

## Energy Savings



Premier's All Natural Filters have been tested by several independent restaurants, labs and HVAC companies, using a variety of equipment and methodology. It's a well known fact that drier air reduces the latent load on the compressors by reducing the amount of moisture that needs to be electrically evaporated. Reducing RH levels to 80% or lower will yield lower temperatures and overall refrigeration and energy costs. Following is a brief description of each effort and the results (the most rigorous and independent listed first). Keep in mind that all cold storage is not created equal and there are many variables that differ in every environment.

- In 2008, Public Services of New Hampshire (PSNH on the NYSE) tested the effects of our filters on the use of energy, in a Nashua, NH, Market Basket walk-in cooler and freezer. The assessment was conducted by Mr. R. S. Leatherbee, PE CEM, of the Power Evaluation Services division of PSNH. **The freezer without filters used 357.70 Kwh/d (per day) compared to the freezer with filters which used 261Kwh/d (per day), resulting in a 96.7 Kwh/d savings per day, which was a 26% reduction in KWH.** The leads to the walk-in cooler were found disconnected twice during both monitoring phases, so no credible data was collected. The original document is available upon request.
- In 2007, the DOD Equipment and Energy Technology Team of the US Army R&D Command at Natick, Mass., examined the ability of Premier's filters to reduce ethylene, mold and bacteria in cold storage. **Additionally, they found that the "refrigerator compressor running time (electrical usage) was reduced by 7%".** No compressor running time differences were assessed on a freezer. The research was jointly conducted by Subham Chandra and Peter Lavigne. It should be noted, that the assessment was conducted on cold storage holding only bananas typically stored at higher temperatures (48-55 F). The results would have probably been more dramatic if the cold storage temperatures had been within the normal HACCP range of 34-42F. The original document is available upon request.

- In 2005, the Boston Market Corporation headquartered in Denver, compared the differences between the '04 and '05 electric bills from 13 Tampa stores with filters in their walk-in coolers. The total electric bill for each store included all the energy costs to power the entire store and the age of the stores ranged from very old stores with various equipment being replaced to a newer store with most of its equipment still under warranty. Five of the stores were eliminated because of equipment issues. Additionally, the stores spanned multiple power grids with dramatically different KWH costs. The remaining eight stores showed a power savings that ranged from \$1612.00 over 5 months (\$322.40 per month) to \$340.24 over 5 months (\$68.04 per month). The most accurate measure of energy change was determined to be store #3217, with a **savings of \$1398.20 over 5 months (\$279.64 per month)**. The original document is available upon request.
- In 2011, Bob Evans Restaurants asked Premier Filters to monitor the energy saving in one of their St. Petersburg stores. Premier hired Cache Mechanical Inc., and they found **the average amps used in the freezer decreased from 14.20 to 8.6 ( 39.44% reduction) and in the cooler from 5.4 to 4.4 (18.52% reduction)**. Cache Mechanical also found that between 12noon and 4pm before the filter installation in the walk-in cooler, the average temperature was 43.4 degrees; the average RH was 97%; and in that 4 hour period there were 34 alarms indicating temperatures were exceeding 42 degrees (HACCP regulations). **After the filters were installed, the average temperature dropped to 39.2 degrees; the average RH dropped to 89.5 % and there was only 1 alarm during that 4 hour peak traffic period indicating temperatures in excess of 42 degrees.** The same analysis of the midnight to 4 am time (when supplies were delivered) showed the average temperature before filters was 40.6; the average RH was 94%; and there were 10 alarms indicating temperatures were exceeding 42 degrees. **The average temperature with filters declined to 37.9 during that same time period; the RH dropped to 90.9% and the alarms indicating temperatures over 42 degrees dropped to 0.** The original report is available upon request.



**Decide today to start saving energy by contacting Premier. You will like your new bottom line!**

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