



Neudorfer Engineers. Inc.
Washington - Oregon - California



Neudorfer Engineers
Standard Definitions
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NEBB STANDARDS SECTION-1, PART-1 DEFINITIONS

These procedural standards have been developed using language defined by “**Shall, Should, and May**” as it relates to the standards and procedures described in this publication. It is important to note these particular words throughout this publication and how they pertain to NEBB standards and procedures.

Accuracy: The *accuracy* of an instrument is the capability of that instrument to indicate the true value of a measured quantity.

Adjusting: *Adjusting* is the varying of system flows by partially closing balancing devices, such as dampers and valves, and varying fan speeds to achieve optimum system operating conditions within design and installation limitations.

AHJ: The local governing Authority Having Jurisdiction over the installation.

Balancing: *Balancing* is the methodical proportioning of air and hydronic flows through the system mains, branches, and terminal devices using acceptable procedures to achieve the specified airflow or hydronic flow within testing and design limitations.

Calibrate: The act of comparing an instrument of unknown accuracy with a standard of known accuracy to detect, correlate, report, or eliminate by adjustment any variation in the accuracy of the tested instrument.

Conformed Contract Documents: Current and complete documents.

Contract Document Review: A NEBB Qualified TAB Firm review of the contract plans and specifications is limited to determining the proper placement of balancing devices. A NEBB Qualified TAB Firm is *not* responsible for the review of equipment sizing, design load calculations or any other engineering function that is properly the responsibility of the design professional.

Deficiency: *Deficiency* is considered any circumstance that adversely affects the specified balance of a device or system.

Differential Pressure (ΔP): *Differential Pressure* is the difference between two pressures measured with respect to the same reference pressure. These are typically static pressure measurements taken across equipment, piping components and flow measuring devices.

Environmental Systems: *Environmental Systems* are systems that primarily use a combination of mechanical equipment, airflow, water flow and electrical energy to provide heating, ventilating, air conditioning,

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humidification, and dehumidification for the purpose of human comfort or process control of temperature and humidity.

Function: For the purposes of this NEBB Standard, *function* refers to the specific type of data measurement specified in Table 4-1 of Section 4, *Standards for Instrumentation and Calibration*.

May: The word **may** is used to indicate a course of action that is permissible as determined by the NEBB Certified TAB Firm.

Memory Stop: A memory stop is an adjustable mechanical device that allows a valve to be closed (for service), and limits the valve to a predetermined position when re-opened.

NEBB Certified TAB Firm: A *NEBB Certified TAB Firm* is a firm that has met and maintains all the requirements of the National Environmental Balancing Bureau for firm certification in Testing, Adjusting, and Balancing and is currently certified by NEBB. A NEBB Certified TAB Firm shall employ at least one NEBB Qualified TAB Supervisor in a full time management position.

NEBB Certified TAB Report: The data presented in a NEBB Certified TAB Report accurately represents system measurements obtained in accordance with the current edition of the NEBB *Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems*. A NEBB Certified TAB Report does not necessarily guarantee that systems included are balanced to design flows. Any variances from design quantities, which exceed NEBB tolerances or contract document tolerances, are noted in the test-adjust-balance report project summary.

NEBB Qualified TAB Supervisor: A *NEBB Qualified TAB Supervisor* is a full time employee of the firm in a management position who has successfully passed the supervisor level written and practical qualification examinations and maintains the Supervisor re-qualification requirements of NEBB.

NEBB Qualified TAB Technician: A *NEBB Qualified TAB Technician* is a full time employee of the firm who has met the technician level experience requirements of NEBB and has successfully passed the technician level written and practical qualification examinations. A NEBB Qualified TAB Supervisor shall supervise a NEBB Qualified TAB Technician. (Supervision is not intended to infer constant oversight. A NEBB Qualified TAB Technician is capable of performing assigned tasks with periodic supervision.)

Precision: *Precision* is the ability of an instrument to produce repeatable readings of the same quantity under the same conditions. The precision of an instrument refers to its ability to produce a tightly grouped set of values around the mean value of the measured quantity.

Procedure: A *Procedure* is defined as the approach to and execution of a sequence of work operations to yield a repeatable and defined result.

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Range: *Range* is the upper and lower limits of an instrument's ability to measure the value of a quantity for which the instrument is calibrated.

Resolution: *Resolution* is the smallest change in a measured variable that an instrument can detect.

Shaft Pressurization System: A type of smoke-control system that is intended to positively pressurize stair and / or elevator shafts with outdoor air by using fans to keep smoke from contaminating the shafts during an alarm condition.

Shall: The word **shall** is used to indicate mandatory requirements to be followed strictly in order to conform to the standards and procedures and from which no deviation is permitted.

Note: In the event unique circumstances prevent a required action from being fulfilled, a notation shall be included in the TAB report explaining the exception. For example, such notation could be one of the following: *Not Available, Not Applicable, or Not Accessible*. The simple notation "N/A" without definition is not allowed.

Should: The word **should** is used to indicate that a certain course of action is preferred but not necessarily required.

Smoke-Control System: An engineered system that uses fans to produce airflow and pressure differences across barriers to limit smoke movement.

Smoke-Control Zone: A space within a building that is enclosed by smoke barriers and is a part of a zoned smoke-control system.

Static Head: The pressure due to the weight of the fluid above the point of measurement. In a closed system, static head is equal on both sides of the pump.

Static pressure (SP): *Static Pressure* in an HVAC System is the potential energy a system possesses at the point of measurement to produce and maintain fluid flow against system resistance, and can be either a positive or negative value relative to the appropriate reference pressure.

Standard: A *Standard* is defined as a required qualification, action, or result for TAB work.

Suction Head: The height of fluid surface above the centerline of a pump on the suction side.

System Effect: A phenomenon that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system. System Effect cannot be measured directly, but it can be estimated.

TAB Technician: A *TAB Technician* is an employee of a TAB firm who assists a NEBB Qualified TAB Supervisor and/or a NEBB Qualified TAB Technician by performing TAB work in the field. (Supervision is not

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intended to infer constant oversight. A NEBB TAB Technician may be capable of performing assigned tasks without direct, full time supervision.)

Terminal: A point where the controlled medium enters or leaves the distribution system (e.g., a grill or diffuser).

Terminal Unit: A device that regulates the amount and / or the temperature of the controlled medium.

Testing: *Testing* is the use of specialized and calibrated instruments to measure temperatures, pressures, rotational speeds, electrical characteristics, velocities, and air and hydronic quantities for an evaluation of flow conditions.

Testing, Adjusting, and Balancing (TAB): TAB is a systematic process or service applied to heating, ventilating and air-conditioning (HVAC) systems and other environmental systems to achieve and document air and hydronic flow rates. The standards and procedures for providing these services are referred to as “*Testing, Adjusting, and Balancing*” and are described in this document.

Total Pressure (TP): *Total pressure* is the sum of the static pressure and the velocity pressure at the point of measurement in the system. (**TP = SP + VP**).

Velocity Pressure (VP): *Velocity Pressure* is the kinetic energy of the flow in an HVAC system, and is exerted only in the direction of the flow. Velocity pressure cannot be measured directly; it is the difference between the total pressure and the static pressure at the point of measurement.

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