

SELF-DUMPING BINS:

A SOLUTION TO SAFETY AND PRODUCTIVITY

By Mark Junkersfeld



The operator lifts the bin, and it dumps itself. Contractors report that this is a win-win situation, and is both faster and safer.

Trash removal on a jobsite under the best of conditions is a messy proposition. This controlled mayhem of tossing or loading debris in a bin and then flying the container by crane from the top of a high-rise structure to a dumpster on ground level seems contrary to the following statement from the Occupational Safety and Health Administration (OSHA): “All employers are to provide their employees with a work site free from recognizable hazards that could cause injury or death.”

But jobsite cleanup is necessary, and it can be a time-consuming proposition. In today’s fast-track construction climate, “time is money” means more than ever before.

After all of the jobsite gymnastics involved with loading a bin, rigging it to a crane, swinging it over a dumpster, and dumping it, often the most dangerous part hasn’t even occurred. It is when a man gets in the debris-filled dumpster to unchain the bin that the potential for accidents is most prevalent.

Enter a new method of debris removal that relieves a lot of the danger while cutting a big chunk of time out of the cleanup equation: the self-dumping bin (SDB). In today’s business language, that translates to a win-win. For those who have been using cobbled-together garbage bins or conventional bins that require a four-point rigging system, the SDB is a safety director’s dream come true.

The primary problem with trash removal is that someone has

to climb into a dumpster to remove rigging for the bin to be emptied. Construction personnel are walking in nails, broken glass, rebar, wood, paint cans, etc. Falls are common and lead to cuts, abrasions, and punctures. When employees are climbing on and jumping down from 6- to 8-foot-high icy or wet dumpsters, ankle, knee, and back injuries are the result. These are OSHA-recordable injuries that can be avoided.

The second issue with homemade bins is their load rating. These bins are often loaded with concrete, wood, sheetrock, steel, and other heavy construction waste. With no weight rating, construction personnel have no capacity guidelines. Bins have failed and collapsed due to overloading on several projects.

These homemade bins also require costly rigging. On most designs, a set of four-way cables are needed, along with four shackles—one for each corner. This rigging can cost up to \$800 per bin. Furthermore, the cables become frayed or damaged and must be replaced at additional cost.

With the introduction of the new SDBs, all of the situations, problems, and costs listed above are eliminated. SDBs are quite simple in their operation. They have a single arm that rotates to the vertical position when hoisted. The arm cannot go past center because of stops mounted to the outside of the bin. The bin is sloped in the front for the following reasons:

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- It makes for easier removal of debris; the debris slides out rather than flipping out on many traditional bins.
- The slope keeps debris toward the back of the bin to prevent tipping.

Once the bin is lowered to the ground or into the trash receptacle, the crane operator cables down, allowing the arm to lay back. Once the arm reaches the back of the bin, there is a dog bone that swivels to lock the arm in place. The crane operator can then cable up to dump the debris. The bin can be carried away in the vertical position to the next location. When it is lowered to the ground, the slope on the front automatically lays it into the correct position. Then construction personnel can remove it from the hoisting mechanism. There is no need for personnel to climb into the dumpster.

SELF-DUMPING BINS IN ACTION

On a recent project in Atlanta, Georgia, the conventional garbage bins were tested against the new SDBs. The old-style, homemade bins took two men to attach the rigging and one man to climb into the dumpster to remove the rigging. From the time the bin was attached to the tower crane, dumped, and then released, the total crane time needed was 9 minutes.

The SDB took one man to attach the rigging and one man to remove the rigging. Once it was connected to the crane, dumped, and then released, the total crane time needed was 2 minutes. On this project, they were dumping an average of three bins an hour. This constituted 27 minutes of valuable crane time saved for other duties.

Hugo Hernandez, project manager for Form Works, the concrete contractor on the 67-story Marquis Condominium Tower under construction in West Palm Beach, Florida, is a believer. "No one is climbing around in the trash to re-hook the rigging," he notes. "It is all done by radio communications with the crane operator."

Cleanup from 15,000-square-foot decks more than 800 feet in the air means saving crane time is critical. "Simply rigging with just two chains instead of four saves a lot of time," Hernandez says. "And we only remove the chains half as much since it is self dumping."

GETTING TO THE BOTTOM LINE

The new SDBs serve the following purposes:

- The self-dumping mechanism eliminates the need for project personnel to climb in and out of jobsite dumpsters, which reduces the risk of injuries.
- Costly shackles and rigging are replaced by a single pick point.
- Crane time is saved by quicker cycle time with self-dumping bins. These bins have weight ratings and are certified by an engineer.

"The difference in our guys' attitudes about cleanup is phenomenal," says Bryan Larson, field operations manager for Keystone Structural Concrete in Houston, Texas. "In the 5 months we have been using them, cleanup is faster and the men appreciate staying out of the dumpsters. We have two now and have ordered two more." ♦

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