

SECTION 23 05 93
TESTING, ADJUSTING, AND BALANCING
Design Standard

PART 1 GENERAL

1.1 PURPOSE:

The testing, adjusting, and balancing (TAB) of heating, ventilating, and air-conditioning systems is an essential element of the mechanical system turnover to the District. This design standard has the purpose of creating a consistent application of TAB requirements throughout the San Mateo County Community College District therefore achieving a standard of quality for maintenance and reliability throughout all renovation and new building projects.

PART 2 PRODUCTS

2.1 DESIGN SPECIFICATIONS

Design and specify work to include: Materials, equipment and labor required for testing, adjusting, and balancing work required by this Standard, including air, hydronic systems, and associated equipment and apparatus. The work should consist of setting speed and volume (flow) adjustments, recording data, conducting tests, preparing and submitting reports, and recommending modifications to work as required for complete and operable systems.

- A. All testing, adjusting, and balancing (TAB) shall be done in accordance with the National Environmental Balancing Bureau (NEBB) or Associated Air Balance Council (AABC).
- B. Environmental systems, including all equipment, apparatus, and distribution systems, shall be tested and balanced in accordance with the AABC or NEBB procedural standards. Fume hood testing shall be in accordance with the procedure outlined in the AABC manual.
- C. All instruments used for measurements shall be accurate, and calibration histories for each instrument shall be available for examination. Calibration and maintenance of all instruments shall be in accordance with the requirements of AABC or NEBB.
- D. Accuracy of measurements shall be in accordance with AABC or NEBB standards.
- E. In order to verify field capacities of plants, during the operating tests of the chilled water system and/or heating water system, the Contractor shall provide a false load equal to full capacity on the chiller plant/boiler plant and submit data on gpm flow, pressure drop, inlet and outlet temperatures of chilled water/hot water, amperage of chiller, capacity of gas load, and ambient air temperature at condenser.
- F. In addition, the Contractor shall check the operation of all automatic temperature control equipment; verify all thermostat, aquastat, airstat, etc., set-points and operations; and enlist the aid of the control subcontractor to make necessary adjustment where required.

2.2 REQUIRED REPORTS

Three hard copies along with the report in digital format (in PDF) of the final reports shall be submitted on applicable AABC or NEBB Reporting Forms for review and approval by the Design Consultant and the District.

- A. Each individual final reporting form submitted shall bear the signature of the person who recorded the data and the signature of the testing and balancing supervisor of the performing firm.

- B. If more than one certified firm performs the TAB work, all final reports shall be submitted by that certified firm having managerial responsibility.
- C. Identification of all types of instruments used and their last dates of calibration shall be submitted with the final report.
- D. The final test report shall include appropriate reference to all problems regarding the system(s) encountered prior to, during, and after testing and what action was taken to correct the problem(s), including noise and vibration problems.
- E. Each report shall include a print (or sketch) reduced in size, showing all supply, return, and exhaust air outlets for easy reference to report data.
- F. An approved copy of the balancing report shall be included in the maintenance manual submittal.

2.3 APPROVED MANUFACTURERS

Not applicable

PART 3 EXECUTION

3.1 SUBSTITUTES ALLOWED?

Not applicable

3.2 ASSOCIATED DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS:

Division 23 Design Standards and Construction Specifications

END OF SECTION