

B.H.

B I R D I N C O R P O R A T E D

PLAINTIFF'S EXHIBIT

BIR-873

Memo To: DISTRIBUTION

From: J. W. Jackson - BBH

Subject: TECHNICAL MEETING - 10/11/84

Date: October 12, 1984

A meeting was held on 10/11/84 for the purpose of reviewing cost reduction projects and technical issues. An agenda for each was prepared by Dick Maloof and Jim Jackson. Copies of the agenda are attached.

The following conclusions were reached at this meeting:

COST REDUCTION OPPORTUNITIES

1. Reduce glass mat weight/laminated products

Wilmington will receive 5 carloads of 1.85# mat for their production of Arch 80 and Firebird shingles in November. Charleston will run this mat at 1.85# on the computer control. Jim Jackson will notify Charleston and Wilmington about this mill trial and arrange for proper sampling. Six rolls of 1.60# mat (three rolls for F/B and three rolls for Arch 80) will be included in one of the carloads so that we have production on three mat weights; present 2.0, 1.85 and 1.60. Costa and Bradley to follow trial. Do not reduce present weights when running mat. Remove U/L label from 1.6# run. Dick Maloof and Jim Jackson will set up programs for trials of lightweight mat at Charleston and Shreveport.

2. Sand back at all plants except Portland

Mill trials consisting of at least one shift of sand will be run at Charleston, Wilmington and Martinez. These trials will be run on white Firescreen shingles and evaluated for any staining characteristics. Jim Jackson to set these trials up and have personnel present from BBH. Charleston has a truckload of sand on hand.. FM & FW will use same sand as on H/R & BUR products.

3. Make decision on 210# Wind Seal at Portland and Shreveport

Mill trial was conducted at Portland last Friday and shingles plus control samples have been sent to

BIRD 013418

BBH for testing. No decision will be made until after BBH completes testing.

4. Increasing filler

Mill trials of 63% filler vs. present filler content will be made at Martinez on Firescreen and PRC. The PRC will be run down to 225#/square. Controls as well as mill trial materials will be sent to BBH for evaluation. Following mill trials will be run:

<u>Product</u>	<u>Filler %</u>	<u>Wt.</u>	<u>Backing</u>
F/S	63%	208	Talc
F/S	63%	208	Sand
PRC	63%	225	Talc
PRC	63%	240	Talc

5. Roofing Waste

Trial date has been set for 12/20/84. Hopefully, this can be improved by cancellations at Farrell. BBH to try and locate local Banbury for trial.

6. Woodscape 80

Decision was made to go to Woodscape 80 5" exposure at Charleston. Charlie Fletcher is to determine if 5" exposure is wanted at Shreveport. Jim Jackson to send shingle specification to Alan Currier. Dick Maloof to notify Alan Currier to make necessary die roll changes at Charleston. Jim Jackson to notify Dick Whitney and Bob Popp. Bob Carlson to notify U/L to include 5" exposure on our Woodscape 80 line. Charlie Fletcher to make necessary wrapper changes.

7. Reduce Glass Mat Weight Standard Line

Portland and Charleston will make prolonged runs of 1.9# mat. Portland to receive one carload of 1.9# mat to be run on Firescreen Labor Savers. FK is to run two days on 1.9# on Firescreen. Charleston Mat plant to set the computer on 1.9#. Jim Jackson to arrange for mill trial sample for evaluation at BBH. It was decided that we would make no change in regards to reducing the 2.2# mat weight now used on Woodscares, Wind Seal 80's, PRC's and Firelines.

8. Underlayment GAF/JM - Not discussed

9. Special issues

a. Use of sand on laminated shingles. No test will be made on these shingles until the Fire-screens are run and tested,

b. Plysheet. It was agreed to try a carload of 1.95# mat for Type IV plysheet at Martinez if necessary to reduce roll weights. It was agreed that if we have to go to 2.2# mat on cap sheet (instead of 2.0# Type IV mat) to maintain competitive position, we will.

TECHNICAL ISSUES

1. Packing of Arch 80 at Shreveport

Investigate the Elk Tuscaloosa packaging technique. BBH is waiting for a sample from Shreveport. BBH will contact Marc Linkous for a sample of 1984 Tuscaloosa production of Prestique and Prestique II.

2. Arch 80 Adhesive at Charleston

New adhesive will be received by 11/1/84. Changes have been completed on the laminating equipment at Charleston. BBH to follow mill trial of new adhesive as soon as it is received. Charleston equipment to be duplicated at Shreveport as soon as a successful run is made at Charleston. Charleston will remove tape and go to soap (16%) when we determine new adhesive change is successful.

3. Wind Seal

BBH has canceled its efforts on Fast Seal System and is putting all of its efforts into improving the low temperature toughness (fracturing of the present adhesive). This will include testing Trumbull adhesive received from Shreveport.

4. Summer-Winter Spec on Wind Seal Adhesive

Bob Carlson is to send a reminder to all plants and request that they notify him when they make the change.

5. Embedding Issue - Not discussed

6. Charleston/Shreveport Wind Seal Adhesive - Trumbull

See #3 above

7. Products at FK & FS for Tape

The only products that tape will not be used on will be Arch 80 at Shreveport, Wind Seals at Shreveport, and Arch 80 at Charleston after determining how new laminated adhesive works.

8. Fungus Resistant Shingles

We are having a problem locating a source of supply of zinc granules. Attendees will contact friends in the industry.

It was agreed that BBH would write requests and monitor the mill trials. The plant manager will be responsible for signing off on the acceptability from a machine performance and operating cost standpoint. QC Managers should follow trials and note any immediately observable problems as a result of changes. Report will be included with Plant Managers' report.

JWJ/cm

DISTRIBUTION

R. J. Carlson - BBQ
C. B. Fletcher - BCF
W. C. Kinsey - BRM
R. C. Maloof - BBP
D. R. Suva - BR
F. W. Wood - BBP
Tech File



October 11, 1984

TECHNICAL
ITEMS TO DISCUSS

1. Packing of Architect 80 at Shreveport
 - Like Elk
 - Like Wilmington
 - Cost--proposal
2. Architect 80 adhesive
 - Charleston--by November 1, 1984
 - Shreveport--Unknown
3. Wind Seal seal dot--fracturing issue
 - Is it a problem?
 - What's being done?
4. Summer winder spec on
 - Firescreen, Jet, Woodscape, Architect 80, Firebird
 - Wind Seal adhesive
5. Embedding issue(delay until Carlson is present)
 - New target issued by (Carlson)
 - What should be done at each plant
6. Charleston/Shreveport--Wind Seal adhesive--should we change to Trumbull asphalt?
 - Savings of approximately 20¢/sq. if tape is used
 - Blow-offs.

7. What products at Shreveport/Charleston for tape?

	<u>F/S</u>	<u>J-80</u>	<u>A-80</u>	<u>Woodscape</u>	<u>W/S</u>
FK	Y	Y	Y	Y	--
FS	?	?	?	?	?

- We can remove the tape at Charleston on Architect 80 when new adhesive is applied.
- Settle all issues.

8. Fungus resistant shingles (Jackson)

- Where do we stand?
- What's being done? By whom?
- What's our objective?

9. Weight range to produce products

- How many pounds?

10. Shadowline on Woodscape shingles

- Placement
- Spec tolerance $\pm \frac{1}{2}$

11. Elmendorf tear at Charleston glass plant

- What spec are we going to meet?
- What's the status?

12. Yount process

- Jackson update
- OCF process

13. Fishmouth complaints

- 150 complaints
- What is being done?
- Saturation?
- Wet product?
- Cover finish product.
- Back coating.

Projects	Proposed	Savings/Sq.	1985 Sales Plan Units	Est. Annual Cost Savings	Remarks
1. Reduce glass mat wt./ laminated products	1. lower mat weight to 1.85 both products	F/B \$.22/Sq. A80 \$.22/Sq.	A/80 FO 30,000 FM 41,750 FW 91,500	F/B \$15,884 A80 \$37,235	1. Can do w/o UL approval
a. Architect 80--FW	2. Reduce 1.85 to 1.75	F/B \$.15/Sq. A80 \$.15/Sq.	F/B FO 10,000 FM 29,700 FW 32,500	F/B \$10,830 A80 \$25,388	1. Need UL trial for less than 1.80
b. F/B--FW	3. Put tape on both products and sand back. Keep weight same. 1-3/4 tape-- 7# sand--	TAPE F/B \$.18/Sq. A80 \$.18/Sq.		F/B \$12,996 A80 \$30,465	1. Mill trial--No UL approval needed
c. FK/FS Architect 80 on above	Trial run on #1 and #2 at these plants on 1.85 ASAP	SAND F/B \$.26/Sq. A80 \$.26/Sq.	A80 FS 250,000 FB/FK 164,750	F/B \$18,772 A80 \$44,005	Just order material-- Check #10 performance?
2. Sand back at all plants except FO	Replace talc with net 7# of sand	\$.24/Sq. \$.24/Sq.		\$60,000 \$39,540	No handle problem anticipated on stain test on coast.
	FB FK FS FM FW	\$.22 \$.27 \$.31 \$.25 \$.32	1,068,800 1,400,000 1,145,748 365,000 620,000	\$235,136 \$378,000 \$355,182 \$91,250 \$198,400	FB FK FS FM FW
3. Make decision on 210# W/S at FO/FS	What is cost at Sat. 165% FO Sat. 165% FS				Knife wear cut all plants vs. present.
4. Inc. filler at	From To Max.				
FM--F/S only, PRC	60 63 65	\$.35/Sq.	365,000	\$127,750	Handling problems?
FS--F/S, Jet, A-80, Woodscape	55 63 65	(F/S \$.92/Sq. A80 \$1.21/Sq.	1,145,748	\$1,054,088	Handling problems?
FB--W/S, Jet	53 63 65	(W80 \$1.01/Sq. \$.1.27/Sq.	250,000 42,000	\$302,500 \$42,420	Handling problems?
FK--F/S, Jet, A-80, Woodscape	59 63 65	(F/S \$.52/Sq. A80 \$.65/Sq. W80 \$.54/Sq.	1,400,000 164,750 60,000	\$728,000 \$107,088 \$32,400	Handling problems?
5. Roofing waste	Utilize for back coating by adding 10% to regular coating				Trial at Farrell 12/20/84 Cost savings--\$2.4m/yr. Cut equipment cost \$600,000/plant.

Projects	Proposed	Savings/Sq.	1985 Sales Plan Units	Est. Annual Cost Savings	Remarks
6. Woodscape 80	Go to 5" exposure from 4-3/4" at FK and FS	\$.78/Sq.	FS 42,000 FK 60,000	\$ 32,760 \$ 46,800	Change present die roll (2,000/roll) 3 die rolls involved (2 at FK, 1 at FS)
7. Reduce glass mat weight standard line.					
a. 1.90# vs. 2.0#					
F/S					
Jets					
b. 2.1 vs. 2.2					
Woodscape					
W/S 80					
PRC's					
M/Fireline					
8. Underlayment GAF--JM					