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COOLING FOR LESS



A Guide to Efficient Cooling

In Abu Dhabi's hot, humid climate, we depend on air conditioning for much of the year, so it's important to make sure your A/C unit is well maintained and running efficiently. Keeping cool accounts for at least half of the electricity consumed in most local homes. Understanding how your air conditioning (A/C) or cooling system works is important. Not only you will learn how to use it more efficiently but you can reduce your monthly bill.

Types of Cooling Systems

Cooling systems vary in design and the areas in which they best function. Most high-rise apartment buildings use rooftop chillers to cool water, which is circulated throughout the building to cool individual apartments, hallways and common areas.

District cooling provides air conditioning to many newer high-rise buildings. This cooling method resembles the chiller systems, but a central plant houses the chillers rather than locating them on individual rooftops. The chilled water is pumped from the central plant to surrounding buildings.



SET YOUR
THERMOSTAT TO THE
RECOMMENDED
OPTIMUM **TEMPERATURE**
OF **24° C.**

Other residential buildings/villas use either split A/C systems or window A/C units, and many use a combination of both. Split systems have an outdoor unit that cools and pumps a refrigerant to a separate indoor unit, which then cools the apartment. Window units are designed as a single piece of equipment mounted on an exterior wall, with both an outdoor side and an indoor side.

Inside the House

If district cooling or chillers are used in your apartment, then your home contains at least one air vent (or diffuser) in the ceiling or walls. Chilled water is pumped through a fan coil unit located behind the vents. This creates cold air, which a fan blows through the vent to cool the air inside the room.

Some split A/C systems (ducted split) have room vents similar to chiller and district cooling systems. Other split systems (mini-split) have a long, narrow indoor unit that is usually mounted high on the wall of the room that it cools.

A/C Controls

If your building has a chiller or district cooling system you can control the fan speed and air temperature in your apartment using the thermostat, which allows you to preset and adjust settings to a comfortable level. Once the selected temperature has been reached, the system will switch on and off to maintain it. Avoid trying to cool the room quickly by using a very low thermostat setting because the A/C will keep cooling past your optimum level, which is inefficient and can be uncomfortable. These same guidelines apply to split systems with room vents and thermostats.

Other types of split systems have a control panel located on the indoor unit and/or a remote control for controlling the fan speed and temperature. Window units are also fitted a control panel, but some newer models benefit from a remote control.

Fit a Digital Thermostat

If your house is fitted with analog thermostats, replace them with digital models or ask your landlord to. Non-digital thermostats are less accurate and can be prone to sizeable and uncomfortable temperature swings. Modern digital thermostats are usually accurate to within 0.5° C of the set temperature.

Temperature setting

Set your thermostat to the recommended optimum temperature of 24° C. This setting provides sufficient comfort while also reducing the impact of thermal shocks (the sudden changes in temperature when you enter or leave your house). Avoid overcooling your living space as it wastes energy and can make your electricity bills much more expensive.

Fan speed setting

If your A/C system allows you to adjust the fan speed, operate the system at the medium or high setting rather than at the low setting. Higher fan speeds distribute cool air more evenly throughout the room and are more energy efficient than a low setting. If the high setting becomes too noisy then switch to the medium setting; avoid using the low setting.

Some A/C systems allow you to adjust the fan to either an on setting, which runs the fan continuously, or an auto setting which shuts the fan off when the compressor is not operating. Using auto is preferred because it is more efficient. Also, the on option can actually increase the indoor humidity by blowing back into the room some of the moisture that was removed by the A/C.

Ensure Effective Air Flow

An air conditioning unit requires 30cm clearance on all sides to operate effectively, so it's important that nothing blocks the airflow. Make sure the immediate areas surrounding your A/C unit, both outside and inside, is free of obstructions; especially things like curtains or window blinds.

Ventilation system

Save energy by switching off your toilet and kitchen exhaust fans when not in use. This also prevents untreated air entering your apartment, which can lead to dust accumulation and condensation - causing fungal and mold growth. If you open windows or doors for natural ventilation, switch off your A/C to avoid condensation and wasted energy.



Regular Maintenance

The easiest way to look after your air conditioners and make sure they are operating efficiently is to arrange an annual inspection by a qualified technician. If your building's maintenance department hasn't already checked your apartment's cooling system before the summer heat arrives, contact them to schedule a visit. Regular maintenance helps avoid the inconvenience of a mechanical breakdown and should save you money on your electricity bills.

Cleaning Air Filters

Split systems and window units are fitted with air filters to collect dust that could otherwise clog up the A/C unit. Keeping the air filter clean is one of the most important ways to make sure your A/C runs efficiently. As an added benefit, air filters also help clean the air in your home.

Cleaning the air filter is quick and easy to do. For window and mini-split A/C units, the air filter is located just behind the front cover of the indoor part of the unit. If you have one or more ducted split A/C systems, the indoor units are probably located in a utility closet. If you have trouble finding the air filter, contact your building's maintenance department or a qualified technician, who can show you how to access the filter and clean it.

After opening or removing the A/C's cover, determine if the filter is dirty. (Most air filters are made of gray or black foam.) If the filter is dirty, remove it and wash it in the sink. Make sure the filter dries completely before placing it back in the unit. If the filter is torn or damaged, replace it as soon as possible. Check the filter every month and clean it when it looks dirty.

Call For Assistance

Despite your best maintenance efforts, sometimes it's necessary to call in the professionals. Contact your building's maintenance department or a qualified technician if you experience any of these issues:

Your A/C unit

- no longer provides adequate cooling,
- makes unusual or loud noises,
- has a thermostat that doesn't provide the exact temperature point you set,
- frequently trips the electricity circuit breaker,
- has a heavy buildup of dust on the outdoor section, or
- drips water inside your apartment.

***Source:** Executive Affairs Authority (EAA), Demand Side Management Comprehensive Cooling Plan, July 2012. Abu Dhabi, U.A.E.

