

An Advanced Technique to Reutilize Concrete

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Editorial

Demolition of concrete foundations, sidewalks, driveways, and other concrete buildings is common in the early stages of many construction projects, leaving a contractor with a large volume of heavy, dense materials to deal with. Concrete, fortunately, can be recycled and reused in a variety of ways. The method usually entails crushing or pulverising concrete rubble near the demolition or construction site. The size and shape of the concrete pieces to be recycled have a role in determining the optimal procedure [1-3].

Reusing concrete is an excellent strategy to save money on construction while also helping the environment. Recycled concrete not only keeps waste out of landfills, but it also eliminates the need to mine and transport other minerals like gravel [4].

Concrete recycling's advantages

Concrete recycling reduces building waste and extends landfill life while also saving builders money on disposal and tipping fees. Concrete can typically be recycled in places close to the demolition or building site, which minimises transportation expenses. When it comes to LEED Green Building certification, employing recycled concrete might help you get points. In some cases, a recycling operation creates new job opportunities that would not otherwise exist.

What happens when concrete is recycled?

Industrial crushing equipment with jaws and massive impactors is used to recycle concrete. After the concrete has been broken up, it is frequently screened to remove dirt and particles, as well as to separate the large and tiny aggregates. To separate certain materials from crushed concrete, additional procedures and equipment such as water flotation, separators, and magnets may be utilised. Pulverizing the concrete is another possibility, but it is not always the ideal solution because it makes the separation process more difficult and may result in more contamination from smaller leftovers.

Recyclable concrete equipment

When evaluating concrete recycling as a viable alternative, you must also analyse the various choices for crushing the concrete. A portable crusher that can be relocated to multiple places or projects is the most practical choice. It's often ideal to put up a portable crusher in a central area, close to where the concrete is being demolished yet far enough away from site traffic. When selecting processing equipment, consider the following factors:

- A powerful electromagnet, water flotation, or an air separator system that can draw steel from concrete should be included in the equipment.
- Separate hydraulic supports will allow for a speedier setup.
- Control systems can be automatic, manual, or remote.

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- Conveyors, jaws, and cones can be used to complete the concrete processing process, from demolition to usable material.

What can you do with old concrete?

Many of the same ways that fresh materials, such as gravel, paving materials, and aggregates, can be used using recycled concrete. Walkways, driveways, and other outdoor hard surfaces with permeable paving: Broken concrete that has been expertly poured offers a stable, porous traffic surface that allows rainwater to drain. This strategy helps to replenish groundwater by reducing the amount of runoff water that must be controlled by storm sewer systems. Old concrete pavement can be shattered in place and used as a base layer for asphalt pavement poured over it, thanks to a process known as rubblelization. Material for excavations incorporating underground utility lines as a bed foundation: Gravel is used to cover utility ditches to aid drainage, and broken concrete is an effective, low-cost substitute for gravel.

Mixing aggregate for new concrete: Some of the virgin aggregate used in ready-mix concrete can be replaced with crushed concrete. Stream bank erosion can be controlled by placing larger pieces of crushed concrete along weak stream banks or gullies. Ground concrete can be used to replace river rock or other gravels used as ground coverings and mulch when properly crushed and sorted. Fill for wire gabions: Crushed gravel can be used to create ornamental and useful privacy screen walls or retaining walls using wire cages (gabions). Large slabs of concrete, strategically positioned offshore, can be used to lay the foundation for coral to develop new oceanic reef ecosystems [4,5].

Conflict of Interest

None.

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