

## HEAT WAVE

July's record-setting heat wave was the longest and hottest in 30-years! Although it's unlikely to have such extreme temperatures in the near future, we would like to pass on some valuable information that can help keep you cool when the weather gets hot. And likely save you money!

First, some technical background. Air Conditioning units are sized for heat-load within a facility, and limited to size by building codes within various regions. For example, a building in Seattle, WA would not have the same AC units if it were located in Tempe, AZ. Even though the internal requirements may be the same, the efficiency of the AC units has to be much greater in Tempe because the ambient temperature on the roof is much greater. How does the temperature on the roof affect the temperature in the building you ask? Once the temperature on a roof has exceeded a unit's designed optimal cooling capacity to provide 68° to 72° cooling, the unit's efficiency begins a steady decline as the outdoor temperatures rise. Bringing this example home, Air Conditioning units in our region are rated for 95° outdoor temperatures. When the temperature on a roof reaches 96°, you loose about 1% efficiency (ability to provide cooling). For each degree, another 1% efficiency is lost. A few degrees over 95° (or a small drop in efficiency) is not a big deal-or even noticeable. But when the temperatures reach 110° and above for several days in a row, we might as well be in Tempe, AZ.

During this past week, rooftop temperatures (the actual temperature at the units as opposed to the temperature reported by the weatherman) reached in excess of 130°. This represented an efficiency loss of 35%. Even newer equipment in perfect working condition can't sustain optimal cooling in this environment. Couple this with older units that have simply lost efficiency because of age, wear and tear, a 35% additional loss renders these units incapable of cooling their subject spaces anywhere near 68° -72°.

So why not put more efficient units on the roof and be prepared for this type of heat-wave? Enter Title 24. As mentioned earlier, units are rated based on regions. With energy at a premium, installing a unit capable of 100% efficiency in say, 110° weather, would waste energy if in fact the temperatures were on average far below. Thus, we have units rated at 95° based on our average climate. Anything higher would not be approved.

Understanding the limitations of your air conditioning may help avoid service calls, and prepare you for extreme temperatures in the future. Easily a third of our service calls this week were related to t-stats being mis-adjusted (usually turned too far down) and units working at their fullest capacity with no breakdown or problem-other than lost efficiency as explained above. Here are five tips that can help in the event of another week of high temperatures:

1. Ensure t-stats do not get set below 68°. If an AC unit can't cool a room to 68°, setting the t-stat lower will not make it cooler, it will simply break the AC unit. And then there will be no cooling at all.
2. If a request for a service call is made because a room won't get below 74° to 76°, and the temperature outside is 110°, it is very likely there is nothing wrong with the AC Unit. Most likely the unit is simply maxed. You may need to call us to verify the working condition of the unit, but this information may save you the cost of a service call.
3. If you did not elect to include coil cleaning in your PM, ensure all proposals for coil cleaning are approved prior to the summer months. Dirty condenser coils are one of the biggest contributors to a unit's loss of efficiency. And dirty coils drive up energy consumption and costs.
4. Complete all compressor annuals in the Spring. Annuals ensure equipment is running at optimal efficiency. Performing annuals before the summer months provides for time to make repairs, if necessary, before a building's comfort becomes a problem.

5. Ensure all repairs are made on a timely basis. Many of the service calls we answered were to address issues we had previously proposed. Many of these items were not seen as priorities in the milder weather, but became severe problems in the extreme heat.

We hope you find this information helpful. At AirCom, we constantly look for ways to improve our service and maintain a commitment to our customers that exceeds expectations. Call us anytime with your questions, comments or concerns: 1-800-739-6500.

Thank you!

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