23 05 93 – Testing, Adjusting and Balancing for HVAC

1. Introduction
   A. This section contains the requirements for inspecting, testing, adjusting and balancing of HVAC systems.
   B. The Contractor shall be AABC or NEBB certified and shall furnish all labor, tools and equipment required to complete the work.

2. References
   A. ASHRAE
   B. AABC
   C. NEBB
   D. SMACNA

3. Design Standards
   A. For constant volume systems, the entire system shall be rebalanced after every project.
   B. Requirements and recommendations for acoustical and indoor air quality (IAQ) testing shall be considered and discussed with FMD during design.

4. Documentation and Review Requirements
   A. TAB strategies, procedures and reporting format shall be submitted for review and approval by FMD and design engineer before TAB work begins. The submittal shall include:
      1. Specific systems listed clearly identifying each piece of equipment to be included in TAB work with appropriate test procedures and measurements to be taken.
      2. Instrument calibration records shall be provided on forms shown in NEBB, AABC or SMACNA with manufacturer’s specified accuracy listed.

5. Installation and Performance Requirements
   A. Prior to TAB work, the Contractor must verify the following: systems have been installed and are operating as specified, all balancing devices have been installed, all duct leakage tests have been completed and clean filters have been installed.
   B. All equipment shall be vibration tested after installation.
C. All instrumentation used for testing shall be calibrated within 6 months of use. Accuracy of the instrumentation shall not be less than what is specified by the instrument manufacturer.

D. Balancing devices shall be marked by the Contractor to indicate final settings.

6. **As-Built Requirements**

   A. Final report shall include a summary describing test methods, test results and major corrective actions taken.

   B. Air Handling Unit data shall include a static pressure profile diagram.