

# Status of Recycled Materials Used in Construction

February 2018

Vermonters generate a variety of wastes that are inherently recyclable, and Vermont law has incrementally banned a number of these materials from disposal. “Blue bin” recyclables have been banned since 2015; clean wood, leaf and yard waste since 2016, and all food scraps by 2020. Since 1992, tires also are banned from disposal.

Beginning on January 1, 2015, a commercial project that generates more than 40 cubic yards—or about one large roll-off container—of architectural waste (clean wood, plywood, oriented strand board (OSB), drywall, metal, asphalt shingles) is required to bring that waste to an architectural waste recycling facility if there is one located within 20 miles.



**Construction and demolition project site at a former State office complex in Waterbury, VT.**

## **Asphalt, Brick, and Concrete (ABC)**



Due to economics and the materials’ useful properties, bituminous concrete (“asphalt”), brick, concrete, and other masonry materials are near-universally recycled into natural aggregate substitutes. The ANR encourages the beneficial use of uncontaminated, processed ABC waste.

*Certified ABC recycling facility, Colchester.*

## **Processed Glass Aggregate (PGA)**

Processed Glass Aggregate (PGA) is made from crushed and screened clean food and beverage containers. As the market for glass containers lessens, more and more collected containers are processed into PGA. To be reused, PGA must meet a VTrans/ANR sizing and cleanliness specification. PGA is inert, free draining, and makes an excellent substitute for natural aggregate in many construction applications; however, removing the “deleterious material” (paper, labels, neck rings) is challenging, particularly with single-stream recycling, and Vermont’s cold, wet climate.

## Compost

With wood, brush and leaves now banned from disposal, and food waste diversion on the upswing, Vermont composting facilities are continuously increasing the amounts of compost they are producing. Unfortunately, the demand often has not kept pace with the supply. Compost is an excellent soil amendment and top dressing on public and private construction projects, and its use is highly encouraged in the 2017 ANR Stormwater Manual and Guidance on permitted construction projects.

## Tires

Vermonters generate about 700,000 scrap tires per year. Nearly all our scrap tires are shipped out of State for processing or recycling, and the majority of Vermont's – and the nation's – tires become Tire Derived Fuel (TDF) for use in industrial boilers. However, the TDF market is shrinking, and other options for scrap tire management must be developed.

The use of Ground Tire Rubber (GTR) in hot mix asphalt has seen a resurgence around the county, including other New England states, as the technology has improved. Shredded scrap tires can be used as Tire Derived Aggregate (TDA) in construction projects, making use of the material's free-draining, light weight, and insulative properties.



*Portable hot mix asphalt plant, Hooksett, NH, incorporating ground tire rubber.*

## Recycled Asphalt Shingles (RAS)

Asphalt roofing shingles are comprised of asphalt and aggregate, with a small amount of paper or fiberglass binder, allowing recycled shingles to be particularly suitable in road construction projects. Vermont produces an estimated 25,000 tons of shingle waste per year, and one certified facility is now collecting “tear off” shingles for recycling. RAS has been used in Vermont and elsewhere in hot mix asphalt and to improve the performance on gravel roads.

