

Plastics News



Ford turns to tooling to help new F-150 stand out

Laser etching, inserts, SMC all have a role to play in helping the 2021 Ford F-150 stand out

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Detroit — Designers for the 2021 Ford F-150 have put new capabilities in etching and tooling inserts to help the truck stand out while providing molded trim that can “span a variety of customers, expectations and price points.”

Dustin Shedlarski, interior design manager of the F-150, told *Plastics News* that new geometric textures were laser etched into tooling, creating “quite a spread of different finishes throughout” the interior of the truck.

“We wanted to make sure we added personality to the interior, even on the hard plastic parts ... to give it a premium feel ... and to differentiate the versions of the truck,” Shedlarski said.

The laser etching is used on parts for even the lowest trim levels, he said. “It takes what would normally be kind of a low-end part and really adds a lot of interest and character to it.”

The 150 is Ford’s biggest selling and most important vehicle, so it is important to get the details right.

To help manage the cost of tooling for so many trim levels, the geometric etching patterns exist on removable inserts that attach to the cavity of the molds, he said.

“It helped us manage multiple parts and aesthetics to the surface without us having to have unique tools for every single part,” Shedlarski said.

“We definitely had to really prioritize the capacity and throughput of tools to get them done on time and support the program,” said Alan Moran, North America instrument panel and console engineering manager at Ford. “Just because we’re not accustomed to this process with the large-scale tools.

“We’ve taken the geometric grains and started implementing them over

larger-scale surfaces than what we have in the past,” Moran said.

The laser grain process, which is also used on the top of the instrument panel, door trims, upper glove box and register bezels, he said, allows the grain to hold more definition than traditional acid etching.

“It gives us a multilayer grain pattern, which is more crisp than our acid etching processes that we’re more accustomed to using,” Moran said. “The acid etch process kind of rounds out some of the detail of the grain.”

“When you get inside the vehicle and get close to the parts, there’s so much detail that photos really don’t capture,” he added.

Another new feature, a center console work table, folds out from the armrest lid and creates a flat space for writing or eating in the center of the vehicle. That part also has a fine-grained texture finish.

Areas people would likely be standing



on the truck have a large grain for foot traction, said Craig Moccio, senior closures systems manager at Ford.

The new F-150's tailgate also includes a flat, sheet molded compound panel for writing, Moccio told *Plastics News*.

"On a work site [the customer] wants a flat area to write on, throw out blueprints," he said.

Aluminum or steel, Moccio said, "isn't the best surface" for a flat panel. Ford also needed "a material that is structurally strong enough to handle loads like Harleys, people with ATVs."

"Normally you want to shape in a steel or aluminum panel so you don't dent it and so it doesn't deform," Moccio said. "Sheet molding compound is a very good selection for that. It's very tough; it has about 50 percent glass fill in it so it's formable. ... The weight was very competitive."

The SMC enabled Ford to mold other shapes into the tailgate panel, like cup, pencil, tablet and screw and bolt holders, Moccio said.

"So if you're sitting on a hill or something and you throw down your nuts and bolts, they won't roll," he added.

Molded lockable storage under the rear seats allow customers to safely secure tools or hunting rifles, Moccio said.



New geometric textures were laser etched into tooling, creating the interior of the Ford F-150 truck. The laser grain process, which is also used on the top of the instrument panel, door trims, upper glove box and register bezels, allows the grain to hold more definition than traditional acid etching.

Ford Motor Company photos

The SMC also made it possible to place different-sized grains in "zones," he said.

A lot of imaging and logos are put on in a secondary process, Moccio said, but some of the logos on the F-150 are etched into the tool and molded to the part.

Subtle, decorative appliques made of film on various series of the F-150, Moran said, look "like a graphic of some sort," at first glance.

"On the King Ranch series, it's a real

wood applique, but behind that wood is a plastic substrate," Moran said. "The plastic pushes against the aluminum, which pushes through a hole in the wood to create an aluminum look inlay within the wood part."

"On the outside you're seeing aluminum and wood," Moran said. "But it's the plastic and everything behind it that helps force the feature through the part and give you a super clean, smooth inlay that's flush to the surface."