Applications for Using Pulverized Glass Aggregate

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Presented
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Alternative Uses for Recycled Glass Processed to Construction Aggregate Specifications

• Pulverize Glass into Glass Aggregate
  – Uniform size – no sharp edges (3/8” minus and 1/8” minus glass sand)

• Glass is separated from other materials
  – Reduction in size and removal of metal, plastics and most paper
  – All types of glass and ceramics are permitted.
Materials used to produce glass aggregate include:

- unsorted glass bottles
- whole or broken bottles
- plate glass
- tempered glass
- ceramics
- any frangible material
What is Pulverized Glass Aggregate?
Glass aggregate is smooth and rounded - no sharp edges. It will not cut.

OK to drive or walk on it - even barefoot!
The Glass Recycling Alternative

- General Aggregate
- Fill or Soil Enhance
- Aggregate Base
- Road Construction
- Traction Sand
- Asphalt Sub-Base

Saratoga County
The Glass Recycling Alternative

• Pipe Bedding

• Backfill
Glass aggregate used for dust control
The Glass Filtration Recycling Alternative

Wastewater
Filter
Medium
Septic Waste Water Treatment
Septic Waste Water Treatment
Septic Waste Water Treatment
Final Effluent and Cascade System
Benefits of pulverized glass aggregate as a filtration media:

• Normally has a neutral pH

• Chemically inert and does not leach minerals

• It does not break down, as natural aggregate may, so it will perform at an optimal level for an extended period of time.
Benefits of pulverized glass aggregate as a filtration media:

• No inherent silts or clays to cause “lenses” or “perching” of water

• Provides Opportunity for Bio-attenuation for Contaminants of Concern (microorganism friendly environment)

• Good compaction, less dense, easy to apply

• Superior Filtration Rate (10 sec/inch)
The Glass Landscaping Recycling Alternative

- Parks, parking lots, and roads
- Landscaping – road, shoulder, and medium enhancement
Glass aggregate as trail surfacing
Smooth, safe glass aggregate can be produced in various sizes with equipment such as the Andela Pulverizing System.

Uniform size – no sharp edges (3/8” minus and 1/8” minus glass sand)

Glass is separated from other materials. Reduction in size and removal of metal, plastics and most paper.
Glass Recycling Equipment
Andela GP-05L Pulverizer System

Challenges

• Think like a “gravel pit” owner/operator – Visit aggregate suppliers, learn “language” – Follow the trucks, find the markets

• Must have adequate storage

• Must size it and keep it clean
A Sustainable Business Model

- Andela Products
  - Glass recycling for every community
  - Flexibility for different recycling programs
  - Multiple local markets
Environmental benefits

- Enhancement of local glass recycling efforts
- Non-recyclable glass and ceramics are kept out of landfills
- Reduced air pollution and carbon footprint associated with mining and transporting natural aggregate, in most cases, since glass aggregate is usually made and used locally
- Reduced exposure to silicosis producing natural aggregate
Pulverized Glass and CleanGlass
Marketing Opportunities & Challenges

• Connect with the public
• Partner with private construction & landscaping companies
• Keep price competitive
• Project specs & requirements are necessary for its usage
Pulverized Glass and CleanGlass Marketing Opportunities & Challenges

Public - Private Projects

- Technical specifications are helpful, but contractor and customer make decision.
- Large and small supply is acceptable.
- Represent a large segment of the market.
The Glass Recycling Alternative

• Prices for Alternative Markets:
  – $0 - $10 Bulk Aggregate
  – $20 - $30 Specialty Aggregate (some marketing required)
  – $150 - $1,000 / ton Sandblasting & Colored Landscaping (requires additional processing/marketing - i.e. cleaning, drying, bagging, screening, coloring)
Final Thoughts

Material Availability and Cost

Quality Product

Community Involvement (PR)