

# RECYCLING IN CONSTRUCTION

A Look at C&D Debris and Tire Recycling

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C&D DEBRIS







## WHAT IS C&D DEBRIS?

- Through the construction and demolition stream, countless material is produced.
- According to the EPA, over **569 million tons** of debris was generated in 2017.<sup>1</sup>
- This is the most recycled waste stream: **73%** is recycled
  - Majority is aggregates – concrete and asphalt
- Concrete/Asphalt
- Metals
- Wood
- Drywall
- Brick
- Plastics/OCC
- Asphalt Shingles
- C&D Fines
- Stone
- Glass
- Carpet

## C&D DEBRIS RECYCLING

- These materials have an **ENDLESS LIFE CYCLE.**
- Recycling leads to less material going to the landfill.
  - Due to Hurricane Harvey, over 1 million cubic yards of debris went straight to landfills.

# TYPES OF C&D DEBRIS

WOOD





# WOOD

- Recyclable wood includes plywood and manufactured wood
- Painted wood and treated wood cannot be recycled



# RECYCLED WOOD PRODUCTS



MULCH



ANIMAL BEDDING



WOOD FUEL PELLETS



GYPSUM



# GYPSUM



- Also known as Drywall or Sheetrock
- Estimated 5% of drywall is recycled annually<sup>1</sup>
- No local recyclers of drywall/gypsum

<sup>1</sup>[Cdrecycling.org](https://www.cdrecycling.org)



# RECYCLED GYPSUM PRODUCTS



SOIL ADDITIVE



NEW DRYWALL



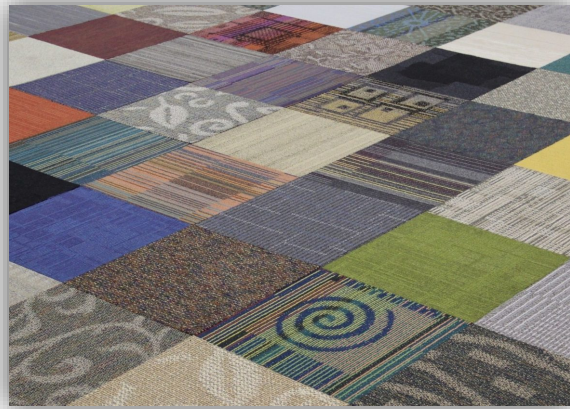
GYPSUM CEMENT

CARPET





# RECYCLED CARPET PRODUCTS



CARPET TILES



FIBER/CARPET CUSHION

# METALS

**Ferrous metals** contain iron (Fe: Ferrum) and have magnetic properties

- Stainless steel, carbon steel, alloy steels, cast iron

**Non-ferrous metals** do not contain iron, are generally more malleable, and are non-magnetic

- Brass, copper, gold, nickel, lead, zinc



# METALS

- Metal has an **ENDLESS LIFE CYCLE**
- Usually the first material that is recovered
- Cherry recycles over 70,000 tons of metal annually
  - Distributed to local markets
  - Mill-direct to different countries
    - Mainly rebar





# RECYCLED METAL PRODUCTS



STEEL REBAR



COPPER



ALUMINUM



ASPHALT



# ASPHALT

- Retains the ability to function as adhesive (a glue or cement), so it can be reused, giving it an **ENDLESS LIFE CYCLE**
- Recycling of asphalt saves taxpayers an estimated \$2.5 billion per year
- Saves thousands of acre-feet of landfill space each year



# ROADS

- Reclaimed Asphalt Pavement (RAP) can be recycled into the pavement that is as high, or even higher, in quality as pavements made of all-virgin materials.



# SHINGLES



- Recycled Asphalt Shingles (RAS) can also be mixed into hot-mix asphalt.
- Due to regional climate, the percentage has been reduced
- Less virgin material needed to produce hot-mix



# CONCRETE



# CONCRETE

- Most generated and most recycled material
  - By weight
- **ENDLESS LIFE CYCLE**
  - Can be recycled into countless new products



# RECYCLED CONCRETE PRODUCTS



SCREENED ROCK

- A.k.a. “Sewer Rock”



FINES

- Artificial turf base



# TIRES



# TIRES

- Landfills do not accept whole tires
  - They must be cut into quarters
- Currently being used as an alternative fuel source
- Crumb rubber
  - Steel and tire cord removed
- Land reclamation





# TIRES





THANK YOU!

**Media Credit:**

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