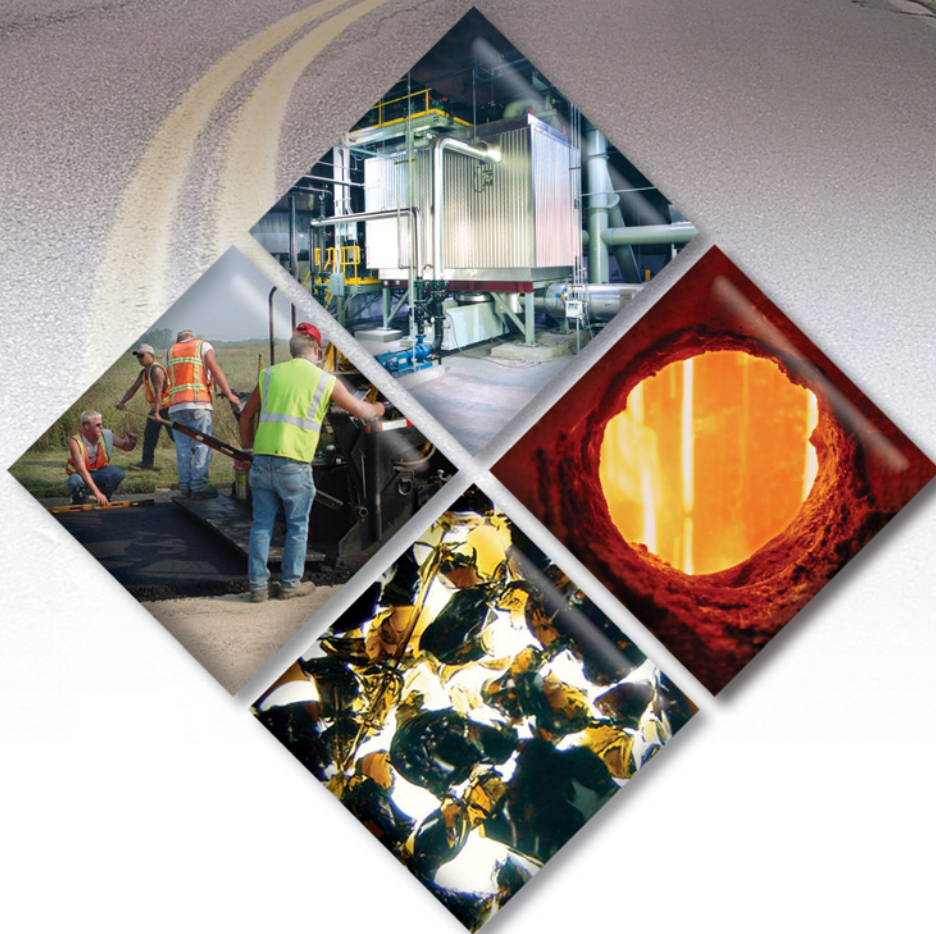


GLASS AGGREGATE INNOVATIVE. SUSTAINABLE. ENVIRONMENTALLY FRIENDLY.



Minergy's vitrification (melting) technologies recycle sludge, biosolids and contaminated soils into a useful, environmentally friendly product — glass aggregate — that cost-effectively and consistently outperforms quarried aggregates. Proven commercial applications include:

- Hot mix asphalt
- Utility trench fill
- Pozzolan (cement) substitute
- Construction backfill
- Roadbed construction
- Blasting media
- Roofing shingle granules
- Ceramic floor tiles

**MINERGY**[®]
VITRIFICATION

1512 S. Commercial St., Neenah, WI 54956
(920) 727-1919
www.minergy.com

VITRIFICATION PROCESS

This unique mineral recovery process melts the mineral content of sludge using a patented process, which creates an inert, environmentally friendly glass product that can be put to beneficial use.

- High process temperatures destroy organic contaminants in the sludge.
- Rapid quenching of molten glass in water physically sequesters heavy metals within the glass matrix, resulting in low leaching potential.
- Glass aggregate handles and stores similar to conventional quarried aggregates.



SUSTAINABLE PERFORMANCE

Minergy's glass aggregate's unique composition succeeds in many commercial applications.

- Grading and high angularity helps build voids in mineral aggregate, producing high-quality, economical hot mix asphalt.
- Qualifies as "recycled material" in D.O.T. and project specifications.
- Density, compaction, size distribution and drainage properties are ideal for many structural fill applications.
- Amber Blast™ blasting abrasive offers advantages over other abrasives. Unlike other abrasives, it contains NO crystalline silica and has a 30 percent higher cutting rate due to sharp, angular grains.
- Chemical composition and vitreous texture possess latent cementitious properties, which can be used as an active mineral admixture in cement.

To learn more about how you could benefit from Minergy's cost-effective, environmentally safe glass aggregate, call (920) 727-1919 or visit www.minergy.com.

SIEVE ANALYSIS (ASTM C136)

Sieve Size	Percent Passing as Received	
	Aggregate From Paper Sludge	Aggregate From Biosolids
25.0 mm (1")	100.0	100.0
19.0 mm (3/4")	98.5	99.9
12.5 mm (1/2")	98.3	99.3
9.5 mm (3/8")	96.5	97.8
4.75 mm (#4)	75.6	92.8
2.36 mm (#8)	34.0	78.4
1.18 mm (#16)	12.0	54.8
0.6 mm (#30)	4.5	27.4
0.3 mm (#50)	1.8	8.8
0.15 mm (#100)	0.8	3.0
Percent finer than 0.075 mm (#200)	0.4	1.3

PHYSICAL PROPERTIES

Properties Include:	Aggregate From Paper Mill Sludge	Aggregate From NSSD Biosolids
Moisture Content (ASTM D2216) (%)	2.2	5.1
Organic Content (ASTM D2974) (%)	<0.1	0.2
Unit Weight (ASTM C29/29M) (pcf)		
As Received Loose	84.9	76.5
As Received Rodded	102.2	85.7
Oven Dry Loose	93.9	84.5
Oven Dry Rodded	104.7	92.9
Maximum Dry Density (ASTM D698) (pcf)	108.5	105.7
Specific Gravity (ASTM C127, 128)		
Bulk Specific Gravity (SSD)	2.81	2.69
Apparent Specific Gravity	2.84	2.72
Absorption	2.88	2.78
Soil Classification (ASTM D2487)	SP (Poorly Graded Sand With Gravel)	SP (Poorly Graded Sand)