

PLAINTIFF'S EXHIBIT

GP-762

GEORGIA PACIFIC
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SUMMARY

New products developed through Gypsum Research contributed \$655,594 gross profit to the Division in the first half year.

The G-P elevator shaft liner system and Pre-Dec wallboard for mobile homes are two new developments which proved to be good profit makers. We have leap-frogged our competition in providing one of the most economical methods for enclosing elevator shafts in high rise buildings. Jobs using our system are in progress in Portland and Chicago, and Sales tells us that others will follow. In addition to the substantial volume of gypsum in the shaft wall, it provides an inside track to sell other products for the interior partitions in these buildings. Pre-Dec has been responsible for \$145,110 profit in the first half of 1971. This is an excellent example of our ability to sell a low cost commodity for which there is an existing market. The manufacture of Pre-Dec is being considered at other plant locations in addition to Acme.

Our entry into the panel and stud adhesive business has met with some problems of acceptance by users of solvent type products. This can be a profitable business for us, so an all-out effort is being made to improve the market acceptance.

Some brand-new developments are just beginning which should keep the momentum going. At the suggestion of Alex McCaskill and using the commodity approach, we are investigating the possibility of manufacturing a low cost vinyl covered wallboard. The objective is to increase the sales and profits from our capital investment in laminating equipment. Another recent development and a potential new outlet for gypsum board is a so called "exterior gypsum wallboard." This product serves as a base for the application of an acrylic coating on the outside of a building. We are working with Kelly-Moore, who supplies the acrylic coating, to evaluate this new exterior finish. Pictures of the gypsum board/acrylic texture finish are shown on pages 8, 9, and 10.

Under product improvements, a new line of wall and ceiling textures is being introduced. The new textures have been well received in the market and the raw material cost is substantially lower. The slow transition from casein/limestone to vinyl/gypsum joint compounds at Acme is about 80% complete. Now instead of facing a decision of whether to continue manufacturing joint system at Acme, a larger and more efficient operation is being planned.

The royalty return from Firestop licensing has grown to about \$250,000 annually. The increase in royalties has been due to our continued

development of Firestop products, management's enforcement of the patent, and stricter building code requirements for fire protection. The basic Firestop patent expires in 1973, but we have another patent which will issue shortly and sustain a significant portion of our Firestop royalty potential for another seventeen years. We have licensed The Celotex Corporation under our shaft wall patent application and this will add to our future royalty income. The sales of G-P Firestop products has continued to grow, and at a faster rate than our competition, so the royalties make additional profit on the sales of our competitors.

As we have seen, research is important to develop new and more profitable outlets for gypsum products. Equally important is the timing of the development and the provision of facilities to manufacture the product. In most instances, our timing has been good, but in some cases it could have been better. The shaft wall, Pre-Dec, and gypsum joint compound projects all appear to have been well timed. The improved texture line is several years late and it will take a big sales effort to take full advantage of the work that has been done. In most cases we should be researching the product years before the market develops - so that when the demand occurs, the product has been fully tested and is ready. It would help if we had more market information than is currently available. Such knowledge would make our efforts more effective and improve our timing to maximize the profits from new developments.

ANALYSIS OF SALES & PROFITS FROM NEW PRODUCTS

January Through June 1971

<u>Unit</u>	<u>Product</u>	<u>Sales Volume</u>	<u>List Sales Amount</u>	<u>Gross Profit Amount</u>
MSF	Denscote Base (All)	8,208.4	\$ 297,424	\$ 26,892
Tons	Denscote Plaster (All)	1,447.7	82,949	15,417
MSF	Tile Backer Board (All)	6,203.1	411,880	153,925
MSF	1/4" Sound Deadening Board	3,150.8	101,658	21,696
MSF	Radiant Heat Panels (All)	124.4	49,083	(7,759)
MSF	Pre Dec Wallboard	8,381.8	476,707	145,110
MSF	Pre Dec Ceiling Tile	2.1	184	53
MSF	Shaft Liner Panels	108.6	19,597	1,521
M Lin. Ft.	"T"-Spline	43.7	6,898	1,367
M Lin. Ft.	"L"-Runner	10.0	930	132
M Lin. Ft.	"J"-Channel	9.0	1,606	80
Pails	Ready Mix	515,413.4	1,599,292	226,006
Cartons	Ready Mix	2,572.1	7,028	62
Tons	Triple Duty	2,198.2	289,976	54,979
Tubes	Panel Adhesive	89,724.0	32,135	11,703
Tubes	Drywall Adhesive	6,924.0	5,055	1,242
Tons	Bestex A (All Plants)	675.5	89,384	642
Tons	Bestex B (All Plants)	48.2	7,969	374
Tons	Bestex C (All Plants)	278.0	43,977	351
Tons	Bestex D (All Plants)	167.1	25,677	(885)
Tons	Speedset	172.5	26,749	2,035
Each	Thermostats	218.0	1,318	362
Pounds	Insulated Nails	204.1	<u>1,571</u>	<u>289</u>
TOTAL:			<u>\$3,579,047</u>	<u>\$655,594</u>

IMPROVED PRODUCTS SECTION

Gypsum Textures

Our objective in developing a new line of textures is a) to improve the market acceptance to increase volume, and b) to reduce the raw material cost to improve the profitability. Our only hope to accomplish the cost reduction was to be able to use gypsum instead of limestone as the filler and vinyl or starch instead of casein as the binder. This fit into the over-all program at Acme to eliminate the expensive casein/limestone formulas. We also manufacture texture at Akron where the gypsum is too dark in color so it was necessary to work with limestone here.

The first approach taken was to find a pigment system which would provide the optimum hiding and coverage. Once this was done, we searched for the right combination of the binders, fillers, water retention agents, and aggregates. The initial formula consisted of a vinyl binder. This texture was tested in Memphis and performed well enough that more than a thousand bags were sold. During the field testing, it was found that there was room for even more improvement. The texture required high pressure to break up easily during application and dried out fast making cleanup rather difficult. The textures were re-formulated and a combination of a starch and a gum were used in place of the vinyl binder. This time the texture received even better acceptance in the difficult Memphis market. Trials in the Florida and Denver markets were also favorable and in late June we ceased manufacturing the old casein/limestone textures at Acme, replacing them with the gypsum/starch formulas. In addition to the better acceptance, the raw material cost of the aggregated texture was reduced from \$1.85 to \$1.05 per 40 lb. bag. The cost of the non-aggregated texture was reduced from \$1.07 to \$.71 per 25 lb. bag. This takes us from a loss position to a profitable one providing even more incentive to increase texture sales.

Concurrent with the gypsum base textures at Acme, limestone textures for Akron were developed with the same pigment and adhesive systems. These textures are slated to be field tested late this summer. The raw material cost reductions will not be as substantial as those realized at Acme, but they will still be significant. All the textures are color matched so that any cross shipments from Acme or Akron should not cause any problem.

The finishing touch for a complete texture system is to have an expanded polystyrene aggregate. Engineering is working on the layout of equipment to expand and shred this aggregate.

Gypsum Joint Compounds

Our efforts to develop a satisfactory All Purpose with a gypsum/vinyl formula at Acme met with considerable resistance in the field. While there was some acceptance, certain markets, notably Memphis and Oklahoma City, would not use the new product. In the meantime, we were losing money on every bag of limestone/casein All Purpose that was sold. The Ready Mix has been successfully converted to a gypsum formula and we have been furnishing it for over a year. Also, the Central Mix had gotten acceptance, but the All Purpose proved to be a different matter. After much re-formulating and re-testing, all of which exasperated everyone involved, a formula was found which has satisfied users in Memphis and Oklahoma City. The same formula has been tested as a Triple Duty (in lieu of the limestone Triple Duty) and again favorable reports have been received. Through persistence, a difficult problem of acceptance was solved. The only remaining casein product to be eliminated is Topping and we are diligently working to develop a suitable gypsum/vinyl substitute. When accomplished, this will complete the transition at Acme restoring the profitability to an operation that had become a losing proposition.

Ram Press Process Plaster

George Fowler, our industrial engineer from Blue Rapids, proposed that we go all out to make our Ram process plaster competitive to U.S.G. It was suggested that we do this by working with the people who manufacture the Ram pottery presses. It was decided to proceed with at least one visit to Ram to see if we were making progress. Before doing this, quite a lot of work was done at Blue Rapids to develop a formula which would be as close to U.S.G's Ceramical as possible. A formula consisting of equal amounts of Densite and Denscal, white Portland cement, gum arabic, and the optimum combination of set control agents was sent to Ram Inc. to be evaluated in comparison with Ceramical. The photographs illustrate the Ram pottery making process.

SALES SERVICE SECTION

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All of these factors will be taken into consideration in the upcoming series of flamespread tests at Underwriters' Laboratories in Santa Clara. We will test Stauffer and Columbus white stipple 6 mil vinyl. We purchase most of our vinyl from Columbus but the Stauffer vinyl performs better. We will use the National Casein PCVE adhesive which we are using and a formulated adhesive which performs well on the machine, better in the flamespread test, and is more economical. If possible, two different amounts of each adhesive will be tried. We will use 65 lb. paper inasmuch as it was determined that the lighter the paper the better. The U.L. series of flamespread tests should be completed in August.

Monolithic Eternawall

At the request of Sales, a method of making a monolithic or smooth joint for vinyl covered wallboard was developed. This was accomplished by forming a round edge board with a 1" wide .015" deep taper and keeping the vinyl loose (unlaminated) 4" back from the edges of the board. The recommended method of finishing the joints is: a) Apply two coats of 30 minute Speed Set to the joint filling the round edge and taper, b) adhere the flaps in wallpaper fashion with a suitable vinyl wallpaper paste.

These tests were conducted on 25 oz. fabric back vinyl with a color pattern. Sales subsequently found it desirable to purchase and market a 12 oz. white vinyl in order to meet competition. This will give a less satisfactory result than the vinyl originally tested, but it may be acceptable.

Fast Method of Joint Finishing

Sales advised that competition had a method of completely finishing joints in 30 minutes. We were never able to substantiate this when we contacted some of the people who were supposedly using this method. National Gypsum has a system called "Thermoweld" which has limited acceptance. U.S.G. has no system but their Durabond setting type products are the most acceptable in the market. We have two problems: One is to improve the working properties of Speed Set, and the second is to develop a faster method of finishing joints, but not necessarily 30 minutes. In fact it would be better if the total time were closer to one hour.

George Green has developed a setting type product that has a relatively long working life (45 minutes) but hydrates quickly (15 minutes). The working life can be extended without significantly changing the time of setting. Normally to achieve a 45 minute working life would require a set of 1½ to 2 hours because of the stiffening that precedes the set. The stiffening is caused by the early formation of needle-like crystals. This stiffening has been substantially eliminated by a crystal habit modifier which makes rectangular rather than needle shape crystals. This discovery

paves the way for a product which will give maximum working time for a quick set material. The next step is to incorporate good application characteristics. We will evaluate a method of finishing much like we use for the Dens-Cote system. In other words, embed glass fiber tape, trowel over the tape, and double back to trowel the joint smooth. If this were successful, it would be a way of finishing the joints in an hour - and essentially in one application.

Low-Cost Vinyl Covered Wallboard

We are investigating low-cost predecorated wallboard laminated with thin vinyl or other inexpensive facing. The objective is to generate more sales for laminated products to fully utilize our laminating equipment. The net result should be lower costs and, therefore, greater sales and profits.

Our approach has been a) to use lower cost vinyl or other decorative films (We have ordered samples of Elm Coated Fabric's 2 mil vinyl, Stauffer's 2 mil vinyl, Permaneer's woodgrain vinyl, and DuPont's Tynec non-woven to evaluate); b) to reduce the adhesive cost (An adhesive was formulated that is over 10¢/lb. less than the adhesive we are currently buying and trials at Fort Dodge and Wilmington have been favorable); c) to increase the operating speed (The new adhesive with its higher tack is permitting speeds of 60-80 ft./min. as compared to standard of about 40-50 ft./min. It may require some additional handling equipment but a 50% increase in speed will help reduce our manufacturing costs.)

Pilot Fire Testing

During the past 5 months, pilot fire tests have been conducted on a corrugated steel/gypsum wallboard roofdeck, a wall with paneling on one side and 5/8" Firestop on the other, and two back-to-back wood stud walls. These tests were to provide information requested by Sales.

U.L. Flamespread Label

We received approval from U.L. to use regular wallboard instead of Firestop to label Pre-Dec and Eternawall. This saves the cost of the more expensive Firestop formula as well as the cost of the fire resistance label. Now only the flamespread label is required.

Round Edge Wallboard

Our patent claims have been rejected by the examiner. We plan to rewrite the claims and establish some limits as to the curvature in order to overcome the examiner's objection. We are also preparing a method to accurately measure the degree of roundness. All of this is regarded as important in view of the various round and bevel edges that are being marketed to reduce ridging.

Improved Firestop

Our patent will issue shortly. Our current Firestop patent expires in two years so this will allow us to continue to license some of the Firestop line for another 17 years. As soon as the patent issues, we will advise our licensees and send them a new agreement similar to the old one with a royalty schedule as follows: \$.65/M for 1", \$.55/M for 5/8", \$.45/M for 1/2", and \$.35/M for 3/8" Firestop.

Shaft Wall System

Our patent application was filed on March 22 under Serial No. 126,823. We have a license agreement with The Celotex Corporation under this pending patent application at a royalty rate of \$5/M.

Gypsum Joint System

An action has been received on this patent application with the usual rejection of all claims. We will have to be more definitive in our description of the adhesive used with the gypsum filler. This is considered an important patent in view of the ever increasing costs of manufacturing joint system with limestone and casein. Revisions will be pursued through Synnestvedt and Lechner so we can have the patent allowed.