

S U M M A R Y

Facts and Figures

This is our first semi-annual report since we moved into our new Tigard Research headquarters. Since this is the year end, we will include some annual figures in addition to the six months figures. The sales and profits generated from new products in 1967 reached all time highs of \$3,307,524 and \$875,769. This growth since 1962 is shown on the charts on pages 3 and 4. The 1967 figures represent 4.1% of the Gypsum Division sales and 4.6% of the Division profits. Firestop sales escalated to 30,604 M sq ft of 1/2" and 81,792 M sq ft of 5/8" which are increases of 26.1% and 19.0% respectively over 1966 figures. We feel that improvements in the products and new fire and sound ratings have been a factor in this growth. In addition, it is estimated that reduced weight limits for Firestop have saved approximately \$62,303 in 1967.

\$200,961 was budgeted for Research in 1967. Our R & D expenses were actually \$174,232 for the year. We have budgeted \$221,000 for Research in 1968. Our expected distribution of budgeted expenditures in 1968 are shown on the graph on page 8.

New Products

The only new product released in the last six months was a vermiculite aggregate texture which will be called Bestex D. The major research activity has been the continuation of projects which were started in 1967 or earlier. The molded grainboard pilot plant is complete and some encouraging trial runs were made. Our option to develop this process has been extended for another six months. The wallboard radiant heating panel is now at the stage where we will be seeking Underwriters approval and at the same time field testing will be started. Another new product is a specially formulated 3/16" thick wallboard which we are proposing to use as a core material in wood paneling. Earlier experiments were conducted at the Savannah plant but the current investigation will be done in cooperation with the Eugene Division.

Improved Products

Hard End wallboard may be one of the most significant improvements in gypsum wallboard in recent years. Very shortly an installation will be made in the Acme wallboard line. From this method we can evaluate the method of manufacturing hard end wallboard and also see what the reaction in the field will be. The Denscal operation is currently underway and replacements of Denscal for Densite are being made to take advantage of the lower cost of Denscal. The estimated savings per ton of Densite replaced by Denscal is \$11.00. Other product improvements being investigated are the replacement of limestone with gypsum in Joint System, the search for a lower cost emulsion for water proof sheathing and the development of a hard edge wallboard.

12 MONTHS 1967 MARKET PERFORMANCE OF NEW PRODUCTS

<u>Product</u>	<u>Sales Volume</u>	<u>List Sales</u>	<u>Gross Operating Profit</u>
Dens-Cote Base (all)	18,106.6	\$801,372.60	\$272,235.77
Tile Backer Board (all)	4,824.7	409,567.83	197,884.02
Gypsum Sound Deadening Board	764.0	30,168.65	9,617.16
One Day Joint Compound	292.9	50,168.98	11,210.74
Ready Mix	6,782.0	837,517.99	127,674.46
Triple Duty	4,885.0	735,909.21	172,559.93
Grabit Adhesive	74.4	11,073.37	4,207.96
Bestex A Texture	1,043.3	170,678.85	28,072.27
Bestex B Texture	41.0	8,115.44	72.46
Bestex C Texture	222.7	42,805.84	(2,083.65)
Bestex D Texture	1.0	165.00	9.35
Dens-Cote Plaster (all)	3,043.9	185,353.80	45,584.34
Dens-Cote Tape	1.2	18,099.07	5,332.58
Model Densite	.1	2.20	.33
Ram Process Plaster	37.3	6,050.22	3,380.30
Dnescal PR	.5	35.20	11.40
Denscal HP	0.	0.	0.
Tooling Plaster	0.	0.	0.
High Expansion Plaster	0.	<u>0.</u>	<u>0.</u>
 TOTALS		 \$3,307,524.00	 \$875,769.00

6 MONTHS 1967 MARKET PERFORMANCE OF NEW PRODUCTS

<u>Product</u>	<u>Sales Volume</u>	<u>List Sales</u>	<u>Gross Operating Prof</u>
Dens-Cote Base (all)	10,452.3	\$468,296.17	\$169,231.36
Tile Backer Board (all)	2,694.7	232,895.11	113,571.94
Gypsum Sound Deadening Board	438.6	15,317.34	4,872.29
One Day Joint Compound	180.1	25,468.63	5,590.25
Ready Mix	3,632.4	427,326.03	63,066.03
Triple Duty	2,692.7	388,806.70	84,917.45
Grabit Adhesive	45.1	5,362.79	1,915.58
Bestex A Texture	616.2	101,691.66	18,215.63
Bestex B Texture	24.8	4,933.60	63.52
Bestex C Texture	121.2	22,560.45	1,241.59
Bestex D Texture	1.0	165.00	9.35
Dens-Cote Plaster (all)	1,370.3	83,743.11	21,304.96
Dens-Cote Tape	1.1	11,117.65	3,716.43
Model Densite	.1	2.20	.33
Ram Process Plaster	58.3	3,894.27	2,397.30
Denscal PR	.5	35.20	11.40
Denscal HP	0.	0.	0.
Tooling Plaster	0.	0.	0.
High Expansion Plaster	0.	<u>0.</u>	<u>0.</u>
 TOTALS		 \$1,791,526.00	 \$481,125.00

reduces end splitting of the paper and makes the end of the board harder and therefore less subject to damage in handling. It is our opinion that reducing beading at the end joints is attacking the problem where it is most prevalent. Furthermore, our method will not involve new materials or extra operations as does the U.S.G. method.

A spray system appears best for producing the hard end wallboard. The apparatus for applying the hard end treatment has been purchased, test operated in Tigard and sent to Acme, where it will be installed in their wallboard line between the end sawing and end bundling operations. Mr. Hollingsworth suggested adding a green dye to the resin treatment for identification and to use as a promotional aid. Tests are currently in progress to determine whether the green dye has any tendency to migrate through to the finished surface.

4. Lower Cost Sheathing - R&D 90

In view of the narrow profit in sheathing, an all out effort is being expended to reduce costs whenever possible. One approach was to make the edges square instead of tongue and groove. Sales, however, felt they could not sell a square edge sheathing because of the FHA requirement that the edges be tongue and groove. Reducing the weight and quality of the paper is another consideration being acted on by manufacturing. Still another potential cost reduction is to try some wax-rosin emulsions to see if they will make the core water resistant less expensively than the asphalt wax emulsion we now use. Trials are being conducted at the Akron, N. Y. plant to determine whether there are any savings to be gained from the emulsion.

5. Reduce Limestone Costs in Joint System - R&D 275

Two different limestones are used in our Acme Joint System products. One of these (Purestone) is cheaper than the other by about \$5 per ton. The more expensive limestone (Thompson Weiman marbledust) is used in the high volume products such as Topping and Triple Duty. A coarser version of Purestone was tried to make it more like the marble dust but there is still a difference in the working characteristics which we feel would adversely affect the working properties of the products. Any gain in raw material savings could easily be wiped out by a possible reduction in sales, so it is not worth the risk to make the change.

Another possibility for cost reduction is the substitution of gypsum for limestone in Joint System. While this is a more difficult objective to achieve, the potential saving is much greater than a mere limestone substitution would offer. There are two reasons why gypsum is not used as a filler in Joint System. Gypsum counteracts the alkali in the casein products and keeps the casein from going into solution. The casein must go into solution in order to provide adhesion. This would not be a problem in Triple Duty or Ready Mix since these products contain vinyl adhesives. The other problem is the inherent absorbency of gypsum. This causes the joint system

to be more absorbent than the wallboard paper and results in decoration problems. One approach is to use anhydrous gypsum. Another is to treat dihydrate gypsum with a waterproofing agent to give it the required properties. Both methods are presently under investigation.