

## Recovering Foam from Scrapped Autos

### 2000 FLC Award Winner

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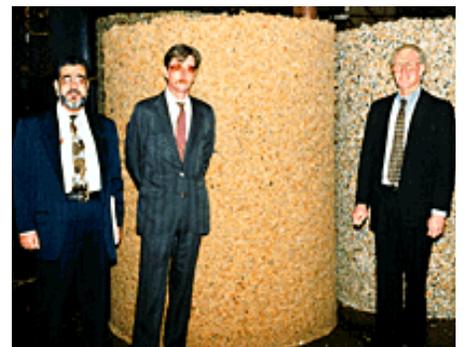


From about 10 million junked cars, auto shredders generate 3-5 million tons of waste, commonly known as automotive shredder residue (ASR), annually. The cars are shredded to recover metal, leaving about 100,000 tons of polyurethane foam (PUF), which is landfilled at great expense.



An Argonne process could help avoid this scenario. The process recovers PUF from auto shredder residue (the material left after metals are recovered). The resulting product meets the performance criteria for new-material carpet padding and for reuse in automotive applications. Clean recycled foam sells for \$0.25-0.30 per pound, compared with more than \$1.00 per pound for virgin foam. The residue from auto recycling is a source of polyurethane foam that is recovered (above, left) and cleaned (below, left) by an Argonne process, before being baled for shipping.

A continuous process system with a design capacity of 100 pounds per hour was designed and built by Argonne. Operation of the facility in staged campaigns produced more than 3 tons of clean, dry foam. The product was evaluated by major foam recyclers and met their specifications. The overall process consists of six basic unit operations: (1) PUF recovery and screening, (2) sizing, (3) washing, (4) rinsing, (5) drying, and (6) baling. The process is fully continuous to minimize materials handling and labor costs. A unique trommel, equipped with longitudinal slots to reject all material less than a specific size, is used to recover any oversized material (predominantly PUF) from the residue. As the PUF exits the trommel, an air-knife is used to isolate it from the residual material. Following size reduction, washing, and rinsing, a unique



dryer is used that reduces the drying time from about 3.5 hours in conventional dryers to less than 15 minutes. The clean, dry foam is then baled for shipment.

The technology has been licensed to Salyp Recycling Center of Belgium.

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### **For More Information**

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