

# Quality

PLAINTIFF'S EXHIBIT

BIR-1168

## Quality in the smokestack industries



# Coming on strong with quality

How one company took short-term lowered profit margins to assure the long-term success of its quality improvements.

**Q**uality isn't a luxury to Bird Inc. The company has staked its future on producing fiberglass-based asphalt roofing shingles of the highest quality at its Norwood, MA plant

"When you're staking the life of a 190-year-old company on new products, you'd better be sure they are of the highest quality, particularly when they are replacing products which suffered from a previous lack of quality control standards at our plant," said George J. Haefler, chairman and CEO

The company's commitment to quality is eloquent rebuttal to anyone who thinks a shingle is a shingle. Last fall it introduced new lines of fiberglass-based asphalt roofing shingles to its Northeast market. It is spending millions of dollars to ensure that its shingles pass rigorous quality standards. The program is so stringent that mill foremen who once declined the offer to place their names on bundles of shingles now proudly watch as their names are stamped on bundles of products (Figure 1)

Shingles may all seem alike, but they must provide protection everyday for 20 years or more under all types of adverse weather conditions. No excuses or promises will appease a roofing contractor or homeowner who has had a bad experience

hands. They can blow off, curl up, line up incorrectly, and be hard to handle when he tries to carry them up the ladder

In the past, Bird received many complaints about its products. A year and a half ago, the company decided to reassert itself by making a commitment to quality

They backed up that commitment with a decision to pay the price to ensure that their products were durable, reliable, attractive and easy to handle. The company willingly accepted lower profit margins than other companies in the short-run to show its customers that its first priority was quality.

This re-emphasis dominates the company's thinking from George Haefler to the employees. "The foundation of this company had to be re-established on quality and service," explained Haefler. "Quality is the foundation on which you can grow. You must be better before you can be bigger."

The company once had a 40 percent market share in the Northeast because it produced reliable, sturdy shingles. But partly because of its dominance, the company became complacent, and quality began to slip. The first problems, which started a decade ago, were controlling dimensions and color consistency.

The problems were compounded in 1980 when the company converted from the standard, 12 by 36-inch shingle to a metric, 13 1/4 by 39 3/8-inch size. Metric, at the time, appeared to be the industry trend. In addition, competing Canadian firms were making metric-sized shingles. Bird then changed, with the industry, from the once-dominant felt-based shingles to the more modern fiberglass-based asphalt shingle.

Fiberglass-based shingles have several advantages over felt-based shingles. They wear longer, and will not curl up when exposed to excessive moisture. They also will not react to dramatic changes in moisture. Fiberglass-based shingles also are more fire resistant than felt-based shingles.

Fiberglass-based asphalt shingles can also have their problems. The lighter weight can make them susceptible to tearing in the roofer's hands or ripping off the roof in very high winds. This lighter weight, combined with the wider and longer metric size, creates a greater opportunity for the wind to get under a shingle, lift it up and blow it away.

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This problem was attacked with a broad-based company program to emphasize quality. "Because of our problems, we decided to give quality the number-one priority at all levels," said Mark Linkous, general manager of the Northeast Roofing Div. This program had several facets, including a Quality Task Force to examine everything that affects the quality of the shingles and customer service.



Figure 1. Mill foremen are "staking their names on quality." On every package of shingles is a stamp bearing the words, "Made in Norwood by \_\_\_\_\_ and his crew." Louie Gabrielli is proud to have his name on the product.

with the shingles they used for a roof

Whether they're made of wood, tile, felt-based or fiberglass-based asphalt, shingles can tear apart or break in a roofer's

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The first results of the renewed emphasis on quality could be seen in improvements in the company's first fiberglass-based line.

- A 90 percent increase in the amount of asphalt-based sealant used on each shingle to increase blow-off resistance.
- A new formula for the sealant that lowered its softening point by about 10°F and allowed shingles to seal in cooler temperatures.
- A repositioning of the sealant line so the adhesive is closer to the bottom edge of the shingle, leaving less room for the wind to get under shingles.
- Installation of a new cutting machine that guaranteed dimensions to within 1/32 of an inch.
- A strong reinforcing-type tape on the back of the shingle where roofers drive their nails. This tape increased the nail-holding power of the shingles by 60 percent, improved the tear-resistance of the shingles, and improved handling by preventing shingles in bundles from sticking together.
- A stronger, water-resistant Shinglegard wrapper to improve the carrying characteristics of shingle bundles. This stronger wrapper was combined with a new, hot-melt glue to seal the wrappers more tightly.

These changes, implemented in March, 1983, brought a dramatic improvement in quality. But the improvement did not stop there.

The Quality Task Force continued monitoring shingle performance and talking with contractors and roofers about what they would like. Quality Patrols were set up in which managers, sales people, production workers—even George Haufler—went out to visit contractors and roofers at their work sites. These Quality Patrols provide direct feedback from the people whose opinions count most.

"The Quality Patrols were organized to teach our people, including the men who work on the machines, the effects that a good or a bad product have on all of us," stated Tom Hartnett, director of contractor and builder sales.

A market survey found that 70 percent of the company's shingles were used for reroofing applications—the use that metric-sized shingles were most inappropriate for.

As a result of the intensive monitoring of the performance of the shingles, Bird decided to introduce a new shingle product in the Northeast that took all the quality improvements already in place and added to them. These combined quality improvements were instituted in a new product called the Wind Seal 80. "We addressed every aspect of the shingle, from the glass-based mat that it's built upon to the pallet that it's stored and shipped on," said Bob Carlson, quality control supervisor.

The decision was made to invest heavily in capital improvements despite the fact that the company was losing money. "The money was spent at the worst time for the company," said Linkous.

All of these surveys and decisions led to the following improvements:

- A return to the 12 by 36-inch size shingle. This reduced the exposure of individual shingles, and therefore cut down the chances that they would blow off. The more compact shingles also worked better in reroofing jobs, and were easier to handle.
- An increase in the weight of the fiberglass mat, the base of the shingles, by ten percent and an increase in the overall weight of the shingles. This resulted in a stronger, more tear-resistant mat and reduced the chances that a shingle would tear or blow off.

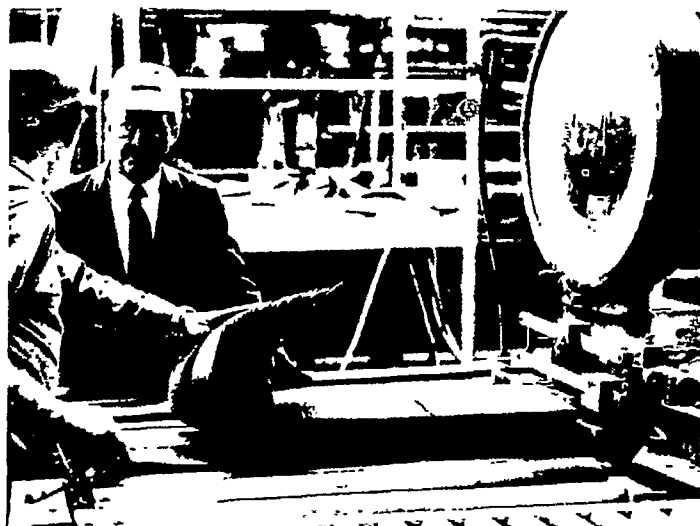


Figure 2 George Haufler is a frequent visitor to the roofing shingle production facility in Norwood.

- Installation of a computer-controlled system in the factory to maintain precise tolerances in the weights of shingles.
- Installation of a new colored granule blending system to ensure consistent and repeatable color.

When the new controls and equipment were installed, resumption of production was delayed for two weeks to ensure that the shingles that came out were of the highest quality.

All of these changes were implemented even before completion of the company's new plant, being built adjoining the old one. This increased the cost of the quality improvement program, but it put the better products on the market more quickly. The introduction of these improvements in an efficient plant meant a reduced profit margin. "We are putting a high-quality product out there that costs us more to manufacture than our competitors' products, yet we're selling it at the same price," said Linkous.

To spread the word about these new and improved shingles, the sales force began new programs to better serve professional contractors and roofers. By sponsoring a series of meetings and seminars on roofing developments and by publishing a newsletter, *The Northeast Roofing Report*, Bird aligned itself with the business interests of roofers. The emphasis has been on professional roofers' concerns, and building the loyalty and confidence of roofers. The emphasis on quality is bringing tangible results already. One former customer, who hadn't purchased any shingles from the company in two years, ordered ten truckloads.

The company takes pride in the positive feedback it is now receiving, but hopes the lesson behind them is never lost. "I don't think anyone would want to go through what we went through," said Linkous. "We've learned some valuable lessons the hard way—it's nice to be hearing compliments from our customers again."

Haufler is determined that the effort for improved quality will maintain its priority status. "The foundation of all our efforts has to be in quality—quality in a new product, quality in a new plant, and quality in our marketing program."

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## An executive looks at quality

George J. Hauflier believes his company, with its problems, is a microcosm of smokestack industry in America. "We were lulled into a feeling of prosperity," he said. "We became bloated with inflation, reduced productivity and reduced quality."

Bird, which in 1983 posted its first profit in three years, competes in an industry in which a company's record for quality products and reliability counts for everything. Contractors, especially those doing reroofing work, get most of their business on referrals and their reputations. "In New England, reroofing is 70 percent of the

business," explained Hauflier. "Therefore, contractors must have quality installations to get referrals."

What he calls the "negative costs" associated with dissatisfied customers are important to the business of roofing contractors. This poses a special challenge to shingle manufacturers. "We sell roofing at ten cents a pound. Who else sells anything at ten cents a pound these days? And we offer a warranty that our shingles will hold up under wind, rain, ice, sun, sleet and snow," he said. "We must be sure of quality."

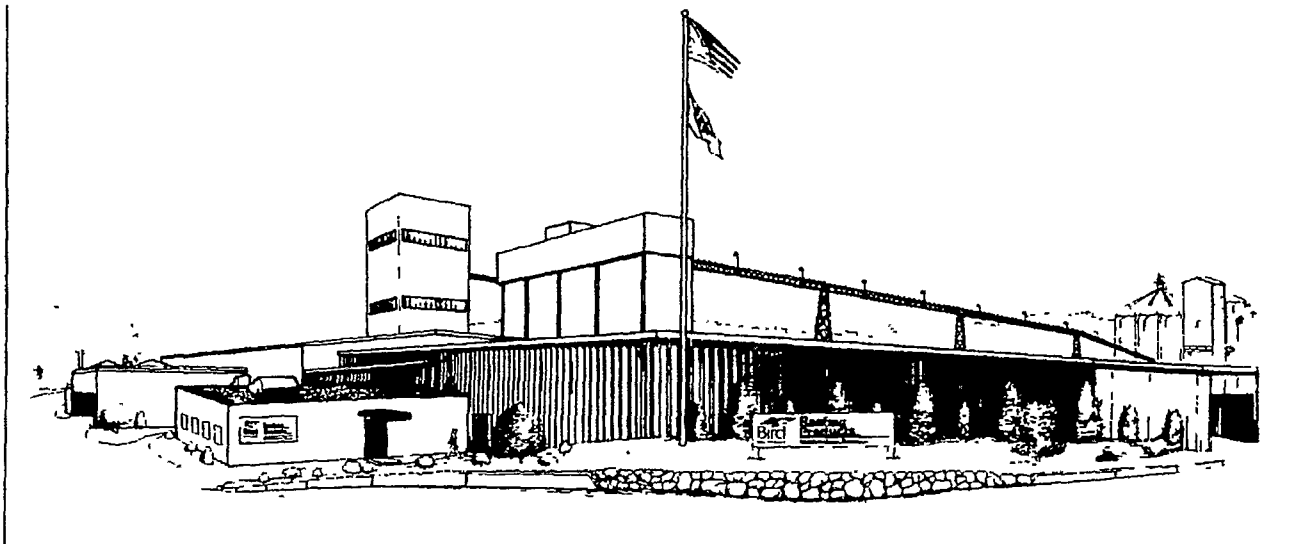
The relatively low price of roofing materials and the high expectations of their performance always existed for shingle manufacturers. But with the OPEC oil embargo and the resulting ten-fold increase in the price of asphalt, a key ingredient in

shingles, the character of the challenge changed.

Hauflier believes that a major part of the \$35 million increase in company profits during the past two years is directly related to improvements in the quality of the shingles, the quality of the manufacturing process, and the quality of service to contractors. "Were it not for these quality improvements, this company would not survive," he declared.

He believes in involving everyone in the company to identify with what is happening, and that everyone must understand the importance of their performance to the company. "There has to be a realization among the entire company that if you want a job, you have to produce a quality product that somebody wants to buy," Hauflier said.

## The Quality Commitment Continues . . .



Pictured above is an artist's rendition of the new Bird Northeastern Division Roofing Products Plant at Norwood, Massachusetts. This new, state of the art facility — totally on line in early 1985 — will produce the highest quality shingles available and effectively permit Bird to better serve its customers.

In 1985, Bird will celebrate the 80th anniversary of the Norwood Plant and the 190th anniversary of the Founding of the Corporation.



Bird Incorporated, East Walpole, MA 02032

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