

The Problem:

A steel mill in Baltimore, Maryland was experiencing flow problems with their alloy feed bunkers. The material would often rathole near the outlet opening, slowing production. Crowbars or sledgehammers were used on the bunkers to keep the material moving. Eventually, damage from hammers reduced the materials' ability to slide along the hopper wall, further aggravating flow problems.

The company considered several solutions to the flow problem, including using special UHMW liners in the bunkers to reduce friction between the material and bunker wall. The liners would have been a costly solution - not only in the price of the liners but in down-time and clean-out of the bunker prior to installation.

The Solution:

Apptech Engineered Systems, the NAVCO® Representative in Pennsylvania was contacted about the problem and offered a solution through "Applied Vibration" using NAVCO® BH vibrators. The mill was impressed with the cost savings the NAVCO® vibrators offered over the UHMW liners but requested a trial before purchasing vibrators for all the bunkers. The unique NAVCO® Bin Map System* was applied and the result recommended a combination of BH 4.00's and a BH 6.00 would be most effective. The recommended solution was installed on one of the mill's six bunkers for a trial period.

The trial proved successful; the linear vibration generated by the precise placement of appropriately sized vibrators was completely effective in collapsing the rat-holes. The mill later purchased a total of 24 vibrators with a full line of accessories - including mounting plates, FRL's, hoses, manual valves and safety cables. The NAVCO® solution offered the mill six figure savings over the UHMW liners, and there was virtually zero down-time during installation of the vibrators.

*See Bulletin 1000.506 for more Bin Map info.

Pneumatic Piston Vibrator

Vibrators as Material Flow Aids vs. Costly UHMW Liners



Hammer damage to hoppers impairs flow.

**Comparative Testing:**

After running non-stop for 7 hours, using no lubrication, against 6 similar competitor vibrators, NAVCO®'s BH was one of only two vibrators that were still running smoothly and upon inspection there was no evidence of wear on the piston or bore of the BH.



Available in 10 sizes, the BH fits any application, and BH Vibrators are available with Teflon Coating for longer life and less wear in harsh conditions.

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