5					13.1					114					305			351						
Mill Factor, %			100.0					98.5					101.8					107.2			101.7						
Mill Index, %			99.1					101.6					104.5					101.2			96.5						

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

TABLE XIV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL K
August and September, 1962

Date	Mch	Wch	Basis weight, lb			Caliper, Points			Bursting Strength, p.s.i.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet									
			Institute	Max	Min	Institute	Max	Min	Institute	Max	Min	Institute	Max	Min	Institute	Max	Min							
7-19-62	1	1	42.0	42.7	42.9	0.2	11.8	12.6	12.4	-0.2	116	78	98	103	+5	400	312	347 ^a	432	360	394 ^a	---	---	
7-23-62	---	2	42.0	44.2	44.5	+0.3	12.6	11.8	12.2	+0.1	139	88	108	114	+6	432	352	383	472	360	423 ^a	---	---	
7-24-62	---	2	42.0	43.2	43.2	0.0	12.2	11.7	12.0	0.0	126	96	110	113	+3	392	288	361	440	360	405 ^a	---	---	
7-24-62	---	2	41.2	43.0	42.7	-0.3	12.2	11.3	11.9	0.0	119	81	100	110	+10	432	336	398 ^a	456	352	393 ^a	---	---	
Current Mill	---	---	43.3	43.4	43.1	+0.1	12.2	12.1	12.1	-0.1	104	110	110	+6	---	---	---	---	---	---	---	---	---	---
Current Mill Average	---	---	43.4	---	---	---	12.6	---	---	---	105	---	---	---	---	---	---	---	---	---	---	---	---	---
Mill Factor, *	---	---	95.8	---	---	---	96.8	---	---	---	99.0	---	---	---	---	---	---	---	---	---	---	---	---	---
Mill Index †	---	---	-00.9	---	---	---	96.1	---	---	---	93.7	---	---	---	---	---	---	---	---	---	---	---	---	---

*This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit. This date appeared on the sample received by the Institute. The mill data sheet gives the date of manufacture as August 21, 1962

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

TABULE XV

RESULTS OF INSTITUTE AND MILL DATA FOR MILL 1

August and September, 1962

Date	Finish	Ch	Basis weight, lb			Caliber, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g/sheet in Machine			Elmendorf Tear, g/sheet Cross Machine												
			Institute	Mill	Diff	Max	Min	AV	Max	Min	AV	Max	Min	AV	Max	Min	AV	Max	Min	AV	Diff						
7-2-62	F		43.4	41.0	+2.2	42.5	-0.5	12.4	11.7	12.0	11.9	-0.1	14.1	98	113	113	0	336	248	290	301	+11	376	312	345 ^a	362	+17
7-13-62	F	1	43.6	42.0	+2.8	42.2	-0.6	12.9	11.7	12.0	11.9	-0.1	14.0	85	113	113	0	352	240	277	293	+16	368	320	333 ^a	348	+15
7-23-62	F	1	43.6	42.0	+2.6	42.5	-0.1	12.9	11.9	12.2	12.0	-0.2	12.5	88	108	107	-1	296	240	271	284	+13	384	320	341 ^a	364	+23
8-1-62	F		44.0	42.0	+2.9	43.0	-0.4	12.0	11.0	11.5	11.4	-0.1	12.4	90	107	108	+1	336	256	269 ^a	285	-4	368	304	335 ^a	368	+33
8-11-62	F	1	44.0	42.0	+2.6	42.6	0.0	12.0	11.1	11.6	11.4	-0.2	11.4	93	103	109	+6	360	240	289	275	-14	384	280	334 ^a	349	+15
8-27-62	F	1	43.8	42.0	+2.7	42.2	-0.5	12.7	11.6	12.1	12.0	-0.1	13.3	87	109	110	-1	344	240	279 ^a	269	-10	376	312	341 ^a	352	+11
8-21-62	F	1	44.0	42.2	+2.5	43.5	-0.6	12.0	11.0	11.5	11.4	-0.1	12.1	86	106	108	+2	352	240	272	291	+19	344	304	327 ^a	372	+45
Current Mill Average			42.7	42.6	-0.1			11.6	11.7	-0.1			108	110	110	+2	281	285	+4					336	359	+23	
Cumulative Mill Average			43.4					12.6					111					297						355			
Mill Factor			98.4					93.7					97.3					94.6						94.6			
Mill Index			99.5					92.9					97.3					87.0						90.8			

This average includes the readings for one or more specimens which tore beyond the 3/5-inch limit.

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

TABLE VII

RESULTS OF INVESTIGATION OF THE EFFECT OF VIBRATION ON THE STRENGTH OF PAPER
August and September, 1962

Date Vibe	Instr No	Bursting Strength, $\frac{lb}{sq\ in}$		Tearing, g/sheet		Tearing, g/sheet		Tearing, g/sheet																	
		Institute	Diff	Institute	Diff	Institute	Diff	Institute	Diff																
7-18-62	B	43 0	43 5	43 0	-0 5	13 0	12 2	12 7	12 3	-0 4	116	83	102	109	+7	448	312	380 ^a	445	-35	464	352	423 ^a	404	-19
7-18-62	B	45 6	44 3	45 6	-0 5	13 0	12 2	12 7	12 4	-0 3	129	88	100	106	+3	456	344	397 ^a	425	+18	496	400	443 ^a	416	-27
7-20-62	B	44 6	43 6	43 2	-0 6	13 3	12 4	13 0	12 9	-0 1	127	85	104	105	-1	448	220	363 ^a	430	+67	464	384	417 ^a	411	-6
8-2-62	B	44 4	43 9	43 2	-0 7	13 3	12 5	13 0	13 0	0 0	133	81	101	107	+6	448	320	365 ^a	401	-30	446	352	399 ^a	410	-20
8-9-62	B	44 2	43 6	43 4	-0 2	13 2	11 8	12 4	12 2	-0 2	127	84	103	108	-5	408	296	360 ^a	401	-41	456	352	405 ^a	413	-8
8-30-62	B	44 0	42 2	43 3	0 0	13 1	12 0	12 5	12 4	-0 1	120	89	104	106	-2	448	296	377 ^a	437	+60	480	366	421 ^a	457	-36
Current 11 average			43 7	43 3	-0 4	12 7	12 5	12 5	12 5	-0 2	103	107	107	107	-4	374	416	416	416	0	448	366	421 ^a	457	-36
Cumulative 11 average			43 5			12 5					111					372					443				
Vib Factor			100 5			98 2					92 2					100 5					100 2				
11. Index			101 9			100 0					92 8					115 8					113 0				

These averages include the readings for one or more specimens which are on the line of error with
vibe -- current 11. A separate calculation for the total of the 11 specimens is shown.

TABLE VIII

SUMMARY OF TESTS AT WILL D-1 FOR WILL N
MARCH AND SEPTEMBER 1962

Title Spec	28-day strength, lb		Caliber, counts		Bursting Strength		Clearance Tear, g./sheet		Elmerco Tear, g./sheet												
	Inst.	AV	In	AV	In	AV	In	Inst.	AV	Inst.	AV										
2-1-62	445	222	12.1	12.5	12.6	+0.1	125	90	111	108	-3	352	254	316 ^a	363	47	448	300	397 ^a	447	+50
2-9-62	512	256	11.5	12.0	12.8	+0.2	134	93	112	107	-5	384	288	341 ^a	351	-10	415	328	360 ^a	436	+67
2-11-62	445	222	11.9	12.7	12.9	+0.2	120	81	100	102	2	392	280	326	350	-24	446	352	381 ^a	445	+64
2-21-62	512	256	12.0	12.9	13.0	+0.1	124	86	106	112	+6	368	288	319	35	+16	440	344	395 ^a	415	+20
2-22-62	445	222	11.5	12.5	12.9	0.0	130	80	101	103	-2	348	272	325	344	+19	422	352	380 ^a	416	+36
Current 28-day average		233	12.2	12.8	12.8	+0.1		106	106	106	0		325	325	351	-26		365	365	432	+47
Cumulative 28-day average		426	12.0				112					306						375			
28-day Factor, %		101.2					94.6					105.5						102.7			
Will. Index %		100.9					95.5					100.0						104.1			

TABLE VIII

SUMMARY OF TESTS AT WILL D-1 FOR WILL O

10 samples submitted

^aThis average includes the readings for one or more specimens which were beyond the 5/8-inch limit.
Note - All "Current 28-day average" data are calculated from the tabular 28-day individual readings.

TABLE XIX
SUMMARY OF INSTITUTE AND MILL DATA FOR WLL P
August and September, 1962

Date Yrce	Finish	Vch	Basis weight, lb		Wt. Diff	Caliber, Points		Av. Diff	Bursting Strength, p.s.i. 1/2" dia			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
			Institute Max Min	Av		Institute Max Min	Av		Max	Min	Av	Max	Min	Av	Max	Min	Av	Max	Min	Av	Diff.						
7-1-62	F	3	44.2	42.2	43.3	43.4	+0.1	14.0	12.8	13.1	12.6	-0.3	124	92	108	108	0	384	304	342	372	-30	472	336	381 ^a	425	-44
7-2-62	F	3	43.8	42.2	42.7	43.3	-0.6	13.8	12.7	13.1	12.8	-0.3	123	88	109	108	-1	384	240	337	383	-46	400	360	377 ^a	423	-46
7-22-62	F	3	44.0	43.0	43.7	44.1	+0.4	12.8	11.3	12.2	12.1	-0.1	122	83	108	111	+3	384	280	332	353	+21	424	312	372 ^a	425	+53
7-23-62	F	3	44.4	43.4	43.9	44.1	+0.2	12.9	11.6	12.2	12.1	-0.1	119	80	106	106	-2	392	304	330	347	-17	416	336	371 ^a	394	+23
8-10-62	F	3	44.0	42.0	43.0	43.7	+0.7	13.7	12.4	13.0	12.5	-0.5	125	92	108	111	+3	364	296	348	331	-17	472	352	390 ^a	391	+1
8-11-62	F	3	44.2	43.0	43.7	44.2	+0.5	13.6	12.8	13.2	12.5	-0.7	135	89	112	112	0	448	288	351	343	-8	480	344	395 ^a	384	-11
8-24-62	F	3	44.2	42.2	43.4	44.2	+0.8	13.8	12.3	13.1	12.4	-0.7	130	96	116	113	-3	432	336	369	370	+1	464	352	405 ^a	416	+11
8-25-62	F	3	43.8	42.4	43.4	43.5	+0.1	13.6	12.3	13.2	12.4	-0.8	124	86	109	112	+3	416	328	364 ^a	359	-5	448	384	409 ^a	422	-13
Current Mill Average			43.4	43.5	43.4	43.5	-0.4	12.9	12.4	12.4	12.4	-0.5	110	110	110	110	0	347	347	347	357	+10	387	387	387	410	+23
Current Mill Average			43.5	43.5	43.5	43.5	0	12.6	12.6	12.6	12.6	0	110	110	110	110	0	341	341	341	341	0	392	392	392	392	0
W.L. Factor, %			99.8	102.4	102.4	102.4	0	102.4	102.4	102.4	102.4	0	100.0	100.0	100.0	100.0	0	101.8	101.8	101.8	101.8	0	98.7	98.7	98.7	98.7	0
W.L. Index, %			101.2	101.2	101.2	101.2	0	101.6	101.6	101.6	101.6	0	99.1	99.1	99.1	99.1	0	107.4	107.4	107.4	107.4	0	104.6	104.6	104.6	104.6	0

^aThis average includes the readings for one or two specklers which were beyond the 3/8-inch limit
etc. All current mill average data are calculated from the totals of the individual readings

TABLE IX
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C
August and September, 1962

Date Yr	Vch. No.	Finish	Basis Weight, lb.			Caliper, points			Bursting Strength, P.S.I. Edge			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Gross Machine							
			Max.	Min.	Av.	Diff.	Institute	Mill	Max.	Min.	Av.	Diff.	Institute	Mill	Max.	Min.	Av.	Diff.				
7-21-62	W.F.	1	43.6	42.2	42.7	43.2	+0.5	12.5	11.5	11.9	11.6	-0.3	134	85	115	116	+1	344	304	325 ^a	345	+20
7-22-62	W.F.	2	44.2	42.6	43.8	43.6	0.0	12.4	11.4	12.0	11.7	-0.3	128	99	115	119	+4	368	320	339 ^a	354	+15
8-9-62	W.F.	2	42.4	42.0	42.1	41.9	-0.2	12.6	11.9	12.1	11.7	-0.4	138	91	109	110	-1	336	280	305	311	-6
8-11-62	W.F.	1	44.0	42.4	43.5	43.1	-0.4	12.1	11.5	11.9	11.5	-0.4	134	95	111	110	-1	424	288	343 ^a	319	-24
8-15-62	W.F.	1	43.8	42.2	43.0	42.9	-0.4	11.8	11.1	11.4	11.5	+0.1	135	102	116	113	-5	332	272	317 ^a	317	0
9-16-62	W.F.	1	44.2	43.8	44.0	43.6	-0.4	12.2	11.2	11.7	11.4	-0.3	137	95	117	116	-1	368	280	314	315	+1
9-16-62	W.F.	1	44.0	42.8	43.7	43.5	-0.2	12.8	12.0	12.5	12.0	-0.5	133	102	114	110	-4	352	264	320 ^a	320	0
9-16-62	W.F.	1	44.0	42.8	43.7	43.5	-0.2	12.8	12.0	12.5	12.0	-0.5	129	92	110	112	+2	416	288	324 ^a	328	+4
Current Mill Average:			43.3	43.1	43.1	43.1	-0.2	11.9	11.7	11.7	11.7	0	113	113	113	113	0	316	323	323	323	7
Current Mill Average:			43.0					12.1					113					309				
Mill Factor, %			100.7					98.3					100.0					102.3				
Mill Index, %			100.9					93.7					101.8					97.6				

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

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

TABLE XXI

SUMMARY OF FINITURE AND MILL DATA FOR MILL S

August and September, 1962

Date Made	Veh. Finish	Basis Weight, lb.		Caliper, points		Bursting Strength, p.s.i. Page		Elmendorf Tear, g./sheet In Machine		Elmendorf Tear, g./sheet Cross Machine																		
		Institute	Mill	Institute	Mill	Institute	Mill	Institute	Mill	Institute	Mill																	
		Max. Min.	AV.	Max. Min.	AV.	Max. Min.	AV.	Max. Min.	AV.	Max. Min.	AV.																	
7-25-62	K.F.	42.4	41.6	42.0	42.1	0.1	12.5	11.2	11.9	11.6	-0.3	130	93	109	102	-1	376	304	329 ^a	311	-18	400	328	348 ^a	375	-27		
7-25-62	K.F.	42.6	40.6	41.7	41.7	0.0	12.7	11.1	11.9	11.4	-0.5	130	89	109	106	-3	368	280	314	315	+1	368	320	345 ^a	355	+10		
8-26-62	K.F.	43.8	42.0	42.7	43.3	+0.6	12.9	11.8	12.3	12.3	0.0	114	84	104	103	-1	368	272	321 ^a	293	-28	368	304	327 ^a	346	+19		
8-26-62	K.F.	43.0	41.6	42.2	42.5	+0.3	12.7	11.3	12.1	12.0	-0.1	130	86	104	98	-6	352	272	305 ^a	280	-25	376	296	341 ^a	311	-30		
Current Mill Average:		42.2		42.4	-0.2	12.0	11.6	-0.2	107	104	-3	317	300	-17	340	361												
Cumulative Mill Average:		42.5					12.2		112																			
Mill Factor, %		99.3					93.4		95.5																			
Mill Index, %		98.4					94.5		96.4																			

This average includes the readings for one or more specimens which tore beyond the 3/16-inch limit.
Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL T
August and September, 1962

Date Made	Men.	Finish No.	Basic Weight, lb.			Caliper, mils			Bursting Strength, p.s.i., edge			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
			Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.										
7-10-62	1		45.6	44.2	44.6	44.4	-0.2	15.0	13.2	13.9	13.5	-0.4	125	76	104	109	-5	432	288	366A	338	-26	368	304	343A	369	+26
7-10-62	1		44.2	43.2	43.9	43.8	-0.1	14.7	13.0	13.7	13.4	-0.3	126	85	108	109	+1	384	264	327A	324	-3	392	336	363A	380	+17
7-29-62	1		44.2	42.2	43.4	43.3	-0.1	14.8	13.0	13.5	12.6	-0.9	120	82	106	109	+3	352	256	296	288	+2	384	328	358A	375	-17
8-2-62	1		44.0	42.2	43.0	42.8	-0.2	14.0	12.5	13.3	12.6	-0.7	126	80	110	108	-2	336	264	297A	275	-22	368	328	347A	359	-12
8-5-62	1		44.2	42.8	43.9	43.8	-0.1	14.7	13.0	13.7	13.0	-0.7	132	84	103	105	-2	368	280	316A	304	-12	424	328	360A	385	+5
8-12-62	1		44.2	42.0	43.2	43.1	-0.1	14.1	13.1	13.7	13.1	-0.6	126	79	103	106	+3	384	248	325	293	-32	412	352	377A	390	+13
8-13-62	1		45.8	43.8	44.5	44.4	-0.1	14.4	13.0	13.8	13.3	-0.5	128	82	107	107	0	368	260	312	322	-10	405	320	354A	407	+53
8-2-62	1		44.2	42.2	43.0	43.0	0.0	14.3	13.0	13.5	13.2	-0.3	133	84	105	106	-1	400	256	325	315	-9	412	358	389A	408	+39
8-4-62	1		44.2	42.2	43.4	43.2	-0.2	14.6	13.4	14.1	13.1	-0.1	135	84	109	112	+3	352	264	326	274	-35	384	320	357A	385	+2
8-2-62	1		44.2	42.2	43.6	43.2	-0.4	13.9	12.8	13.2	12.3	-0.9	129	85	105	107	-2	352	256	291	283	-1	368	320	341A	348	-7
8-2-62	1		44.2	42.2	43.6	43.2	-0.4	14.5	13.0	13.9	13.3	-0.2	125	87	104	103	-1	400	248	341	326	-35	412	358	389A	384	-1
Current Mill Program			45.7	43.7	44.7	44.7	0.0	14.2	13.1	13.7	13.1	-0.4	106	107	107	-1	318	305	305	305	-16				361	392	-17
Subsistive Mill Weight			43.1					13.5					107					317							362		
Mill Factor, S			101.4					101.6					99.1					100.6							99.7		
Mill Index, S			101.9					101.3					99.5					98.6							97.6		

This inventory includes the results for one or more specimens which were below the 5/16-inch limit.
Note: All "current mill average" test are calculated from the totals of the individual readings.

TABLE XVIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL U
August and September, 1962

Date Made	Finish	No.	Basis Weight, lb.			Caliber, points			Bursting Strength, p.s.i. per sq. in.			Elmendorf Tear, g./sheet in Machine			Elmendorf Tear, g./sheet Cross Machine												
			Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.										
8-2-62	N.F.	-	44.2	43.0	43.6	43.5	-0.3	13.1	12.7	13.0	12.8	-0.2	150	97	114	116	+2	376	250	309	292	+17	400	312	364 ^a	339	-25
8-3-62	N.F.	-	44.0	42.2	43.6	43.3	-0.3	12.5	11.9	12.1	12.2	+0.1	138	105	120	125	+5	336	288	310	303	-7	400	320	368 ^a	351	-17
8-13-62	N.F.	7	44.4	44.0	44.2	43.9	-0.3	12.6	12.0	12.2	11.9	-0.3	148	100	115	113	-2	344	272	302	301	-1	384	328	355 ^a	365	+10
8-17-62	N.F.	-	43.6	42.2	42.8	42.6	-0.2	13.2	12.2	12.6	12.1	-0.7	129	92	107	110	+3	360	264	315 ^a	323	+8	432	320	359 ^a	347	-12
8-30-62	N.F.	-	43.8	42.2	42.9	42.8	-0.1	13.6	13.1	13.5	12.9	-0.6	127	86	105	104	-1	352	288	315	295	-20	384	352	361 ^a	359	-2
8-31-62	N.F.	-	43.8	42.2	43.3	43.0	-0.3	13.3	12.5	13.0	12.4	-0.6	127	99	112	115	+3	400	280	337	312	-25	472	344	375 ^a	348	-27
9-7-62	N.F.	-	42.8	42.2	42.5	42.4	0.0	13.2	12.5	13.0	12.3	-0.7	135	101	115	116	+1	366	288	316	303	-13	366	320	345 ^a	341	-4
9-14-62	N.F.	-	44.4	43.4	43.8	44.2	+0.4	13.3	12.7	12.9	12.3	-0.6	128	95	113	111	-2	464	288	366	337	-29	400	336	365 ^a	348	-17
Current Mill Average:			43.4	43.2	43.2	43.2	-0.2	12.8	12.4	12.4	12.4	-0.4	113	114	114	-1	321	281	321	306	-13	361	312	350	350	-11	
Cumulative Mill Average:			42.8	42.8	42.8	42.8	0.0	12.6	12.6	12.6	12.6	0.0	115	115	115	0.0	100.0	100.0	100.0	100.0	0.0	355	355	355	355	0.0	
Mill Factor, %			101.4	101.4	101.4	101.4	0.0	101.6	101.6	101.6	101.6	0.0	98.2	98.2	98.2	0.0	99.4	99.4	99.4	99.4	0.0	101.7	101.7	101.7	101.7	0.0	
Mill Index, %			101.2	101.2	101.2	101.2	0.0	100.8	100.8	100.8	100.8	0.0	101.8	101.8	101.8	0.0	97.6	97.6	97.6	97.6	0.0	97.6	97.6	97.6	97.6	0.0	

^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.

TABLE XXIV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL V

August and September, 1962

Date Make	Veh. Finish No.	Basis weight, lb.			Caliper, points			Bursting Strength, p.s.i. gauge			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
		Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.	Institute Max. Min. Av.										
7-21-62	----	42.4	41.5	42.1	42.1	0.0	13.9	13.2	13.5	13.2	-0.4	130	68	102	107	-1	320	256	286 ^a	273	-13	352	304	329 ^a	344	-15
7-27-62	----	42.4	42.0	42.2	41.6	-0.4	14.0	13.1	13.5	13.6	0.0	132	60	102	110	-8	336	264	289	237	-52	368	304	346 ^a	334	-12
8-2-62	V.F.	44.0	43.0	43.6	43.0	-0.8	14.0	13.2	13.7	13.4	-0.3	127	83	116	118	+2	328	272	290 ^a	267	-23	416	344	374 ^a	369	-5
8-10-62	V.F.	43.2	42.0	42.4	42.6	-0.2	13.8	13.0	13.3	13.2	-0.1	136	90	116	118	-2	344	256	296	278	-18	400	336	372 ^a	356	-16
8-15-62	V.F.	43.6	42.0	42.3	42.2	-0.1	13.3	12.7	13.0	13.2	-0.2	138	86	116	113	-3	336	240	292 ^a	266	-24	400	288	353 ^a	355	+2
8-26-62	V.F.	44.0	43.2	43.6	43.9	-0.3	13.3	12.9	13.1	13.1	0.0	130	87	112	115	+3	336	256	293	271	-22	368	320	347 ^a	352	+5
9-13-62	V.F.	42.4	42.0	42.1	42.0	-0.1	14.0	13.0	13.6	13.2	-0.4	130	82	109	106	-1	304	272	285 ^a	271	-14	400	304	357 ^a	341	-16
Current Mill Average:		42.7	42.5	42.2	42.1	-0.2	13.4	13.3	13.3	13.3	-0.1	111	113	113	+2	290	266	287	266	-24	354	354	350	350	-4	
Cumulative Mill Average:		42.1					13.4					114					287					334				
Mill Factor, %		101.4					102.9					97.4					101.0					106.0				
Mill Index, %		99.5					105.5					100.0					95.8					95.7				

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

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

IV through XXIV also include under each test heading a column labeled "Diff." This column shows the differences between averages obtained at the Institute and those obtained at the mills. The data obtained at the Institute are used as the reference in calculating these differences.

The average test results obtained at the Institute and at the mills are summarized in Table XXV for the current period. Shown in this table for each mill is the difference for each test between the current mill average based on Institute data and the current mill average based on mill data. In addition, for each test the maximum difference encountered in comparing Institute and mill averages for individual sample lots is shown. In Table XXVI, the differences for each test between the current mill averages based on Institute data and those based on mill data shown in Table XXV have been converted to per cent (based on Institute data as a reference). In addition, for purposes of comparison, the percentage differences from the previous bimonthly report are shown.

A summary of the agreement obtained in the comparisons of Institute and mill test data for the current period is shown in Table XXVII. This summary is based on the results given in Table XXVI. The tabulated data show the number of mills, and the percentage of all mills which this number represents, whose average test results for the current period fall within designated percentages from the average test results obtained at the Institute. It may be noted from this summary that agreement between the results obtained at the Institute and those obtained at the mills was generally very good.

Preconditioning and conditioning data pertinent to the test results obtained at the mills during the current period are given in Table XXVIII.

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

Mill Compared	Basis Weight																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Institute	43.1	42.5	42.1	41.7	41.3	40.9	40.5	40.1	39.7	39.3	38.9	38.5	38.1	37.7	37.3	36.9	36.5	36.1	35.7	35.3	34.9	34.5	34.1	33.7	33.3	32.9
Mill	42.5	42.0	41.5	41.0	40.5	40.0	39.5	39.0	38.5	38.0	37.5	37.0	36.5	36.0	35.5	35.0	34.5	34.0	33.5	33.0	32.5	32.0	31.5	31.0	30.5	30.0
% Difference	+0.6	+0.5	+0.6	+0.5	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4	+0.4
Institute	11.7	11.5	11.3	11.1	10.9	10.7	10.5	10.3	10.1	9.9	9.7	9.5	9.3	9.1	8.9	8.7	8.5	8.3	8.1	7.9	7.7	7.5	7.3	7.1	6.9	6.7
Mill	11.4	11.2	11.0	10.8	10.6	10.4	10.2	10.0	9.8	9.6	9.4	9.2	9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.4	7.2	7.0	6.8	6.6	6.4
% Difference	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3
Institute	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107
Mill	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107
% Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institute	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325
Mill	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325
% Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institute	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396
Mill	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396	396
% Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Based on averages included only those samples on which mill test data were submitted. Average difference is the difference between the Institute mill average and the mill average based on mill test data. Percent difference accompanied in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XXVI
COMPARISON OF INSTITUTE-MILL DIFFERENCES FOR AUGUST AND SEPTEMBER, 1962
(Average Difference, per cent)

Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, cross	Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, cross
A	Apr.-May	--	--	--	--	--	K	Apr.-May	-0.7	0	+6	--	--
	June-July	+0.2	-2	+10	-0.3	+1		June-July	-0.7	0	+5	--	--
	Current	-0.5	-5	+6	+5	+2		Current	+0.2	-0.8	+6	--	--
B	Apr.-May	0	-2	+8	-12	-8	L	Apr.-May	-0.7	-2	+2	-3	+2
	June-July	-0.5	-2	+9	-13	-14		June-July	0	-2	+2	0	+1
	Current	--	--	--	--	--		Current	-0.2	-0.8	+2	+1	+7
C	Apr.-May	--	--	--	--	--	M	Apr.-May	-0.7	-0.8	+0.9	+7	+5
	June-July	--	--	--	--	--		June-July	-1	-2	+2	+11	+2
	Current	--	--	--	--	--		Current	+0.9	-2	+4	+11	+0.5
D	Apr.-May	-0.7	-3	+5	-8	-3	N	Apr.-May	+0.5	-0.8	-0.9	+5	+5
	June-July	+0.5	-3	+4	+2	+1		June-July	-0.2	-2	-0.9	+13	+12
	Current	-0.5	-4	+2	-4	+2		Current	-0.5	+0.8	0	+8	+12
E	Apr.-May	0	-4	+9	+7	-2	O	Apr.-May	--	--	--	--	--
	June-July	+1	-4	+7	+11	+10		June-July	--	--	--	--	--
	Current	+0.2	-4	+7	+20	+16		Current	--	--	--	--	--
F	Apr.-May	+0.7	-0.8	-5	+9	+11	P	Apr.-May	+1	-4	+5	+3	+2
	June-July	+0.5	-2	+3	+7	+8		June-July	+1	-2	+3	+0.6	+2
	Current	+0.7	-0.8	+2	-2	+5		Current	+0.9	-4	0	+3	+6
G	Apr.-May	+0.5	0	+2	-5	0	Q	Apr.-May	+0.7	-2	+4	+7	+1
	June-July	+0.7	-0.8	0	+1	+5		June-July	-0.9	-2	0	+6	+4
	Current	-0.5	0	+2	+3	+3		Current	-0.5	-2	0	+2	+2
H	Apr.-May	+0.5	-2	+2	+0.9	+2	S	Apr.-May	+0.7	0	+0.9	-6	-2
	June-July	+0.9	-2	+7	+9	+8		June-July	+0.9	0	-3	-4	+4
	Current	+0.7	-2	+5	-10	+9		Current	+0.5	-2	-3	-5	+2
I	Apr.-May	0	-3	+3	+5	+2	T	Apr.-May	-0.9	-4	+1	-10	0
	June-July	-1	-2	-5	+12	-13		June-July	-0.7	-4	+4	-11	-2
	Current	-0.9	-2	+2	+15	+16		Current	0	-3	+0.9	-5	+5
J	Apr.-May	+1	-0.7	+4	+8	+17	U	Apr.-May	+0.5	-3	+4	-0.6	+0.8
	June-July	+0.9	-2	+5	+5	+15		June-July	-0.5	-4	+3	-0.3	0
	Current	+1	-2	+4	-2	+11		Current	-0.5	-3	+0.9	-4	-3
V	Apr.-May	-0.2	0	+2	-14	+0.6	V	Apr.-May	-0.2	0	+2	-14	+0.6
	June-July	-0.9	-0.8	+3	-11	-0.9		June-July	-0.9	-0.8	+3	-11	-0.9
	Current	-0.5	-0.7	+2	-8	-1		Current	-0.5	-0.7	+2	-8	-1

TABLE XXVII
 SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL RESULTS
 (August and September, 1962)

	Average Percentage Difference Between Institute and Mill Test Results									
	+0.5	+1	+2	+3	+4	+5	+7.5	+10	+20	
Basis weight										
Number of mills	12	18								
Percentage of all mills	66.7	100.0								
Caliper										
Number of mills	1	6	12	14	17	18				
Percentage of all mills	5.6	33.3	66.7	77.8	94.4	100.0				
Bursting strength										
Number of mills	3	5	11	12	14	15	18			
Percentage of all mills	16.7	27.8	61.1	66.7	77.8	83.3	100.0			
Tearing strength, in										
Number of mills	0	1	4	6	8	11	11	14	17	
Percentage of all mills	0.0	5.9	23.5	35.3	47.1	64.7	64.7	82.4	100.0	
Tearing strength, cross										
Number of mills	1	2	6	8	8	10	12	13	17	
Percentage of all mills	5.9	11.8	35.3	47.1	47.1	58.8	70.6	76.5	100.0	

TABLE XXVIII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS
(August and September, 1962)

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temp., °F.	Time, hr.	R.H., %	Temp., °F.	Time, hr.
A	50	73	24		None	
B			No samples submitted			
C			No samples submitted			
D		None		48-60	70-76	48
E	50-55	73	48-120	50-55	73	48-120
F	35	73	24	50	73	48
G	50	73	24	50	73	24
H	50	70	24	50	70	24
I	50-53	72-73	120	50-53	72-73	120
J	50	72	24		None	
K		None		50	73	24-72
L	36-46	86-93	0.5	50	72-73	24-48
M	50-52	70-73	48	50	73	48
N		None		55-58	70-72	--
O			No samples submitted			
P		None		50	73	24
Q		None		50	73	24
S		None		50	73	24
T	48-49	76-79	48	48-49	76-79	3
U	32-35	76-77	8	48-52	71-73	16
V		None		50-65	85-93	--

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W. N. Hubert, Research Aide
Container Section



R. C. McKee, Chief, Container Section