



Optimizing Air Balance Report Data

You've installed new HVAC equipment ... expanded your dining area ... and your new décor looks great. So why are you seeing drops of water on your ceiling, why aren't you getting the energy savings you thought you would, and why do the customers who dine at the table in the corner always complain that it's too cold? It could be that your air balance is out of balance.

An "air balance" is a process for measuring the performance of an HVAC system, and for providing the occupants with a comfortably conditioned space according to design specifications. In other words, it is an overall health check for your HVAC systems to make sure the equipment is mechanically sound, that there is positive building pressure and that the thermostat and air flow are adjusted properly.



When you build a new building, it is usually in the contract to perform an air balance after startup, when the HVAC and cooking equipment have been installed and are fully operational, ideally during staff training. After a major system change or renovation is also a critical time for an air balance to diagnose any HVAC-related issues and check the exhaust/hood systems.

An air balance is typically performed by a certified [National Environmental Balancing Bureau](#) (NEBB) or an [Associated Air Balance Council](#) (AABC) contractor, who can provide commercial kitchen ventilation expertise and an experienced restaurant technician. An air balance will provide you with a comprehensive report that includes visit summaries, a punch list, photos and recommendations. It will also include all HVAC equipment data (make, model, serial number, voltage, fuel type, filter sizes and more), as well as building pressurization information (supply, return, outdoor air/exhaust).

Preparing for your air balance

Although your certified contractor will perform the air balance, it takes a collaborative effort between your staff, the equipment manufacturers and your contractor to get to the root of your problems and fully benefit from the process. Be ready to explain your key issues, whether they are related to comfort, moisture, humidity or other areas, so you can provide guidance to your contractor. If an air balance has been performed previously, locate the original report and determine if the punch list items were corrected. Also note if any equipment or facility operation has changed since the previous air balance. And, be sure to log all data and interview your staff before and after the air balance so you can measure results.

For answers to your questions or assistance in initiating the air balance process, contact your Trane representative.

HVAC Benchmarking Basics

- 12,000 BTUH = 1 ton air conditioning
 - 12 MBH = 1 ton air conditioning
 - 1 ton air conditioning = 400 CFM
 - 20-30% outdoor air (max.) – rooftop units
 - 400 CFM per ton +/- 20% - rooftop units
 - 200 – 250 CFM per ton – 100% outdoor air units
 - $RPM1 / CFM1 = RPM2 / CFM2$ – fan law
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