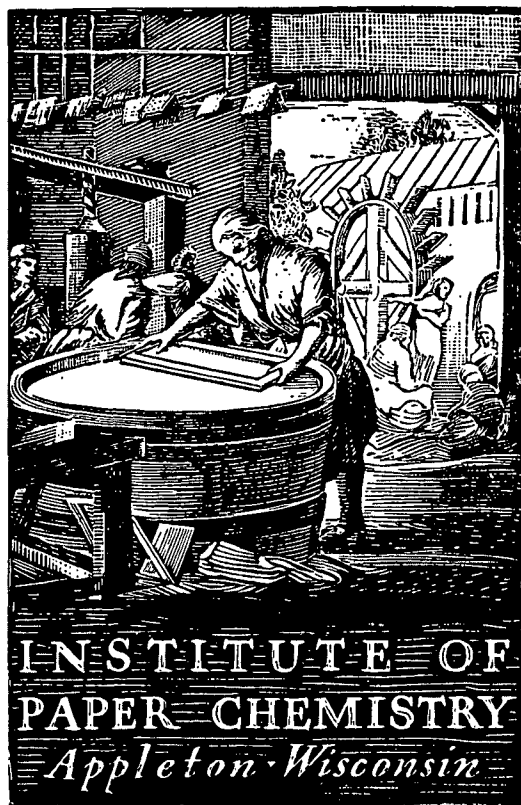


Mr. Boren ✓

BASE-LINE
(JULY-AUGUST, 1971)



CONTINUOUS EVALUATION OF
CORRUGATING MEDIUM

(Data for July and August, 1971)

Project 2694-2

Report Twenty-Seven

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

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

September 24, 1971

BASE-LINE
(JULY-AUGUST, 1971)

THE INSTITUTE OF PAPER CHEMISTRY
Appleton, Wisconsin

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Appleton, Wisconsin

SUMMARY

A. Participation Data:

	Previous Period	Current Period
Period	May-June, 1971	July-August, 1971
Number of machines	31	27
Number of rolls	110	91

Semichemical	29	27
Bogus	2	0

C. New Participants:	None	Inland Container Corp.
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D. Nonparticipants	1. Continental Can (Hodge No. 1)	1. Boise Cascade (Wallula No. 1)
	2. Crown Zellerbach (Lebanon No. 2)	2. Container Corp. (Circleville No. 5)
	3. International Paper (Bastrop No. 1)	3. Continental Can (Hodge No. 1)
	4. Westvaco (Covington No. 7)	4. Crown Zellerbach (Baltimore Nos. 1 & 2, Lebanon No. 2)
	5. Weyerhaeuser (Longview No. 4)	5. Mead (Lynchburg No. 2)
		6. Olinkraft (West Monroe No. 2)
		7. Owens-Illinois (Big Island Nos. 1 & 3)
		8. 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. ²	Cur.	27.8	25.2	26.5	26.7
	Prev.	28.4	25.1	26.7	26.7
Caliper, pt.	Cur.	10.8	9.0	10.0	10.1
	Prev.	11.2	8.8	10.1	10.1
Concora flat crush, p.s.i.	Cur.	49.3	35.0	41.5	42.2
	Prev.	48.6	37.1	41.8	42.2
Single-face flat crush, p.s.i.	Cur.	36.8	25.8	31.7	31.3
	Prev.	35.8	27.4	31.6	31.2

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	3.6	100.0	11	12.1	100.0
600	Min.	19	17.3	96.4	25	27.5	87.9
600	1/2	20	18.2	79.1	18	19.8	60.4
600	1	22	20.0	60.9	11	12.1	40.6
600	1-1/2	45	40.9	40.9	26	28.6	28.6

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

Physical Tests:

Basis weight: Decreased from 26.7 to 26.5 lb./M ft.²
 Caliper: Decreased from 10.1 to 10.0 pt.
 Concora flat crush: Decreased from 41.8 to 41.5 p.s.i.
 Single-face flat crush: Increased from 31.6 to 31.7 p.s.i.

Runnability:

<600 f.p.m. at minimum tension: Increased from 3.6 to 12.1%
 600 f.p.m. at minimum tension: Increased from 17.3 to 27.5%
 600 f.p.m. at 1/2 lb./in. tension: Increased from 18.2 to 19.8%
 600 f.p.m. at 1 lb./in. tension: Decreased from 20.0 to 12.1%
 600 f.p.m. at 1-1/2 lb./in. tension: Decreased from 40.9 to 28.6%

Comments: The current runnability is markedly lower than 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	2	6.9	1	4.2
<u>±</u> 2.5	9	31.0	7	29.2
<u>±</u> 5.0	19	65.5	15	62.5
<u>±</u> 10.0	29	100.0 ^a	22	91.7
<u>±</u> 12.5			24	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 report.

^aMaximum percentage difference was +9.1.

^bMaximum percentage difference was -10.8.

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, 1971, on 91 rolls of corrugating medium submitted for evaluation from twenty-seven 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.

SUMMARY OF CURRENT MACHINE AVERAGES

JULY AND AUGUST, 1971

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	27.3	9.0	45.0	34.2
B	6	SEMICHEMICAL	26.6	10.7	43.8	32.6
C	1	SEMICHEMICAL	26.3	9.0	42.2	31.3
D	4	SEMICHEMICAL	25.7	9.9	43.9	33.0
E	4	SEMICHEMICAL	26.3	9.9	39.7	31.1
F	2	SEMICHEMICAL	27.8	10.6	46.4	34.0
G	1	SEMICHEMICAL	26.3	10.8	40.0	31.1
H	4	SEMICHEMICAL	26.4	10.4	44.6	35.2
I	1	SEMICHEMICAL	26.8	9.9	37.7	29.3
J	4	SEMICHEMICAL	25.2	9.8	39.1	31.2
K	4	SEMICHEMICAL	26.0	10.2	40.2	30.6
L	3	SEMICHEMICAL	27.6	10.2	40.5	32.2
M	5	SEMICHEMICAL	26.2	9.4	39.0	29.7
N	4	SEMICHEMICAL	26.4	10.4	44.8	34.4
O	4	SEMICHEMICAL	26.8	10.2	39.0	30.4
P	1	SEMICHEMICAL	25.4	9.9	35.0	25.8
Q	4	SEMICHEMICAL	26.8	10.4	43.5	30.7
R	4	SEMICHEMICAL	27.5	9.0	44.2	33.4
S	4	SEMICHEMICAL	27.7	9.9	39.6	30.4
T	2	SEMICHEMICAL	25.8	9.2	45.4	35.0
U	6	SEMICHEMICAL	26.5	9.6	40.2	30.5
V	4	SEMICHEMICAL	26.0	9.1	42.1	33.0
W	2	SEMICHEMICAL	27.5	10.2	44.8	33.4
X	2	SEMICHEMICAL	25.8	10.4	49.3	36.8
Y	4	SEMICHEMICAL	26.0	9.7	37.3	28.9
Z	3	SEMICHEMICAL	25.9	10.6	35.3	26.7
AA	4	SEMICHEMICAL	26.3	10.7	38.7	30.0
TOTAL	91					
CURRENT F.K.I. AVERAGE			26.5	10.0	41.5	31.7
CUMULATIVE F.K.I. AVERAGE			26.7	10.1	42.2	31.3
F.K.I. INDEX, PERCENT			99.2	99.0	98.3	101.3

The test results obtained on the rolls submitted from the production of individual machines during the current period are shown in Tables II through XXVIII for Machines A through Z and Machine AA, 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 XXVIII 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, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CCNCGRA 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*B
A-1	6-22-71	346	27.1	5.1	8.9	9.0	48.0	43.2	45.6	35.2	32.8	34.0	1.5	1.562
A-2	7- 6-71	347	27.4	5.1	8.9	9.0	48.6	40.8	45.0	37.6	32.4	34.2	0.5	1.551
A-3	7-23-71	350	27.6	5.1	9.0	9.0	45.0	43.2	44.2	35.4	33.8	34.2	NOTE C	1.543
A-4	8- 2-71	351	27.0	5.0	8.5	8.9	48.6	43.2	45.4	35.8	32.6	34.2	NOTE D	1.550
CURRENT MACHINE AVERAGE			27.3			9.0			45.0			34.2		1.552
CUMULATIVE MACHINE AVERAGE			27.4			9.2			44.4			33.7		
MACHINE FACTOR, PERCENT			99.6			97.8			101.4			101.5		
MACHINE INDEX, PERCENT			102.2			89.1			106.6			109.3		

A Maximum tension at 600 f.p.m.

B 600 f.p.m. minimum tension.

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 III

SUMMARY OF TEST RESULTS FOR MACHINE B
JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CCNCGRA 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*B
B-1	6-24-71	11112	27.2	11.2	10.5	11.0	46.2	40.8	43.4	32.8	30.6	31.8	0.5	1.564
B-2	6-24-71	11192	26.8	12.1	10.3	11.0	46.2	37.2	40.2	30.8	28.2	29.5	0.5	1.569
B-3	7- 1-71	192	26.3	11.1	10.0	10.6	48.6	39.6	45.1	35.4	32.2	34.0	MIN.	1.564
B-4	7- 1-71	202	26.0	10.9	10.0	10.3	49.2	42.0	44.8	35.4	30.8	33.2	0.5	1.565
B-5	8-16-71	7392	26.6	10.9	10.0	10.3	46.2	40.2	44.4	35.2	32.6	33.8	1.5	1.568
B-6	8-16-71	7402	26.8	11.2	10.2	10.9	49.8	42.6	45.2	34.6	33.0	33.4	1.5	1.569
CURRENT MACHINE AVERAGE			26.6			10.7			43.8			32.6		1.567
CUMULATIVE MACHINE AVERAGE			26.2			10.5			41.7			30.4		
MACHINE FACTOR, PERCENT			101.5			101.9			105.0			107.2		
MACHINE INDEX, PERCENT			99.6			105.9			103.8			104.2		

TABLE IV

SUMMARY OF TEST RESULTS FOR MACHINE C

JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
C-1	7- 6-71	19	26.3	5.3	8.7	9.0	46.2	38.4	42.2	33.0	30.2	31.3	1.5	1.561
CURRENT MACHINE AVERAGE			26.3			9.0			42.2			31.3		1.561
CUMULATIVE MACHINE AVERAGE			26.1			9.8			38.8			29.4		
MACHINE FACTOR, PERCENT			100.8			91.8			108.8			106.5		
MACHINE INDEX, PERCENT			98.5			89.1			100.0			100.0		

TABLE V

SUMMARY OF TEST RESULTS FOR MACHINE D

JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
D-1	5-29-71	623	25.5	11.C	9.9	10.2	45.0	41.4	43.7	33.8	32.2	33.1	1.0	1.560
D-2	6-27-71	624	25.6	11.1	9.0	9.6	46.8	42.0	44.6	33.8	31.6	32.8	0.5	1.555
D-3	6-30-71	625	25.4	10.1	9.0	9.8	45.0	39.0	41.5	33.6	31.8	32.8	1.5	1.566
D-4	7-19-71	626	26.3	11.C	9.C	10.0	50.4	41.4	45.7	34.4	32.0	33.5	0.5	1.555
CURRENT MACHINE AVERAGE			25.7			9.9			43.9			33.0		1.559
CUMULATIVE MACHINE AVERAGE			25.8			10.1			47.1			34.7		
MACHINE FACTOR, PERCENT			99.6			98.0			93.2			95.1		
MACHINE INDEX, PERCENT			96.2			98.0			104.0			105.4		

A Maximum tension at 600 f.p.m.

B 600 f.p.m. minimum tension.

TABLE VI

SUMMARY OF TEST RESULTS FOR MACHINE E
JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
E-1	6-10-71	854	26.4	11.1	9.2	10.4	41.4	36.6	39.1	31.6	30.6	31.3	1.5	1.563
E-2	6-23-71	855	26.0	10.2	9.0	9.8	47.4	39.0	41.6	32.2	31.0	31.5	1.0	1.561
E-3	7- 2-71	856	26.0	10.1	9.0	9.4	43.8	35.4	38.5	31.0	28.6	29.7	1.0	1.566
E-4	7-13-71	857	26.7	10.3	9.3	10.0	42.6	35.4	39.6	33.0	30.8	31.9	1.0	1.555
CURRENT MACHINE AVERAGE			26.3			9.9			39.7			31.1		1.561
CUMULATIVE MACHINE AVERAGE			26.4			10.3			41.8			31.5		
MACHINE FACTOR, PERCENT			99.6			96.1			95.0			98.7		
MACHINE INDEX, PERCENT			98.5			98.0			94.1			99.4		

TABLE VII

SUMMARY OF TEST RESULTS FOR MACHINE F
JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
F-1	7-16-71	2196	27.9	11.0	10.5	10.8	50.4	42.6	46.6	36.0	32.8	34.4	MIN.	1.550
F-2	7-20-71	2197	27.7	10.9	10.0	10.4	47.4	45.0	46.1	34.6	31.6	33.6	MIN.	1.550
CURRENT MACHINE AVERAGE			27.8			10.6			46.4			34.0		1.550
CUMULATIVE MACHINE AVERAGE			27.3			10.6			41.3			29.7		
MACHINE FACTOR, PERCENT			101.8			100.0			112.3			114.5		
MACHINE INDEX, PERCENT			104.1			105.0			110.0			108.6		

^AMaximum tension at 600 f.p.m.

^B600 f.p.m. minimum tension.

TABLE VIII

SUMMARY OF TEST RESULTS FOR MACHINE G

JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
G-1	8-12-71	1	26.3	11.0	10.4	10.8	42.0	37.8	40.0	33.2	28.4	31.1	0.5	1.559
CURRENT MACHINE AVERAGE			26.3			10.8			40.0			31.1		1.559
CUMULATIVE MACHINE AVERAGE														
MACHINE FACTOR, PERCENT														
MACHINE INDEX, PERCENT			98.5			106.9			94.8			99.4		

TABLE IX

SUMMARY OF TEST RESULTS FOR MACHINE H

JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
H-1	5- 4-71	723	26.6	11.1	10.0	10.4	48.0	41.4	45.4	39.4	35.2	37.4	NOTE C	1.542
H-2	5-18-71	1137	26.0	11.0	10.3	10.8	46.8	41.4	44.6	36.0	34.8	35.6	NOTE D	1.542
H-3	5-26-71	1365	26.5	10.3	9.9	10.0	45.0	42.0	43.0	36.4	32.6	34.0	0.5	1.563
H-4	6- 1-71	1597	26.5	11.0	10.0	10.5	49.2	42.0	45.5	35.8	32.8	34.0	NOTE E	1.556
CURRENT MACHINE AVERAGE			26.4			10.4			44.6			35.2		1.551
CUMULATIVE MACHINE AVERAGE			25.8			10.2			43.8			33.7		
MACHINE FACTOR, PERCENT			102.3			102.0			101.8			104.4		
MACHINE INDEX, PERCENT			98.9			103.0			105.7			112.5		

A Maximum tension at 600 f.p.m.

B 600 f.p.m. minimum tension.

C Maximum speed at which this roll could be corrugated with minimum tension was 375 f.p.m.

D Maximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.

E Maximum speed at which this roll could be corrugated with minimum tension was 225 f.p.m.

SUMMARY OF TEST RESULTS FOR MACHINE 1
JULY AND AUGUST, 1971

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

SUMMARY OF TEST RESULTS FOR MACHINE J

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

TABLE XII

SUMMARY OF TEST RESULTS FOR MACHINE K

JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
K-1	7-14-71		26.3	10.5	9.8	10.1	43.8	37.2	41.6	33.6	30.2	31.7	MIN.	1.563
K-2	7-15-71		26.3	10.3	9.9	10.1	45.6	36.0	41.5	32.4	30.0	31.2	0.5	1.559
K-3	8-11-71		25.7	10.9	10.0	10.3	43.2	38.4	40.6	29.6	29.2	29.4	1.0	1.571
K-4	8-12-71		25.7	10.4	9.9	10.1	42.0	34.8	37.3	31.6	29.6	30.3	1.0	1.570
CURRENT MACHINE AVERAGE			26.0			10.2			40.2			30.6		1.566
CUMULATIVE MACHINE AVERAGE			26.7			10.3			43.3			31.3		
MACHINE FACTOR, PERCENT			97.4			99.0			92.8			97.8		
MACHINE INDEX, PERCENT			97.4			101.0			95.3			97.8		

TABLE XIII

SUMMARY OF TEST RESULTS FOR MACHINE L

JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
L-1	6-18-71	685	27.6	10.9	9.8	10.1	44.4	39.0	42.0	33.4	32.4	32.9	1.5	1.568
L-2	7-17-71	686	27.7	10.8	10.0	10.2	42.6	37.2	40.1	33.0	31.2	32.4	1.5	1.568
L-3	7-21-71	687	27.4	10.8	10.0	10.2	42.0	36.6	39.4	32.0	30.2	31.3	1.5	1.566
CURRENT MACHINE AVERAGE			27.6			10.2			40.5			32.2		1.568
CUMULATIVE MACHINE AVERAGE			26.4			10.2			41.4			30.4		
MACHINE FACTOR, PERCENT			104.5			100.0			97.8			105.9		
MACHINE INDEX, PERCENT			103.4			101.0			96.0			102.9		

^AMaximum tension at 600 f.p.m.

^B600 f.p.m. minimum tension.

TABLE XIV

SUMMARY OF TEST RESULTS FOR MACHINE M

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CENCCRA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
M-1	7-12-71	383	26.8	5.1	8.0	8.5	45.0	37.2	42.2	32.8	29.6	30.3	1.5	1.575
M-2	6-21-71	384	26.5	10.0	9.2	9.8	43.2	34.2	38.6	30.8	28.4	29.4	1.0	1.567
M-3	7- 8-71	385	26.0	10.0	9.0	9.6	37.8	34.2	36.2	30.0	27.4	29.1	0.5	1.569
M-4	7-19-71	386	26.0	10.0	9.2	9.6	42.0	37.2	39.0	31.0	29.2	30.2	1.0	1.565
M-5	8- 1-71	387	25.7	10.0	9.1	9.5	41.4	36.0	38.9	30.6	27.8	29.4	1.5	1.574
CURRENT MACHINE AVERAGE			26.2			9.4			39.0			29.7		1.570
CUMULATIVE MACHINE AVERAGE			26.4			9.8			40.2			30.2		
MACHINE FACTOR, PERCENT			59.2			95.9			97.0			98.3		
MACHINE INDEX, PERCENT			58.1			93.1			92.4			94.9		

TABLE XV

SUMMARY OF TEST RESULTS FOR MACHINE N

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CENCCRA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
N-1	7-13-71		26.0	10.8	10.0	10.2	51.6	43.8	46.9	37.2	35.2	36.5	MIN.	1.553
N-2	7-14-71		26.2	10.8	9.9	10.2	49.8	42.6	46.1	36.0	33.4	34.9	MIN.	1.554
N-3	7-22-71		26.2	10.9	10.0	10.3	47.4	39.0	42.6	34.4	30.8	32.2	MIN.	1.558
N-4	7-23-71		27.1	11.0	10.1	10.8	48.0	39.6	43.6	34.6	33.8	34.2	MIN.	1.559
CURRENT MACHINE AVERAGE			26.4			10.4			44.8			34.4		1.556
CUMULATIVE MACHINE AVERAGE			26.6			10.4			45.9			33.5		
MACHINE FACTOR, PERCENT			59.2			100.0			97.6			102.7		
MACHINE INDEX, PERCENT			58.9			103.0			106.2			109.9		

^AMaximum tension at 600 f.p.m.

^B600 f.p.m. minimum tension.

TABLE XVI

SUMMARY OF TEST RESULTS FOR MACHINE O

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CONCORDA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
O-1	6- 6-71	3041	26.2	11.0	10.0	10.4	42.0	36.0	38.8	30.4	28.4	29.7	1.5	1.562
O-2	6-12-71	3402	27.4	11.0	10.1	10.5	44.4	36.6	40.2	31.6	30.8	31.3	1.5	1.570
O-3	6-26-71	3022	27.4	10.2	10.0	10.0	43.8	38.4	40.9	33.4	31.8	32.7	1.5	1.562
O-4	8- 2-71	3041	26.3	10.3	9.1	9.8	37.2	34.8	36.0	28.0	27.6	27.9	1.5	1.564
CURRENT MACHINE AVERAGE			26.8			10.2			39.0			30.4		1.565
CUMULATIVE MACHINE AVERAGE			27.9			10.4			41.8			30.9		
MACHINE FACTOR, PERCENT			96.0			98.1			93.3			98.4		
MACHINE INDEX, PERCENT			100.4			101.0			92.4			97.1		

TABLE XVII

SUMMARY OF TEST RESULTS FOR MACHINE P

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CONCORDA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
P-1	7-24-71	33	25.4	10.0	9.7	9.9	38.4	31.8	35.0	27.2	24.2	25.8	MIN.	1.548
CURRENT MACHINE AVERAGE			25.4			9.9			35.0			25.8		1.548
CUMULATIVE MACHINE AVERAGE			26.5			10.0			40.9			30.5		
MACHINE FACTOR, PERCENT			95.8			99.0			85.6			84.6		
MACHINE INDEX, PERCENT			95.1			98.0			82.9			82.4		

^AMaximum tension at 600 f.p.m.

^B600 f.p.m. minimum tension.

TABLE XVIII

SUMMARY OF TEST RESULTS FOR MACHINE Q

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CCNCCRA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
C-1	6-15-71	7642	27.9	11.4	10.5	11.0	48.6	43.2	44.6	32.4	30.6	31.6	1.5	1.571
C-2	7- 1-71	372	26.0	10.5	9.8	10.1	46.8	41.4	44.0	30.8	29.4	30.0	1.5	1.573
C-3	7- 1-71	382	26.0	10.3	9.8	10.0	45.0	40.8	42.7	31.0	29.0	30.2	1.5	1.571
C-4	8-16-71	7972	27.3	11.0	10.0	10.5	45.0	41.4	42.8	31.8	29.8	31.1	1.5	1.570
CURRENT MACHINE AVERAGE			26.8			10.4			43.5			30.7		1.571
CUMULATIVE MACHINE AVERAGE			27.3			11.4			42.2			29.3		
MACHINE FACTOR, PERCENT			98.2			91.2			103.1			104.8		
MACHINE INDEX, PERCENT			100.4			103.0			103.1			98.1		

TABLE XIX

SUMMARY OF TEST RESULTS FOR MACHINE R

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CCNCCRA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
R-1	6-14-71	344	27.4	9.5	8.9	9.1	48.0	42.6	44.3	34.8	33.0	33.4	0.5	1.551
R-2	6-18-71	345	27.6	9.0	8.6	8.9	43.8	39.0	41.6	32.4	30.4	31.1	MIN.	1.542
R-3	7- 8-71	348	27.6	9.0	8.9	9.0	48.0	43.8	45.5	36.2	33.0	34.7	1.5	1.568
R-4	7-20-71	349	27.4	9.1	8.9	9.0	51.0	41.4	45.6	35.2	34.0	34.6	1.5	1.570
CURRENT MACHINE AVERAGE			27.5			9.0			44.2			33.4		1.558
CUMULATIVE MACHINE AVERAGE			27.2			9.0			44.1			33.2		
MACHINE FACTOR, PERCENT			101.1			100.0			100.2			100.6		
MACHINE INDEX, PERCENT			103.0			89.1			104.7			106.7		

^AMaximum tension at 600 f.p.m.

^B600 f.p.m. minimum tension.

TABLE XX

SUMMARY OF TEST RESULTS FOR MACHINE S

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CCNCGRA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
S-1	6- 5-71	4191	28.4	9.5	9.1	9.4	38.4	34.8	36.8	30.6	28.4	29.2	1.0	1.559
S-2	6- 5-71	4191	27.4	10.9	10.0	10.2	42.6	36.0	39.7	31.4	28.2	29.9	1.5	1.557
S-3	6-25-71	4325	27.0	10.9	10.0	10.4	42.6	38.4	39.6	30.8	28.8	29.9	MIN.	1.547
S-4	8- 2-71	4093	27.9	10.2	8.9	9.5	47.4	37.8	42.2	33.6	31.6	32.4	MIN.	1.552
CURRENT MACHINE AVERAGE			27.7			9.9			39.6			30.4		1.554
CUMULATIVE MACHINE AVERAGE			27.7			10.4			41.1			31.2		
MACHINE FACTOR, PERCENT			100.0			95.2			96.4			97.4		
MACHINE INDEX, PERCENT			103.7			98.0			93.8			97.1		

TABLE XXI

SUMMARY OF TEST RESULTS FOR MACHINE T

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CCNCGRA FLAT CRUSH, P.S.I.			SINGLE-FACE FLAT CRUSH, P.S.I.			RUNNABILITY LB./IN.*A	DRAW FACTOR*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
T-1	6-13-71	754	25.2	9.0	8.5	8.9	46.2	43.2	44.2	36.2	32.6	34.7	0.5	1.565
T-2	6-22-71	755	26.3	9.9	9.0	9.5	51.0	42.0	46.7	36.4	33.8	35.4	NOTE C	1.544
CURRENT MACHINE AVERAGE			25.8			9.2			45.4			35.0		1.555
CUMULATIVE MACHINE AVERAGE			27.1			9.5			47.7			35.9		
MACHINE FACTOR, PERCENT			95.2			96.8			95.2			97.5		
MACHINE INDEX, PERCENT			96.6			91.1			107.6			111.8		

A Maximum tension at 600 f.p.m.

B 600 f.p.m. minimum tension

C Maximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.

TABLE XXII

SUMMARY OF TEST RESULTS FOR MACHINE U

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CONCORDA 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*B
U-1	6- 6-71	6	27.9	10.1	9.1	9.9	45.6	35.4	39.8	32.0	30.8	31.3	NOTE C	1.549
U-2	6-15-71	7	26.7	9.0	8.5	8.8	46.2	36.6	40.7	31.0	29.8	30.5	NOTE D	1.549
U-3	6-19-71	8	26.5	9.8	8.8	9.1	45.6	38.4	41.6	30.8	26.8	29.5	MIN.	1.557
U-4	7- 6-71	9	26.3	10.5	9.9	10.1	44.4	39.0	41.9	31.2	30.0	30.8	MIN.	1.556
U-5	7-18-71	10	25.4	10.1	9.0	9.8	39.6	32.4	36.4	29.8	27.0	28.7	MIN.	1.556
U-6	8- 3-71	11	26.3	10.2	9.5	9.9	43.2	39.0	40.8	34.4	31.0	32.4	NOTE E	1.556
CURRENT MACHINE AVERAGE			26.5			9.6			40.2			30.5		1.554
CUMULATIVE MACHINE AVERAGE			27.1			9.8			41.9			31.1		
MACHINE FACTOR, PERCENT			97.8			98.0			95.9			98.1		
MACHINE INDEX, PERCENT			99.2			95.0			95.3			97.4		

A Maximum tension at 600 f.p.m.

B 600 f.p.m. minimum tension.

C Maximum speed at which this roll could be corrugated with minimum tension was 275 f.p.m.

D Maximum speed at which this roll could be corrugated with minimum tension was 375 f.p.m.

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

TABLE XXIII

SUMMARY OF TEST RESULTS FOR MACHINE V

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CONCORDA 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*B
V-1	7-14-71		25.9	9.1	9.0	9.0	42.6	37.2	40.7	31.8	30.2	31.1	0.5	1.560
V-2	7-15-71		26.3	9.5	8.9	9.1	46.8	42.6	44.8	34.8	33.6	34.3	0.5	1.564
V-3	8-13-71		25.8	9.2	9.0	9.0	44.4	39.0	41.5	34.2	30.6	32.8	1.0	1.568
V-4	8-14-71		26.0	9.7	9.0	9.2	45.6	39.0	41.5	34.4	32.8	33.8	1.0	1.569
CURRENT MACHINE AVERAGE			26.0			9.1			42.1			33.0		1.565
CUMULATIVE MACHINE AVERAGE			26.5			9.5			44.4			32.4		
MACHINE FACTOR, PERCENT			98.1			95.8			94.8			101.8		
MACHINE INDEX, PERCENT			97.4			90.1			99.8			105.4		

TABLE XXIV

SUMMARY OF TEST RESULTS FOR MACHINE W
JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
W-1	7- 8-71	283	27.1	10.2	9.9	10.0	46.2	37.8	42.1	32.2	32.0	32.1	MIN.	1.549
W-2	7-31-71	284	27.9	10.9	10.0	10.4	49.8	45.6	47.6	36.4	33.4	34.8	MIN.	1.555
CURRENT MACHINE AVERAGE			27.5			10.2			44.8			33.4		1.552
CUMULATIVE MACHINE AVERAGE			26.9			10.3			39.6			29.1		
MACHINE FACTOR, PERCENT			102.2			99.0			113.1			114.8		
MACHINE INDEX, PERCENT			103.0			101.0			106.2			106.7		

TABLE XXV

SUMMARY OF TEST RESULTS FOR MACHINE X
JULY AND AUGUST, 1971

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*B
				MAX.	MIN.	AV.	MAX.	MIN.	AV.	MAX.	MIN.	AV.		
X-1	7-25-71	852	25.7	11.0	9.8	10.3	51.6	45.6	48.0	38.2	36.2	37.4	MIN.	1.542
X-2	7-26-71	853	26.0	11.2	10.0	10.5	53.4	49.2	50.6	37.6	35.6	36.3	MIN.	1.555
CURRENT MACHINE AVERAGE			25.8			10.4			49.3			36.8		1.549
CUMULATIVE MACHINE AVERAGE			26.0			10.1			50.8			36.6		
MACHINE FACTOR, PERCENT			99.2			103.0			97.0			100.5		
MACHINE INDEX, PERCENT			96.6			103.0			116.8			117.6		

^AMaximum tension at 600 f.p.m.

^B600 f.p.m. minimum tension.

TABLE XXVIII

SUMMARY OF TEST RESULTS FOR MACHINE AA

JULY AND AUGUST, 1971

TYPE OF MEDIUM- SEMICHEMICAL

CODE	DATE MADE	MILL ROLL NO.	BASIS WT., LB./M. SQ. FT.	CALIPER, PT.			CNCRA 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*B
AA-1	6- 9-71	28	26.5	11.2	10.0	10.6	41.4	34.8	38.8	32.0	27.8	30.4	MIN.	1.550
AA-2	6-29-71	29	26.7	11.3	10.8	11.0	41.4	37.2	40.0	32.0	28.8	30.6	MIN.	1.550
AA-3	7-15-71	30	26.0	11.1	9.9	10.5	42.0	34.2	37.9	30.8	26.4	29.1	MIN.	1.547
AA-4	7-22-71	31	26.0	11.2	10.1	10.8	40.8	34.8	38.2	30.2	29.2	29.8	MIN.	1.552
CURRENT MACHINE AVERAGE			26.3			10.7			38.7			30.0		1.550
CUMULATIVE MACHINE AVERAGE			26.2			11.0			38.3			29.1		
MACHINE FACTOR, PERCENT			100.4			97.3			101.0			103.1		
MACHINE INDEX, PERCENT			98.5			105.9			91.7			95.8		

A Maximum tension at 600 f.p.m.

B 600 f.p.m. minimum tension.

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 91 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 XXVIII for Machines A through Z and Machine AA, respectively.

In Table XXIX, 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 are still obtained on specimens conditioned after fluting, no

TABLE XXIX

A COMPARATIVE SUMMARY FOR EACH MACHINE OF THE CONCORA
FLAT CRUSH AVERAGES BASED ON INSTITUTE DATA AND MILL DATA
JULY AND AUGUST, 1971

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	4	45.0	42.6	-2.4	-5.3	-4.2
B	6	43.8	40.0	-3.8	-8.7	-4.7
C	1	42.2	40.7 ^d	-1.5	-3.6	+0.8
D	0	43.9	35.0 ^d	--	--	--
E	4	39.7	38.6	-1.1	-2.8	-3.7
F	2	46.4	47.2	+0.8	+1.7	+4.8
G	1	40.0	44.2	+4.2	+10.5	--
H	4	44.6	43.0	-1.6	-3.6	-1.8
I	1	37.7	34.7	-3.0	-8.0	-2.8
J	4	39.1	41.0	+1.9	+4.9	+8.6
K	4	40.2	42.7	+2.5	+6.2	+2.8
L	3	40.5	38.5	-2.0	-4.9	-3.7
M	5	39.0	38.8	-0.2	-0.5	-1.3
N	4	44.8	45.3	+0.5	+1.1	-1.3
O	3	38.3	34.8	-3.5	-9.1	-6.5
P	1	35.0	35.5	+0.5	+1.4	--
Q	4	43.5	38.8	-4.7	-10.8	-6.6
R	4	44.2	43.0	-1.2	-2.7	-5.5
S	2	39.5	37.1 ^d	-2.4	-6.1	-7.1
T	0	45.4	37.6 ^d	--	--	--
U	6	40.2	41.2	+1.0	+2.5	-0.5
V	4	42.1	43.0	+0.9	+2.1	+1.8
W	1	47.6	43.4 ^d	-4.2	-8.8	-3.2
X	0	49.3	37.1 ^d	--	--	--
Y	4	37.3	36.0	-1.3	-3.5	-1.4
Z	3	35.3	34.9	-0.4	-1.1	--
AA	4	38.7	40.5	+1.8	+4.7	+2.3

^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.

^dMill data were not obtained on specimens tested immediately after fluting.

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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