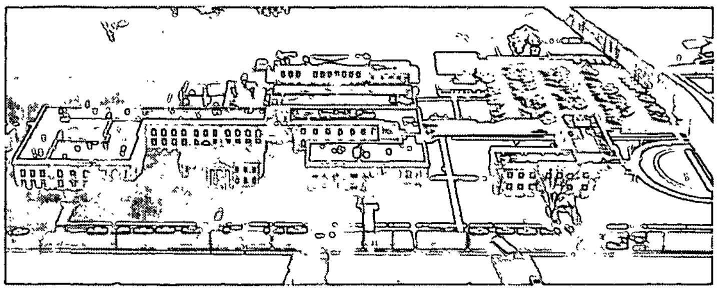
BASE-LINE



THE INSTITUTE OF PAPER CHEMISTRY, APPLETON, WISCONSIN

# CONTINUOUS BASE-LINE STUDY (MODIFIED)
# (MILL CORRUGATING MEDIUM DATA FOR JANUARY, FEBRUARY, MARCH, 1984)

Project 2694-2

Report Fifty-Five

A Progress Report

to

FOURDRINIER KRAFT BOARD GROUP

OF THE

AMERICAN PAPER INSTITUTE

June 1, 1984

THE INSTITUTE OF PAPER CHEMISTRY
Post Office Box 1039
Appleton, Wisconsin 54912
Phone: 414/734-9251
Telex: 469289

June 1, 1984

Project 2694-2

Dear Sir:

We are enclosing a copy of the following report to the Fourdrinier Kraft Board Group of the American Paper Institute:

Report Fifty-Five, Project 2694-2, a progress report entitled, "Continuous Baseline Study (Modified) of Mill Corrugating Medium Data for January, February, March, 1984" dated June 1, 1984

The code identities for paper machines in your company from which data were submitted for evaluation are given on the inside of the front cover of this report.

Sincerely,

Roger H Van Eperen

Roger H. Van Eperen
Manager, Materials Testing Laboratory
Paper Materials Division

RHV/les

Enclosure

GEORGIA-PACIFIC CORPORATION

Your machine is identified in this report by the following code.

| | | |
|---|---|---|
| *Toledo | Machine #2 | N1 |

BASE-LINE
1st QUARTER, 1984

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

# CONTINUOUS BASE-LINE STUDY (MODIFIED)
(MILL CORRUGATING MEDIUM DATA FOR JANUARY, FEBRUARY, MARCH, 1984)

Project 2694-2

Report Fifty-Five

A Progress Report

to

FOURDRINIER KRAFT BOARD GROUP

OF THE

AMERICAN PAPER INSTITUTE



June 1, 1984

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASE-LINE STUDY (MODIFIED)
(MILL CORRUGATING MEDIUM DATA FOR JANUARY, FEBRUARY, MARCH, 1984)

Summary of 26-lb Corrugating Medium Data
(Dec-Mar, 1984)

| Test | | DEC | | JAN | | FEB | | MAR | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Recycled | Total | Recycled | Total | Recycled | Total | Recycled |
| Moisture content, % | Max. | 9.3 | 7.1 | 9.2 | 7.1 | 9.4 | 7.1 | 9.5 | 7.2 |
| | Min. | 4.2 | 4.2 | 4.2 | 4.2 | 4.3 | 4.3 | 4.0 | 4.0 |
| | Ave. | 6.6(34) | 5.8(13) | 6.6(35) | 5.8(13) | 6.6(33) | 5.8(13) | 6.7(34) | 5.8(13) |
| Adj. basis weight, lb/M sq ft | Max. | 27.0 | 27.0 | 27.4 | 27.4 | 27.3 | 27.3 | 27.4 | 27.4 |
| | Min. | 25.2 | 25.2 | 25.4 | 25.7 | 25.5 | 25.9 | 25.3 | 26.1 |
| | Ave. | 26.4(34) | 26.5(13) | 26.4(35) | 26.5(13) | 26.4(33) | 26.5(13) | 26.4(34) | 26.6(13) |
| Caliper, pt. | Max. | 11.7 | 11.7 | 11.9 | 11.9 | 12.1 | 12.1 | 12.6 | 12.6 |
| | Min. | 8.0 | 8.0 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| | Ave. | 9.5(28) | 9.4(12) | 9.5(29) | 9.4(12) | 9.6(27) | 9.4(12) | 9.6(28) | 9.5(12) |
| Concora, lb | Max. | 71.0 | 70.1 | 70.1 | 70.1 | 70.2 | 70.2 | 69.5 | 69.5 |
| | Min. | 51.8 | 51.8 | 52.8 | 52.8 | 52.3 | 52.3 | 50.8 | 50.8 |
| | Ave. | 61.2(34) | 60.6(13) | 61.4(35) | 60.6(13) | 61.0(33) | 60.6(13) | 61.0(34) | 60.2(13) |
| 6" Ring Crush, lb | Max. | 36.4 | 35.0 | 36.0 | 35.0 | 40.1 | 35.0 | 39.9 | 36.0 |
| | Min. | 24.0 | 24.0 | 23.0 | 23.0 | 22.0 | 22.0 | 19.0 | 19.0 |
| | Ave. | 29.9(25) | 29.2( 9) | 29.6(26) | 27.8( 9) | 30.2(26) | 28.4( 9) | 30.6(26) | 28.6( 9) |

Max. and Min. values are current machine averages.
Ave. value is current F.K.B.G. average, number of machines is indicated in parentheses.

## INTRODUCTION

The continuous base-line study (modified) is a compilation of monthly averages of mill test data obtained routinely on 26-lb corrugating medium manufactured in the member mills of F.K.B.G. Mill data are included for moisture content, basis weight, caliper, Concora, and C.D. Ring Crush made on the production of individual machines which produced at least 500 tons of this grade weight during a given month.

## PRESENTATION OF DATA

For the 26-lb grade weight of corrugating medium referred to earlier, data on conditioning and testing environments, mill test averages for moisture content, adjusted basis weight, caliper, Concora, and C.D. Ring Crush results are compiled in the following tables.

| Table Number | Description |
|---|---|
| I-II-III-IV | Mill Test Averages on 26-Lb Corrugating Medium |
| V | Data on Conditioning and Testing Environments |

The procedure used in calculating cumulative machine averages, machine factors, machine indexes, and F.K.B.G. indexes are described in the Appendix.

It should be explained that the number of machines for which data are compiled in each table for a specified month varies for these reasons: a machine must have (a) produced at least 500 tons of 26-lb corrugating medium during the specified month, or (b) produced 500 tons of 26-lb corrugating medium during any one or more of the 12 months prior to the specified month (so that a cumulative average is available), to be included in a given table.

TABLE I

AVERAGES OF ROUTINE MILL QUALITY CONTROL DATA FOR 26 LB. CORRUGATING MEDIUM

JANUARY, 1984

| CODE *E | MOISTURE CONTENT, PERCENT — MACHINE DATA CUR. AV. | CUM. AV. | FACT. *B | IND. *C | ADJ. BASIS WT.,*A LB./M SQ. FT. — MACHINE DATA CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CALIPER, PT. — MACHINE DATA CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CONCORA TEST LB. — MACHINE DATA CUR. AV. | CUM. AV. | FACT. *B | IND. *C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1(R) | 6.0 | 6.0 | 100.0 | 90.9 | 26.9 | 26.8 | 100.4 | 101.9 | 9.0 | 9.0 | 100.0 | 93.8 | 52.8 | 53.1 | 99.4 | 86.8 |
| K1 | 7.0 | 6.6 | 106.1 | 106.1 | 27.3 | 26.4 | 103.4 | 103.4 | 8.5 | 9.0 | 94.4 | 88.5 | 69.0 | 69.3 | 99.6 | 113.5 |
| L1 | 7.3 | 7.3 | 100.0 | 110.6 | 26.4 | 26.3 | 100.4 | 100.0 | 10.2 | 10.2 | 100.0 | 106.2 | 57.0 | 56.6 | 100.7 | 93.8 |
| M1 | 8.7 | 8.4 | 103.6 | 131.8 | 26.0 | 26.0 | 100.0 | 98.5 | 9.3 | 8.7 | 106.9 | 96.9 | 61.0 | 60.5 | 100.8 | 100.3 |
| N1(R) | 7.0 | 7.1 | 98.6 | 106.1 | 26.2 | 26.1 | 100.4 | 99.2 | 11.9 | 11.8 | 100.8 | 124.0 | 63.0 | 62.0 | 101.6 | 103.6 |
| O1(R) | 5.3 | 4.0 | 132.5 | 80.3 | 26.6 | 27.0 | 98.5 | 100.8 | 7.7 | 7.9 | 97.5 | 80.2 | 60.2 | 60.3 | 99.8 | 99.0 |
| P1 | 6.9 | 7.3 | 94.5 | 104.5 | 26.6 | 26.3 | 101.1 | 100.8 | 10.9 | 10.5 | 103.8 | 113.5 | 60.1 | 60.2 | 99.8 | 98.8 |
| Q1 | 6.9 | 6.9 | 100.0 | 104.5 | 26.3 | 26.3 | 100.0 | 99.6 | | | | | 64.0 | 63.2 | 101.3 | 105.3 |
| R1(R) | 7.1 | 7.0 | 101.4 | 107.6 | 26.2 | 26.4 | 99.2 | 99.2 | 9.3 | 9.4 | 98.9 | 96.9 | 70.1 | 69.1 | 101.4 | 115.3 |
| S1(R) | 5.2 | 4.5 | 115.6 | 78.8 | 26.7 | 26.9 | 99.2 | 101.1 | 9.1 | 9.4 | 96.8 | 94.8 | 58.2 | 59.3 | 98.1 | 95.7 |
| W1 | 6.5 | 6.6 | 98.5 | 98.5 | 26.5 | 26.4 | 100.4 | 100.4 | 8.6 | 8.8 | 97.7 | 89.6 | 62.0 | 62.2 | 99.7 | 102.0 |
| X1 | | 5.6 | | | | 26.3 | | | | 9.1 | | | | 63.4 | | |
| Z1(R) | 5.9 | 6.0 | 98.3 | 89.4 | 26.5 | 26.5 | 100.0 | 100.4 | 10.8 | 10.2 | 105.9 | 112.5 | 60.4 | 60.1 | 100.5 | 99.3 |
| C2 | 6.1 | 5.5 | 110.9 | 92.4 | 25.9 | 26.0 | 99.6 | 98.1 | 9.9 | 9.9 | 100.0 | 103.1 | 61.4 | 60.9 | 100.8 | 101.0 |
| E2 | 6.5 | 6.5 | 100.0 | 98.5 | 26.3 | 26.5 | 99.2 | 99.6 | 9.6 | 9.4 | 102.1 | 100.0 | 66.0 | 64.4 | 102.5 | 108.6 |
| G2 | 7.5 | 7.4 | 101.4 | 113.6 | 26.3 | 26.4 | 99.6 | 99.6 | 10.6 | 10.3 | 102.9 | 110.4 | 56.0 | 56.4 | 99.3 | 92.1 |
| N2 | 6.0 | 6.1 | 98.4 | 90.9 | 26.7 | 26.7 | 100.0 | 101.1 | | | | | 59.0 | 61.0 | 96.7 | 97.0 |
| S2(R) | 5.7 | 5.6 | 101.8 | 86.4 | 26.5 | 26.5 | 100.0 | 100.4 | 9.5 | 9.5 | 100.0 | 99.0 | 65.7 | 64.8 | 101.4 | 108.0 |
| Y2 | 5.9 | 6.0 | 98.3 | 89.4 | 26.4 | 26.4 | 100.0 | 100.0 | 10.1 | 9.8 | 103.1 | 105.2 | 60.0 | 60.4 | 99.3 | 98.7 |
| F3(R) | 6.1 | 6.1 | 100.0 | 92.4 | 26.3 | 26.5 | 99.2 | 99.6 | 9.1 | 9.0 | 101.1 | 94.8 | 63.0 | 62.8 | 100.3 | 103.6 |
| G3(R) | 4.2 | 4.3 | 97.7 | 63.6 | 27.4 | 27.0 | 101.5 | 103.8 | 9.0 | 9.0 | 100.0 | 93.8 | 53.3 | 53.5 | 99.6 | 87.7 |
| H3 | 6.8 | 7.1 | 95.8 | 103.0 | 26.5 | 26.2 | 101.1 | 100.4 | 9.6 | 9.2 | 104.3 | 100.0 | 61.8 | 59.8 | 103.3 | 101.6 |
| I3 | 6.8 | 6.7 | 101.5 | 103.0 | 26.4 | 26.4 | 100.0 | 100.0 | 10.2 | 10.1 | 101.0 | 106.2 | 59.0 | 58.1 | 101.5 | 97.0 |
| L3(R) | 5.7 | 5.8 | 98.3 | 86.4 | 25.7 | 25.7 | 100.0 | 97.3 | 8.8 | 8.9 | 98.9 | 91.7 | 58.0 | 56.8 | 102.1 | 95.4 |
| M3 | 6.8 | 6.6 | 103.0 | 103.0 | 26.3 | 26.1 | 100.8 | 99.6 | 7.8 | 8.3 | 94.0 | 81.2 | 70.0 | 67.0 | 104.5 | 115.1 |
| P3 | 7.6 | 7.6 | 100.0 | 115.2 | 26.1 | 26.4 | 98.9 | 98.9 | | | | | 56.0 | 57.2 | 97.9 | 92.1 |
| R3 | 7.0 | 7.0 | 100.0 | 106.1 | 27.1 | 26.7 | 101.5 | 102.6 | 8.9 | 8.9 | 100.0 | 92.7 | 65.4 | 63.8 | 102.5 | 107.6 |
| T3 | 7.2 | 7.3 | 98.6 | 109.1 | 26.3 | 26.4 | 99.6 | 99.6 | 10.1 | 10.2 | 99.0 | 105.2 | 60.0 | 61.5 | 97.6 | 98.7 |
| Y3 | 8.1 | 7.7 | 105.2 | 122.7 | 26.0 | 26.5 | 98.1 | 98.5 | | | | | 59.0 | 59.5 | 99.2 | 97.0 |
| D4 | | 6.5 | | | | 26.1 | | | | 8.6 | | | | 67.0 | | |
| E4 | 8.6 | 8.2 | 104.9 | 130.3 | 26.1 | 26.1 | 100.0 | 98.9 | 10.3 | 10.2 | 101.0 | 107.3 | 63.2 | 63.4 | 99.7 | 103.9 |
| H4(R) | 6.9 | 7.2 | 95.8 | 104.5 | 26.4 | 26.2 | 100.8 | 100.0 | | | | | 62.0 | 61.7 | 100.5 | 102.0 |
| I4 | 9.2 | 9.4 | 97.9 | 139.4 | 25.4 | 25.4 | 100.0 | 96.2 | 9.8 | 9.6 | 102.1 | 102.1 | 64.2 | 64.9 | 98.9 | 105.6 |
| K4(R) | 5.8 | 6.0 | 96.7 | 87.9 | 26.5 | 26.5 | 100.0 | 100.4 | 9.7 | 9.7 | 100.0 | 101.0 | 61.7 | 60.6 | 101.8 | 101.5 |
| N4 | 7.1 | 7.4 | 95.9 | 107.6 | 26.2 | 26.9 | 97.4 | 99.2 | | | | | 58.0 | 60.0 | 96.7 | 95.4 |
| T4(R) | 5.2 | 5.2 | 100.0 | 78.8 | 26.6 | 26.8 | 99.2 | 100.8 | 9.0 | 9.8 | 91.8 | 93.8 | 59.4 | 59.3 | 100.2 | 97.7 |
| U4 | 6.4 | 6.7 | 95.5 | 97.0 | 26.1 | 26.1 | 100.0 | 98.9 | 8.5 | 8.9 | 95.5 | 88.5 | 69.0 | 67.7 | 101.9 | 113.5 |

| FKBG DATA | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED |
|---|---|---|---|---|---|---|---|---|
| CUR. AV | 6.6 | 5.8 | 26.4 | 26.5 | 9.5 | 9.4 | 61.4 | 60.6 |
| CUM. AV | 6.6 | 5.7 | 26.4 | 26.6 | 9.6 | 9.5 | 60.8 | 60.3 |
| IND. *D | 100.0 | 101.8 | 100.0 | 99.6 | 99.0 | 98.9 | 101.0 | 100.5 |

(*)-- NOTES A, B, C, D, AND E, ARE GIVEN IN APPENDIX.

TABLE II

AVERAGES OF ROUTINE MILL QUALITY CONTROL DATA FOR 26 LB. CORRUGATING MEDIUM

FEBRUARY, 1984

| CODE | MOISTURE CONTENT, PERCENT | | | | ADJ. BASIS WT.,*A LB./M SQ. FT. | | | | CALIPER, PT. | | | | CONCORA TEST LB. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MACHINE DATA | | | | MACHINE DATA | | | | MACHINE DATA | | | | MACHINE DATA | | | |
| *E | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C |
| G1(R) | 6.0 | 6.0 | 100.0 | 90.9 | 26.7 | 26.8 | 99.6 | 101.1 | 9.0 | 9.0 | 100.0 | 94.7 | 52.3 | 52.9 | 98.9 | 86.0 |
| K1 | 7.1 | 6.6 | 107.6 | 107.6 | 26.6 | 26.5 | 100.4 | 100.8 | 8.7 | 9.0 | 96.7 | 91.6 | 69.0 | 69.3 | 99.6 | 113.5 |
| L1 | 7.3 | 7.3 | 100.0 | 110.6 | 26.5 | 26.3 | 100.8 | 100.4 | 10.4 | 10.2 | 102.0 | 109.5 | 57.0 | 56.7 | 100.5 | 93.8 |
| M1 | 8.7 | 8.4 | 103.6 | 131.8 | 26.0 | 26.0 | 100.0 | 98.5 | 9.1 | 8.8 | 103.4 | 95.8 | 61.0 | 60.6 | 100.7 | 100.3 |
| N1(R) | 7.1 | 7.1 | 100.0 | 107.6 | 26.3 | 26.1 | 100.8 | 99.6 | 12.1 | 11.7 | 103.4 | 127.4 | 62.2 | 62.2 | 100.0 | 102.[illegible] |
| O1(R) | 5.0 | 4.1 | 122.0 | 75.8 | 26.7 | 27.0 | 98.9 | 101.1 | 7.7 | 7.9 | 97.5 | 81.0 | 59.2 | 60.2 | 98.3 | 97.4 |
| P1 | 7.0 | 7.2 | 97.2 | 106.1 | 26.4 | 26.3 | 100.4 | 100.0 | 10.5 | 10.5 | 100.0 | 110.5 | 60.3 | 60.2 | 100.2 | 99.2 |
| Q1 | 6.9 | 6.9 | 100.0 | 104.5 | 26.3 | 26.3 | 100.0 | 99.6 | | | | | 62.0 | 63.4 | 97.8 | 102.0 |
| R1(R) | 7.1 | 7.0 | 101.4 | 107.6 | 26.3 | 26.4 | 99.6 | 99.6 | 9.2 | 9.4 | 97.9 | 96.8 | 70.2 | 69.2 | 101.4 | 115.5 |
| S1(R) | 4.3 | 4.6 | 93.5 | 65.2 | 26.9 | 26.9 | 100.0 | 101.9 | 9.2 | 9.4 | 97.9 | 96.8 | 59.8 | 59.1 | 101.2 | 98.4 |
| W1 | 6.5 | 6.6 | 98.5 | 98.5 | 26.5 | 26.4 | 100.4 | 100.4 | 8.4 | 8.8 | 95.4 | 88.4 | 64.0 | 62.4 | 102.6 | 105.3 |
| X1 | | 5.6 | | | | 26.4 | | | | 9.0 | | | | 63.6 | | |
| Z1(R) | 5.9 | 6.0 | 98.3 | 89.4 | 26.4 | 26.5 | 99.6 | 100.0 | 10.5 | 10.3 | 101.9 | 110.5 | 61.2 | 60.0 | 102.0 | 100.6 |
| C2 | 6.1 | 5.5 | 110.9 | 92.4 | 25.8 | 26.0 | 99.2 | 97.7 | 9.8 | 9.9 | 99.0 | 103.2 | 60.4 | 60.7 | 99.5 | 99.3 |
| E2 | 6.6 | 6.4 | 103.1 | 100.0 | 26.2 | 26.5 | 98.9 | 99.2 | 9.6 | 9.4 | 102.1 | 101.0 | 64.0 | 64.4 | 99.4 | 105.3 |
| G2 | 7.6 | 7.4 | 102.7 | 115.2 | 26.5 | 26.4 | 100.4 | 100.4 | 10.5 | 10.3 | 101.9 | 110.5 | 56.0 | 56.5 | 99.1 | 92.1 |
| N2 | 6.0 | 6.1 | 98.4 | 90.9 | 26.8 | 26.7 | 100.4 | 101.5 | | | | | 61.0 | 60.6 | 100.7 | 100.3 |
| S2(R) | 5.8 | 5.7 | 101.8 | 87.9 | 26.5 | 26.5 | 100.0 | 100.4 | 9.5 | 9.5 | 100.0 | 100.0 | 66.2 | 64.7 | 102.3 | 108.9 |
| Y2 | 5.9 | 6.0 | 98.3 | 89.4 | 26.5 | 26.4 | 100.4 | 100.4 | 10.1 | 9.8 | 103.1 | 106.3 | 60.0 | 60.3 | 99.5 | 98.7 |
| F3(R) | 6.1 | 6.0 | 101.7 | 92.4 | 26.4 | 26.5 | 99.6 | 100.0 | 9.2 | 9.0 | 102.2 | 96.8 | 62.0 | 62.9 | 98.6 | 102.0 |
| G3(R) | 4.3 | 4.2 | 102.4 | 65.2 | 27.3 | 27.0 | 101.1 | 103.4 | 9.0 | 9.0 | 100.0 | 94.7 | 53.0 | 53.3 | 99.4 | 87.2 |
| H3 | 6.6 | 7.0 | 94.3 | 100.0 | 26.4 | 26.2 | 100.8 | 100.0 | 9.3 | 9.2 | 101.1 | 97.9 | 62.4 | 60.2 | 103.6 | 102.6 |
| I3 | 6.9 | 6.7 | 103.0 | 104.5 | 26.4 | 26.4 | 100.0 | 100.0 | 9.7 | 10.1 | 96.0 | 102.1 | 59.0 | 58.2 | 101.4 | 97.0 |
| L3(R) | 5.8 | 5.8 | 100.0 | 87.9 | 25.9 | 25.7 | 100.8 | 98.1 | 8.8 | 8.9 | 98.9 | 92.6 | 56.0 | 56.9 | 98.4 | 92.1 |
| M3 | | 6.7 | | | | 26.2 | | | | 8.0 | | | | 68.5 | | |
| P3 | 7.3 | 7.6 | 96.0 | 110.6 | 25.9 | 26.4 | 98.1 | 98.1 | | | | | 57.0 | 57.2 | 99.6 | 93.8 |
| R3 | 7.0 | 7.0 | 100.0 | 106.1 | 27.0 | 26.7 | 101.1 | 102.3 | 8.9 | 8.8 | 101.1 | 93.7 | 66.0 | 64.1 | 103.0 | 108.6 |
| T3 | 7.2 | 7.2 | 100.0 | 109.1 | 26.2 | 26.4 | 99.2 | 99.2 | 10.5 | 10.2 | 102.9 | 110.5 | 60.0 | 61.4 | 97.7 | 98.7 |
| Y3 | 7.5 | 7.7 | 97.4 | 113.6 | 26.0 | 26.4 | 98.5 | 98.5 | | | | | 61.0 | 59.5 | 102.5 | 100.3 |
| D4 | | 6.5 | | | | 26.1 | | | | 8.6 | | | | 67.0 | | |
| E4 | 8.4 | 8.3 | 101.2 | 127.3 | 26.0 | 26.1 | 99.6 | 98.5 | 10.0 | 10.2 | 98.0 | 105.3 | 63.0 | 63.4 | 99.4 | 103.6 |
| H4(R) | 6.7 | 7.2 | 93.0 | 101.5 | 26.4 | 26.2 | 100.8 | 100.0 | | | | | 63.0 | 61.7 | 102.1 | 103.6 |
| I4 | 9.4 | 9.4 | 100.0 | 142.4 | 25.5 | 25.4 | 100.4 | 96.6 | 9.6 | 9.6 | 100.0 | 101.0 | 64.7 | 64.8 | 99.8 | 106.4 |
| K4(R) | 5.8 | 6.0 | 96.7 | 87.9 | 26.6 | 26.5 | 100.4 | 100.8 | 9.8 | 9.7 | 101.0 | 103.2 | 61.2 | 60.6 | 101.0 | 100.6 |
| N4 | 7.4 | 7.3 | 101.4 | 112.1 | 26.2 | 26.7 | 98.1 | 99.2 | | | | | 58.0 | 59.3 | 97.8 | 95.4 |
| T4(R) | 5.0 | 5.2 | 96.2 | 75.8 | 26.7 | 26.8 | 99.6 | 101.1 | 9.3 | 9.8 | 94.9 | 97.9 | 61.3 | 59.3 | 103.4 | 100.8 |
| U4 | | 6.6 | | | | 26.1 | | | | 8.8 | | | | 67.7 | | |

FKBG DATA

| | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED |
|---|---|---|---|---|---|---|---|---|
| CUR. AV | 6.6 | 5.8 | 26.4 | 26.5 | 9.6 | 9.4 | 61.0 | 60.6 |
| CUM. AV | 6.6 | 5.7 | 26.4 | 26.5 | 9.5 | 9.5 | 60.8 | 60.2 |
| IND. *D | 100.0 | 101.8 | 100.0 | 100.0 | 101.0 | 98.9 | 100.3 | 100.7 |

(*)-- NOTES A, B, C, D, AND E, ARE GIVEN IN APPENDIX.

TABLE III

AVERAGES OF ROUTINE MILL QUALITY CONTROL DATA FOR 26 LB. CORRUGATING MEDIUM

MARCH, 1984

| | MOISTURE CONTENT, PERCENT | | | | ADJ. BASIS WT.,*A LB./M SQ. FT. | | | | CALIPER, PT. | | | | CONCORA TEST LB. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MACHINE DATA | | | | MACHINE DATA | | | | MACHINE DATA | | | | MACHINE DATA | | | |
| CODE *F | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C |
| G1(R) | 6.0 | 6.0 | 100.0 | 90.9 | 26.7 | 26.8 | 99.6 | 101.1 | 9.0 | 9.0 | 100.0 | 94.7 | 50.8 | 52.8 | 96.2 | 83.4 |
| K1 | 7.3 | 6.7 | 109.0 | 110.6 | 26.5 | 26.5 | 100.0 | 100.4 | 9.0 | 8.9 | 101.1 | 94.7 | 68.0 | 69.2 | 98.3 | 111.6 |
| L1 | 7.1 | 7.3 | 97.3 | 107.6 | 26.5 | 26.3 | 100.8 | 100.4 | 10.2 | 10.2 | 100.0 | 107.4 | 57.0 | 56.7 | 100.5 | 93.6 |
| M1 | 8.9 | 8.5 | 104.7 | 134.8 | 26.0 | 26.0 | 100.0 | 98.5 | 8.9 | 8.8 | 101.1 | 93.7 | 61.0 | 60.7 | 100.5 | 100.2 |
| N1(R) | 7.2 | 7.1 | 101.4 | 109.1 | 26.3 | 26.1 | 100.8 | 99.6 | 12.6 | 11.7 | 107.7 | 132.6 | 61.5 | 62.2 | 98.9 | 101.0 |
| O1(R) | 5.3 | 4.2 | 126.2 | 80.3 | 26.7 | 26.9 | 99.2 | 101.1 | 7.7 | 7.9 | 97.5 | 81.0 | 59.6 | 60.0 | 99.3 | 97.9 |
| P1 | 6.8 | 7.2 | 94.4 | 103.0 | 26.3 | 26.4 | 99.6 | 99.6 | 10.6 | 10.6 | 100.0 | 111.6 | 60.4 | 60.2 | 100.3 | 99.2 |
| Q1 | 6.9 | 6.9 | 100.0 | 104.5 | 26.3 | 26.3 | 100.0 | 99.6 | | | | | 62.0 | 63.2 | 98.1 | 101.8 |
| R1(R) | 7.1 | 7.0 | 101.4 | 107.6 | 26.3 | 26.3 | 100.0 | 99.6 | 9.1 | 9.4 | 96.8 | 95.8 | 69.5 | 69.3 | 100.3 | 114.1 |
| S1(R) | 4.7 | 4.5 | 104.4 | 71.2 | 26.8 | 26.9 | 99.6 | 101.5 | 9.1 | 9.4 | 96.8 | 95.8 | 59.7 | 59.1 | 101.0 | 98.0 |
| W1 | 6.5 | 6.6 | 98.5 | 98.5 | 26.5 | 26.5 | 100.0 | 100.4 | 8.4 | 8.8 | 95.4 | 88.4 | 63.3 | 62.7 | 101.0 | 103.9 |
| X1 | | 5.6 | | | | 26.4 | | | | 9.0 | | | | 63.6 | | |
| Z1(R) | 5.8 | 5.9 | 98.3 | 87.9 | 26.5 | 26.5 | 100.0 | 100.4 | 10.4 | 10.3 | 101.0 | 109.5 | 61.4 | 60.1 | 102.2 | 100.8 |
| C2 | 6.0 | 5.6 | 107.1 | 90.9 | 25.8 | 26.0 | 99.2 | 97.7 | 9.8 | 9.9 | 99.0 | 103.2 | 59.8 | 60.7 | 98.5 | 98.2 |
| E2 | 6.5 | 6.4 | 101.6 | 98.5 | 26.2 | 26.4 | 99.2 | 99.2 | 9.3 | 9.4 | 98.9 | 97.9 | 67.0 | 64.2 | 104.4 | 110.0 |
| G2 | 7.5 | 7.4 | 101.4 | 113.6 | 26.5 | 26.4 | 100.4 | 100.4 | 10.3 | 10.3 | 100.0 | 108.4 | 56.0 | 56.5 | 99.1 | 92.0 |
| N2 | 5.9 | 6.1 | 96.7 | 89.4 | 26.9 | 26.7 | 100.7 | 101.9 | | | | | 60.0 | 60.7 | 98.8 | 98.5 |
| S2(R) | 5.8 | 5.7 | 101.8 | 87.9 | 26.3 | 26.5 | 99.2 | 99.6 | 9.5 | 9.5 | 100.0 | 100.0 | 63.8 | 64.7 | 98.6 | 104.8 |
| Y2 | 6.4 | 6.0 | 106.7 | 97.0 | 26.2 | 26.4 | 99.2 | 99.2 | 9.9 | 9.8 | 101.0 | 104.2 | 60.0 | 60.3 | 99.5 | 98.5 |
| F3(R) | 6.3 | 6.0 | 105.0 | 95.4 | 26.3 | 26.5 | 99.2 | 99.6 | 9.1 | 9.0 | 101.1 | 95.8 | 63.0 | 62.8 | 100.3 | 103.4 |
| G3(R) | 4.0 | 4.2 | 95.2 | 60.6 | 27.4 | 27.0 | 101.5 | 103.8 | 9.0 | 9.0 | 100.0 | 94.7 | 54.7 | 53.0 | 103.2 | 89.8 |
| H3 | 6.8 | 7.0 | 97.1 | 103.0 | 26.4 | 26.3 | 100.4 | 100.0 | 9.6 | 9.2 | 104.3 | 101.0 | 62.4 | 60.5 | 103.1 | 102.5 |
| I3 | 6.9 | 6.7 | 103.0 | 104.5 | 26.3 | 26.4 | 99.6 | 99.6 | 10.2 | 10.1 | 101.0 | 107.4 | 59.0 | 58.4 | 101.0 | 96.9 |
| L3(R) | 5.7 | 5.8 | 98.3 | 86.4 | 26.1 | 25.7 | 101.6 | 98.9 | 9.4 | 8.8 | 106.8 | 98.9 | 55.0 | 56.8 | 96.8 | 90.3 |
| M3 | | 6.7 | | | | 26.2 | | | | 8.0 | | | | 68.5 | | |
| P3 | 7.7 | 7.6 | 101.3 | 116.7 | 26.0 | 26.3 | 98.8 | 98.5 | | | | | 58.0 | 57.2 | 101.4 | 95.2 |
| R3 | 6.8 | 7.0 | 97.1 | 103.0 | 27.0 | 26.8 | 100.7 | 102.3 | 8.9 | 8.9 | 100.0 | 93.7 | 65.5 | 64.6 | 101.4 | 107.6 |
| T3 | 7.3 | 7.2 | 101.4 | 110.6 | 26.2 | 26.4 | 99.2 | 99.2 | 10.5 | 10.2 | 102.9 | 110.5 | 61.0 | 61.2 | 99.7 | 100.2 |
| Y3 | 8.0 | 7.7 | 103.9 | 121.2 | 25.9 | 26.4 | 98.1 | 98.1 | | | | | 59.0 | 59.7 | 98.8 | 96.9 |
| D4 | | 6.5 | | | | 26.1 | | | | 8.6 | | | | 67.0 | | |
| E4 | 8.5 | 8.3 | 102.4 | 128.8 | 26.0 | 26.1 | 99.6 | 98.5 | 10.3 | 10.2 | 101.0 | 108.4 | 62.7 | 63.4 | 98.9 | 103.0 |
| H4(R) | 6.8 | 7.1 | 95.8 | 103.0 | 26.4 | 26.2 | 100.8 | 100.0 | | | | | 62.0 | 61.8 | 100.3 | 101.8 |
| I4 | 9.5 | 9.4 | 101.1 | 143.9 | 25.3 | 25.4 | 99.6 | 95.8 | 9.7 | 9.6 | 101.0 | 102.1 | 64.0 | 64.7 | 98.9 | 105.1 |
| K4(R) | 5.8 | 5.9 | 98.3 | 87.9 | 26.6 | 26.6 | 100.0 | 100.8 | 10.0 | 9.7 | 103.1 | 105.3 | 61.1 | 60.6 | 100.8 | 100.3 |
| N4 | 7.9 | 7.3 | 108.2 | 119.7 | 26.3 | 26.6 | 98.9 | 99.6 | | | | | 58.0 | 59.0 | 98.3 | 95.2 |
| T4(R) | 4.8 | 5.1 | 94.1 | 72.7 | 26.8 | 26.8 | 100.0 | 101.5 | 9.2 | 9.7 | 94.8 | 96.8 | 60.6 | 59.4 | 102.0 | 99.5 |
| U4 | 6.3 | 6.6 | 95.4 | 95.4 | 26.1 | 26.1 | 100.0 | 98.9 | 8.6 | 8.8 | 97.7 | 90.5 | 67.0 | 67.7 | 99.0 | 110.0 |

FKEG DATA

| | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED |
|---|---|---|---|---|---|---|---|---|
| CUR. AV | 6.7 | 5.8 | 26.4 | 26.6 | 9.6 | 9.5 | 61.0 | 60.2 |
| CUM. AV | 6.6 | 5.7 | 26.4 | 26.5 | 9.5 | 9.4 | 60.9 | 60.2 |
| IND. *D | 101.5 | 101.8 | 100.0 | 100.4 | 101.0 | 101.1 | 100.2 | 100.0 |

(*)-- NOTES A, B, C, D, AND E, ARE GIVEN IN APPENDIX.

TABLE IV

AVERAGES OF ROUTINE MILL QUALITY CONTROL DATA FOR 26 LB. CORRUGATING MEDIUM

RING COMPRESSION, LBS.

| | JANUARY, 1984 | | | | FEBRUARY, 1984 | | | | MARCH, 1984 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MACHINE DATA | | | | MACHINE DATA | | | | MACHINE DATA | | |
| | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C | CUR. AV. | CUM. AV. | FACT. *B | IND. *C |
| G1(R) | 23.0 | 22.5 | 102.2 | 79.6 | 22.0 | 22.2 | 99.1 | 76.1 | 19.0 | 21.7 | 87.6 | 65.5 |
| K1 | | | | | | | | | | | | |
| L1 | 25.0 | 27.2 | 91.9 | 86.5 | 27.0 | 27.2 | 99.3 | 93.4 | 28.0 | 27.2 | 102.9 | 96.6 |
| M1 | 32.0 | | | 110.7 | 34.0 | 32.0 | 106.2 | 117.6 | 34.5 | 33.0 | 104.5 | 119.0 |
| N1(R) | 25.0 | 25.6 | 97.6 | 86.5 | 25.0 | 25.5 | 98.0 | 86.5 | 25.0 | 25.5 | 98.0 | 86.2 |
| O1(R) | 31.0 | 29.5 | 105.1 | 107.3 | 30.9 | 29.8 | 103.7 | 106.9 | 30.7 | 30.0 | 102.3 | 105.9 |
| P1 | 35.0 | 34.7 | 100.9 | 121.1 | 36.1 | 34.7 | 104.0 | 124.9 | 34.5 | 34.9 | 98.8 | 119.0 |
| Q1 | 31.0 | 31.0 | 100.0 | 107.3 | 30.0 | 31.0 | 96.8 | 103.8 | 30.5 | 30.8 | 99.0 | 105.2 |
| R1(R) | | | | | | | | | | | | |
| S1(R) | 25.1 | 24.4 | 102.9 | 86.8 | 25.2 | 24.5 | 102.8 | 87.2 | 26.0 | 24.5 | 106.1 | 89.6 |
| W1 | 28.5 | 27.2 | 104.8 | 98.6 | 31.2 | 27.2 | 114.7 | 108.0 | 29.0 | 28.0 | 103.6 | 100.0 |
| X1 | | | | | | | | | | | | |
| Z1(R) | | | | | | | | | | | | |
| C2 | 34.7 | 33.0 | 105.2 | 120.1 | 35.0 | 33.2 | 105.4 | 121.1 | 32.7 | 33.5 | 97.6 | 112.8 |
| E2 | 31.0 | 31.8 | 97.5 | 107.3 | 32.0 | 31.7 | 100.9 | 110.7 | 31.0 | 31.8 | 97.5 | 106.9 |
| G2 | 26.0 | 27.4 | 94.9 | 90.0 | 26.0 | 27.3 | 95.2 | 90.0 | 26.0 | 27.3 | 95.2 | 89.6 |
| N2 | 36.0 | 36.0 | 100.0 | 124.6 | 35.0 | 36.0 | 97.2 | 121.1 | 34.6 | 35.9 | 96.4 | 119.3 |
| S2(R) | 29.0 | 29.8 | 97.3 | 100.3 | 30.1 | 29.5 | 102.0 | 104.2 | 30.6 | 29.4 | 104.1 | 105.5 |
| Y2 | 26.0 | 27.1 | 95.9 | 90.0 | 27.0 | 27.0 | 100.0 | 93.4 | 27.0 | 26.8 | 100.7 | 93.1 |
| F3(R) | 35.0 | 34.2 | 102.3 | 121.1 | 35.0 | 34.1 | 102.6 | 121.1 | 36.0 | 34.1 | 105.6 | 124.1 |
| G3(R) | 25.0 | 27.0 | 92.6 | 86.5 | 26.0 | 26.4 | 98.5 | 90.0 | 27.0 | 26.2 | 103.0 | 93.1 |
| H3 | | | | | | | | | | | | |
| I3 | 27.0 | 27.4 | 98.5 | 93.4 | 29.0 | 27.4 | 105.8 | 100.3 | 29.0 | 27.5 | 105.4 | 100.0 |
| L3(R) | 31.0 | 34.1 | 90.9 | 107.3 | 35.0 | 33.8 | 103.6 | 121.1 | 36.0 | 33.9 | 106.2 | 124.1 |
| M3 | | | | | | | | | | | | |
| P3 | 31.0 | 30.7 | 101.0 | 107.3 | 30.0 | 30.7 | 97.7 | 103.8 | 31.0 | 30.7 | 101.0 | 106.9 |
| R3 | | | | | | | | | | | | |
| T3 | 34.0 | 33.1 | 102.7 | 117.6 | 32.0 | 33.2 | 96.4 | 110.7 | 34.0 | 33.1 | 102.7 | 117.2 |
| Y3 | 30.0 | 28.1 | 106.8 | 103.8 | 28.0 | 28.3 | 98.9 | 96.9 | 38.0 | 28.2 | 134.8 | 131.0 |
| D4 | | | | | | | | | | | | |
| E4 | 32.2 | 33.3 | 96.7 | 111.4 | 40.1 | 33.1 | 121.1 | 138.8 | 39.9 | 34.1 | 117.0 | 137.6 |
| H4(R) | | | | | | | | | | | | |
| I4 | 33.5 | 33.3 | 100.6 | 115.9 | 32.7 | 33.3 | 98.2 | 113.1 | 34.9 | 33.2 | 105.1 | 120.3 |
| K4(R) | | | | | | | | | | | | |
| N4 | 25.0 | 27.0 | 92.6 | 86.5 | 26.0 | 26.3 | 98.8 | 90.0 | 25.0 | 26.2 | 95.4 | 86.2 |
| T4(R) | 26.6 | 25.1 | 106.0 | 92.0 | 26.1 | 25.2 | 103.6 | 90.3 | 26.7 | 25.3 | 105.5 | 92.1 |
| L4 | | | | | | | | | | | | |

FKEG DATA

| | TOTAL | RECYCLED | TOTAL | RECYCLED | TOTAL | RECYCLED |
|---|---|---|---|---|---|---|
| CUR. AV | 29.6 | 27.8 | 30.2 | 28.4 | 30.6 | 28.6 |
| CUM. AV | 28.9 | 28.0 | 28.9 | 27.6 | 29.0 | 27.4 |
| IND. *D | 102.4 | 99.3 | 104.5 | 102.9 | 105.5 | 104.4 |

(*)-- NOTES A, B, C, D, AND E, ARE GIVEN IN APPENDIX.

TABLE V

DATA ON CONDITIONING AND TESTING ENVIRONMENTS

JANUARY, FEBRUARY, MARCH, 1984

| Code | Conditioning Environment: Are Quality Samples Conditioned Before Testing? | Procedure: Time | Procedure: Temp., °F | Procedure: RH, % | Testing Environment: Are Quality Samples Tested Under Controlled Conditions of Temperature & Humidity? |
|---|---|---|---|---|---|
| G1 | No | -- | -- | -- | Yes: 73 ± 3°F; 50 ± 2% RH |
| K1 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |
| L1 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 2% RH |
| M1 | No | -- | -- | -- | Yes: 70 ± 2°F; 50 ± 10% RH |
| N1 | No | -- | -- | -- | Yes: 70 ± 2°F; 50 ± 2% RH |
| O1 | No | -- | -- | -- | Yes: 75 ± 2°F; 50 ± 2% RH |
| P1 | No | -- | -- | -- | Yes: 70 ± 2°F; 50 ± 2% RH |
| Q1 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 2% RH |
| R1 | No | -- | -- | -- | Yes: 72 ± 1°F; 50 ± 1% RH |
| S1 | No | -- | -- | -- | No |
| W1 | Yes | 20 min | -- | -- | Yes: 72 ± 2°F; 50 ± 2% RH |
| X1 | No data submitted for this quarter | | | | |
| Z1 | No | -- | -- | -- | Yes: 72 ± 4°F; 50 ± 5% RH |
| C2 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |
| E2 | No | -- | -- | -- | Yes: 73°F; 50% RH |
| G2 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 2% RH |
| N2 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 2% RH |
| S2 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 3% RH |
| Y2 | No | -- | -- | -- | Yes: 73 ± 1°F; 50 ± 2% RH |
| F3 | No | -- | -- | -- | No |
| G3 | No | -- | -- | -- | Yes: 73 ± 3°F; 50 ± 2% RH |
| H3 | No | -- | -- | -- | No |
| I3 | No | -- | -- | -- | No |
| L3 | Yes | 20 min | -- | -- | Yes: 72 ± 3-5°F; 50 ± 2% RH |
| M3 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |
| P3 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |
| R3 | No | -- | -- | -- | No |
| T3 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 1% RH |
| Y3 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |
| D4 | No data submitted for this quarter | | | | |
| E4 | No | -- | -- | -- | Yes: 72 ± 3°F; 50 ± 2% RH |
| H4 | No | -- | -- | -- | Yes: 70 ± 2°F; 50 ± 5% RH |
| I4 | No | -- | -- | -- | Yes: 72 ± 2°F; 50 ± 3% RH |
| K4 | No | -- | -- | -- | Yes: 72 ± 4°F; 50 ± 5% RH |
| N4 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |
| T4 | No | -- | -- | -- | No |
| U4 | No | -- | -- | -- | Yes: 73 ± 2°F; 50 ± 2% RH |

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# APPENDIX

## NOTES A, B, C, D, AND E, USED IN TABULATIONS OF MILL DATA

Notes A, B, C, D, and E, used in the tables of mill data are given below; these notes define the procedure used in calculating adjusted basis weight, machine factor, machine index, and F.K.B.G. index. It should be stressed that each formula is applicable only to a specific physical property of corrugating medium.

Note A: Adjusted basis weight (ABW) = reported weight (RBW) adjusted to moisture content of 7.8%:

$$\text{ABW} = \text{RBW} \left[ \frac{(100 - \text{reported moisture content, \%})}{(100 - 7.8)} \right]$$

Note B: $\text{Machine factor (\%)} = \left[ \frac{\text{Current machine average}}{\text{Cumulative machine average}} \right] \cdot 100$ <u>where</u>

$$\text{Cumulative machine average} = \sum \frac{\text{CMA's}^{a} \text{ for previous 12 months excluding CMA for current month}}{12}$$

Note C: $\text{Machine index (\%)} = \left[ \frac{\text{Current machine average}}{\text{Cumulative F.K.B.G. total average}} \right] \cdot 100$ <u>where</u>

$$\text{Cumulative F.K.B.G. average} = \sum \frac{\text{CFKBGA's}^{b} \text{ for previous 12 months excluding CFKBGA for current month}}{12}$$

Note D: $\text{F.K.B.G. index (\%)} = \left[ \frac{\text{Current F.K.B.G. average}}{\text{Cumulative F.K.B.G. average}} \right] \cdot 100$ <u>where</u>

$$\text{Current F.K.B.G. average} = \sum \frac{\text{CMA's}^{a} \text{ for current month for all machines}}{\text{Number of machines}}$$

Note E: (R) - Indicates a medium manufactured from recylced fibers.

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[a]CMA = current machine average for a specific physical property of 26-lb corrugating medium obtained during a given month on a specific machine.

[b]CFKBGA = current F.K.B.G. average for a specific physical property of 26-lb corrugating medium obtained during a given month.