

The Concrete Producer

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BUILDING PRECAST SUCCESS

**SMITH-MIDLAND'S
LICENSING-BASED
BUSINESS MODEL**

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Building Precast Success

Product licensing-based business model pushes family business past potential pitfalls. | By Bill Palmer

EVERY PRECAST OPERATION has a unique origin story, although making and installing cattleguards seems like an inauspicious start. But that's how Smith-Midland Corp. began in 1960. The knack for serving niche needs led to a licensing venture that helps shelter the primary business – manufacturing plants in Reidsville, N.C., and Hopkins, S.C., in addition to Midland, Va., headquarters – from macroeconomic ups and downs.

“They’re different but related—service company, licensing, precast manufacturing,” says President/COO and soon-to-be CEO Ashley Smith, founder David Smith’s grandson. “Some precasters, especially those focused on residential construction, didn’t make it through the recession. Our sales decreased, but we were able to weather that storm.”

Diversification is one key to success. Another is commitment to continuous improvement.

Ashley Smith is the third generation leader of Smith-Midland Corp.



“We’ve been studying Toyota’s production system and hope to emulate that,” Smith says. “Toyota says they build people, not cars. We want to be seen as the best company in town, a place where people want to come to work because at the end of the day they feel they made a contribution they’re proud of. That will make us better able to serve our customers.”

Licensing Innovation

“My granddad and dad started making and delivering cattle guards up and down the East Coast,” Smith says. The Smith Cattleguard Co.’s 6,000+-pound slatted slabs are buried in the ground to keep livestock from wandering out of pastures when gates are open. “A precaster said ‘why don’t we make them together in Georgia instead of you having to deliver them down here?’ So they started a franchise operation that evolved into a licensing agreement approach to work with other precasters.”

Today, more than 50 precasters are licensed to make Smith-Midland products through a subsidiary called Easi-Set Worldwide. In addition to other farm products, brands include:

- Easi-Set Buildings in 27 configurations.
- J-J Hooks self-aligning safety barriers, of which more 12 million linear feet have been produced. Another subsidiary, Concrete Safety Systems, rents and installs up to 6,000 feet in a day with two workers for temporary uses like highway construction or security protection around special events like the presidential inauguration or the Superbowl.
- Beach Prisms, safety barriers with slots that prevent erosion by reducing wave energy.
- SlenderWall exterior cladding system.
- SoftSound noise-absorbing walls.

The idea for each came from different places.

“My dad, Rodney, can see a good idea and make it better to be commercially viable,” says Smith. “For example, a fellow came to us with a 6-inch-by-6-inch piece of sound-absorptive product. My dad played with and modified it and put it on a sound wall. Now we have panels that absorb up to 80% of the sound instead of it bouncing off the concrete.”

Smith-Midland launched Midland Advertising + Design in 1980 to strengthen licensee promotional efforts by managing national cooperative advertising programs. Precasters put in a small amount of money and get a marketing effort worth many times their investment. Business-development assistance, along with not having to develop new products themselves, make the advantages of licensing obvious.

“Take the J-J Hooks product,” Smith says. “Highway departments want to see test data, so we did full-scale crash tests with a pickup truck at a 25-degree angle at 60 mph. Licensed precasters can make and sell something that’s been approved by the Federal Highway Administration.”

Family Affair

The Smith family has concrete running through its veins. Smith and his three brothers have been in the business their whole lives.

“Each of us has an area of responsibility and operate more or less autonomously,” he says. “When I was 10 years old, our old batch plant was like our playground; we climbed all over it. The Occupational Safety and Health Administration would have a hard time with that today!”

Smith has been an active National Precast Concrete Association member since 1987 and is the current chairman of the board. His dad was chairman in 1980. “It’s

a fantastic organization. I'm very proud of what we've accomplished to support our members and the industry." But he realizes not everyone shares his enthusiasm.

Precast's Future

Although the market is booming, Smith sees more good things coming.

"Offsite prefab is getting more attention from developers for its speed—faster to build, faster to turn over to the owner. It's hard to get skilled craftspeople like bricklayers, so factory-made products also counteract loss of field labor. That's why I think we're going to see more standardized products in construction, which will benefit precast. We're going to see more automation on jobsites and in



Smith listens to workers in the plant. "We want to be a place where people want to come to work."

"Let's face it: Concrete isn't the most glamorous product. We can attract younger people by building better companies. Get out into neighborhoods and communities; sponsor baseball teams, help build Habitat for Humanity homes. Show young people this is something they want to be part of.

"We still do a lot of print advertising because our research shows the decision makers read magazines. But we know the younger people are coming, so we have a heavy social media presence and try to keep our website updated and relevant."

our plants—maybe 3D printing? In Europe they use more assembly line carousel-style operations. Maybe we'll see CNC machines make molds or machines that cut and bend rebar. But I think the biggest change will be the need to sell systems rather than just products. Customers want a package with a warranty and more service."

But success always seems to come back to his people.

"We have a full-time safety director based in Midland who supports the other two plants in the Carolinas. This is just another part of building trust with our associates. We want them to feel both physically and emotionally safe in their work." TCP

A STORY IN LEAN MANUFACTURING

They're called the Águilas Verdes (Green Eagles), a small team led by Cesar Montiel and Raul Franco, who oversee production of a core product: the J-J Hooks highway safety barrier. We've made various attempts over the years to standardize the process, with varying degrees of success. In 2016, the team was formed to bring the product's manufacturing standards to world-class level.

A "model cell" is a lean manufacturing philosophy intended to establish an "island of perfection" within the plant. The technique defines specific starting and stopping points for a manufacturing process and team members work together to improve each step within that process. As each issue is identified, members examine causes and discuss solutions, make decisions, take actions, and re-examine the process.

We defined our model cell from the point when the concrete mix was delivered from the onsite batch plant until the product had been inspected for quality and sent out the plant door.

Model cells achieve continuous improvement via the daily huddle and visual management. At the daily huddle, held every production day, team members gather in front of a board containing a vast

array of visual statistical data to audit the status of their efforts. Every barrier poured (average 50 per day) is recorded and scored on criteria including safety, quality, labor hours applied, materials used, and targeted delivery schedules kept. Anomalies, successes, and failures are easily seen using the visual techniques. Solutions are discussed and action plans, often referred to as countermeasures, are devised using proven problem-solving techniques.

Some issues expose systematic weaknesses within the larger company leading into the cell's process, supporting the cell's process, or in the next steps directly after the cell's process. These issues are discussed with management, which makes needed adjustments or creates new teams to resolve them. One model cell can have multiple positive impacts on the processes of other departments and management teams, improving the organization's overall effectiveness.

Improvements began to take shape within a few weeks of launching our safety barrier model cell. The concrete mix was tested and adjusted and mold improvements were made, greatly decreasing quality issues with the finished surface. Tools and techniques were changed to eliminate an operation from the process, requiring fewer materials.

By early fall, defects were reduced from 68% to 15% and labor hours per barrier dropped by 14%.



Smith-Midland associates Will Guevara, Victor Garcia, David Rodriguez, Javier Mares, Miguel Humana, Carlos Canás, and Eduardo Portillo comprised a continuous-improvement team that reduced defects in the precaster's safety barriers from 68% to 15%.

Smith-Midland