



# Air Flail Cleaning Technology

A completely new innovative way to clean dry bulk cement vessels, rail cars and terminals with simple tools anyone can use.

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Hold Cleaning Technologies LLC





Cement cleaning with ***pre-industrial tools*** is dangerous, difficult, slow and ineffective





Cement cleaning with *modern Air Flail tools* is safe, easy, fast, effective – economical and eco-friendly



## Fast

- ✓ CREW MULTIPLIER: One worker can clean six times faster than with pre-industrial tools; but more thoroughly and with less effort
- ✓ Thorough dry cleaning eliminates time spent “wet” (high pressure water or acid) cleaning
- ✓ Reduces total vessel cleaning time at discharge port by 1-2 days
- ✓ Complete elimination of all vessel cleaning time lost by cleaning underway to next load port: 2-3 days



## Economical

- ✓ Increased rail terminal throughput
- ✓ NO expensive contractors for ships, rail or terminal cleaning
- ✓ NO expensive wet cleaning and waste water/acid/cement disposal
- ✓ Cleaning savings up to 90%; up to \$2.00/Mt for bulk vessel Portland Cement transport. Additional savings for underway cleaning
- ✓ **Unilateral adopters realize cleaning savings as competitive landed cement cost advantage**



## Eco-Friendly

- ✓ Reduced cleaning time reduces vessel CO2 emissions
- ✓ Dramatically minimizes vessel residual cement cargo for ocean discharge
- ✓ NO water, acid or wet cement waste for ocean or land discharge
- ✓ Thoroughly cleans “escaped” cement from all surfaces in and around manufacturing and intermodal facilities, eliminating further environment migration

[Click here to watch our video](#)