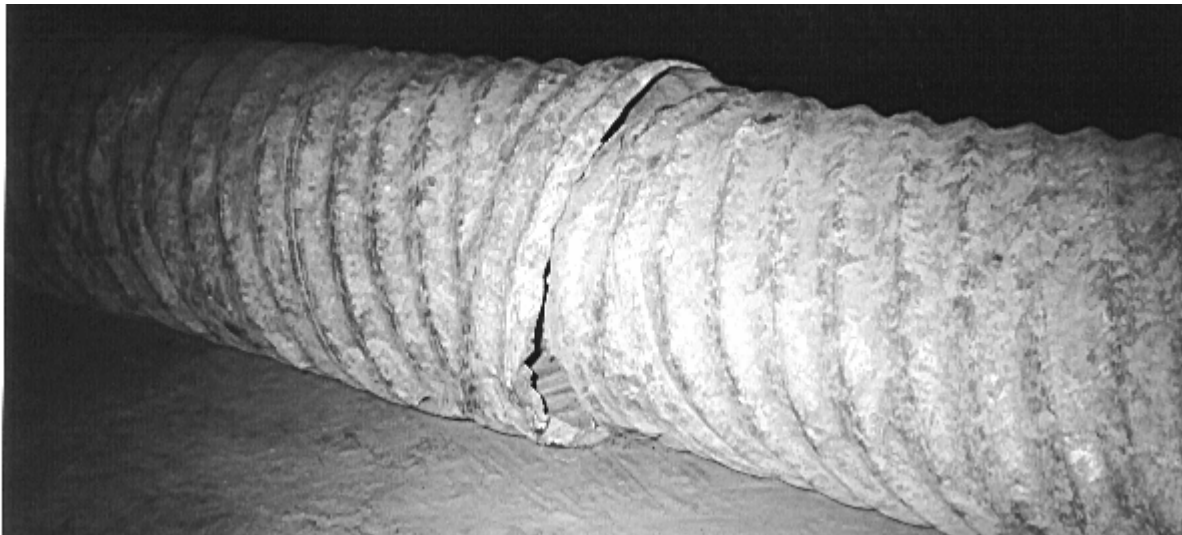


THE ARGUMENT
for an
AIRFLOOR
for
POTATO STORAGE
Bob Hesse

It is easy to agree that the weakest element in modern potato storage is air distribution. Otherwise why would airflow rates have increased in the last 25 years from 10 cfm/ton to 12 cfm, to 15, 17, 20 and now even 36 cfm/ton? It only takes about 3 cfm/ton to exhaust the heat of respiration for a healthy pile, and it is clearly impossible to uniformly supply saturated air to the pile with airpipe during high cfm airflow rates. The corrugations in air pipe cause impingement that wrings moisture out of the air. Consequently it is very easy to understand why an AirEverywhere concrete under-floor air distribution system has real merit for potato storage.



With Suberizer's AirEverywhere Floor, the narrow $\frac{7}{8}$ "-wide by 16" long vents on the floor surface are uniformly spaced such that the farthest raw product on the floor from a vent is less than 12". It is easy to imagine that air distribution is clearly very good. Furthermore, as airpipe ages, the damaged ends which do not mate, and the flattened ducts which certainly prevent uniform air distribution, all definitely contribute to a weak link in storage performance.



TOTALLY ENGINEERED RAW PRODUCT STORAGE

MORE UNIFORM AIR DISTRIBUTION

Clearly, an air floor provides more uniform air distribution; therefore, more uniform temperature control. In addition, there is assurance of more air to problem potatoes. More uniform air distribution also assures more uniform sprout inhibitor distribution. Consequently, more uniform air distribution helps to reduce losses.

SIGNIFICANTLY BETTER HUMIDIFICATION

The under-floor concrete absorbs and holds a massive amount of water and stays moist, with the assurance of getting saturated air to more potatoes. The whole under-floor arrangement is *part* of the humidification system. No humidity losses to the supply air take place due to impingement, like the losses caused by corrugations in air pipe. And gravity prevents free water from entering the pile. Consequently, another of the weak links in storage with air pipe is addressed: providing significantly better humidification. Better humidification without free water assures fewer losses.



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STORAGE MANAGEMENT IS ASSISTED

With the benefits of more uniform air distribution and better humidification, storage management is easier and more effective. There is less need to fiddle with techniques to move more air here, or there. And if you need to encourage more air to a certain section of the pile, closing duct gates with the closer duct spacing in an AirEverywhere Floor makes this task much simpler and far more productive.

Monitoring humidification and associated equipment details to make certain that no free water is blown onto potatoes is a concern with air pipe. The under-floor concrete ducts provide the best assurance for getting saturated supply air to the pile with the comfort that no free water will enter the pile. The storage floor surface is never wet, yet saturated air is uniformly distributed to the pile.

Pulling air pipe during removal of the potatoes from storage crushes and damages a percentage of spuds. The air floor eliminates these losses.

The labor of handling, moving, and placing air pipe is eliminated, and there is no air pipe to replace. With time, the complete benefits derived from a well-designed air floor will more than offset the somewhat greater initial cost of including an air floor.

With an air floor it makes sense to minimize dirt brought into storage. It is helpful to receive and eliminate dirt outside the storage and convey the spuds to the piler. But, the design of the air floor system, and the techniques developed for cleaning the under-floor ducts make this task very reasonable.



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