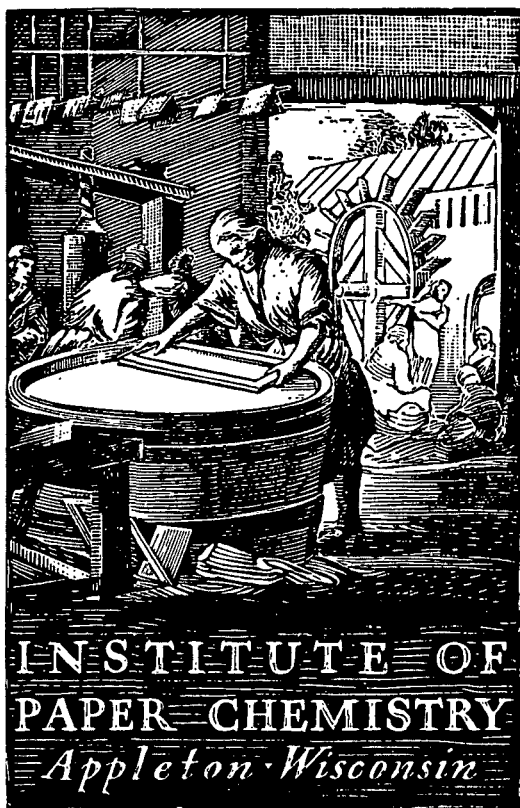




BASE-LINE
(JULY-AUGUST, 1972)



CONTINUOUS EVALUATION OF
CORRUGATING MEDIUM

(Data for July and August, 1972)

Project 2694-2

Report Thirty-Three

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 20, 1972

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM

(Data for July and August, 1972)

Project 2694-2

Report Thirty-Three

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 20, 1972

TABLE OF CONTENTS

	Page
SUMMARY	1
INTRODUCTION	4
SUMMARY OF CURRENT MACHINE AVERAGES	6
SUMMARY OF TEST RESULTS FOR INDIVIDUAL MACHINES	8
DISCUSSION OF RESULTS	22

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM (DATA FOR JULY AND AUGUST, 1972)

SUMMARY

PART I. GENERAL

A. Participation Data:

	Previous Period	Current Period
Period	May-June, 1972	July-August, 1972
Number of machines	29	28
Number of rolls	92	94

B. Distribution of Mediums by Type:

Semichemical	29	28
Bogus	0	0

C. New Participants:

None Weyerhaeuser
(Valliant)

D. Nonparticipants:

- | | |
|--|--|
| 1. Crown Zellerbach
(Baltimore Nos. 1,
2, & Lebanon No. 2) | 1. Alton Box Board
(Alton Nos. 3 & 4) |
| 2. Mead Corp.
(Lynchburg No. 2) | 2. Crown Zellerbach
(Baltimore Nos. 1
& 2) |
| 3. Owens-Illinois
(Big Island Nos.
1 & 3) | 3. International
(Bastrop No. 1) |
| 4. Westvaco
(Covington No. 7) | 4. Owens-Illinois
(Big Island Nos. 1
& 3) |
| | 5. Westvaco
(Covington Nos. 6
& 7) |

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. ²	Cur.	27.8	25.4	26.4	26.4
	Prev.	27.3	25.2	26.2	26.5
Caliper, pt.	Cur.	10.6	9.0	10.0	10.1
	Prev.	10.9	9.0	10.1	10.1
Concora flat crush, p.s.i.	Cur.	53.0	35.8	41.8	41.1
	Prev.	47.0	32.8	40.7	41.2
Single-face flat crush, p.s.i.	Cur.	39.2	27.4	31.6	30.6
	Prev.	35.2	25.0	30.4	30.8

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.	2	2.2	100.0	3	3.2	100.0
600	Min.	18	19.6	97.8	14	14.9	96.8
600	1/2	24	26.1	78.2	25	26.6	81.9
600	1	17	18.5	52.1	16	17.0	55.3
600	1-1/2	31	33.7	33.7	36	38.3	38.3

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

Physical Tests:

Basis weight: Increased from 26.2 to 26.4 lb./M ft.²
 Caliper: Decreased from 10.1 to 10.0 pt.
 Concora flat crush: Increased from 40.7 to 41.8 p.s.i.
 Single-face flat crush: Increased from 30.4 to 31.6 p.s.i.

Runnability:

<600 f.p.m. at minimum tension: Increased from 2.2 to 3.2%
 600 f.p.m. at minimum tension: Decreased from 19.6 to 14.9%
 600 f.p.m. at 1/2 lb./in. tension: Increased from 26.1 to 26.6%
 600 f.p.m. at 1 lb./in. tension: Decreased from 18.5 to 17.0%
 600 f.p.m. at 1-1/2 lb./in. tension: Increased from 33.7 to 38.3%

Comments: The current runnability compares favorably with that of the previous period.

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
<u>±</u> 1.0	5	18.5	6	22.2
<u>±</u> 2.5	12	44.4	9	33.3
<u>±</u> 5.0	20	74.1	19	70.4
<u>+10.0</u>	26	96.3	26	96.3
<u>+20.0</u>	27	100.0 ^a	27	100.0 ^b

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 period.

^aMaximum percentage difference was -18.7.

^bMaximum percentage difference was -11.7.

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, 1972 on 94 rolls of corrugating medium submitted for evaluation from twenty-eight 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, 1972

MILL CODE	NO. OF ROLLS	TYPE OF MEDIUM	BASIS WEIGHT, LB.	CALIPER, POINTS	CONCORA FLAT CRUSH, P.S.I.	SINGLE-FACE FLAT CRUSH, P.S.I.
A	2	SEMICHEMICAL	26.0	10.1	36.2	27.8
B	4	SEMICHEMICAL	26.5	10.6	42.6	31.3
C	4	SEMICHEMICAL	27.4	10.5	37.0	29.4
D	4	SEMICHEMICAL	27.0	9.5	53.0	39.2
E	2	SEMICHEMICAL	26.3	9.8	43.5	33.8
F	4	SEMICHEMICAL	27.2	10.6	42.6	31.8
G	4	SEMICHEMICAL	26.0	9.8	42.4	33.1
H	4	SEMICHEMICAL	26.7	10.4	40.2	30.2
I	4	SEMICHEMICAL	26.6	9.0	43.6	33.4
J	4	SEMICHEMICAL	26.2	9.6	44.3	32.5
K	4	SEMICHEMICAL	27.8	9.4	44.2	32.4
L	2	SEMICHEMICAL	25.4	9.8	35.8	28.2
M	3	SEMICHEMICAL	26.5	9.7	38.3	29.8
N	4	SEMICHEMICAL	26.1	9.8	37.9	29.5
O	4	SEMICHEMICAL	26.6	10.4	40.2	30.8
P	2	SEMICHEMICAL	26.8	9.2	40.3	30.7
Q	3	SEMICHEMICAL	26.2	10.4	37.9	28.1
R	2	SEMICHEMICAL	26.3	9.7	45.8	31.2
S	3	SEMICHEMICAL	26.2	10.4	43.1	31.9
T	4	SEMICHEMICAL	26.8	10.5	47.3	34.7
U	4	SEMICHEMICAL	26.0	10.4	39.8	30.6
V	2	SEMICHEMICAL	27.7	9.4	40.5	31.0
W	4	SEMICHEMICAL	26.5	9.1	45.2	34.0
X	3	SEMICHEMICAL	25.5	10.2	41.6	32.2
Y	4	SEMICHEMICAL	26.3	9.9	47.0	34.2
Z	4	SEMICHEMICAL	25.6	9.6	43.4	34.2
AA	4	SEMICHEMICAL	25.7	10.4	36.8	27.4
BB	2	SEMICHEMICAL	26.6	10.4	41.2	32.1
TOTAL	94					
CURRENT F.K.I. AVERAGE						
CUMULATIVE F.K.I. AVERAGE						
F.K.I. INDEX, PERCENT						
			26.4	10.0	41.8	31.6
			26.4	10.1	41.1	30.6
			100.0	99.0	101.7	103.3

The test results obtained on the rolls submitted from the production of individual machines during the current period are shown in Tables II through XXIX for Machines A through Z and Machines AA and BB, 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 XXIX 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, 1972

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 FACTOR*8	
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
A-1	6-27-72	12	25.3	10.8	9.9	10.4	36.0	33.6	28.0	23.2	25.5
A-2	7-27-72	14	26.7	10.0	9.6	9.8	45.0	38.8	31.6	28.6	30.2
CURRENT MACHINE AVERAGE											
				10.1		36.2		27.8		1.575	
CUMULATIVE MACHINE AVERAGE				10.0		38.5		28.9		1.562	
MACHINE FACTOR, PERCENT				101.0		94.0		96.2			
MACHINE INDEX, PERCENT				100.0		88.1		90.8		1.569	

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, 1972

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 FACTOR*8	
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
B-1	7- 8-72	3642	27.1	11.3	10.8	11.0	45.0	41.4	43.4	31.8	29.8
B-2	7- 8-72	3652	26.8	11.3	10.7	11.0	48.6	39.6	43.2	32.0	30.2
B-3	8- 6-72	2512	25.7	10.3	9.5	9.9	41.4	37.2	39.8	32.2	29.8
B-4	8- 6-72	2522	26.5	10.9	10.0	10.3	46.2	40.8	43.8	33.8	30.6
CURRENT MACHINE AVERAGE											
				10.6		42.6		31.3		1.571	
CUMULATIVE MACHINE AVERAGE				10.2		42.0		31.3		1.565	
MACHINE FACTOR, PERCENT				103.9		101.4		106.5		1.564	
MACHINE INDEX, PERCENT				105.0		103.6		102.3		1.565	

TABLE IV
SUMMARY OF TEST RESULTS FOR MACHINE C
JULY AND AUGUST, 1972

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	
				CALIPER, PT. MAX. MIN. AV.	CALIPER, PT. MAX. MIN. AV.	CALIPER, PT. MAX. MIN. AV.	CALIPER, PT. MAX. MIN. AV.					
C-1	6-27-72	408	26.7	10.6	9.0	9.9	41.4	36.0	38.6	31.0	29.8	30.3
C-2	7-6-72	409	29.5	12.0	10.2	11.4	38.4	33.6	34.9	30.4	27.8	28.8
C-3	7-23-72	410	27.1	11.0	10.0	10.6	40.2	34.8	37.7	29.4	28.0	28.8
C-4	8-6-72	411	26.3	10.4	10.0	10.1	39.0	33.6	36.6	31.0	28.8	29.6
CURRENT MACHINE AVERAGE												
				27.4	10.5	10.5		37.0		29.4		1.566
CUMULATIVE MACHINE AVERAGE				26.3	10.0	10.0		38.9		28.9		
MACHINE FACTOR, PERCENT				104.2	105.0	105.0		95.1		101.7		
MACHINE INDEX, PERCENT				103.8	104.0	104.0		90.0		96.1		

TABLE V
SUMMARY OF TEST RESULTS FOR MACHINE D
JULY AND AUGUST, 1972

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	
				CALIPER, PT. MAX. MIN. AV.	CALIPER, PT. MAX. MIN. AV.	CALIPER, PT. MAX. MIN. AV.	CALIPER, PT. MAX. MIN. AV.					
D-1	6-26-72	768	26.5	9.0	8.2	8.8	54.0	46.2	49.2	38.4	35.6	36.7
D-2	6-30-72	769	27.2	10.2	9.0	9.6	54.6	51.0	52.6	40.0	37.4	38.8
D-3	7-1-72	770	26.5	10.0	9.0	9.2	57.0	52.2	54.6	40.8	39.2	40.2
D-4	7-3-72	771	27.7	10.9	9.9	10.4	60.6	51.0	55.4	41.6	40.2	40.9
CURRENT MACHINE AVERAGE												
				27.0	9.5	9.5		53.0		39.2		1.565
CUMULATIVE MACHINE AVERAGE				26.8	9.4	9.4		47.5		36.1		
MACHINE FACTOR, PERCENT				100.7	101.1	101.1		111.6		108.6		
MACHINE INDEX, PERCENT				102.3	94.0	94.0		129.0		128.1		

* See Table II for Notes A and B.

TABLE VI

SUMMARY OF TEST RESULTS FOR MACHINE E

JULY AND AUGUST, 1972

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.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	LB./IN.*A	DRAW FACTOR*8	
E-1	6-11-72	256	26.5	10.2	9.3	9.8	45.6	42.0	44.0	34.6	33.0	34.1	1.0	1.553
E-2	6-11-72	257	26.1	10.1	9.5	9.8	46.2	39.6	43.0	34.8	31.6	33.4	1.5	1.562
CURRENT MACHINE AVERAGE												33.8	1.558	
CUMULATIVE MACHINE AVERAGE												30.3		
MACHINE FACTOR, PERCENT												110.7	111.6	
MACHINE INDEX, PERCENT												105.8	110.4	

TABLE VII

SUMMARY OF TEST RESULTS FOR MACHINE F

JULY AND AUGUST, 1972

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.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	LB./IN.*A	DRAW FACTOR*8	
F-1	5-30-72	703	27.1	11.0	10.1	10.8	40.8	36.0	38.2	30.0	28.6	29.3	1.5	1.574
F-2	6-8-72	704	27.6	10.7	10.0	10.3	44.4	42.0	43.2	34.2	32.4	33.1	0.5	1.557
F-3	6-23-72	705	27.0	10.9	10.0	10.4	47.4	43.2	45.4	33.4	30.8	32.2	1.5	1.564
F-4	7-5-72	706	27.1	11.0	10.3	10.8	48.0	39.6	43.8	33.8	31.0	32.7	1.0	1.565
CURRENT MACHINE AVERAGE												31.8		1.565
CUMULATIVE MACHINE AVERAGE												28.8		
MACHINE FACTOR, PERCENT												110.4		
MACHINE INDEX, PERCENT												103.9		

*See Table II for Notes A and B.

TABLE VIII
SUMMARY OF TEST RESULTS FOR MACHINE G

JULY AND AUGUST, 1972

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.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	LB./IN.*A
G-1	6- 2-72	878	26.7	10.6	9.8	10.1	47.4	38.4	41.8	35.6	32.4	33.7	1.5	1.571
G-2	6-17-72	879	25.5	11.0	8.9	9.7	43.2	36.0	40.3	31.6	29.8	30.6	1.5	1.573
G-3	7- 6-72	880	26.5	10.5	9.5	10.0	47.4	40.2	45.0	36.0	33.8	34.8	1.5	1.572
G-4	8- 3-72	881	25.4	10.0	9.0	9.4	46.2	39.6	42.7	34.4	32.0	33.3	1.5	1.567
CURRENT MACHINE AVERAGE													33.1	1.571
CUMULATIVE MACHINE AVERAGE													31.2	
MACHINE FACTOR, PERCENT													106.1	
MACHINE INDEX, PERCENT													108.2	

TABLE IX

SUMMARY OF TEST RESULTS FOR MACHINE H

JULY AND AUGUST, 1972

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 LB./IN.*A FACTOR*8	
			MAX.	MIN.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	0.5	1.559
H-1	6-15-72	2285	26.2		10.3	10.0	10.1	43.2	36.6	40.6	32.2	29.8	31.2	0.5	1.559
H-2	6-22-72	2286	27.1		10.8	10.0	10.4	44.4	37.2	42.0	31.6	29.6	30.8	0.5	1.563
H-3	7- 3-72	2293	26.6		10.9	10.0	10.4	42.6	35.4	39.1	30.4	28.8	29.9	0.5	1.550
H-4	7- 6-72	2294	27.0		11.0	10.0	10.6	40.8	37.8	38.9	29.2	28.0	28.8	0.5	1.549
CURRENT MACHINE AVERAGE														30.2	1.555
CUMULATIVE MACHINE AVERAGE														30.0	
MACHINE FACTOR, PERCENT														100.7	
MACHINE INDEX, PERCENT														98.7	

*See Table II for Notes A and B.

TABLE X

SUMMARY OF TEST RESULTS FOR MACHINE I

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. MAX. MIN. AV.	CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.	SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.	RUNNABILITY LB./IN.*A	DRAW FACTOR*8
I-1	6-15-72	388	26.1	9.0 8.3 8.7	43.2 40.8 41.9	32.6 31.0 32.0	MIN.	1.550
I-2	6-30-72	389	25.8	9.8 9.1 9.5	44.4 39.0 41.8	34.6 33.2 33.8	MIN.	1.555
I-3	7-16-72	392	27.3	9.1 8.4 8.9	45.6 42.0 43.4	35.4 32.6 33.8	1.5	1.567
I-4	7-18-72	393	27.0	9.0 8.4 8.9	49.2 45.6 47.2	35.4 32.6 34.1	1.5	1.568
CURRENT MACHINE AVERAGE								
26.6				9.0	43.6	33.4		1.560
27.1				9.1	44.0	32.8		
98.2				98.9	99.1	101.8		
100.8				89.1	106.1	109.2		

TABLE XI

SUMMARY OF TEST RESULTS FOR MACHINE J

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. MAX. MIN. AV.	CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.	SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.	RUNNABILITY LB./IN.*A	DRAW FACTOR*8
J-1	7-12-72		26.2	10.0 9.5 9.8	44.4 42.6 43.7	32.2 30.6 31.5	1.0	1.565
J-2	7-13-72		26.2	10.0 9.2 9.7	44.4 41.4 42.8	32.2 30.0 31.2	1.0	1.561
J-3	8-9-72		26.3	9.7 9.0 9.4	47.4 44.4 45.6	35.0 33.0 34.0	1.5	1.569
J-4	8-10-72		26.2	9.6 9.0 9.3	46.8 43.8 45.1	34.6 32.0 33.3	1.5	1.567
CURRENT MACHINE AVERAGE								
26.2				9.6	44.3	32.5		1.566
26.1				9.4	43.2	31.9		
100.4				102.1	102.5	101.9		
99.2				95.0	107.8	106.2		

*See Table II for Notes A and B.

TABLE XII

SUMMARY OF TEST RESULTS FOR MACHINE K

JULY AND AUGUST, 1972

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.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8		
K-1	6-29-72	3	28.0	10.0	9.2	9.6	47.4	42.6	45.1	34.4	32.6	33.2	1.5	1.571
K-2	6-29-72	4	28.0	9.6	9.0	9.2	45.6	41.4	43.6	33.4	31.2	32.4	1.5	1.574
K-3	7-12-72	5	27.4	9.9	9.0	9.4	46.2	41.4	43.8	33.2	31.0	31.6	1.5	1.575
K-4	7-12-72	6	27.7	9.9	9.1	9.4	48.6	42.0	44.2	33.2	30.4	32.4	1.5	1.576
CURRENT MACHINE AVERAGE												32.4	1.574	
CUMULATIVE MACHINE AVERAGE												30.8		
MACHINE FACTOR, PERCENT												105.2		
MACHINE INDEX, PERCENT												105.9		

TABLE XIII

SUMMARY OF TEST RESULTS FOR MACHINE L

JULY AND AUGUST, 1972

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.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8					
L-1	6-27-72	13	23.5		9.8	9.1	9.4	39.0	30.6	33.8	28.2	27.2	27.8	1.0	1.555		
L-2	7-27-72	15	27.4		10.6	9.9	10.3	39.6	35.4	37.9	30.0	27.4	28.5	1.0	1.560		
CURRENT MACHINE AVERAGE															35.8	28.2	1.558
CUMULATIVE MACHINE AVERAGE															37.9	28.3	
MACHINE FACTOR, PERCENT															94.4	99.6	
MACHINE INDEX, PERCENT															87.1	92.2	

*See Table II for Notes A and B.

TABLE XIV

SUMMARY OF TEST RESULTS FOR MACHINE M

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT.,		CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY					
			LB./M.	SQ. FT.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8				
M-1	6-6-72		26.3		11.0	9.2	10.1	39.0	35.4	37.4	31.4	27.0	29.6	0.5	1.558	
M-2	6-26-72		27.7		10.0	9.8	9.9	45.0	37.8	40.7	32.0	30.0	31.0	MIN.	1.555	
M-3	7-19-72		25.6		9.4	8.8	9.0	37.8	36.0	36.8	30.0	27.6	28.7	1.0	1.560	
CURRENT MACHINE AVERAGE																1.558
CUMULATIVE MACHINE AVERAGE																29.8
MACHINE FACTOR, PERCENT																29.8
MACHINE INDEX, PERCENT																100.0
																97.4

TABLE XV

SUMMARY OF TEST RESULTS FOR MACHINE M

JULY AND AUGUST, 1972

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.	MAX.	MIN.	LB./IN.*A	DRAW FACTOR*8					
N-1	6-27-72	408	25.7	10.3	9.1	9.5	42.6	35.4	38.6	31.0	29.6	30.2	1.0	1.569			
N-2	7-5-72	409	26.0	10.1	9.8	10.0	37.8	34.2	35.9	29.2	27.4	28.2	0.5	1.564			
N-3	7-23-72	410	26.0	10.4	10.0	10.1	39.6	33.6	36.4	29.2	27.6	28.3	1.5	1.570			
N-4	8-6-72	411	26.8	10.4	9.0	9.7	44.4	38.4	40.6	32.6	29.6	31.4	1.5	1.569			
CURRENT MACHINE AVERAGE													26.1	9.8	37.9	29.5	1.568
CUMULATIVE MACHINE AVERAGE													26.1	10.0	37.2	28.4	
MACHINE FACTOR, PERCENT													100.0	98.0	101.9	103.9	
MACHINE INDEX, PERCENT													98.9	97.0	92.2	96.4	

*See Table II for Notes A and B.

TABLE XVI

SUMMARY OF TEST RESULTS FOR MACHINE O

JULY AND AUGUST, 1972

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 FACTOR*8	
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
O-1	7-12-72		26.4	10.6	10.0	10.2	44.4	37.8	40.6	32.4	30.0
O-2	7-13-72		26.5	10.9	10.1	10.5	43.2	35.4	40.1	30.8	28.8
O-3	7-17-72		26.9	10.8	10.0	10.5	42.0	39.0	40.3	32.4	30.2
O-4	7-18-72		26.6	10.9	10.2	10.6	42.6	35.4	39.6	31.8	30.4
CURRENT MACHINE AVERAGE											
				10.6	10.0	10.2	44.4	37.8	40.6	32.4	30.0
				10.9	10.1	10.5	43.2	35.4	40.1	30.8	28.8
				10.8	10.0	10.5	42.0	39.0	40.3	32.4	30.2
				10.9	10.2	10.6	42.6	35.4	39.6	31.8	30.4
CUMULATIVE MACHINE AVERAGE											
				10.6	10.0	10.2	44.4	37.8	40.6	32.4	30.0
				10.9	10.1	10.5	43.2	35.4	40.1	30.8	28.8
				10.8	10.0	10.5	42.0	39.0	40.3	32.4	30.2
				10.9	10.2	10.6	42.6	35.4	39.6	31.8	30.4
MACHINE FACTOR, PERCENT											
				100.0	100.0	100.0	95.3	95.3	95.3	99.7	99.7
MACHINE INDEX, PERCENT											
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
CURRENT MACHINE AVERAGE											
				26.6	10.4	10.4	40.2	40.2	40.2	30.8	30.8
				26.7	10.4	10.4	42.2	42.2	42.2	30.9	30.9
				99.6	100.0	100.0	95.3	95.3	95.3	99.7	99.7
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
CURRENT MACHINE AVERAGE											
				26.6	10.4	10.4	40.2	40.2	40.2	30.8	30.8
				26.7	10.4	10.4	42.2	42.2	42.2	30.9	30.9
				99.6	100.0	100.0	95.3	95.3	95.3	99.7	99.7
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
CUMULATIVE MACHINE AVERAGE											
				26.6	10.4	10.4	40.2	40.2	40.2	30.8	30.8
				26.7	10.4	10.4	42.2	42.2	42.2	30.9	30.9
				99.6	100.0	100.0	95.3	95.3	95.3	99.7	99.7
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
MACHINE FACTOR, PERCENT											
				100.0	100.0	100.0	95.3	95.3	95.3	99.7	99.7
MACHINE INDEX, PERCENT											
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
CURRENT MACHINE AVERAGE											
				26.6	10.4	10.4	40.2	40.2	40.2	30.8	30.8
				26.7	10.4	10.4	42.2	42.2	42.2	30.9	30.9
				99.6	100.0	100.0	95.3	95.3	95.3	99.7	99.7
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
CUMULATIVE MACHINE AVERAGE											
				26.6	10.4	10.4	40.2	40.2	40.2	30.8	30.8
				26.7	10.4	10.4	42.2	42.2	42.2	30.9	30.9
				99.6	100.0	100.0	95.3	95.3	95.3	99.7	99.7
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6
MACHINE FACTOR, PERCENT											
				100.0	100.0	100.0	95.3	95.3	95.3	99.7	99.7
MACHINE INDEX, PERCENT											
				100.8	103.0	103.0	97.8	97.8	97.8	100.6	100.6

TABLE XVII

SUMMARY OF TEST RESULTS FOR MACHINE P

JULY AND AUGUST, 1972

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 FACTOR*8	
				MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
P-1	7-18-72	1634	27.1	9.2	8.9	9.0	45.0	40.2	41.8	31.8	29.4
P-2	7-25-72	1775	26.5	10.0	9.0	9.4	39.6	37.2	38.8	31.6	30.0
CURRENT MACHINE AVERAGE											
				9.2	8.9	9.0	45.0	40.2	41.8	31.8	29.4
				10.0	9.0	9.4	39.6	37.2	38.8	31.6	30.0
CUMULATIVE MACHINE AVERAGE											
				9.2	8.9	9.0	45.0	40.2	41.8	31.8	29.4
				10.0	9.0	9.4	39.6	37.2	38.8	31.6	30.0
MACHINE FACTOR, PERCENT											
				91.1	91.1	91.1	98.0	98.0	98.0	100.3	100.3
MACHINE INDEX, PERCENT											
				91.1	91.1	91.1	98.0	98.0	98.0	100.3	100.3
CURRENT MACHINE AVERAGE											
				26.8	9.2	9.2	40.3	40.3	40.3	30.7	30.7
CUMULATIVE MACHINE AVERAGE											
				26.8	9.2	9.2	40.3	40.3	40.3	30.7	30.7
MACHINE FACTOR, PERCENT											
				101.5	91.1	91.1	98.0	98.0	98.0	100.3	100.3
MACHINE INDEX, PERCENT											
				101.5	91.1	91.1	98.0	98.0	98.0	100.3	100.3
CURRENT MACHINE AVERAGE											
				26.8	9.2	9.2	40.3	40.3	40.3	30.7	30.7
CUMULATIVE MACHINE AVERAGE											
				26.8	9.2	9.2	40.3	40.3	40.3	30.7	30.7
MACHINE FACTOR, PERCENT											
				101.5	91.1	91.1	98.0	98.0	98.0	100.3	100.3
MACHINE INDEX, PERCENT											
				101.5	91.1	91.1	98.0	98.0	98.0	100.3	100.3

*See Table II for Notes A and B.

TABLE XVIII

SUMMARY OF TEST RESULTS FOR MACHINE Q

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M.		CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.				SINGLE-FACE FLAT CRUSH, P.S.I.				RUNNABILITY	
			SQ. FT.		MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	LB./IN.*A	DRAW FACTOR*8	
Q-1		13	26.0		10.9	10.0	10.4	39.0	34.2	36.5	28.2	26.8	27.5	0.5	1.567	
Q-2		14	26.3		10.6	10.0	10.3	40.8	37.2	39.1	30.4	28.4	29.2	0.5	1.563	
Q-3		15	26.3		10.7	10.1	10.4	40.2	36.6	38.0	28.6	26.8	27.6	0.5	1.564	
CURRENT MACHINE AVERAGE			26.2				10.4			37.9			28.1		1.565	
CUMULATIVE MACHINE AVERAGE			26.0				10.4			37.9			28.4			
MACHINE FACTOR, PERCENT			100.8				100.0			100.0			98.9			
MACHINE INDEX, PERCENT			99.2				103.0			92.2			91.8			

TABLE XIX

SUMMARY OF TEST RESULTS FOR MACHINE R

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT.,		CALIPER, PT.		CONCORA FLAT CRUSH, P.S.I.		SINGLE-FACE FLAT CRUSH, P.S.I.		RUNNABILITY				
			LB./M.	SQ. FT.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	AV.	LB./IN.*A	DRAW FACTOR*8		
R-1	6-17-72	7404	26.6		10.0	9.0	9.7	47.4	44.4	46.3	32.4	30.6	31.6	0.5	1.564
R-2	6-19-72	7421	26.0		10.6	9.0	9.7	46.8	39.6	45.2	31.6	29.8	30.8	0.5	1.563
CURRENT MACHINE AVERAGE			26.3				9.7			45.8			31.2		1.564
CUMULATIVE MACHINE AVERAGE			25.7				9.4			42.1			29.1		
MACHINE FACTOR, PERCENT			102.3				103.2			108.8			107.2		
MACHINE INDEX, PERCENT			99.6				96.0			111.4			102.0		

*See Table II for Notes A and B.

TABLE XX
SUMMARY OF TEST RESULTS FOR MACHINE S
JULY AND AUGUST, 1972

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 DRAW LB./IN.*A FACTOR*8	
				CALIPER, PT. MAX. MIN. AV.						
S-1	6- 8-72	301	26.5	11.0 9.9 10.3		48.6 40.8 44.9	33.4 32.0 32.6		0.5	1.571
S-2	6-27-72	302	25.9	10.8 10.0 10.3		43.2 39.6 41.3	31.8 29.4 30.4		MIN.	1.561
S-3	7-10-72	303	26.2	11.0 10.1 10.6		46.2 39.6 43.2	34.2 31.8 32.7		0.5	1.562
CURRENT MACHINE AVERAGE										
				10.4		43.1	31.9			1.565
CUMULATIVE MACHINE AVERAGE				10.0		43.9	31.9			
MACHINE FACTOR, PERCENT				104.0		98.2	100.0			
MACHINE INDEX, PERCENT				103.0		104.9	104.2			

TABLE XXI
SUMMARY OF TEST RESULTS FOR MACHINE T
JULY AND AUGUST, 1972

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 DRAW LB./IN.*A FACTOR*8	
				CALIPER, PT. MAX. MIN. AV.						
T-1	7-13-72	6432	26.6	11.0 10.3 10.8		51.0 47.4 49.0	36.2 34.0 35.1		1.5	1.570
T-2	7-13-72	6442	25.5	10.8 10.0 10.4		51.0 43.8 46.4	36.0 33.0 34.9		1.5	1.570
T-3	8- 6-72	2422	27.6	10.8 10.0 10.4		49.8 42.6 45.8	35.2 34.2 34.6		1.5	1.562
T-4	8- 6-72	2432	27.3	10.6 10.0 10.3		50.4 43.8 47.9	35.0 33.2 34.1		1.0	1.565
CURRENT MACHINE AVERAGE										
				10.5		47.3	34.7			1.567
CUMULATIVE MACHINE AVERAGE				10.8		43.4	31.1			
MACHINE FACTOR, PERCENT				97.2		109.0	111.6			
MACHINE INDEX, PERCENT				104.0		115.1	113.4			

*See Table II for Notes A and B.

TABLE XXIII

SUMMARY OF TEST RESULTS FOR MACHINE V

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL															
CODE	DATE MADE	MILL ROLL NO.	BASIS WT.,		CALIPER, PT.			CONCORA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY	
			LB./M.	SQ. FT.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.	LB./IN.*A	DRAW FACTOR*8
V-1	7-19-72	1	27.0		9.5	9.0	9.2	43.2	37.8	40.1	31.6	28.6	30.3	MIN.	1.550
V-2	7-19-72	2	28.4		10.1	9.0	9.5	45.0	34.8	40.9	32.4	31.6	31.8	MIN.	1.550
CURRENT MACHINE AVERAGE			27.7				9.4			40.5			31.0		1.550
CUMULATIVE MACHINE AVERAGE			28.0				9.4			37.1			29.3		
MACHINE FACTOR, PERCENT			98.9				100.0			109.2			105.8		
MACHINE INDEX, PERCENT			104.9				93.1			98.5			101.3		

*See Table II for Notes A and B.

TABLE XXIV

SUMMARY OF TEST RESULTS FOR MACHINE W

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. MAX. MIN. AV.	CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.	SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.	RUNNABILITY LB./IN.*A FACTOR#B
W-1	7-1-72	390	26.5	9.8 9.0 9.3	50.4 46.8 48.4	36.6 34.6 35.7	MIN. 1.550
W-2	7-3-72	391	26.2	9.5 9.0 9.2	48.6 43.2 46.0	34.6 33.0 33.8	1.0 1.566
W-3	7-27-72	394	26.5	9.2 8.8 9.0	46.2 39.0 42.6	33.8 32.2 32.7	1.5 1.577
W-4	7-31-72	395	26.9	9.0 8.8 9.0	46.2 40.8 43.6	34.8 32.4 33.6	1.5 1.572
CURRENT MACHINE AVERAGE							
CUMULATIVE MACHINE AVERAGE				9.1	45.2	34.0	1.566
MACHINE FACTOR, PERCENT				9.2	44.1	32.8	
MACHINE INDEX, PERCENT				98.9	102.5	103.6	
				90.1	110.0	111.1	

TABLE XXV

SUMMARY OF TEST RESULTS FOR MACHINE X

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. MAX. MIN. AV.	CONCORA FLAT CRUSH, P.S.I. MAX. MIN. AV.	SINGLE-FACE FLAT CRUSH, P.S.I. MAX. MIN. AV.	RUNNABILITY LB./IN.*A FACTOR#B
X-1	6-3-72	640	25.7	11.0 9.2 10.2	44.4 39.0 41.3	33.8 31.8 32.8	1.0 1.566
X-2	6-22-72	641	25.1	11.1 8.9 10.0	43.2 40.8 42.1	34.0 31.6 32.7	1.5 1.564
X-3	7-18-72	642	25.7	11.0 10.0 10.4	43.8 40.2 41.5	31.8 30.0 31.2	1.0 1.559
CURRENT MACHINE AVERAGE							
CUMULATIVE MACHINE AVERAGE				10.2	41.6	32.2	1.563
MACHINE FACTOR, PERCENT				10.4	42.5	32.5	
MACHINE INDEX, PERCENT				98.1	97.9	99.1	
				101.0	101.2	105.2	

*See Table II for Notes A and B.

TABLE XXVI

SUMMARY OF TEST RESULTS FOR MACHINE Y

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. MAX. MIN. AV.	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
Y-1	7-12-72		26.0	10.0 9.8 9.9	50.4 42.6 47.0	34.2 31.8 32.7	0.5	1.560
Y-2	7-13-72		25.5	10.0 9.4 9.8	48.6 43.2 46.1	35.0 33.0 33.9	0.5	1.560
Y-3	7-17-72		26.8	10.1 9.8 10.0	49.2 45.0 47.4	36.2 34.0 35.0	0.5	1.550
Y-4	7-18-72		26.8	10.0 9.7 9.9	49.8 45.0 47.6	35.8 34.8 35.2	0.5	1.554
CURRENT MACHINE AVERAGE								
			26.3	9.9	47.0	34.2		1.556
CUMULATIVE MACHINE AVERAGE								
			26.2	10.1	43.8	33.0		
MACHINE FACTOR, PERCENT								
			100.4	98.0	107.3	103.6		
MACHINE INDEX, PERCENT								
			99.6	98.0	114.4	111.8		

TABLE XXVII

SUMMARY OF TEST RESULTS FOR MACHINE Z

JULY AND AUGUST, 1972

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT. MAX. MIN. AV.	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
Z-1	5-25-72	1738	25.7	9.8 8.4 8.9	46.2 37.8 40.9	34.2 33.0 33.7	MIN.	1.565
Z-2	6- 5-72	2047	25.4	11.0 10.0 10.4	46.2 38.4 43.1	34.6 33.2 34.0	MIN.	1.554
Z-3	6- 9-72	2156	25.4	10.8 10.0 10.2	45.6 42.0 43.7	35.2 32.0 33.6	NOTE C	1.561
Z-4	6-13-72	2263	26.0	9.5 8.4 9.0	47.4 43.2 46.0	37.0 34.8 35.7	NOTE D	1.571
CURRENT MACHINE AVERAGE								
			25.6	9.6	43.4	34.2		1.563
CUMULATIVE MACHINE AVERAGE								
			26.3	10.4	45.2	33.9		
MACHINE FACTOR, PERCENT								
			97.3	92.3	96.0	100.9		
MACHINE INDEX, PERCENT								
			97.0	95.0	105.6	111.8		

*See Table II for Notes A and B.

C Maximum speed at which this roll could be corrugated with minimum tension was 200 f.p.m.

D Maximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

TABLE XXVIII

SUMMARY OF TEST RESULTS FOR MACHINE AA

JULY AND AUGUST, 1972

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*B
AA-1	7-15-72	4709	26.0	11.0	10.1	10.6	35.4	37.2	27.8	26.8	27.4
AA-2	7-15-72	4712	25.9	11.0	10.0	10.6	33.6	35.5	26.8	25.6	26.3
AA-3	7-30-72	6516	25.5	10.6	10.0	10.2	39.6	36.0	28.6	27.6	28.2
AA-4	7-30-72	6519	25.3	10.2	9.8	10.0	37.8	33.6	28.8	27.4	27.9
CURRENT MACHINE AVERAGE											
				25.7	10.4	10.4	36.8	37.2	27.4	27.7	1.549
CUMULATIVE MACHINE AVERAGE				26.2	10.6	10.6	37.7	37.7	27.7	27.7	
MACHINE FACTOR, PERCENT				98.1	98.1	97.6	89.5	89.5	89.5	89.5	
MACHINE INDEX, PERCENT				97.3	103.0	103.0	89.5	89.5	89.5	89.5	

TABLE XXIX

SUMMARY OF TEST RESULTS FOR MACHINE BB

JULY AND AUGUST, 1972

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*B
BB-1	6-10-72	176	26.3	11.0	10.0	10.6	45.0	37.2	41.9	32.2	30.2
BB-2	7-19-72	173	26.8	10.5	10.0	10.2	42.6	39.0	40.6	34.0	32.0
CURRENT MACHINE AVERAGE											
				26.6	10.4	10.4	41.2	41.2	32.1	32.1	1.547
CUMULATIVE MACHINE AVERAGE				26.1	10.4	10.4	41.6	41.6	32.1	32.1	1.544
MACHINE FACTOR, PERCENT				101.9	100.0	100.0	99.0	99.0	100.0	100.0	
MACHINE INDEX, PERCENT				100.8	103.0	103.0	100.2	100.2	104.9	104.9	

*See Table II for Notes A and B.

C Maximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

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 94 rolls evaluated during the current period and the 92 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 XXIX for Machines A through Z and Machines AA and BB, respectively.

In Table XXX, 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 percentage differences of the previous two-month period. In those cases where mill Concora flat crush data

TABLE XXX

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

JULY AND AUGUST, 1972

Machine Code	No. of Rolls Compared	Concora Flat Crush, p.s.i.			Av. Diff., % ^c	
		I.P.C. Av. ^a	Mill Av. ^a	Av. Diff. ^b	Current	Previous
A	2	36.2	34.6	-1.6	-4.4	+3.4
B	4	42.6	42.7	+0.1	+0.2	+2.2
C	4	37.0	38.8	+1.8	+4.9	+4.1
D	4	53.0	50.5	-2.5	-4.7	-18.7
E	2	43.5	38.4	-5.1	-11.7	+9.0
F	4	42.6	42.9	+0.3	+0.7	+3.7
G	4	42.4	38.6	-3.8	-9.0	-1.2
H	4	40.2	41.7	+1.5	+3.7	+7.8
I	4	43.6	40.4	-3.2	-7.3	-3.2
J	4	44.3	43.3	-1.0	-2.3	+2.8
K	4	44.2	42.4	-1.8	-4.1	--
L	2	35.8	35.3	-0.5	-1.4	-1.6
M	3	38.3	41.7	+3.4	+8.9	+4.1
N	4	37.9	36.5	-1.4	-3.7	+5.6
O	4	40.2	42.0	+1.8	+4.5	+1.2
P	2	40.3	39.8	-0.5	-1.2	--
Q	3	37.9	39.2	+1.3	+3.4	+5.2
R	2	45.8	42.4	-3.4	-7.4	-5.1
S	3	43.1	40.3	-2.8	-6.5	-4.0
T	4	47.3	47.2	-0.1	-0.2	+0.5
U	4	39.8	39.6	-0.2	-0.5	+2.8
V	0	40.5	-- ^d	--	--	--
W	4	45.2	42.4	-2.8	-6.2	-1.5
X	3	41.6	41.9	+0.3	+0.7	+2.1
Y	4	47.0	49.0	+2.0	+4.3	+0.5
Z	4	43.4	45.0	+1.6	+3.7	-5.4
AA	4	36.8	39.0	+2.2	+6.0	-1.5
BB	2	41.2	41.2	0.0	0.0	+0.2

^aComparisons based on current machine average include only those rolls for which mill data were submitted.

^bAverage 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.

^cAverage difference (percent) is computed by dividing the average difference in p.s.i. by the Institute current machine average and multiplying by 100.

^dNo identification on rolls.

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.

THE INSTITUTE OF PAPER CHEMISTRY

R. C. McKee / gjs

R. C. McKee, Chairman
Container Section

IPST HASELTON LIBRARY



5 0602 01053281 2