PRODUCT # 766H (CUSTOMER) J&L Pittsburgh MFG. PLANT Cleveland

RECIPE # XS 1560C Prod'n Dept. 114

MACHINE # Mark IV TOOLING TYPE Mark IV ring

BATCH SIZE 822#

3

OBJECTIVE OF TEST:

1.0 TECHNICAL DEPT./DESIGN OBSERVATIONS

1.1 Recipe: Good

1.2 Pulping: Pulper #6 was not in good shape

1.3 Forming: Good

1.4 Machine settings:

1.5 Cycle time: 1 min. 45 sec.

1.6 Physical test results:

1.7 The machine started at 11:10 a.m. due to mechanical problems (no vacuum)

PLAINTIFF'S EXHIBIT FOS-526

NOTES:

Test Evaluation The slurry is inconsistent

Actions Required Holding tank analysis

Dept. Expenses:
Lab hrs 20 hrs.
Materials
Signed: AS/GF Date: 12/7

2.0 ENGINEERING/TOOLING OBSERVATIONS

2.1 Slurry condition: Hard to control with machine timers

2.2 Tool condition: Good

2.3 Machine condition: Good (had to fix vacuum hose line prior to run)

2.4

NOTES: Erratic forming and vac. holding behavior

Test Evaluation Thick/thin pieces - no green strength

Actions Required Improve slurry properties

Dept. Expenses:
Lab hrs.
Materials
Signed: SJC Date: 12/7

3.0 QUALITY CONTROL OBSERVATIONS

3.1 Green shape dimensions: Initial rings (20 pcs) showed good shape and lack of cavities

3.2 Forming behavior: Forming became erratic as the test continued

3.3 Oven curing:

3.4 Dry shape dimensions: O.K.

3.5 Checking fixture fit: N/A

3.6 Green scrap/Dry scrap: Green scrap became very high during erratic form.

3.7 Physical test results: Compressibility - 13.5# (11.4%), density 0.74 g/cm$^3$, TS= 33

3.8 Sales feedback:

3.9

NOTES: 20 well-formed cycles were made when forming difficulties

Test Evaluation were encountered. Slurry seemed to have a variable solids content from one cycle to next

Actions Required See next page----

Dept. Expenses:
Lab hrs.
Materials
Signed: Date:

4.0 PRODUCTION DEPARTMENT OBSERVATIONS

4.1 Machine settings: Abnormal - very quick form - erratic

4.2 Cycle time: Under 2 minutes

4.3 Forming behavior: Poor

4.4 Productivity: Poor - vacuum problems - slurry inconsistent from cycle to cycl

4.5

NOTES: This was not the same slurry we ran on Thanksgiving Day.

Test Evaluation

Actions Required

Dept. Expenses:
Lab hrs. 36 hrs.
Materials XS 1560C-820#
Signed: JCH Date: 12/

MANAGEMENT RECOMMENDATIONS:

Signed:
Date:

Distribution:
11/5/73/wef

QUALITY CONTROL OBSERVATIONS (continued):

Note: Could not form consistently due to variation in solids content. Then formed green pieces seemed to lose all green strength, rings would fall out of tool due to lack of green strength.

Cured samples of 1st 20 cycles show good physical characteristics.

Actions Required:
It appears to this observer:

(1) In order to form rings without cavities in this recipe, we must operate at a very high solids content to compensate for the absence of RM's 265 and 319.
(2) This high solids content cannot be handled properly by our existing holding tank impeller.
(3) Equipment modifications need to be effected before pursuing this recipe further.

PRODUCT # 491E - ring CUSTOMER) Great Lakes (Date) (Shift)
E. PLANT Cleveland
RECIPE # XS-1560A Prod'n Dept. 114
MACHINE # Mark IV TOOLING TYPE Mark IV - ring
BATCH SIZE 410#

OBJECTIVE OF TEST: To produce asbestos-free PROFLEX ring

1.0 TECHNICAL DEPT./DESIGN OBSERVATIONS

1.1 Recipe: made 6 batches, acceptable. 5 more at lower solids level, unacceptable.
1.2 Pulping:
1.3 Forming: Cavitations (FitzGerald & O.E.)
1.4 Machine settings: F.T.: 25 sec. Fill time: 13 sec. B.B. 15 sec.; DWT 17 sec. Ex.T 15 sec. P.t. 35 sec.
1.5 Cycle time: 2 minutes
1.6 Physical test results: Dns. 0.65 g/cc; tr. st. 34 psi.
1.7 (GF: In some cases the ring extremities did not fill completely but in general rings were smooth & very even in thickness. I feel that a longer run is warranted---Best looking rings yet. Note undercuring)

NOTES:
Test Evaluation Unacceptable
Actions Required Decision at Task Force latitude

Dept. Expenses:
Lab hrs 8
Materials --
Signed: AS/GF Date: 11/14/

2.0 ENGINEERING/TOOLING OBSERVATIONS

2.1 Slurry condition: Thin, causing washout around outer edges.
2.2 Tool condition: Good; clean, no damage or blocked screen
2.3 Machine condition: Good; vacuum working good (better than ever seen)
2.4

NOTES: After Arquad oil was added & more water, washout was worse. Too many cavities around outer edges.
Test Evaluation
Actions Required

Dept. Expenses:
Lab hrs. 1 hr 15 min.
Materials --
Signed: RTC Date: 11/14

3.0 QUALITY CONTROL OBSERVATIONS

3.1 Green shape dimensions: Thickness out of spec. in some rings due to cavities
3.2 Forming behavior: Had difficulty forming complete toe of H.S. and edges
3.3 Oven curing: Many rings undercured, perhaps too high greenwater
3.4 Dry shape dimensions: OK
3.5 Checking fixture fit: N/A
3.6 Green scrap/Dry scrap: Not applicable for such a short run
3.7 Physical test results: Density 0.65; Chatillon reading 9-12
3.8 Sales feedback:
3.9

NOTES: Recipe has excellent potential. Need to try again to work out forming problems.
Test Evaluation
Actions Required

Dept. Expenses:
Lab hrs.
Materials
Signed: GHF Date: 11/14

4.0 PRODUCTION DEPARTMENT OBSERVATIONS

4.1 Machine settings: Form 20-30 sec. Dewater 15-25 sec. Pressures 50-60#
4.2 Cycle time: Under 2 minutes
4.3 Forming behavior: erratic - not satisfactory
4.4 Productivity: 1 stack - 10 cycles. Much green scrap
4.5

NOTES: Slurry settles out too fast - inconsistent solid levels.
Test Evaluation
Actions Required

Dept. Expenses:
Lab hrs. 22 labor hrs.
Materials
Signed: JCM Date: 11/14

MANAGEMENT RECOMMENDATIONS:

Signed:
Date:

Distribution:
11/5/73/wef

1769

PRODUCT # 297-D (CUSTOMER) USS GARY MAIN PLANT CLEVELAND

RECIPE # 5465 Prod'n Dept. 107

MACHINE # CORR. TOOLING TYPE CORR-BOARD

BATCH SIZE 1077#

OBJECTIVE OF TEST: ASBESTOS FREE PRODUCTION ON CORROGATED MACHINE

1.0 TECHNICAL DEPT./DESIGN OBSERVATIONS

1.1 Recipe: Good
1.2 Pulping: Good
1.3 Forming: Good - acceptable
1.4 Machine setting: ft = 20-23 sec; dwt = 5.5-6.0 sec; pt = 1.5 sec.
1.5 Cycle time: 1 min. 20 sec.; 1 min. 10 sec; 1 min. 15 sec.
1.6 Physical test results:
1.7

NOTES:
Test Evaluation Good - acceptable
Actions Required EP 5465 seems to be acceptable for corr.machines

Dept. Expenses:
Lab hrs 40
Materials --
Signed: AS/GF Date: 11/20

2.0 ENGINEERING/TOOLING OBSERVATIONS

2.1 Slurry condition:
2.2 Tool condition: Used corrugated tool 2 cavity
2.3 Machine condition:
2.4

NOTES:
Test Evaluation Formed good,pcs strong.
Actions Required Must ship and test in field for signs of breakage in package.

Dept. Expenses:
Lab hrs. 30 min.
Materials
Signed: RTC Date: 11/20

3.0 QUALITY CONTROL OBSERVATIONS

3.1 Green shape dimensions: OK
3.2 Forming behavior: OK
3.3 Oven curing: OK
3.4 Dry shape dimensions: 53-3/8 x 12-1/2 (screen side measurements)
3.5 Checking fixture fit: Template corrugations O.K.
3.6 Green scrap/Dry scrap: 52 green, 5 dry
3.7 Physical test results: Trans. str. 370/380, density .89/.90
3.8 Sales feedback:
3.9

NOTES: Foaming causing problems. Blowback system
Test Evaluation aggravates foaming over Mark III. Need to evaluate
Actions Required antifoam addition at pulper to prevent foam from being created.

Dept. Expenses:
Lab hrs.
Materials
Signed: GHF Date: 11/20

4.0 PRODUCTION DEPARTMENT OBSERVATIONS

4.1 Machine settings: Form 18 sec. Dewater 10 sec.
4.2 Cycle time: Approx. 1-1/2 min.
4.3 Forming behavior: Heavy foaming - pcs. sticking to tool - erratic thickness
4.4 Productivity: Below RHE due to constantly cleaning tool
4.5

NOTES: Water sprays would help
Test Evaluation
Actions Required

Dept. Expenses:
Lab hrs.
Materials
Signed: JCM Date: 11/20

MANAGEMENT RECOMMENDATIONS:

Signed:
Date:

Distribution:
11/5/73/wcf

1770

PRODUCT # 5413 & 5463 CUSTOMER) Armco Middletown P. PLANT Cleveland

RECIPE # EP 5465 Prod'n Dept. 107 - South

MACHINE # E and F TOOLING TYPE Mark III - Flat boards

BATCH SIZE 1,077# (24-hour supervised pulping)

OBJECTIVE OF TEST: To illustrate EP 5465 as an effective recipe.

1.0 TECHNICAL DEPT./DESIGN OBSERVATIONS.

1.1 Recipe: Good

1.2 Pulping: Good

1.3 Forming: Good (E) Dew.t

1.4 Machine setting: 5-6 sec. fill time; 20-15 sec. dewat. time(F) 5 sec fill time, 25 se

1.5 Cycle time: 60-65 sec. (F) 65-70 sec. (E)

1.6 Physical test results: I dns. = 0.86g/cc; 0.88 g/cc. Ts = 338; 323. Dns. = 0.85; 0.85.

1.7 II Dns. = 0.83 g/cc; 0.87 ; 0.84; 0.86, 0.84; 0.86.

NOTES: III Dns. - 0.78 g/cc; 0.84; 0.89

Test Evaluation Good

Actions Required Detailed instructions & supervision on batch makers:

Dept. Expenses:
Lab hrs 30 hours
Materials
Signed: AS Date: 11/14
GF 11/14

2.0 ENGINEERING/TOOLING OBSERVATIONS

2.1 Slurry condition: NOT PRESENT FOR TEST

2.2 Tool condition:

2.3 Machine condition:

2.4

NOTES:

Test Evaluation

Actions Required

Dept. Expenses:
Lab hrs.
Materials
Signed: Date:

3.0 QUALITY CONTROL OBSERVATIONS MODIFIED 5465-no PVAC resin, increased P.F. resin

3.1 Green shape dimensions: OK

3.2 Forming behavior: Very good, reduced dusting, greater surface hardness.

3.3 Oven curing: OK - darker appearance due to absence of PVAC and incr. P.F. resin

3.4 Dry shape dimensions: OK

3.5 Checking fixture fit: N/A

3.6 Green scrap/Dry scrap: Dry scrap 5.75%

3.7 Physical test results: Density 0.84 - 0.89: T.S. 277-341 psi

3.8 Sales feedback: ---

3.9

NOTES:

Test Evaluation Position of Tech. Dept. is validated: reduced dusting is possible if material is made correctly.

Actions Required

Dept. Expenses:
Lab hrs. 0
Materials 0
Signed: GHT Date:

4.0 PRODUCTION DEPARTMENT OBSERVATIONS

4.1 Machine settings: Normal

4.2 Cycle time: Under 2 minutes

4.3 Forming behavior: O.K.

4.4 Productivity: Good

4.5 I don't think it was a fair test because of omission of RM 3579 - foam still present.

NOTES:

Test Evaluation

Actions Required

Dept. Expenses:
Lab hrs. ---
Materials
Signed: JCM Date: 11/1

MANAGEMENT RECOMMENDATIONS:

Signed:
Date:

Distribution:
11/5/73/wcf

1771