

AEDG Implementation Recommendations: Testing and Balancing

The Advanced Energy Design Guide (AEDG) seeks to achieve 30 percent savings over Standard 90.1-1999. This guide focuses on improvements to small office buildings, less than 20,000 square feet. The recommendations below are adapted from the implementation section of the guide, and should be used in cooperation with the whole document.* The full design guide is available from the ASHRAE website, [Advanced Energy Design Guide for Small Office Buildings](#) .

Testing, Adjusting, and Balancing (TAB)

After the system has been installed, cleaned, and placed in continuous operation, the system should be tested, adjusted, and balanced for proper operation. This procedure will help to ensure that the correctly sized diffusers, registers, and grilles have been installed, each space receives the required airflow, the equipment meets the intended performance, and the controls operate as intended. The TAB subcontractor should certify that the instruments used in the measurement have been calibrated within 12 months prior to use. A written report should be submitted for inclusion in the Operation and Maintenance Manuals.

Heating Sources

Forced air electric resistance and gas-fired heaters require a minimum airflow rate to operate safely. These systems, whether stand-alone or incorporated into an air-conditioning or heat pump unit, should include factory-installed controls to shut down the heater when there is inadequate airflow.

Filters



Air-conditioning and heat pump unit filters are included as part of the factory-assembled unit and will be selected by the equipment manufacturer, dependent on the airflow. Replacement of dirty filters should correspond to the filter manufacturer's recommendations. Use a filter differential pressure gauge to monitor the pressure drop across the filters. The gauge should be checked on a routine basis as well as a visual inspection of the filters. Include a monitor to send an alarm when the filter pressure drop exceeds a predetermined maximum pressure drop.

Return and Relief Air

Relief (rather than return) fans should be used when necessary to maintain building pressurization during economizer operation. However, where return duct static pressure exceeds 0.5 in. of water, return fans should be used.

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