



Portable Cooling: Equipment and Applications

Portable air conditioners are not merely for use in hot weather and emergencies

By CLARK MICHEL
Atlas Sales & Rentals Inc.
Newark, Calif.

It's summer, a time when overworked HVAC systems become prone to failure and portable air conditioners are pressed into emergency service. But portable air conditioners are not just for use in hot weather. They can provide solutions to a range of heat-related and comfort challenges year-round. This article will review what facility owners and managers need to know about portable cooling equipment for the summer season and beyond.

Equipment Types

There are three main types of portable equipment in use today:

- Air-cooled portable air conditioners, which exhaust hot air through ductwork. Air-cooled portable air conditioners are the most commonly used equipment because they can be installed almost anywhere, usually in minutes. They are preferred over water-cooled units where water leakage, no matter how unlikely, would be catastrophic (e.g., in rooms that house computer servers).

- Water-cooled portable air conditioners, which connect to an external water source. They are best-suited for use in facilities with central cooling towers or chiller systems or where the municipal water supply is plentiful and economical. Water-cooled systems do not require exhaust ducts, so they often are specified when there is no convenient way to exhaust hot air out of a room (e.g., in restaurants).

- Evaporative coolers, which use an internal or external water source to provide cooling and a fan to push

air across a space. Although their performance is not comparable to that of portable air conditioners, they can provide a simple, low-cost cooling option for specialized use—most commonly, for outdoor areas where the budget or power supply is limited, as they can run on standard residential current. Warehouses are another common application for these units.

Portable Cooling Solutions for Non-Emergencies

Besides emergency backup, a common application for portable air-conditioning units is bridging gaps during construction or renovation. When work on a building addition or remodel is under way, a central HVAC system may be shut down or not even be installed yet. Not only does portable cooling provide relief to construction crews, it can facilitate work processes. For example, by controlling temperature and humidity, it allows faster drying of spackle and better acclimation of wood flooring and paneling to prevent warping or buckling.

Similarly, if an HVAC system is shut down for refurbishing or replacement, portable units can be brought in to deliver cooling for as long as needed, ensuring comfort of building occupants and protection of heat-sensitive equipment until the permanent system is up and running.

Special events also can benefit from portable cooling. Tented weddings and parties require more cooling capacity than typical building applications because of the heat loads generated by large crowds. A good rule of thumb is 1 ton of portable cooling for every 125 to 175 sq ft of tented area. For outdoor events in open areas, evaporative cooling is an option worth considering. "Evap" or "swamp" coolers

are used most frequently in desert climates, but even in Florida, evaporative cooling can yield a 5°F to 15°F temperature reduction.

Portable equipment often is installed on a permanent basis to cool special areas with heavy heat loads, such



A technician installs a portable-cooling exhaust kit.

Clark Michel is vice president of Atlas Sales & Rentals Inc., a nationwide distributor of portable cooling and heating equipment for more than 30 years. For more information, visit www.atlassales.com.