



Our newsletter is back after a short hiatus with a mobile-friendly, fresh look – check it out! We're excited to continue to share unique projects, great products, helpful tips, and the latest company highlights with you each month. Thank you for your continued support.

Capstone Project: TPU Shred & Sort

"An Automatic Sorting Machine"



After meeting with Unisbrands CEO Nicholas Unis and learning more about the company's recycling process, Penn State Altoona seniors Sara Roselius and Kyle Knowles knew they wanted to get involved with this online footwear marketplace. UnisBrands creates sustainable 3D printed sneakers from thermoplastic polyurethane (TPU) that can be worn and then recycled into a new pair.

The companies recycling process is done in two phases. In the first phase, shoe components are shredded into small granules and separated by color. Second, the thermoplastic is heated and re-extruded into usable spools of soft plastic thread. UnisBrands asked the Altoona students to design a system for phase one of their recycling process. "Our project is to take 3D printed shoes, shred them down, and sort the material," Sara said.

The main design objective of the project was to shred the thermoplastic components into small granules and then sort them by color into ten pre-designated bins. Their automatic sorting machine had to be compact in size so it could be easily stored and fit through the facilities doorways. In addition, the system called for an easy to use HMI interface and programming sequence so any operator could understand how to use it.

The compact integrated design challenged the students to design and manufacture many of the parts to make their project work. This included the gears, the sorting chute and collection bins, and the electrical encasement. To save money, the students used salvaged electrical components, 3D printed the specialty parts, and received donated materials like the acrylic sheets for the bins.

Because their automatic sorting machine was less than 35" x 35", the bins needed to be a nonstandard size to fit all ten of them underneath the table. "The size of the bins was so specific," explained Sara. "We knew if we used acrylic, we could laser cut the pieces and easily heat and bend the sheets into bins."

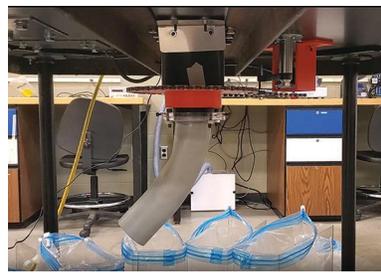


Sara's project partner, Kyle Knowles, said heating and bending the acrylic sheets required patience. "If it is not at the right temperature, you will not be able to get a good bend". Though it was difficult to maintain the exact same bend for each bin, Kyle was able to produce the specialty-sized bins required for their project.

By heating and bending the acrylic sheets, the assembly of each collection bin was much easier than cutting, drilling, and bolting together each side.

The finished project 'TPU Shred & Sort' features a redesigned shredder and ten stationary bins in a circular array. A movable chute transports the shredded thermoplastic pellets to the desired bin. The translucent bins make it easy for the machine's operator to verify the material is being distributed correctly.

In addition, the students felt the clear acrylic material added a nice aesthetic and went well with UnisBrands innovative modern style.



Featured Product

Acrylic Sheets

High optical clarity and light in weight, transparent acrylic sheets are as clear as glass, yet half the weight. This durable plastic material is impact resistant and will not shatter into tiny shards if dropped. A much safer alternative to normal glass!

- **Great Impact Strength**
- **Half the Weight of Glass**
- **Easily Fabricated & Formed**
- **Weather Resistant**

Easy to handle and work with, these versatile plastic sheets can be glued, drilled, routed, polished, bent, and laser-cut into almost any shape.

Acrylic sheets are an ideal alternative for traditional glass applications such as windows, cabinet fronts, shower doors, picture frames, and display shelves.

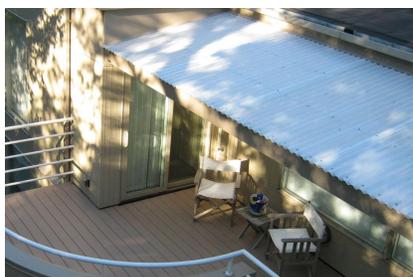


For more acrylic sheet info, please send an email or call 888.602.4441 to speak to a friendly and knowledgeable A-Team member.

[Request Product Info](#)

DIY Tip of the Month

Indoor-Outdoor Spaces



shelter outside, you can improve the comfort and

Multiwall and corrugated polycarbonate sheets can be used to create a seamless indoor-outdoor flow from your home to your yard. By letting natural light inside or creating

Frequently Asked Polycarbonate Question

Q: How can you tell which side of a polycarbonate sheet is UV-protected if the masking film or product label is missing?

A: An iodine test can be performed to determine which side of the sheet has

functionality of your living spaces.

- Sunrooms
- Awnings
- Screened Porches
- Terraces
- Patio & Deck Covers
- Verandas

Polycarbonate sheets are extremely durable, allowing them to withstand the elements. They are UV-protected to shield anything below from harmful UV-rays, from your skin to your furniture. Lightweight and easy to install, polycarbonate requires less structural support than traditional glazing materials.

AmeriLux offers sheets in a variety of profiles, colors and light transmissions, allowing you to choose a polycarbonate product that matches the style of your home and provides the level of translucency or shade you're looking for.

Call 888.602.4441 or [click here](#) for help choosing the best polycarbonate sheet for your next project.

a UV coating. Simply put a few drops of iodine on one side of the sheet and try wiping it off.

If the iodine wipes off easily, that is the UV-side. The iodine will stick to the side of the sheet that is not UV-protected. Iodine can be purchased over the counter at most drugstores or big-box retailers.



[More FAQs](#)

Links of Interest

- [Polycarbonate-glazed atrium brings light to this heritage home's dining space](#)
- [Bring daylight into your home; research shows moderate sunlight exposure can improve overall health and happiness](#)
- [Home experts predict post-pandemic trends in home design, including desire for increased daylighting and seamless indoor-outdoor experiences as more people are working remotely](#)

Company Highlights

Meet the A-Team

Employee Spotlight | Saige Giese

Drawn to the AmeriLux culture, Saige joined the AmeriLux A-Team this past fall as our Human Relations Manager. When asked about her first impression of AmeriLux, Saige said, “the culture is unlike anything I have seen before.”

As HR Manager, one of Saige’s responsibilities is to ensure that AmeriLux continues to foster a win-win environment for all employees. Saige feels it is crucial that all team members feel fulfilled and valued in their roles. She is also responsible for management of all employee benefits, payroll, recruiting, and retention.



Saige believes that the most important role HR Managers play is taking ownership of the culture and sense of fulfillment that employees have. "Each employee is unique in what makes them feel fulfilled," she said, explaining how this sometimes presents a challenge. "My goal is to emphasize a culture that both retains our current team while attracting additional candidates that can also aid in the success and growth of AmeriLux."

"It is incredible to see a company that actually stands behind its core values and goes above and beyond to accommodate employee needs."

"Is This A Great Country, Or What...?!"



How We Succeed
At AmeriLux

At AmeriLux, we are intentional about how we choose to succeed. We strive to exemplify our core value statements in everything we do. During these uncertain times, know that we are here to support you and your business in any way we can – now and in the future.

"We celebrate our freedom and opportunity, and look to the future with optimism. We believe in the power of happiness and positivity to produce outstanding results. We are intentional about cultivating creativity and innovation through optimistic, positive thinking."

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