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## PET: Always Something New

by Ken Tumblyson, President, Buckeye Shapeform

Plastic Enclosure Technology (PET) has made enclosure end products more unique and smaller than ever before. There is always a newly configured plastic enclosure in production, something that's never been made before, the trend is towards producing smaller enclosures for original equipment manufacturers (OEMs).

Enclosures are shrinking in size because the OEM components are becoming smaller. Technology has advanced to a point where more powerful components are requiring less space, much like what has happened with computers. PET is so versatile that there is never a hassle creating a new enclosure package, no matter how small the size or demanding the enclosure specifications.

### PET: A Non-Conformer

There are no standard products with PET, no need to start with a standard case and modify. Every plastic enclosure is customized to dimension specifications that relate to component size and enclosure function. PET has advanced to accomplish the transfer of the very best in sheet metal cutting, as well as bending and forming techniques.

PET utilizes CAM software, custom 3-axis CNC routers, and automated heat bending machines to produce configurations of virtually any kind. Plastic enclosure design can also be tweaked on the fly to accommodate prototyping changes. And, there is no upfront tooling investment, so smaller volume production runs are not cost prohibitive. Choosing the right material option will add to the overall value and complement the enclosure components, too.

### Material Options

Plastic enclosure research has identified four main material options. One is most likely better suited than another, depending on the product function, but all offer great properties.

- **ABS** – Acrylonitrile, Butadiene and Styrene is known for its ability to withstand impact and heat as well as its ruggedness, plus it has electrical properties that are consistent over a wide range of frequencies.
- **HIPS** – High Impact Polystyrene is fairly rugged and inexpensive, but has reduced electrical properties.
- **Polycarbonate & Acrylic** – This material combination is impact and temperature resistant, plus it has improved optical properties for applications. Acrylic is a rugged material and highly transparent and resistant to ultraviolet radiation.
- **Kydex** – A PVC/Acrylic blend that is a tough material and heat resistant with a good appearance.\*

### PET's Widening Usage

More and more customers are asking for plastic material enclosures due to their versatility. PET's use is increasing with industrial processing equipment, medical and



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Plastic enclosure research has identified four main material options: ABS, HIPS, Polycarbonate & Acrylic, and Kydex.

dental equipment, automated PCB and process equipment, electronic and computing applications as well as enclosures that would typically be structural foam.

In the end, those OEMs who are good matches with PET receive a visually pleasing package that continues to get smaller all the time.

\*If shielding is needed with any of the materials, a copper conductive coating can be added.

Kenneth R. Tumblyson is president of Buckeye Shapeform. For more than 100 years, Buckeye has been committed to providing quality products to OEM companies of all sizes around the world. Founded in 1902 as the Buckeye Stamping Company, the organization now includes Buckeye Enclosures, Buckeye Novelty Cans, Buckeye Knobs, and Buckeye Deep Drawn Technology. Buckeye Enclosures offers a complete line of off-the-shelf instrumentation enclosures as well as services for modifying standard enclosures and creating completely customized solutions in either metal or plastic material. For additional information, contact Buckeye Shapeform at 877-728-0776 or [info@buckeyeshapeform.com](mailto:info@buckeyeshapeform.com) or visit <http://www.buckeyeshapeform.com/>.

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