



# Productivity THROUGH software

A rolling mill is connected to a coil handling system that's run by an AMS controller. By using this controller, Mueller has increased production and reduced scrap.

## Coil handling controllers and software keep productivity high while dramatically reducing scrap

**S**ome customers can be a unique catalyst for a company. Along with using the company's products, they can push its product lines into new areas and ventures.

This was the case for AMS Controls, Maryland Heights, Mo., when its customer, Mueller Inc., Ballinger, Texas, inspired the company to develop unique roll forming software and systems to handle different equipment.

AMS Controls has an extensive lineup of products that include production and management integration software and a family of coil handling controller solutions. Its electronic controls are used for roll forming operations, including blank and coil-fed machines, cut-to-length machines and extrusion lines.

Mueller Inc. began about 75 years ago when Walter Mueller opened the Mueller Sheet Metal Co. He provided water towers made of sheet metal. His sons expanded the business to include sheet metal products related to building construction.

In 1984, the Burly Corp., a Texas company owned by the Davenport family, acquired Mueller and expanded it to manufacture pre-engineered metal building and residential metal roofing products.

Mueller serves the central and south-west U.S. markets from 28 distribution and three manufacturing locations. It employs 600 and still directly serves end users.

Coil handling equipment and form rolling mills are two of the most important pieces of equipment for the company. This equipment generates the sides, roof, door, guides and purlins of the steel buildings the company sells.

"Labor is a small part of the overall cost of our products," says Rayome Soupiset, operations manager. "It's the steel and steel fabrication that can make or break our profitability. So getting the correct setup at our rolling mills is crucial. We need the right coil at the right machine at the right time to produce the correct product because of the company's just-in-time delivery system."

The company's JIT delivery system makes it heavily depend on ERP and other software that ties manufacturing together with distribution. It keeps track of everything from the purchase of coil stock that can be bought anywhere in the world to the final delivery to a residence or building contractor using Mueller's own distributors and trucks.

For warranty verification, the company tracks each fabricated steel piece by using an ink jet printer integrated into the coil handling system. Mueller does this for assembly information and to track the warranty offered for a particular product for validation and to ensure that a customer is calling about one of Mueller's products and not another manufacturer's.

A fabricated building can be painted in many colors directly on the coil. So along with the different styles of buildings, colors and sizes, the ERP software keeps track of everything, including special buildings created from standards. That's why an integration of equipment and ERP software is imperative, says Soupiset. To help with this, the company uses an extensive bar coding and reference label system for tracking everything from the coil to the final product.

### From manual to automated

Asked why Mueller went to an automated control system for its coil handling system and rolling mills, Adolfo Narro, manufacturing manager, says, "Before having this

# Coil Handling

equipment, everything was manually operated, and it was taking a long time to run production. We also needed to reduce our scrap rate, which was about 60 percent. With AMS Controls and its Eclipse software, it's down to 2.5 percent."

Narro says the main things the company was looking for in a controller and software were the warranty traceability for the products and more efficient production.

"There were a lot of mistakes being made in production, such as running the wrong product," he says. "Now our controllers track that, making sure we're running the right product."

Narro says AMS' controls have been in use for about 12 years and that there are 25 controllers throughout the company being used on roll forming equipment and coil handling machines. But Mueller also has them on punching systems and feed rollers.

## How it works

Fabrication starts when Mueller gets an order downloaded to the company's software from a sales representative. The order goes into the ERP and Eclipse software where it's downloaded into the AMS controller. Eclipse generates a report for the mill operator that shows coils needed for the day.

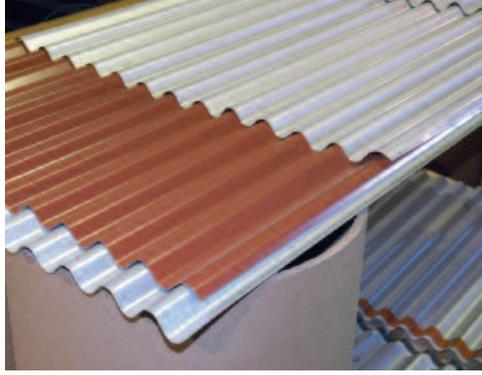
When the operator gets the bar code from the coil, he scans it and the software then validates the coil by looking for it in the system.

If Mueller has it, the operator will get it. If he gets the wrong coil, it'll be caught when it's checked at the coil handler, and the rolling mill won't let it run.

"Our purchasing department needs about five days to get us a coil, but we can tell when we are running low," Narro says. "So as soon as we download all the orders to our mainframe, we know how much coil we have. If we're down by about 1,000 linear ft., then our system checks different manufacturers, along with our other manufacturing plants, for the stock."

Mueller stocks about 22,000 tons of coil and doesn't stock any manufactured products.

The Eclipse software runs the mill and coil handler, outputs a coil report after a



**Rolling mills and coil handlers are used to produce parts for steel buildings or roofs.**

ning 24 hours a day. The most we could get out of a mill was probably about 80,000 lbs. of steel. When we did the first week's order, our first run using the AMS controller was about 120,000 lbs. from a single nine-hour shift. That's when we started realizing this was more efficient and a lot better for us. We started putting more controllers on our machines. Now we don't have a night shift. We have less scrap, more efficient operators, and we actually track every order. Our production is way up. We're producing about 450,000 lbs. in a 10-hour day."

Narro also says Mueller used to have three workers manually running a corrugated operation.

"It would take them at least 12 hours to run 15,000 lbs. because the machine was slow," he says. "We invested in a machine to make the same product using an AMS controller. Now one operator runs that mill [and does the same amount] all in about an hour's time."

Mueller typically will build from a 6-ft.-by-9-ft. building to one that's 250 ft. by 1,000 ft. using 26-gauge steel for panels and 12-, 14- and 16-gauge steel for purlins. These last 30 years or more. Studs are made from 12-, 14- or 16-gauge steel that's usually cold-rolled. Galvalume AZ50 and AZ55 grade 50 and grade 80 in both painted products and Galvalume Plus for panels are used, as well.

**FFJ**

job is run to the ERP software, giving Mueller coil traceability, and keeps track of the rolled steel and finished product. It's also working with the inkjet printer to verify every single sheet that's produced.

A mill will only run enough material for a particular job.

"The reason that we're using these inkjet printers is because it was requested by a customer," Narro says. "You have different assembly zones on a house. They need to know exactly where to take that bundle of panels, so they can start installing the roof at the right place."

Soupiet and Narro both wanted different features for their equipment that AMS originally didn't offer. One feature was software that put the customer's information on a tag for each bundled job.

"AMS developed a label for us and integrated it with its controller," Narro says. "The next feature was the inkjet printer. They now give us all the information for a customer on each rolled panel. Then we wanted coil validation. After that, we needed punch pattern definition for punching holes in our panels. Then we asked for a touch-screen controller. We've asked for different reports from the Eclipse software to make sure we track every coil, order, link and bundle. So if a customer calls and says, 'We're missing parts here,' we can see when we downloaded the part, when we ran it, what type of bundle we sent them and how many parts we actually gave them. All this information is integrated."

"When we started here it was a manual operation," he continues. "We were run-

**AMS Controls Inc.**, Maryland Heights, Mo., 314/344-3144, fax: 314/344-9996, [www.amscontrols.com](http://www.amscontrols.com), e-mail: [info@amscontrols.com](mailto:info@amscontrols.com).

**Mueller Inc.**, Ballinger, Texas, 877/268-3553, [www.muellerinc.com](http://www.muellerinc.com), e-mail: [sales@muellerinc.com](mailto:sales@muellerinc.com).



**A rolling mill using an AMS Controls controller makes parts for an overhead door.**