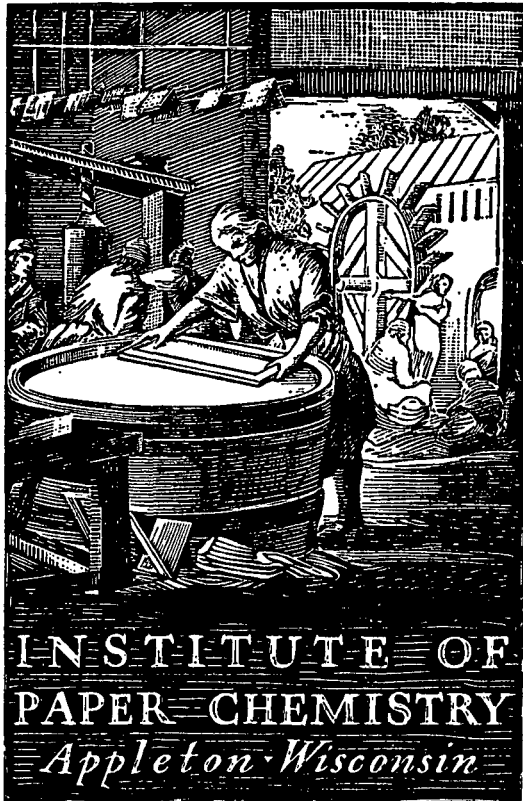


**BASE-LINE**  
(JULY-AUGUST, 1970)



**CONTINUOUS EVALUATION OF  
CORRUGATING MEDIUM**

(Data for July and August, 1970)

Project 2694-2

Report Twenty-One

A Progress Report

to

**FOURDRINIER KRAFT BOARD INSTITUTE, INC.**

This material is intended only for the internal use of authorized persons within Fourdrinier Kraft Board Institute member companies

September 25, 1970

BASE-LINE  
(JULY-AUGUST, 1970)

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM  
(Data for July and August, 1970)

SUMMARY

PART I. GENERAL

A. Participation Data:

Period	Previous Period	Current Period
	May-June, 1970	July-August, 1970
Number of machines	31	30
Number of rolls	110	102

B. Distribution of Mediums by Type:

Semichemical	31	28
Bogus	0	2
Kraft	0	0

C. New Participants:

Boise Cascade

None

D. Nonparticipants:

1. Chesapeake (West Point)	1. Chesapeake (West Point)
2. Container Corp. (Circleville No. 5)	2. Continental Can (Hopewell No. 1)
3. Crown Zellerbach (Baltimore Nos. 1 & 2)	3. The Mead Corp. (Lynchburg No. 2)
4. Olinkraft (West Monroe Nos. 1 & 3)	4. Olinkraft (West Monroe Nos. 1 & 3)
5. Owens-Illinois (Big Island No. 1)	5. Owens-Illinois (Tomahawk No. 1)
6. St. Joe Paper Co. (Port St. Joe No. 1)	6. St. Joe Paper Co. (Port St. Joe No. 1)
7. St. Regis Paper Co. (Coshocton No. 1)	7. St. Regis Paper Co. (Coshocton No. 1)
8. Union Camp Corp. (Monroe No. 2)	8. Union Camp Corp. (Monroe No. 2)
9. Westvaco (Covington No. 7)	9. Westvaco (Covington Nos. 6 & 7)
	10. Weyerhaeuser (Longview No. 4)

PART II. QUALITY DATA

A. Summary of Physical Test Data

Test	Report	Machine Averages		F.K.I. Averages	
		Max.	Min.	Current	Cumulative
Basis weight, lb./1000 ft. <sup>2</sup>	Cur.	27.9	25.4	26.7	26.8
	Prev.	27.9	25.4	26.6	26.8
Caliper, pt.	Cur.	12.1	9.1	10.1	10.2
	Prev.	11.6	9.2	10.2	10.2
Concora flat crush, p.s.i.	Cur.	50.1	32.0	42.2	42.0
	Prev.	52.9	31.9	42.0	42.3
Single-face flat crush, p.s.i.	Cur.	38.2	22.9	31.4	31.4
	Prev.	38.4	24.2	31.4	31.6

B. Summary of Runnability Data

Runnability		Previous Period			Current Period		
Speed, f.p.m.	Tension, lb./in.	No. of Rolls	% of Total	Cum., %	No. of Rolls	% of Total	Cum., %
<600	Min.	4	3.7	100.0	6	5.9	100.0
600	Min.	13	11.9	96.3	19	18.6	94.1
600	1/2	19	17.4	84.4	16	15.7	75.5
600	1	15	13.8	67.0	20	19.6	59.8
600	1-1/2	58	53.2	53.2	41	40.2	40.2

C. Trends in Quality Data in Current Report with Reference to Data from Previous Report

Physical Tests:

Basis weight: Increased from 26.6 to 26.7 lb./M ft.<sup>2</sup>  
 Caliper: Decreased from 10.2 to 10.1 pt.  
 Concora flat crush: Increased from 42.0 to 42.2 p.s.i.  
 Single-face flat crush: Same as previous report.

Runnability:

<600 f.p.m. at minimum tension: Increased from 3.7 to 5.9%.  
 600 f.p.m. at minimum tension: Increased from 11.9 to 18.6%.  
 600 f.p.m. at 1/2 lb./in. tension: Decreased from 17.4 to 15.7%.  
 600 f.p.m. at 1 lb./in. tension: Increased from 13.8 to 19.6%.  
 600 f.p.m. at 1-1/2 lb./in. tension: Decreased from 53.2 to 40.2%.

Comments: The decrease in current runnability at 1.5 lb./in. tension from the previous report is manifested by the increase at min. tension and 1.0 lb./in. tension.

PART III. CONCORA CALIBRATION DATA

A. Summary of Data (Number and Percentage of Machines Included Within the Indicated Ranges)

Range, %	Previous Period		Current Period	
	No. of Machines	% of Total	No. of Machines	% of Total
+ 1.0	3	13.0	1	4.2
+ 2.5	8	34.8	9	37.5
+ 5.0	16	69.6	17	70.8
+10.0	22	95.7	23	95.8
+15.0	23	100.0 <sup>a</sup>	24	100.0 <sup>b</sup>

B. Significance of Calibration Data

The current level of agreement between Institute and mill Concora flat crush data compares favorably with that of the previous report.

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<sup>a</sup>Maximum percentage difference was -12.4.

<sup>b</sup>Maximum percentage difference was -11.9.

## INTRODUCTION

As requested by the Technical Division of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous evaluation of corrugating medium have been prepared by The Institute of Paper Chemistry on a bimonthly instead of monthly basis since August, 1961. The current report summarizes the data obtained during July and August, 1970, on 102 rolls of corrugating medium submitted for evaluation from thirty machines.

Each roll was evaluated at the Institute for basis weight, caliper, Concora flat crush (tested immediately after fluting), H. and D. flat crush on single-faced board, and runnability. Runnability was evaluated by corrugating each roll under standardized conditions on the Institute's single-facer into A-flute board at 600 feet per minute with minimum tension and recording the draw factor at this speed and tension if the roll ran satisfactorily. If unsatisfactory runnability occurred at this speed and tension, the single-facer was slowed down in increments of 25 f.p.m. using minimum tension until satisfactory runnability was obtained, i.e., until there was no visual evidence of fractured flutes. In this latter case the draw factor was recorded for the highest speed below 600 f.p.m. (with minimum tension) at which the roll ran satisfactorily. On the other hand, if initial fabrication of the roll was satisfactory at 600 f.p.m. with minimum tension, further runs were made at 600 f.p.m. using higher tension to determine the maximum tension at 600 f.p.m. which the medium could sustain without visual evidence of fracturing. The higher tensions used at 600 f.p.m. were 0.5, 1.0, and 1.5 lb./inch. For each roll, flat crush was determined on the single-faced board obtained at a speed of 600 f.p.m. with minimum tension, or if the roll could not be corrugated satisfactorily at 600 f.p.m. with minimum tension, flat crush was determined on the single-faced board obtained at the highest speed below 600 f.p.m. at which the medium could be

corrugated with minimum tension. The flat crush results on the single-faced board, in addition to supplying information about quality, also provide data which may be useful to each participant as a means of evaluating the nature of the quantitative relationship between Concora flat crush and combined board flat crush for his medium.

For each participating machine, test data for the current period are shown in Table I. A tabulation of the number of rolls and type of medium evaluated is also given in Table I for each machine. The current machine test averages given in Table I are the means for each test property of the averages obtained on all rolls of corrugating medium evaluated from a given machine during the current period. In addition to the current machine test averages, Table I also presents current F.K.I. averages, cumulative F.K.I. averages, and F.K.I. indexes. The current F.K.I. average for each test property is the mean of the current machine averages for the same property for all machines participating in the study during a given period. The cumulative F.K.I. average for a given test property is the mean of the current F.K.I. averages for the same property for the previous twelve-month period excluding the average for the current period. The F.K.I. index for each test property is obtained as follows:

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

The F.K.I. index for each test property provides a convenient means of comparing current average quality with corresponding average quality for the previous six periods. An index greater than 100% indicates, of course, that current average quality is higher than the corresponding average quality for the previous six periods; similarly an index below 100% indicates that current average quality is lower than the corresponding average quality for the previous six periods.



TABLE I  
SUMMARY OF CURRENT MACHINE AVERAGES  
JULY AND AUGUST, 1970

MILL CODE	NO. OF ROLLS	TYPE OF MEDIUM	BASIS WEIGHT, LB.	CALIPER, POINTS	CONCORDA FLAT CRUSH, P.S.I.	SINGLE-FACE FLAT CRUSH, P.S.I.
A	4	SEMICHEMICAL	27.6	10.4	43.0	30.9
B	2	SEMICHEMICAL	27.2	9.7	32.0	22.9
C	3	SEMICHEMICAL	26.9	10.5	43.9	33.7
D	4	SEMICHEMICAL	26.8	10.6	38.2	28.8
E	4	SEMICHEMICAL	27.3	9.7	45.4	34.4
F	4	SEMICHEMICAL	26.5	10.4	37.2	27.4
G	4	SEMICHEMICAL	27.9	10.4	41.8	31.9
H	2	SEMICHEMICAL	26.2	9.8	44.8	33.4
I	4	SEMICHEMICAL	26.4	10.4	36.9	27.4
J	4	SEMICHEMICAL	26.1	9.7	40.6	30.6
K	3	SEMICHEMICAL	27.2	12.1	40.5	29.1
L	4	SEMICHEMICAL	26.5	9.8	40.0	31.1
M	2	SEMICHEMICAL	26.5	10.0	50.1	38.2
N	4	SEMICHEMICAL	26.6	11.1	39.8	29.5
O	4	SEMICHEMICAL	26.9	9.9	39.9	29.6
P	4	SEMICHEMICAL	26.5	9.9	42.4	31.4
Q	4	SEMICHEMICAL	26.0	10.0	41.2	30.6
R	4	SEMICHEMICAL	27.2	9.1	44.1	32.7
S	4	SEMICHEMICAL	26.7	9.7	42.2	31.7
T	2	BOGUS	27.4	9.4	41.0	29.2
U	4	SEMICHEMICAL	25.4	9.9	44.8	35.2
V	2	SEMICHEMICAL	27.0	10.4	46.6	33.9
W	2	SEMICHEMICAL	26.8	10.2	44.5	32.9
X	4	SEMICHEMICAL	26.0	10.0	37.7	27.9
Y	4	SEMICHEMICAL	26.1	10.2	49.4	37.1
Z	4	SEMICHEMICAL	27.3	10.0	39.8	29.8
AA	4	SEMICHEMICAL	26.2	10.0	41.9	30.9
BB	4	SEMICHEMICAL	26.3	9.4	45.0	33.2
CC	2	BOGUS	27.6	10.5	42.4	32.0
DD	2	SEMICHEMICAL	26.2	9.8	47.6	35.4
TOTAL	102					
		CURRENT F.K.I. AVERAGE	26.7	10.1	42.2	31.4
		CUMULATIVE F.K.I. AVERAGE	26.8	10.2	42.0	31.4
		F.K.I. INDEX, PERCENT	99.6	99.0	100.5	100.0

The test results obtained on the rolls submitted from the production of individual machines during the current period are shown in Tables II through XXXI for Machines A through Z and Machines AA, BB, CC, and DD, respectively. For each machine, the maximum, minimum, and average results obtained on each roll are shown for all test properties except basis weight for which only the average is shown; in addition, the overall average result for all rolls submitted from a given machine is shown for each test property. The latter overall averages are reported as "current machine averages." A cumulative machine average for each test property is also shown and represents the mean of the current machine averages for the same property for the previous six periods (excluding the current period). Also shown for each machine and for each test property in Tables II to XXXI are a machine factor and machine index which are defined as follows:

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

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

The machine factor and machine index provide a convenient means for comparing the current machine average for each test property with either the previous results obtained on the same machine for the same test property or with the cumulative result for all machines - i.e., the cumulative F.K.I. average for the same test property.

TABLE II  
SUMMARY OF TEST RESULTS FOR MACHINE A  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY LB./IN.*A	DRAW FACTOR#B				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.			MAX.	MIN.		
A-1	4-18-70	318-2	27.4	10.8	10.0	10.1	43.2	34.8	40.2	31.8	29.2	30.2	1.5	1.583	
A-2	6-12-70	354-1	26.8	10.8	10.0	10.3	46.8	41.4	45.0	33.6	32.6	33.1	1.5	1.600	
A-3	7-10-70	355-1	29.4	11.0	10.0	10.2	47.4	42.6	44.4	33.8	30.4	31.2	1.5	1.564	
A-4	7-18-70	338-1	26.7	11.1	10.4	10.8	44.4	41.4	42.5	29.8	28.4	29.0	1.5	1.572	
CURRENT MACHINE AVERAGE				27.6	10.4	10.4	43.0			30.9					1.580
CUMULATIVE MACHINE AVERAGE				27.3	10.6	10.6	39.5			29.0					
MACHINE FACTOR, PERCENT				101.1	98.1	98.1	108.9			106.6					
MACHINE INDEX, PERCENT				103.0	102.0	102.0	102.4			98.4					

A. Maximum tension at 600 f.p.m.  
B. 600 f.p.m. minimum tension.

TABLE III  
SUMMARY OF TEST RESULTS FOR MACHINE B  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY LB./IN.*A	DRAW FACTOR#B				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.			MAX.	MIN.		
B-1	5-22-70	E-1	27.4	10.2	9.8	10.0	33.0	28.2	31.0	23.6	22.0	23.0	1.5	1.577	
B-2	5-22-70	E-2	27.1	9.9	9.0	9.4	34.2	31.2	32.9	23.2	22.0	22.8	1.5	1.575	
CURRENT MACHINE AVERAGE				27.2	9.7	9.7	32.0			22.9					1.576
CUMULATIVE MACHINE AVERAGE				26.3	9.5	9.5	33.3			25.7					
MACHINE FACTOR, PERCENT				103.4	102.1	102.1	96.1			89.1					
MACHINE INDEX, PERCENT				101.5	95.1	95.1	76.2			72.9					

TABLE IV  
SUMMARY OF TEST RESULTS FOR MACHINE C  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY DRAW LB./IN.*A FACTOR*8				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.					
C-1	5-18-70	440	26.7	10.9	10.0	10.3	47.4	44.4	46.0	38.0	32.4	34.2	MIN. NOTE C	1.547
C-2	5-18-70	443	27.2	11.0	10.1	10.6	43.2	41.4	42.0	33.6	32.0	33.1	MIN.	1.537
C-3	5-18-70	446	26.8	11.1	10.0	10.7	46.8	40.2	43.6	35.4	32.8	33.8	MIN.	1.550
CURRENT MACHINE AVERAGE			26.9			10.5	43.9			33.7				1.545
CUMULATIVE MACHINE AVERAGE			27.5			11.4	39.4			30.4				
MACHINE FACTOR, PERCENT			97.8			92.1	111.4			110.8				
MACHINE INDEX, PERCENT			100.4			102.9	104.5			107.3				

\* See Table II for Notes A and B.

C Maximum speed at which this roll could be corrugated with minimum tension was 550 f.p.m.

TABLE V  
SUMMARY OF TEST RESULTS FOR MACHINE D  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY DRAW LB./IN.*A FACTOR*8				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.					
D-1	6-16-70	250	26.5	11.0	10.0	10.4	45.0	37.2	40.7	32.2	29.0	30.4	0.5	1.568
D-2	6-23-70	251	27.0	10.9	10.1	10.6	39.6	32.4	36.4	29.2	28.0	28.7	NOTE C	1.559
D-3	7- 3-70	252	26.8	11.0	10.0	10.7	38.4	33.0	38.4	27.8	25.8	26.7	NOTE D	1.554
D-4	7-20-70	253	27.1	11.0	10.3	10.8	44.4	34.8	40.1	31.0	28.8	29.5	0.5	1.563
CURRENT MACHINE AVERAGE			26.8			10.6	38.2			28.8				1.561
CUMULATIVE MACHINE AVERAGE			27.4			10.9	39.7			29.4				
MACHINE FACTOR, PERCENT			97.8			97.2	96.2			98.0				
MACHINE INDEX, PERCENT			100.0			103.9	91.0			91.7				

\* See Table II for Notes A and B.

C Maximum speed at which this roll could be corrugated with minimum tension was 500 f.p.m.

D Maximum speed at which this roll could be corrugated with minimum tension was 525 f.p.m.

TABLE VI  
SUMMARY OF TEST RESULTS FOR MACHINE E  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. AV.		CONCORA FLAT CRUSH, P.S.I. AV.		SINGLE-FACE FLAT CRUSH, P.S.I. AV.		RUNNABILITY LB./IN.*A FACTOR*8				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.					
E-1	6-18-70	295	27.4	10.0	9.5	9.8	49.2	42.6	45.6	34.4	31.4	33.1	NOTE C	1.538
E-2	6-19-70	296	27.6	10.1	9.9	10.0	46.8	39.6	43.8	36.4	33.6	34.7	MIN.	1.549
E-3	7-28-70	300	26.3	9.8	8.8	9.2	48.0	43.2	45.8	35.8	33.0	34.4	MIN.	1.566
E-4	7-30-70	301	27.9	10.2	9.3	9.8	50.4	42.0	46.4	36.8	33.2	35.2	MIN.	1.554
CURRENT MACHINE AVERAGE											34.4	34.4	1.552	
CUMULATIVE MACHINE AVERAGE											33.5	33.5		
MACHINE FACTOR, PERCENT											103.2	103.2		
MACHINE INDEX, PERCENT											108.1	108.1		

\* See Table II for Notes A and B.

† Maximum speed at which this roll could be corrugated with minimum tension was 500 f.p.m.

TABLE VII  
SUMMARY OF TEST RESULTS FOR MACHINE F  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. AV.		CONCORA FLAT CRUSH, P.S.I. AV.		SINGLE-FACE FLAT CRUSH, P.S.I. AV.		RUNNABILITY LB./IN.*A FACTOR*8				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.					
F-1	5-28-70	18	26.0	11.0	10.0	10.6	43.2	37.8	40.9	31.4	26.8	29.6	MIN.	1.562
F-2	6-10-70	20	26.7	10.1	9.5	10.0	37.2	33.0	35.2	28.4	25.6	27.2	MIN.	1.575
F-3	7-1-70	22	26.0	10.5	9.3	10.0	36.6	27.0	32.8	22.6	22.0	22.3	MIN.	1.552
F-4	7-18-70	24	27.4	11.0	10.1	10.8	43.8	33.0	39.8	31.4	29.2	30.5	MIN.	1.575
CURRENT MACHINE AVERAGE											37.2	37.2	1.566	
CUMULATIVE MACHINE AVERAGE											40.0	40.0		
MACHINE FACTOR, PERCENT											99.0	99.0		
MACHINE INDEX, PERCENT											88.6	88.6		

TABLE VIII

SUMMARY OF TEST RESULTS FOR MACHINE G

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT. LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY DRAW				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	FACTOR* <sup>B</sup>			
G-1	4-18-70	433-3	27.6	11.8	11.0	11.2	43.2	34.8	38.6	31.2	29.4	30.4	0.5	1.557
G-2	6-12-70	478-1	28.3	10.2	9.4	9.9	42.0	37.8	39.7	29.6	28.4	29.0	1.5	1.568
G-3	7-10-70	437-2	27.9	11.2	10.8	11.0	48.0	40.8	45.2	35.2	32.4	33.5	1.0	1.565
G-4	7-19-70	428-1	27.7	10.5	9.0	9.7	46.2	41.4	43.6	36.2	33.4	34.6	1.5	1.560
CURRENT MACHINE AVERAGE			27.9			10.4			41.8			31.9		1.563
CUMULATIVE MACHINE AVERAGE			27.1			10.6			39.7			29.0		
MACHINE FACTOR, PERCENT			103.0			98.1			105.3			110.0		
MACHINE INDEX, PERCENT			104.1			102.0			99.5			101.6		

TABLE IX

SUMMARY OF TEST RESULTS FOR MACHINE H

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT. LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY DRAW				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	FACTOR* <sup>B</sup>			
H-1	7-22-70		26.4	10.0	9.4	9.9	49.2	43.2	45.4	36.2	31.4	34.7	0.5	1.565
H-2	7-23-70		26.1	10.1	9.3	9.8	46.2	42.0	44.2	32.8	31.2	32.0	1.0	1.563
CURRENT MACHINE AVERAGE			26.2			9.8			44.8			33.4		1.564
CUMULATIVE MACHINE AVERAGE			26.9			10.4			44.4			32.5		
MACHINE FACTOR, PERCENT			97.4			94.2			100.9			102.8		
MACHINE INDEX, PERCENT			97.8			96.1			106.7			106.4		

\* See Table II for Notes A and B.

TABLE X  
SUMMARY OF TEST RESULTS FOR MACHINE I  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY LB./IN.*A FACTOR*8				
				MAX. MIN. AV.	MAX. MIN. AV.	MAX. MIN. AV.	MAX. MIN. AV.							
I-1	5-28-70	17	26.0	10.5	9.9	10.1	36.0	32.4	34.2	27.4	26.4	26.9	0.5	1.550
I-2	6-10-70	19	26.1	11.0	10.0	10.7	36.6	32.4	34.1	25.8	24.0	24.8	1.0	1.571
I-3	6-26-70	21	26.3	11.0	10.0	10.6	45.6	37.8	41.0	28.8	28.2	28.5	0.5	1.556
I-4	7-14-70	23	27.4	10.8	9.9	10.2	40.8	36.6	38.4	30.6	28.6	29.3	1.0	1.572
CURRENT MACHINE AVERAGE											27.4	1.562		
CUMULATIVE MACHINE AVERAGE											38.7	29.2		
MACHINE FACTOR, PERCENT											95.3	93.8		
MACHINE INDEX, PERCENT											87.8	87.3		

TABLE XI  
SUMMARY OF TEST RESULTS FOR MACHINE J  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY LB./IN.*A FACTOR*8				
				MAX. MIN. AV.	MAX. MIN. AV.	MAX. MIN. AV.	MAX. MIN. AV.							
J-1	6-24-70	360	25.6	9.9	8.9	9.2	46.8	39.6	43.1	33.6	30.8	32.5	1.5	1.570
J-2	7-8-70	361	26.5	10.0	9.9	10.0	43.2	40.8	42.0	31.8	31.4	31.7	1.0	1.569
J-3	7-21-70	362	26.5	10.0	9.5	9.8	40.2	36.6	38.3	30.6	28.6	29.7	1.5	1.571
J-4	8-7-70	363	25.8	10.0	9.0	9.7	42.0	36.0	38.8	29.8	27.4	28.7	1.5	1.571
CURRENT MACHINE AVERAGE											40.6	1.570		
CUMULATIVE MACHINE AVERAGE											40.9	29.8		
MACHINE FACTOR, PERCENT											99.3	102.7		
MACHINE INDEX, PERCENT											96.7	97.4		

\* See Table II for Notes A and B.

TABLE XII

SUMMARY OF TEST RESULTS FOR MACHINE K

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8			
K-1	6- 3-70	1432	26.6	12.0	11.2	11.7	40.2	36.0	38.2	26.4	25.0	25.8	0.5	1.567
K-2	7- 9-70	3522	26.9	12.6	11.9	12.2	42.6	38.4	40.4	31.0	29.4	30.1	0.5	1.567
K-3	7- 9-70	3532	28.1	13.1	12.0	12.5	46.2	42.0	43.0	33.0	29.6	31.4	0.5	1.567
CURRENT MACHINE AVERAGE			27.2	12.1			40.5			29.1				1.567
CUMULATIVE MACHINE AVERAGE			26.5	11.5			39.5			27.3				
MACHINE FACTOR, PERCENT			102.6	105.2			102.5			106.6				
MACHINE INDEX, PERCENT			101.5	118.6			96.4			92.7				

TABLE XIII

SUMMARY OF TEST RESULTS FOR MACHINE L

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8			
L-1	3-30-70	47	25.8	9.9	9.0	9.4	45.0	39.0	41.5	32.8	31.6	32.2	MIN.	1.551
L-2	3-31-70	48	26.5	10.0	9.0	9.8	37.2	30.6	34.9	27.4	26.0	26.6	MIN.	1.548
L-3	7-22-70	53	27.1	10.5	10.0	10.2	43.8	40.8	42.0	35.2	32.8	33.8	MIN.	1.557
L-4	7-23-70	54	26.5	10.0	9.8	9.9	43.2	39.0	41.8	33.0	30.6	31.8	0.5	1.563
CURRENT MACHINE AVERAGE			26.5	9.8			40.0			31.1				1.555
CUMULATIVE MACHINE AVERAGE			26.1	10.3			39.7			30.5				
MACHINE FACTOR, PERCENT			101.5	95.1			102.8			102.0				
MACHINE INDEX, PERCENT			98.9	96.1			95.2			99.0				

\* See Table II for Notes A and B.



TABLE XIV  
SUMMARY OF TEST RESULTS FOR MACHINE M  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAM FACTOR*8			
M-1	6-15-70	601	26.6	10.9	9.5	10.1	54.6	50.4	52.8	42.0	38.2	40.5	1.5	1.577
M-2	7- 8-70	602	26.4	10.9	9.0	10.0	49.8	45.6	47.4	36.6	35.4	36.0	1.0	1.561
CURRENT MACHINE AVERAGE			26.5			10.0			50.1			38.2		1.569
CUMULATIVE MACHINE AVERAGE			25.7		9.8				45.6			34.6		
MACHINE FACTOR, PERCENT			103.1		102.0				109.9			110.4		
MACHINE INDEX, PERCENT			98.9		98.0				119.3			121.6		

TABLE XV  
SUMMARY OF TEST RESULTS FOR MACHINE N  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAM FACTOR*8			
N-1	6- 3-70	791	26.3	11.0	10.0	10.5	42.6	34.2	38.4	29.6	25.8	27.8	1.5	1.574
N-2	7-10-70	3162	26.3	12.0	11.0	11.3	45.6	36.6	39.8	31.2	28.4	29.7	MIN.	1.566
N-3	7-10-70	3172	26.0	12.0	11.0	11.6	38.4	34.2	36.5	30.4	27.0	28.4	MIN.	1.565
N-4	8-10-70	3261	27.7	11.1	10.8	11.0	46.2	42.6	44.6	33.2	30.8	32.0	1.5	1.572
CURRENT MACHINE AVERAGE			26.6			11.1			39.8			29.5		1.569
CUMULATIVE MACHINE AVERAGE			26.9		10.6				40.1			29.5		
MACHINE FACTOR, PERCENT			98.9		104.7				99.2			100.0		
MACHINE INDEX, PERCENT			99.2		108.8				94.8			93.9		

\* See Table II for Notes A and B.

TABLE XVI  
SUMMARY OF TEST RESULTS FOR MACHINE O  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. AV.		CONCORA FLAT CRUSH, P.S.I. MIN. AV.		SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.		RUNNABILITY LB./IN.*A DRAW FACTOR*B				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MIN.	MIN.			
0-1	6-30-70	2104	27.1	10.0	9.3	9.8	43.8	39.0	41.2	30.6	28.8	29.7	0.5	1.555
0-2	6-30-70	2111	26.8	10.0	9.8	9.9	45.0	34.2	41.0	30.4	28.6	29.6	MIN.	1.560
0-3	7-13-70	2112	26.9	10.0	9.2	9.8	45.0	33.6	39.6	30.2	29.2	29.6	0.5	1.555
0-4	7-21-70	2119	26.8	10.1	10.0	10.0	42.6	34.2	37.8	30.0	28.6	29.4	MIN.	1.555
CURRENT MACHINE AVERAGE			26.9		9.9	9.9	43.9		39.9	29.6				1.556
CUMULATIVE MACHINE AVERAGE			27.0		10.4	10.4	41.1		41.1	29.6				
MACHINE FACTOR, PERCENT			99.6		97.0	97.0	97.1		97.1	100.0				
MACHINE INDEX, PERCENT			100.4				95.0		95.0	94.3				

TABLE XVII  
SUMMARY OF TEST RESULTS FOR MACHINE P  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. AV.		CONCORA FLAT CRUSH, P.S.I. MIN. AV.		SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.		RUNNABILITY LB./IN.*A DRAW FACTOR*B				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MIN.	MIN.			
P-1	6-2-70	120	26.2	10.0	9.8	9.9	46.2	40.8	43.2	31.8	31.2	31.4	1.5	1.577
P-2	6-9-70	570	26.3	9.9	9.1	9.8	47.4	39.0	43.9	33.0	31.4	32.2	1.5	1.576
P-3	7-6-70	110	26.8	10.1	9.9	10.0	43.2	40.2	41.6	31.4	30.0	30.6	1.5	1.570
P-4	7-29-70	111	26.6	10.1	9.8	10.0	45.6	37.8	40.9	33.2	29.4	31.3	1.5	1.572
CURRENT MACHINE AVERAGE			26.5		9.9	9.9	42.4		42.4	31.4				1.574
CUMULATIVE MACHINE AVERAGE			26.0		10.5	10.5	38.2		38.2	28.6				
MACHINE FACTOR, PERCENT			101.9		94.3	94.3	111.0		111.0	109.8				
MACHINE INDEX, PERCENT			98.9		97.0	97.0	101.0		101.0	100.0				

\* See Table II for Notes A and B.

TABLE XVIII  
SUMMARY OF TEST RESULTS FOR MACHINE Q  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX. MIN.	AV.	MAX. MIN.	AV.	MAX. MIN.	AV.	LB./IN.*A	FACTOR*B	DRAW		
Q-1	6-3-70	830	25.8	10.3	9.0	9.8	43.8	34.8	39.0	31.0	28.4	29.8	1.0	1.556
Q-2	6-19-70	831	27.0	11.0	10.0	10.4	50.4	43.2	45.0	35.8	34.0	34.8	1.0	1.572
Q-3	7-8-70	832	25.7	10.5	9.0	10.0	40.8	34.8	37.9	28.0	26.6	27.2	MIN.	1.540
Q-4	7-19-70	833	25.5	11.0	9.0	10.0	46.2	40.8	43.0	31.0	30.0	30.7	1.5	1.568
CURRENT MACHINE AVERAGE													1.559	
CUMULATIVE MACHINE AVERAGE													30.6	
MACHINE FACTOR, PERCENT													32.0	
MACHINE INDEX, PERCENT													95.6	
													97.4	

TABLE XIX  
SUMMARY OF TEST RESULTS FOR MACHINE R  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX. MIN.	AV.	MAX. MIN.	AV.	MAX. MIN.	AV.	LB./IN.*A	FACTOR*B	DRAW		
R-1	6-17-70	294	27.2	9.1	8.8	9.0	46.8	43.8	45.4	35.2	33.0	33.7	NOTE C	1.537
R-2	6-22-70	297	27.4	9.5	9.0	9.1	45.6	42.6	44.0	33.2	30.0	31.1	NOTE D	1.542
R-3	7-22-70	298	27.4	9.9	8.9	9.1	46.2	42.6	44.8	35.2	33.2	33.9	0.5	1.560
R-4	7-27-70	299	26.9	9.5	8.9	9.2	45.6	39.6	42.1	34.6	30.6	32.0	1.5	1.570
CURRENT MACHINE AVERAGE													1.552	
CUMULATIVE MACHINE AVERAGE													32.7	
MACHINE FACTOR, PERCENT													33.8	
MACHINE INDEX, PERCENT													96.7	
													104.1	

\* See Table II for Notes A and B.  
 C Maximum speed at which this roll could be corrugated with minimum tension was 325 f.p.m.  
 D Maximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

TABLE XX

SUMMARY OF TEST RESULTS FOR MACHINE S

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY LB./IN.*A	DRAW FACTOR*8			
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.			AV.	AV.	
S-1	3-12-70	209	26.8	10.1	9.1	9.7	46.2	39.6	43.0	33.0	30.8	32.4	1.5	1.581
S-2	3-24-70	210	27.3	10.0	9.9	10.0	45.0	36.0	41.4	32.6	30.8	31.5	1.5	1.580
S-3	4-8-70	211	26.3	9.2	8.9	9.0	45.6	41.4	43.4	32.6	31.6	32.2	1.5	1.582
S-4	4-22-70	212	26.4	10.1	10.0	10.0	43.8	39.0	41.2	31.4	30.0	30.7	1.5	1.574
CURRENT MACHINE AVERAGE														
CUMULATIVE MACHINE AVERAGE														
MACHINE FACTOR, PERCENT														
MACHINE INDEX, PERCENT														
			26.7		9.7	9.7	42.2		42.2		31.7			1.579
			100.0		10.1	10.1	43.4		43.4		31.2			
			99.6		96.0	96.0	97.2		97.2		101.6			
					95.1	95.1	100.5		100.5		101.0			

TABLE XXI

SUMMARY OF TEST RESULTS FOR MACHINE T

JULY AND AUGUST, 1970

TYPE OF MEDIUM- BOGUS

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY LB./IN.*A	DRAW FACTOR*8			
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.			AV.	AV.	
T-1	3-18-70	430	27.4	10.0	9.0	9.3	41.4	32.4	37.2	27.6	23.8	26.1	1.5	1.595
T-2	3-31-70	431	27.4	10.0	9.1	9.6	47.4	42.0	44.8	33.4	31.8	32.4	1.5	1.596
CURRENT MACHINE AVERAGE														
CUMULATIVE MACHINE AVERAGE														
MACHINE FACTOR, PERCENT														
MACHINE INDEX, PERCENT														
			27.4		9.4	9.4	41.0		41.0		29.2			1.596
			103.0		96.9	96.9	104.6		104.6		105.4			
			102.2		92.2	92.2	97.6		97.6		93.0			

\* See Table II for Notes A and B.

TABLE XXII

SUMMARY OF TEST RESULTS FOR MACHINE U

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8			
U-1	5-25-70	0055	26.3	10.2	9.1	9.8	48.0	43.8	45.6	35.4	33.8	34.6	0.5	1.562
U-2	6-1-70	0285	25.4	10.8	9.0	9.5	49.2	40.2	45.5	38.2	35.0	36.0	1.5	1.576
U-3	6-8-70	0554	24.9	10.5	9.9	10.1	47.4	41.4	45.1	36.4	32.0	34.9	MIN.	1.555
U-4	6-8-70	0564	24.9	10.8	10.0	10.3	45.0	39.0	42.8	37.0	32.6	35.2	MIN.	1.556
CURRENT MACHINE AVERAGE			25.4			9.9	44.8			35.2				1.562
CUMULATIVE MACHINE AVERAGE			26.3			9.7	45.4			34.4				
MACHINE FACTOR, PERCENT			96.6			102.1	98.7			102.3				
MACHINE INDEX, PERCENT			94.8			97.0	106.7			112.1				

TABLE XXIII

SUMMARY OF TEST RESULTS FOR MACHINE V

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8			
V-1	8-3-70		27.0	10.8	10.1	10.4	49.2	45.0	47.0	35.0	33.2	34.1	1.0	1.564
V-2	8-4-70		27.1	11.0	10.0	10.4	52.2	43.2	46.1	35.0	32.0	33.7	1.0	1.563
CURRENT MACHINE AVERAGE			27.0			10.4	46.6			33.9				1.564
CUMULATIVE MACHINE AVERAGE			26.7			10.3	45.7			34.3				
MACHINE FACTOR, PERCENT			101.1			101.0	102.0			98.8				
MACHINE INDEX, PERCENT			100.7			102.0	111.0			108.0				

\* See Table II for Notes A and B.

TABLE XXIV

SUMMARY OF TEST RESULTS FOR MACHINE W  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAM FACTOR*B			
W-1	6-15-70	227	26.8	10.5	10.0	10.2	46.8	41.4	44.5	35.2	32.4	33.3	1.0	1.564
W-2	6-15-70	228	26.8	10.5	10.0	10.1	46.2	43.2	44.5	33.0	31.8	32.5	1.5	1.564
CURRENT MACHINE AVERAGE						10.2	44.5			32.9				1.564
CUMULATIVE MACHINE AVERAGE						10.0	41.6			32.0				
MACHINE FACTOR, PERCENT						102.0	107.0			102.8				
MACHINE INDEX, PERCENT						100.0	106.0			104.8				

TABLE XXV

SUMMARY OF TEST RESULTS FOR MACHINE X  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAM FACTOR*B			
X-1	5-27-70	7986	26.3	10.2	9.1	9.8	40.8	34.2	36.1	28.0	26.0	27.1	MIN.	1.573
X-2	6-1-70	8079	26.3	10.5	10.0	10.1	40.8	37.8	39.1	31.0	28.4	29.9	MIN.	1.569
X-3	7-13-70	8879	25.9	10.5	9.9	10.2	43.8	35.4	38.3	28.0	26.8	27.5	MIN.	1.565
X-4	7-27-70	9133	25.4	10.0	9.2	9.9	39.6	36.0	37.2	28.8	26.0	27.0	MIN.	1.560
CURRENT MACHINE AVERAGE						10.0	37.7			27.9				1.567
CUMULATIVE MACHINE AVERAGE						10.1	40.8			32.2				
MACHINE FACTOR, PERCENT						99.0	92.4			86.6				
MACHINE INDEX, PERCENT						98.0	89.8			88.8				

\* See Table II for Notes A and B.

TABLE XXVI

SUMMARY OF TEST RESULTS FOR MACHINE Y  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	TYPE OF MEDIUM- SEMICHEMICAL		CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.	SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.	RUNNABILITY LB./IN.*A FACTOR*8	DRAW FACTOR*8					
				CALLIPER, PT. MAX. MIN. AV.	CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.									
Y-1	3-31-70	837	25.2	11.0	9.8	10.2	51.0	42.6	47.2	36.4	34.2	35.6	1.0	1.577
Y-2	6-14-70	840	26.8	11.0	10.1	10.5	53.4	45.0	50.5	40.0	37.2	38.7	1.5	1.575
Y-3	7-6-70	841	26.0	10.5	9.8	10.1	50.4	46.8	48.8	38.6	36.0	37.4	1.0	1.562
Y-4	7-20-70	842	26.3	11.0	9.9	10.2	56.4	46.8	51.0	38.8	35.8	36.8	1.5	1.568
CURRENT MACHINE AVERAGE				26.1		10.2	49.4			37.1				1.571
CUMULATIVE MACHINE AVERAGE				25.6		10.2	46.7			34.9				
MACHINE FACTOR, PERCENT				102.0		100.0	105.8			106.3				
MACHINE INDEX, PERCENT				97.4		100.0	117.6			118.2				

TABLE XXVII

SUMMARY OF TEST RESULTS FOR MACHINE Z  
JULY AND AUGUST, 1970

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	TYPE OF MEDIUM- SEMICHEMICAL		CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.	SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.	RUNNABILITY LB./IN.*A FACTOR*8	DRAW FACTOR*8					
				CALLIPER, PT. MAX. MIN. AV.	CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.									
Z-1	6-23-70	360	25.8	9.1	8.8	9.0	42.6	40.2	40.8	32.2	30.8	31.4	1.5	1.572
Z-2	7-7-70	361	27.3	10.0	9.9	10.0	46.2	39.0	41.3	31.2	28.4	29.9	1.5	1.572
Z-3	7-21-70	362	26.0	9.9	9.2	9.6	42.0	37.2	38.9	29.8	27.4	29.0	1.5	1.571
Z-4	8-7-70	363	30.1	12.0	11.0	11.2	40.8	34.2	38.0	29.6	27.6	28.7	0.5	1.565
CURRENT MACHINE AVERAGE				27.3		10.0	39.8			29.8				
CUMULATIVE MACHINE AVERAGE				26.6		9.7	39.7			29.4				
MACHINE FACTOR, PERCENT				102.6		103.1	100.2			101.4				
MACHINE INDEX, PERCENT				101.9		98.0	94.8			94.9				

\* See Table II for Notes A and B.

TABLE XXVIII

SUMMARY OF TEST RESULTS FOR MACHINE AA

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*B			
AA-1	7- 2-70	300	26.3	10.2	10.0	10.0	36.0	39.2	30.6	28.6	29.6	1.5	1.570	
AA-2	7- 7-70	301	26.5	10.5	10.0	10.0	40.2	42.2	31.2	30.6	30.8	1.0	1.560	
AA-3	7-30-70	302	26.0	10.0	9.8	9.9	40.8	42.6	32.0	30.2	31.2	1.0	1.566	
AA-4	8-14-70	303	26.0	10.0	9.9	10.0	42.0	43.7	33.0	31.0	32.0	1.0	1.568	
CURRENT MACHINE AVERAGE				26.2	10.0	10.0	41.9	43.9	30.9	30.9	32.2	1.566		
CUMULATIVE MACHINE AVERAGE				26.9	10.4	10.4	43.3	45.3	32.2	32.2	32.2	1.566		
MACHINE FACTOR, PERCENT				97.4	96.2	96.2	96.8	96.8	96.0	96.0	96.0	98.4		
MACHINE INDEX, PERCENT				97.8	98.0	98.0	99.8	99.8	98.4	98.4	98.4	98.4		

TABLE XXIX

SUMMARY OF TEST RESULTS FOR MACHINE BB

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*B			
BB-1	6- 8-70	10	26.3	10.0	8.9	9.3	42.0	44.4	34.2	32.0	32.8	1.5	1.589	
BB-2	6-25-70	11	25.4	9.0	8.2	8.8	46.2	49.0	37.4	34.4	36.2	1.5	1.588	
BB-3	7-25-70	12	27.2	10.0	9.0	9.5	48.0	46.6	35.0	33.4	34.3	0.5	1.565	
BB-4	7-30-70	13	26.3	10.8	9.5	10.2	42.6	37.2	30.4	27.8	29.5	1.0	1.570	
CURRENT MACHINE AVERAGE				26.3	9.4	9.4	45.0	45.0	33.2	33.2	33.2	1.578		
CUMULATIVE MACHINE AVERAGE				27.4	10.1	10.1	42.1	42.1	31.6	31.6	31.6	1.578		
MACHINE FACTOR, PERCENT				56.0	93.1	93.1	106.9	106.9	105.1	105.1	105.1	105.1		
MACHINE INDEX, PERCENT				98.1	92.2	92.2	107.1	107.1	105.7	105.7	105.7	105.7		

\* See Table II for Notes A and B.



TABLE XXX

SUMMARY OF TEST RESULTS FOR MACHINE CC

JULY AND AUGUST, 1970

TYPE OF MEDIUM- 8GGUS

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	AV.	MAX.	AV.	MAX.	MIN.	AV.	LB./IN.*A	DRAN FACTOR#B		
CC-1	3-20-70	530	27.9	11.0	10.0	10.7	47.4	36.0	41.8	33.2	29.0	31.5	1.5	1.584
CC-2	3-31-70	531	27.4	10.8	10.0	10.3	46.8	39.6	43.1	33.4	31.6	32.6	1.5	1.593
CURRENT MACHINE AVERAGE			27.6			10.5	42.4			32.0				1.589
CUMULATIVE MACHINE AVERAGE			27.2			10.0	40.0			28.6				
MACHINE FACTOR, PERCENT			101.5			105.0	106.0			111.9				
MACHINE INDEX, PERCENT			103.0			102.9	101.0			101.9				

TABLE XXXI

SUMMARY OF TEST RESULTS FOR MACHINE DD

JULY AND AUGUST, 1970

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
				MAX.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	LB./IN.*A	DRAN FACTOR#B	
DD-1	6-10-70	733	26.3	10.0	9.3	9.9	55.8	41.4	47.9	37.6	34.2	35.5	1.5	1.567
DD-2	6-18-70	734	26.0	10.0	9.4	9.8	51.6	44.4	47.4	36.2	34.4	35.4	1.5	1.570
CURRENT MACHINE AVERAGE			26.2			9.8	47.6			35.4				1.569
CUMULATIVE MACHINE AVERAGE			26.9			10.0	48.1			36.0				
MACHINE FACTOR, PERCENT			97.4			98.0	99.0			98.3				
MACHINE INDEX, PERCENT			97.8			96.1	113.3			112.7				

\* See Table II for Notes A and B.

## DISCUSSION OF RESULTS

Shown on page 2, Part II, Section "A" of the Summary are the maximum and minimum current machine averages obtained for each test property during the current period and the previous period. Also shown for each test property is the current F.K.I. average which represents the mean of the current machine averages and hence is indicative of the test level being maintained by the industry as a whole for each test property to the extent that the industry is represented by the participating machines. Also given for each test property is the cumulative F.K.I. average which represents the mean of the current F.K.I. averages for the previous six periods.

The runnability data for the 102 rolls evaluated during the current period and the 110 rolls evaluated during the previous period are summarized on page 2, Part II, Section "B" of the Summary.

Supplementary to the runnability data, draw factors were determined for each roll of medium at 600 f.p.m. with minimum tension (or, for rolls with poor runnability, at the maximum speed runnable with minimum tension) and are given in Tables II through XXXI for Machines A through Z and Machines AA, BB, CC, and DD, respectively.

In Table XXXII, an effort has been made to compare Institute and mill Concora flat crush test results for each machine for the current period. The following information is presented in this table: (1) Current machine average based on Institute data, (2) current machine average based on mill data, (3) the average difference — that is, the difference between the current machine average based on Institute data and the current machine average based on mill data, and (4) the average differences expressed as percentage differences, along with the percent differences of the previous two-month period. In those cases where mill Concora flat crush data

TABLE XXXII

A COMPARATIVE SUMMARY FOR EACH MACHINE OF THE CONCORA  
FLAT CRUSH AVERAGES BASED ON INSTITUTE DATA AND MILL DATA  
JULY AND AUGUST, 1970

Machine Code	No. of Rolls Compared	Concora Flat Crush, p.s.i.			Av. Diff., % <sup>c</sup>	
		I.P.C. Av. <sup>a</sup>	Mill Av. <sup>a</sup>	Av. Diff. <sup>b</sup>	Current	Previous
A	4	43.0	37.9	-5.1	-11.9	-12.4
B	2	32.0	33.4	+1.4	+4.4	+9.7
C	3	43.9	41.4	-2.5	-5.7	-5.7
D	4	38.2	36.5	-1.7	-4.5	-5.6
E	4	45.4	43.2	-2.2	-4.8	-4.3
F	0	37.2	32.8 <sup>d</sup>	--	--	--
G	4	41.8	39.1	-2.7	-6.5	-4.0
H	2	44.8	44.2 <sup>d</sup>	-0.6	-1.3	-0.2
I	0	36.9	29.9 <sup>d</sup>	--	--	--
J	2	42.6	41.0	-1.6	-3.8	-2.6
K	3	40.5	38.3	-2.2	-5.4	-3.2
L	4	40.0	41.2 <sup>d</sup>	+1.2	+3.0	-3.0
M	0	50.1	38.0 <sup>d</sup>	--	--	--
N	4	39.8	38.9	-0.9	-2.3	-1.8
O	4	39.9	42.2	+2.3	+5.8	-1.4
P	4	42.4	43.8	+1.4	+3.3	--
Q	4	41.2	40.6	-0.6	-1.5	-6.1
R	4	44.1	41.3	-2.8	-6.3	-3.4
S	4	42.2	42.7	+0.5	+1.2	--
T	2	41.0	38.5	-2.5	-6.1	--
U	4	44.8	43.8	-1.0	-2.2	-4.7
V	2	46.6	46.5 <sup>e</sup>	-0.1	-0.2	+2.3
W	0	44.5	--	--	--	--
X	4	37.7	36.8 <sup>d</sup>	-0.9	-2.4	+1.0
Y	0	49.4	38.8 <sup>d</sup>	--	--	--
Z	2	41.0	41.8	+0.8	+2.0	-3.0
AA	4	41.9	43.3	+1.4	+3.3	+9.0
BB	2	47.8	48.6	+0.8	+1.7	+6.1
CC	2	42.4	40.6 <sup>d</sup>	-1.8	-4.2	--
DD	0	47.6	39.1 <sup>d</sup>	--	--	--

<sup>a</sup> Comparisons based on current machine average include only those rolls for which mill data were submitted.

<sup>b</sup> Average difference is the difference between the current machine average based on Institute test results and that based on mill test results with the Institute test results used as the reference.

<sup>c</sup> Average difference (percent) is computed by dividing the average difference in p.s.i. by the Institute current machine average and multiplying by 100.

<sup>d</sup> Mill data were not obtained on specimens tested immediately after fluting.

<sup>e</sup> No mill data available.

are still obtained on specimens conditioned after fluting, no average differences between current machine averages based on Institute and mill data are shown. The inclusion of these comparisons is made possible by the fact that interested participants submit their Concora flat crush results to The Institute of Paper Chemistry (on data sheets obtainable from the Institute). This affords each participant an opportunity to review the level of agreement noted for his data with the levels noted for the other participants. Comparisons of this kind are a helpful adjunct to other calibration procedures.

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