Standard Operating Procedure	SOP No.
Fan Testing	8.004

DCR No.: 97027
Revision No.: 1

Effective: 3-3-97
Supersedes: 3-3-97
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1 Purpose

1.1 To establish a standard procedure for testing the ability of the fan system to comply with the design requirements.

2 Scope

2.1 This procedure applies to the supply air, return air, or exhaust air fans.

3 Reference

3.1 NEBB Testing Adjusting Balancing Manual for Technicians, First Edition, 1986.

4 Definition

4.1 CFM Cubic Feet per Minute

4.2 RPM Revolutions Per Minute

5 Responsibility

5.1 TAB technicians shall record all test readings on Form FN 8.004.1 (Fan Test Report Form).

5.2 All test reports shall be saved in files, located in the TAB department of Therma.

5.3 All test equipment utilized shall be in calibration in accordance with NEBB Standards and traceable to the National Institute of Standards and Technology (NIST).

6 Materials Requirement

6.1 None

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7 Test Equipment

7.1 Differential Pressure Meter (Air)

7.2 Pitot Tube

7.3 Volt-Ammeter

7.4 Tachometer

7.5 Tape Measure

8 General Procedures

8.1 Ensure that the fan system is safely disconnected from the electrical power source.

8.2 Record all data from the nameplates of the unit, fan and motor on the Form FN 8.004.1 (Fan Test Report Form).

Drive Data

8.3 Measure and record the quantity and size or part numbers of belts and sheaves.

Fan Data

8.4 Energize the fan system.

8.5 Balance duct systems to design conditions.

8.6 Measure and record air volumes in CFM with the system at design conditions.

8.7 Measure the fan's RPM using a tachometer.

8.8 Measure the discharge static pressure, inlet static pressure and filter pressure drop using a differential pressure meter (air).

8.9 Calculate the total static pressure from the difference of the discharge and inlet static pressures.

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Motor Data

8.10 Measure the motor's RPM using the tachometer.

8.11 Measure the voltage and amperes using a voltmeter and an ammeter.

8.12 Calculate the brake horsepower (BHP) of the motor using the following equation:

$$BHP = \frac{NPHP \times MA \times MVolt}{NPA \times NPVolt}$$

Where:

NPHP = Nameplate Horsepower
NPA = Nameplate Amperes
NPVolt = Nameplate Voltage
MA = Measured Amperes
MVolt = Measured Voltage

8.13 Record all data on the Form FN 8.004.1 (Fan Test Report Form).

9 Review and Approval

9.1 Return the Form FN 8.004.1 (Fan Test Report Form) to the TAB Department for review.

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Document Approval

General Foreman — Date: 4-15-97

Service Manager — Date: 4-15-97

Quality Assurance Manager — Date: 4-16-97

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