

# Shell Polymers

# CASE STUDY

## Sustainable Asphalt in Private Market Applications

A surprising fact to most people is the asphalt industry has been using recycled waste products in asphalt mixes over the last 50 years. In fact, most asphalt contains recycled products. As the asphalt industry advances its quest for net zero carbon emissions, partnerships between the owner and the industry are invaluable. Armed with scientifically based research, partnerships benefit the mutual goals of both the owner and industry - to create an asphalt pavement that meets the needs of the users, provides value to the owner, and achieves sustainability.

One example of a successful partnership that met all those goals was when [Lindy Paving Inc.](#) utilized recycled plastic in all the mix designs used for the Shell Polymers in Monaca, PA. In 2017, Shell built this major petrochemical plant near Pittsburgh, Pennsylvania, USA. The facility was built on the banks of the Ohio River about 30 miles north west of Pittsburgh and located close to its source of ethane and customer base.

During phases 1 and 2 of construction, Lindy stabilized the subgrade and placed 4.5" depth of asphalt. Lindy placed the asphalt during the peak phase of construction when there were approximately 8,500 craft workers onsite building the plant. During these initial phases, Lindy completed 145,000 SY of stabilization and 39,500 tons of base. Phase 3 was the final phase of construction and consisted of finishing the 25,000 SY of stabilization, 10,000 tons of base and milling 1/2" of the existing base placed in the first two phases and paving 17,000 tons of wearing course. Using recycled plastic material in all of the mix designs resulted in a sustainable pavement for Shells' Pennsylvania Polymer Complex.

Asphalt paving technologists have been leaders in recycling for many years evaluating ground tire rubber, roofing shingles, glass, reclaimed asphalt and more. The National Asphalt Pavement Association has published a [two-part report](#)

on plastics summarizing the current state of the knowledge regarding recycling plastics into new asphalt mixtures. The National Center for Asphalt Technology (NCAT) is constructing test sections for a 3-year testing cycle to evaluate performance of various recycled additives (fibers, rubber and plastics). As more scientifically based research is available, the asphalt industry will continue to work with private market owners to construct asphalt pavements that incorporate meet sustainable goals.

Additional resources on recycling, climate and the Road Forward Initiative available at [AsphaltPavement.org/Climate](https://AsphaltPavement.org/Climate).

