

THINK

pozzotive®

An Update Presentation by Urban Mining CT to the

Solid Waste Advisory Committee

Regarding
Pozzotive®

April 20th, 2021

The Pozzotive® Solution



Pozzotive® is a high-performance ground glass product that creates stronger and longer-lasting low carbon concrete. It provides ground-breaking solutions in three industries:

- Glass Recycling
- Cement
- Pozzolans

With broad support from CT DEEP, the first full-scale facility of its kind worldwide opened here in CT in December 2020.



Industry Problems and Solutions

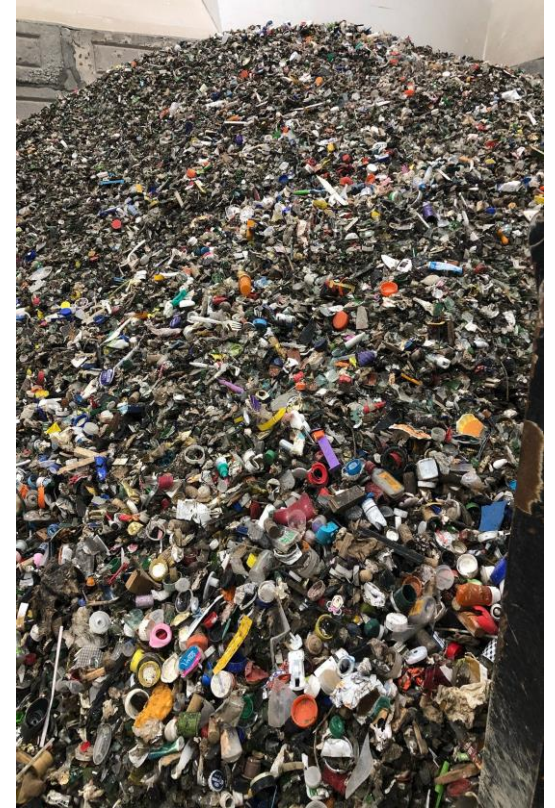


Recycling Industry:

The economics for recycling glass are challenging. Manufacturers require color segregation, ceramic and pyroceram removal, and a minimum size of $\frac{3}{8}$ ". The green glass market is limited, and the CRT panel glass market is nonexistent. Most glass is still land-filled.

Solution: Pozzotive® is now using any size and color of glass along with ceramics and pyrocerams from MRFs, increasing both the value and utilization of glass in our state.

We also have innovative solutions for recycled CRT panel glass, plate glass and demolition glass



Industry Problems and Solutions



Cement Industry:

Making one ton of cement generates about a ton of CO₂.

Solution: Pozzotive[®] replaces up to 50% of cement in concrete, reducing cement-related CO₂ on a nearly ton-for-ton basis.



Pozzolan Industry:

A pozzolan is an important component in making high performance concrete. The most common pozzolan has been fly ash from coal burning power plants. Shutdowns and conversions of those plants have significantly reduced the supply of fly ash.

Solution: Pozzotive[®] helps fill these growing supply voids and does it with a better performing alternative.



Why Use Pozzotive® in Concrete?



- **Environmental Benefits:**

- Dramatic reduction in the carbon footprint of concrete
- Process utilizes any size or color glass and ceramics: no glass to landfill
- Yields a white material that increases reflectivity and reduces “heat island” effect
- Made and used regionally from regionally harvested post-consumer glass, minimizing long-haul trucking

- **Performance Benefits:**

- Better performing and longer lasting concrete
- Resistance to chloride penetration and reduced moisture penetration means a longer life for concrete and major long-term savings in infrastructure costs



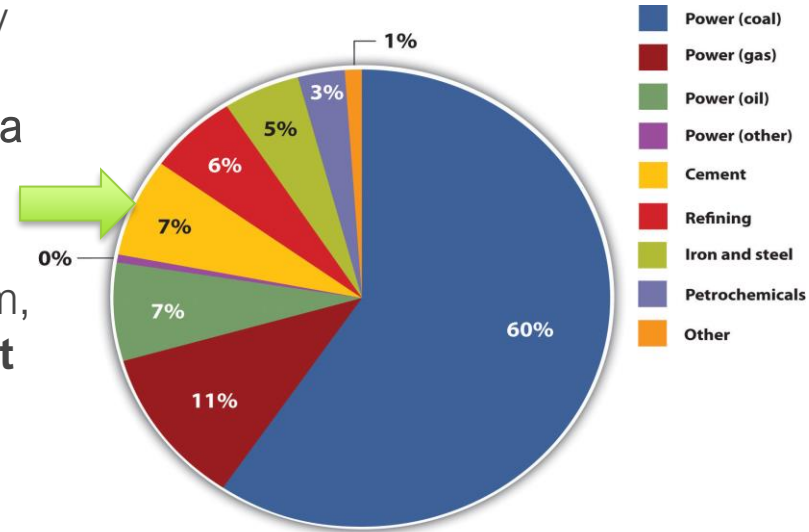
The Solution to Cement's CO₂ Problem



It is estimated that **7%** of the CO₂ produced globally is from the manufacture of cement. The Global Warming Potential (GWP) for cement is over a over a ton of CO₂e for every ton of cement made.

In stark contrast, Climate Earth, an independent firm, recently found that the **GWP of Pozzotive® is just 5% of the portland cement it replaces!**

The carbon impact of Pozzotive® from our CT plant will be equivalent to taking about 8,000 cars off the road a year.



Strong Market Acceptance

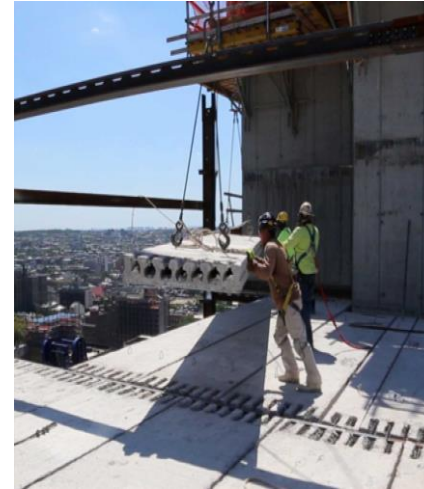


Successful third-party lab testing completed by:

McInnis, US Concrete, CEMEX, O&G Industries, Unilock Pavers, CCNY, Rensselaer Polytechnic Institute, Clarkson University, NYCDDC/DOT, BASF, 3M, FL and CT DOT

Representative projects using Pozzotive:

- **Sidewalks:** NYC (DDC) and Mountain View, CA (Google)
- About 10 million **concrete blocks:** 2nd Ave subway, NYPD Academy, Yankee Stadium, 855 Sixth Ave, US Navel Drone Facility, NYU, Columbia, Sloan Kettering, Univ. of West Virginia, UCONN, ESPN HQ, Marine Gateway (Vancouver)
- Over 500,000 SF of **pre-stressed concrete slabs:** Various residential developments in the NY metro area
- **Permeable Pavers:** The United Nations Plaza, Whole Foods, Brooklyn, NYCSCA Net Zero School
- **Structural High-Rise Pour:** Halletts Point, NYC

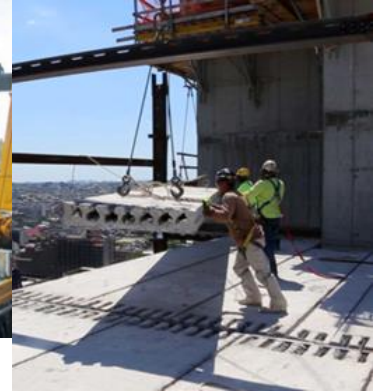


Strong Market Acceptance



Pozzotive® can also transform demolition waste glass into a new building product: 60 tons of UN window glass were recovered, crushed and milled into Pozzotive® and then used to make Sustainable High-Performance Concrete pavers now at the entrance to the U.N.

NYC projects clockwise from top left:
United Nations Plaza
Via Verde
City Point
El Jardin de Selene
A&E firms already specifying Pozzotive



SPECIFIED BY:

AECOM **GRIMSHAW**

PERKINS+WILL

HAZEN AND SAWYER
Environmental Engineers & Scientists



Dattner Architects

Severud Associates
CONSULTING ENGINEERS P.C.



Industry Turning Point:



Halletts Point in NYC was the first structural high-rise pour nationally to use a glass pozzolan



Industry Recognition



BuildingGreen selects new building products that significantly reduce energy consumption and carbon emissions and improve product life cycles. We have now won this national award twice!

Pozzotive® also earned the United States EPA's Environmental Quality Award in Region 2, the highest award given to the public by the USEPA.

The Northeast Recycling Council (NERC), a non-profit consortium of 11 states united for environmentally sustainable materials management, awarded Pozzotive® its 2020 Environmental Sustainability Leadership Award.



**Pozzotive Ground Glass
Pozzolan**



Benefits for our Communities



Pozzotive provides our communities with a:

- Cost-effective large-scale solution to our glass challenges
- Real alternative to costly and diminishing landfill options
- New and commercially viable low-carbon solution for concrete
- Better performing and longer lasting concrete
- Great environmental and community outreach story on many levels - feedstock is sourced locally, and finished products are manufactured and used locally
- Significant capital investment and the creation of new jobs
- https://www.dropbox.com/sh/ep7gez188pib3ds/AACw7qBZIR_dc2MoxY2nlqfSa?dl=0

What Can SWAC Do To Help?



Support:

- Robust glass recycling programs
- The reuse of our state's glass within our local communities
- Legislation that encourages the use of low carbon concrete and concrete with recycled content



www.pozzotive.com

