

AMCA Publication 111-99 (R2007)

Laboratory Accreditation Program



**AIR MOVEMENT AND CONTROL
ASSOCIATION INTERNATIONAL, INC.**

The International Authority on Air System Components

AMCA PUBLICATION 111-99 (R2007)

Laboratory Accreditation Program



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Arlington Heights, IL 60004-1893**

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Authority

This edition of Publication 111 includes revisions adopted by the membership on or before October 15, 1999. Exceptions to this are Sections A.2.7, B.2.4, and B.4.1, which were adopted 14 January, 2001 and became effective 1 February, 2001. The August 2007 changes were adopted by the AMCA Membership on July 28, 2007. The entire document was reaffirmed on October 20, 2007.

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or

AMCA International, Incorporated
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Related AMCA Standards and Publications

Related Standards

- ANSI/AMCA 210 *Laboratory Methods of Testing Fans for Rating*
- AMCA 220 *Test Methods for Air Curtain Units*
- AMCA 300 *Reverberant Room Method for Sound Testing of Fans*
- ANSI/AMCA 500-D *Laboratory Methods of Testing Dampers for Rating*
- ANSI/AMCA 500-L *Laboratory Methods of Testing Louvers for Rating*
- ANSI/AMCA 610 *Methods for Testing Airflow Measurement Stations for Rating*

Related AMCA Publications

- AMCA 211 *Certified Ratings Program Air Performance*
- AMCA 261 *Directory of Products Licensed to Bear the AMCA Seal*
- AMCA 262 *Directory of Agricultural Products with Certified Ratings*
- AMCA 311 *Certified Sound Ratings Program for Air Moving Devices*
- AMCA 511 *Certified Ratings Program for Air Control Devices*
- AMCA 611 *Certified Ratings Program – Airflow Measurement Performance*

AMCA Application and Submittal Forms with AMCA Publication 111

- LAP2 *Application for Accreditation of Laboratory*

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Laboratory Accreditation Program

1. Purpose

The purpose of the AMCA Laboratory Accreditation Program is to provide a means for laboratories to be qualified for testing of products in accordance with appropriate AMCA standard test methods or other test methods recognized by AMCA.

2. Scope

2.1 Laboratories

The AMCA Laboratory Accreditation Program applies to laboratories capable of testing in accordance with the test standards listed in Annex A.

2.2 Eligible licensees

Any person, firm, or corporation, whether a member of AMCA or not, that maintains a laboratory for testing of products in accordance with one or more of the test standards listed in Annex A shall be eligible to participate in this program.

3. Definitions

3.1 AMCA. The Air Movement and Control Association International, Inc., a non-profit corporation organized under the laws of the state of Michigan, U.S.A., having its principal office at 30 West University Drive, Arlington Heights, Illinois 60004-1893 U.S.A

An AMCA Accredited Laboratory is a laboratory that has been accredited in accordance with AMCA Publication 111 Laboratory Accreditation Program. An accredited laboratory may be owned and operated by a certified ratings Licensee or by an independent individual or organization.

3.2 The AMCA Laboratory. The association's laboratory in Arlington Heights, Illinois, U.S.A. Other **Independent Accredited Laboratories** may be designated as an AMCA Laboratory by the Board of Directors for the purposes of performing pre-certification tests, check tests and challenge tests under AMCA's Certified Ratings Program.

3.3 License. A legal contract between AMCA and a person, firm or corporation that authorizes

participation in the AMCA Laboratory Accreditation Program. The AMCA Laboratory Accreditation Program License is in Annex E of this document.

3.4 Licensee. A person, firm or corporation that entered into a License Agreement with AMCA in accordance with the requirements of this program.

3.5 Shall and should. The word "shall" is understood to be a mandatory requirement, and the word "should" is understood to be advisory.

4. Procedure for Obtaining the Certificate of Accreditation

4.1 Application

Application for obtaining a license for a laboratory is made by completing form LAP-2 (Application for Laboratory Accreditation; see Annex F). The application is to be completed and sent to AMCA along with the data required in Section 4.2. The application shall be reviewed by AMCA staff and the applicant notified, if necessary, of any changes or further information required to comply with the Laboratory Accreditation Program.

4.2 Documentation submittal requirements

The following shall be submitted with the LAP-2 application form:

4.2.1 Application fee

4.2.2 Dimensioned drawing of the laboratory showing the location of the test setup.

4.2.3 Dimensioned drawing of the test setup indicating the critical dimensions specified in the applicable test standard.

4.2.4 A complete list of instruments being used by the Applicant for testing in accordance with the applicable standard. Each instrument shall be completely identified as to manufacturer, model number and serial number, and shall indicate how the instrument is used in the laboratory.

4.2.5 Catalog information for each instrument indicating that the instrument meets the requirements of the applicable test standard.

4.2.6 A copy of the current calibration record for each instrument.

4.2.7 Other documentation required by the test standard that shows that the laboratory test setup or space meets the qualification criteria called out in the standard (e.g. room qualification data for reverberant rooms).

4.2.8 Two copies of the License Agreement (see Annex E) signed by the owner or officer of the party applying for accreditation. The licenses shall also be signed by a witness, and sealed with the applicant's corporate seal if the Applicant is a corporation.

4.3 AMCA Staff review of laboratory documentation

4.3.1 The documentation submitted in compliance with Section 4.2 shall be reviewed by AMCA technical staff. They shall notify the applicant if any changes or further information are necessary to comply with the requirements of the Laboratory Accreditation Program.

4.3.2 When the documentation submitted in accordance with Section 4.2 has been found to comply with the requirements of the Laboratory Accreditation Program, the AMCA staff shall so advise the Applicant and arrange to have a witnessed accreditation test conducted in the Applicant's laboratory.

4.4 Witnessed accreditation test at applicant's laboratory

A product shall be selected by AMCA to be tested at the Applicant's laboratory in accordance with Annex C. Multiple products may be chosen to fulfill the testing requirements if multiple accreditations are being sought, or if it is necessary in the opinion of AMCA staff to test multiple products to ensure that the requirements of the standard are being met.

A technical representative of AMCA shall travel to the applicant's laboratory to witness the test or tests. The AMCA representative shall take no part in the testing. Rather, the duties and requirements of the AMCA representative shall be the following:

4.4.1 Inspect the test setup for its completeness and dimensional conformance to the test standard. This applies to all test setups, and shall not be limited to the test setup in use for the witness test.

4.4.2 Audit the calibration files. This may be done for any or all instruments normally used in the laboratory, not limited to the instruments used for the test. A calibration demonstration may be requested.

4.4.3 Take independent readings of certain

parameters during the test for verification of the instrumentation's accuracy.

4.4.4 Observe the general conduct of the personnel conducting the test in order to determine familiarity with the test standard and the competency levels of the personnel.

4.4.5 Obtain a complete set of test data and test results.

Conformance with all of the above items is essential and shall be documented to the satisfaction of the AMCA representative. All the requirements of the test standard being used shall be met before proceeding to the AMCA check test.

4.5 AMCA Check test

Having been tested at the applicant's laboratory, the product shall then be tested at the AMCA Laboratory. A representative of the Applicant shall be given an opportunity to witness the test.

The results of the AMCA test shall be compared against the results obtained in the Applicant's laboratory. If the difference in the two sets of results is within the tolerances allowed by and summarized in Annex B of this publication, the Applicant's laboratory shall be considered to have successfully passed the check test requirements.

4.6 AMCA Staff's review of applicant's test report

The AMCA technical staff shall also review the applicant's test report to verify its conformance with the test standard and AMCA Publication 111, Section 9.2. The AMCA technical staff shall notify the applicant if any changes are required to conform to the Laboratory Accreditation Program.

4.7 Submittal of final test report and license fee

The Applicant shall submit the following to AMCA:

4.7.1 A test report in conformance with the applicable test standard and AMCA Publication 111, Section 9.2.

4.7.2 The license fee.

4.8 AMCA Staff review of final test report

4.8.1 Upon receipt of the license fee and data submitted in compliance with Section 4.7, the AMCA staff shall review the final test report and notify the applicant if any changes or further information is

necessary to comply with the requirements of the Laboratory Accreditation Program.

4.8.2 When the final test report has been found to comply with the requirements of the Laboratory Accreditation Program, the AMCA staff shall advise the Applicant and send to the Applicant the following:

4.8.2.1 A Laboratory Accreditation Certificate completed in accordance with Annex D. The accreditation date on the certificate shall be the submittal date of the final test report and license fee, or the AMCA check test, whichever is later. AMCA shall send the Laboratory Accreditation Certificate to the Applicant no later than one month after the accreditation date shown on the Certificate.

4.8.2.2 A Laboratory Accreditation Program License. The License shall specify for which test standard(s) the laboratory is accredited. The License shall be signed by AMCA's Executive Vice President and a witness, and sealed with AMCA's corporate seal. AMCA shall send the Laboratory Accreditation Program License to the Applicant with the Laboratory Accreditation Certificate.

5. Maintaining the Certificate of Accreditation

The accreditation is based upon the personnel, setup, instruments, and procedures used at the time of the witness test at the Licensee's laboratory. If there are changes made to any of the above that could significantly affect the accreditation, the Licensee shall notify AMCA. It is the responsibility of the Licensee to maintain the quality of personnel, equipment, and procedures throughout the accreditation period.

If, in the opinion of AMCA, the Licensee no longer maintains the quality of equipment, personnel, or procedures necessary to maintain the high quality standards required by AMCA test standard(s), the accreditation may be terminated by AMCA.

6. Accreditation Period

The Licensee's laboratory shall be accredited for a period of three years, commencing on the original accreditation date, or the last renewal date, whichever is later.

7. Accreditation Renewal

7.1 Renewal notice

Three months before the accreditation period expires, AMCA shall inform the Licensee of the approaching expiration and shall select a product to be tested in the Licensee's laboratory in accordance with Annex C.

7.2 Submittal requirements

The Licensee shall test the product in their laboratory and submit the following to AMCA:

7.2.1 A test report in conformance with the applicable test standard and AMCA Publication 111, Section 9.2.

7.2.2 A complete list of instruments being used by the licensee for testing in accordance with the applicable test standard. Each instrument shall be completely identified as to the manufacturer, model number and serial number.

7.2.3 For each instrument added since the original accreditation or the last renewal date, whichever is later, catalog information for each instrument indicating that the instrument meets the requirements of the applicable test standard(s).

7.2.4 For each instrument added since the original accreditation or the last renewal date, whichever is later, a copy of the current calibration record.

7.2.5 The license fee.

7.3 AMCA Check test

Having been tested in the Licensee's laboratory, the product shall then be tested at the AMCA Laboratory.

The results of the AMCA test shall be compared against the results obtained in the Licensee's laboratory. If the difference in the two sets of results is within the tolerances allowed by and summarized in Annex B of this publication, the Licensee's laboratory shall be considered to have successfully passed the check test requirements.

If the Licensee does not obtain calibration check test results that are within the tolerances as described above, the accreditation shall not be renewed by AMCA. In this case, the product shall be returned to the Licensee's laboratory without providing the Licensee the results of the AMCA test. The Licensee shall then be given an opportunity to retest the product and resubmit the results to AMCA.

If the retest at the Licensee's laboratory falls within the tolerances required by Annex B of this publication, the Licensee's laboratory shall be considered to have successfully passed the check test requirements if, in AMCA's opinion, the Licensee provides a sufficiently detailed explanation for the differences between their two tests.

7.4 AMCA Staff review of licensee's test report and documentation

7.4.1 After the Licensee has successfully passed the check test requirements the AMCA staff shall review the test report and data submitted in accordance with the above and notify the Applicant if any changes or further information is necessary to comply with the requirements of the Laboratory Accreditation Program.

7.4.2 When the test report and documentation have been found to comply with the requirements of the Laboratory Accreditation Program, the AMCA staff shall advise the Licensee and send to the Licensee a certificate in accordance with Annex D. The accreditation renewal date shall be the submittal date of the final test report and license fee or the previous expiration date, whichever is later. The next expiration date shall be the date three years from the original accreditation date, or the previous expiration date, whichever is later. AMCA shall send the Laboratory Accreditation Certificate to the Licensee no later than one month after the accreditation date shown on the certificate.

7.5 Expiration of accreditation

If the Licensee does not successfully complete the steps necessary to renew the accreditation, the accreditation shall expire on the expiration date shown on the certificate. At AMCA's discretion, a temporary extension may be given to the accreditation period to settle technical problems which may have arisen.

8. Reaccreditation

A laboratory that has had its accreditation expire and wishes to be re-accredited shall be required to repeat the entire process described in Section 4 of this publication.

9. Reference to Amca Accredited Laboratory

9.1 Literature or advertisement

9.1.1 The term "AMCA Accredited Laboratory" or any

variation thereof shall not be used in any catalog, product literature, or advertisement that contains product performance, except when ALL products are licensed to bear the AMCA Certified Ratings Seal for all data published.

9.1.2 In catalogs, product literature or advertisements that are general in nature and DO NOT contain product performance data, reference may be made to the fact that the company maintains and "AMCA Accredited Laboratory." In this event the term "AMCA Accredited Laboratory" shall be marked with an asterisk (*) referenced to the following statement that must be included on the same page:

"Product performance data based on tests in an AMCA Accredited Laboratory are not to be construed as being licensed to bear the AMCA Seal."

9.2 Individual test data

Individual test results shall indicate that the data was obtained in an AMCA Accredited Laboratory by use of the following statement:

"These test data were obtained in a laboratory accredited by AMCA for (insert appropriate test Method: AMCA 210 Air Performance, AMCA 500-D Leakage, etc.) testing. Data are not Certified by AMCA."

If a computer program is used to calculate the test results, the above statement shall be printed adjacent to the test results by the computer program.

9.3 Other statements

No statement shall be made which implies that the results of tests performed in one AMCA Accredited Laboratory are better, or more accurate, or more reliable than those from any other accredited laboratory.

10. Charges

10.1 Fee schedule

AMCA establishes the fee schedules of charges relating to the Laboratory Accreditation Program and may revise them from time to time. Current fee schedules may be obtained from the AMCA office.

10.2 Application fee

Upon application for laboratory accreditation the Applicant shall pay an application fee as contained in the fee schedule.

10.3 Witness test fees

All tests required in the Applicant's laboratory for laboratory accreditation shall be paid for by the Applicant.

The Applicant shall be required to reimburse AMCA for the time required to witness the testing.

10.4 Staff travel time and travel expenses

When travel by a staff engineer is required for the purpose of laboratory accreditation, the Applicant shall be required to reimburse AMCA for travel time and incurred travel expenses.

10.5 Annual license fee

Each Licensee shall pay an annual license fee as shown in the current fee schedule. Failure to pay the annual fee shall result in withdrawal of the License Agreement by the Association.

10.6 Laboratory accreditation check test fee

All tests required in the AMCA Laboratory for laboratory accreditation check tests shall be paid for by the Applicant or Licensee in accordance with the current fee schedule for the AMCA Laboratory. All costs of transporting product to or from the AMCA Laboratory shall be borne by the Applicant or Licensee. Any other costs associated with the accreditation check tests shall be paid for by the Applicant or Licensee.

11. Administration

11.1 Administrator

The administration of the Laboratory Accreditation Program shall be the responsibility of the Executive Vice President.

11.2 Registration of complaints

Complaints regarding the misuse of the term AMCA Accredited Laboratory as outlined in Section 5 shall be addressed to the Executive Vice President. These complaints shall be in writing and accompanied by supporting evidence.

11.3 Confidentiality

All laboratory information, test data, and related communications shall be kept confidential by the Executive Vice President and AMCA staff.

12. Appeals and Settlement of Disputes

12.1 Appeals procedure

If the Applicant or Licensee does not agree with the administration or interpretation of the requirements of this document by AMCA staff they may appeal to the Executive Committee of the AMCA Board by a written request directed to the Executive Vice President of AMCA.

In the event that agreement cannot be reached between the Executive Committee and the appealing party, the appeal shall be put before the AMCA Board of Directors.

12.2 Settlement of disputes

Any disagreement concerning the administration of the Laboratory Accreditation Program that cannot be settled by the appeal procedure above shall be submitted to a Final Appeals Board consisting of three impartial persons not associated with the air movement and control industry. The AMCA President shall obtain the services of three persons to serve on this board who are acceptable to the Licensee. The decision of the Final Appeals Board shall be binding on both parties, and the cost of convening the board, together with the cost of laboratory tests to resolve the dispute, shall be borne by the party in error.

13. Changes to the Program

Changes to this program shall be made in accordance with the procedure laid down by the AMCA By-Laws. All revisions shall state the date at which the change shall become effective with respect to both new license applications and to previously licensed laboratories.

Annex A. Recognized Test Standards

A.1 AMCA Test Standards

A.1.1 AMCA 210/ASHRAE 51 *Laboratory Methods of Testing Fans for Rating*

A.1.2 AMCA 220 *Test Methods for Air Curtain Units*

A.1.3 AMCA 230 *Laboratory Methods of Testing Air Circulator Fans for Rating*

A.1.4 AMCA 300 *Reverberant Room Method for Sound Testing of Fans*

A.1.5 AMCA 500-D *Laboratory Methods of Testing Dampers for Rating* (Air performance and Airflow leakage rate test methods only)

A.1.6 AMCA 500-L *Laboratory Methods of Testing Louvers for Rating*

A.1.7 AMCA 610 *Methods for Testing Airflow Measurement Stations for Rating*

A.1.8 AMCA 260 *Laboratory Methods of Testing Induced Flow Fans for Rating*

A.2 Other Recognized Test Standards

A.2.1 BS848: Part 1 *Method of Testing Performance (Fans for General Purposes)*

A.2.2 AFNOR NF X 10-200 *Rules for the Gas Dynamic Platform Tests of Ducted Fans*

A.2.3 DIN 24 163 Teil 1 *Fans Performance Testing, Standard Characteristics*

A.2.4 DIN 24 163 Teil 2 *Fans Performance Testing, Standardized Airways*

A.2.5 ISO 5801 *Industrial fans – performance testing using standardized airways*

A.2.6 HEVAC Technical Specification *Laboratory Testing and Ratings of Weather Louvers When Submitted to Simulated Rain, 4th Edition – Water penetration test only.*

A.2.7 ASTM E477 *Standard Test Method for Measuring Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers.*

Annex B. Check Test Tolerances

The following tolerances shall be used for comparison of the test data of the accredited laboratory to the test data of the AMCA Laboratory for purposes of accreditation and check testing of the accredited laboratory.

B.1 Air movement devices

B.1.1 Airflow at constant speed (except air curtains). Airflow test results obtained in the accredited laboratory shall not differ by more than +1.25% or -2.5% along parabolic system lines from the AMCA Laboratory results except at free air where it may be +2% or -4%.

The fan input power obtained in the accredited laboratory shall be within +5%, or +37 watts (0.05 hp), whichever is greater, and -2.5% or -19 watts (0.025 hp), whichever is less when compared to the AMCA Laboratory results. The fan shall be tested at the same speed in both laboratories within ±5%.

B.1.2 Sound. Sound test results obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than ±5dB in the first octave band and ±3dB in all other octave bands. The fan shall be tested at the same speed in both laboratories.

B.1.3 Air curtain units

B.1.3.1 Airflow rate. Air curtain free delivery airflow results obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than ±2.5%. The motor input power shall not differ by more than ±7.5% when corrected for air density.

B.1.3.2 Outlet velocity uniformity. Outlet velocity uniformity results obtained in the accredited laboratory and the AMCA Laboratory shall not be different by more than ±7.5%.

B.1.3.3 Velocity projection. Velocity profile results obtained in the accredited laboratory and the AMCA Laboratory shall not be different by more than ±7.5%.

B.1.4 Air circulator fans

B.1.4.1 Airflow rate. Air circulator fan free delivery airflow results obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than ±5%. The input power shall not differ by more than ±5% when corrected for density.

B.1.5 Induced flow fans

B.1.5.1 Inlet airflow rate. Inlet airflow test results for an induced flow fan shall meet the requirements of Section B.1.1.

B.1.5.2 Outlet airflow rate. Outlet airflow test results for an induced flow fan obtained in the accredited laboratory shall not differ by more than +2% or -4% along parabolic system lines from the AMCA Laboratory results.

B.2 Air control devices

B.2.1 Air performance. The air performance test results obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than ±3.75% or ±8.495 m³/hr (5 cfm), whichever is greater, at any tested pressure differential.

B.2.2 Water penetration. The water penetration test results obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than ±5% of the airflow rate at the beginning point of water penetration.

B.2.3 Air leakage flow rate. The air leakage flow rate obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than ±5% or ±4.248 m³/hr (2.5 cfm), whichever is greater, at any tested pressure differential.

B.2.4 Wind-driven rain water penetration effectiveness. The wind-driven rain water penetration effectiveness obtained in the accredited laboratory and the AMCA Laboratory shall not differ by more than the following tolerances:

<u>Effectiveness</u>	<u>Tolerance</u>
1.000 to 0.99	+0.0025, -0.0050
0.989 to 0.95	+0.0125, -0.0250
less than 0.95	+0.0500, -0.1000

B.3 Airflow measurement stations

The airflow rate test results obtained in the accredited laboratory and the AMCA Laboratory shall not be different by more than ±0.5% when the test device is 0.186 m² (2ft²) or more, or ±1% when the test device is less than 0.186 m² (2ft²).

The following equation shall be used to calculate the difference in the measured airflow rate, Q:

$$DIFFERENCE = |(Q_{AMCA} - Q_{AMS}) - (Q_{ACCREDITED LABORATORY} - Q_{AMS})|$$

B.4 Acoustic attenuation devices

B.4.1 Acoustical duct silencer – sound performance. Sound test results obtained in the accredited laboratory and the AMCA Laboratory shall not be different by more than 6 dB in the first octave band and 3 dB in all other octave bands.

Annex C. Check Test Requirements

C.1 Air movement devices

Testing at the AMCA Laboratory shall be conducted using the same Installation Type and Standardized Airways as at the Licensee's, or Applicant's laboratory.

C.1.1 Fan airflow tests at constant speed (except air curtains)

C.1.1.1 Check test for initial accreditation

C.1.1.1.1 Non-pitot traverse testing. Each test rig shall be tested.

C.1.1.1.2 Pitot traverse testing. Only one duct size shall be tested. An inlet duct Pitot traverse may be used to accredit outlet duct Pitot traverse testing, and vice versa.

C.1.1.1.3 Combination inlet and outlet chambers. In the case where a chamber is designed to test either inlet or outlet air, e.g., a combination AMCA Standard 210 Figure 12 and Figure 15 chamber, both the inlet and outlet air testing configuration shall be tested.

C.1.1.2 Check test for accreditation renewal. Only one test rig shall be tested, selected at random by AMCA staff.

C.1.2 Sound

C.1.2.1 Check test for initial accreditation. AMCA Standard 300 Figure 1 may be used to accredit only Figure 1. Figure 2 may be used to accredit only Figures 1.A and 2. Figure 3 may be used to accredit only Figures 1.A and 3.

C.1.2.2 Check test for accreditation renewal. Only one figure shall be tested. Figure 1.A may not be used to renew accreditation for either Figure 2 or Figure 3.

C.1.3 Air curtain units. Check Test for Initial Accreditation and Accreditation Renewal.

C.1.3.1 Airflow rate. An airflow rate test may be used to accredit only airflow rate testing.

C.1.3.2 Outlet velocity. An outlet velocity projection test may be used to accredit only outlet velocity testing.

C.1.3.3 Velocity projection. A velocity projection test may be used to accredit both outlet velocity and

velocity projection testing.

C.2 Air control devices

C.2.1 Air performance

C.2.1.1 Check test for initial accreditation

C.2.1.1.1 Test device setup. AMCA Standard 500-D Figure 5.3 may be used to accredit AMCA Standard 500-D Figures 5.1, 5.2, 5.3, 5.4 and 5.5, and AMCA Standard 500-L Figures 5.1, 5.2, 5.4, and 5.5. Figure 5.1 or 5.2 of AMCA Standards 500-D and 500-L may be used to accredit only Figures 5.1, 5.2, 5.4 and 5.5 of AMCA Standards 500-D and 500-L. Figure 5.4 or 5.5 of AMCA Standards 500-D and 500-L may be used to accredit only Figures 5.4 and 5.5 of AMCA Standards 500-D and 500-L.

C.2.1.1.2 Airflow rate measurement setup. Each setup shall be tested.

C.2.1.2 Check test for accreditation renewal

C.2.1.2.1 Test device setup. AMCA Standard 500-D Figure 5.3 may be used to accredit AMCA Standard 500-D Figures 5.1, 5.2, 5.3, 5.4 and 5.5 and AMCA Standard 500-L Figures 5.1, 5.2, 5.4, and 5.5. Figure 5.1 or 5.2 of AMCA Standards 500-D and 500-L may be used to accredit only Figures 5.1, 5.2, 5.4 and 5.5 of AMCA Standards 500-D and 500-L. Figure 5.4 or 5.5 of AMCA Standards 500-D and 500-L may be used to accredit only Figures 5.4 and 5.5 of AMCA Standards 500-D and 500-L.

C.2.1.2.2 Airflow rate measurement setup. Only one test rig shall be tested, selected at random by AMCA staff.

C.2.1.2.3 Test devices. To overcome the effects of unstable blades or other components, a substitute device such as an orifice plate or panel may be used with the prior approval of AMCA.

C.2.2 Water penetration

C.2.2.1 Check test for initial accreditation. Each test device setup and airflow rate setup combination shall be tested.

C.2.2.2 Check test for accreditation renewal. Only one setup combination shall be tested, selected at random by AMCA staff.

C.2.3 Airflow leakage rate

C.2.3.1 Check test for initial accreditation. Each test device setup and airflow rate setup combination shall be tested.

C.2.3.2 Check test for accreditation renewal. Only one setup combination shall be tested, selected at random by AMCA staff.

C.2.3.2.1 Test devices. To overcome the effects of unstable blades or other components, a substitute device such as an orifice plate or panel may be used with the prior approval of AMCA.

C.3 Airflow measurement stations

Any figure may be used for initial accreditation and accreditation renewal.

Annex D. Certificates

Accreditation certificates shall contain the following information:

- D.1** Licensee name
- D.2** Laboratory address
- D.3** Test standard
- D.4** Description of test rig
- D.5** Test procedure (AMCA Standards 220, 500-D, 500-L, HEVAC simulated rain test only)
- D.6** Test Figure (all except AMCA Standards 500-D, 500-L, and 610)
- D.7** Airflow rate measurement and test device combination (AMCA Standards 500-D, 500-L, and 610 only)
- D.8** Signatures of AMCA's Executive Vice President and Director of Technical Services
- D.9** Original accreditation date
- D.10** Renewal date (if applicable)
- D.11** Expiration date
- D.12** AMCA corporate seal

Annex E. License Agreement

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. LABORATORY ACCREDITATION PROGRAM LICENSE AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20____, by and between AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC., a non-profit corporation organised under the laws of the State of Michigan, United States of America, having its principal office at 30 West University Drive, Arlington Heights, Illinois 60004, U.S.A., hereinafter called the "Licensor" or "AMCA", party of the first part, and _____ corporation, having its principal office at _____ hereinafter called the "Licensee."

WITNESSETH:

WHEREAS, Licensor has developed, promulgated, and adopted laboratory standards for the testing and performance rating of air movement and control devices; and

WHEREAS, it is in the public interest that the performance ratings of air movement and control devices be based on data obtained in laboratories qualified to conduct tests in accordance with the appropriate AMCA Standards and certain other recognised standards; and

WHEREAS, in order to identify qualified laboratories which are equipped and staffed to carry out such tests, Licensor registers such laboratories and authorises them to use the identifying description "AMCA Accredited Laboratory" in connection with test results to show that the test data was obtained in a laboratory accredited by AMCA; and

WHEREAS, Licensee represents that it maintains and operates a laboratory fully equipped and staffed to conduct tests of air movement and control devices in accordance with the AMCA Standard Test Method as well as by other test methods recognised by AMCA and desires to be accredited by AMCA so that it may indicate that its test results for an air movement and control device so tested was obtained in an AMCA Accredited Laboratory; and

WHEREAS, Licensee has been furnished with a copy of AMCA Publication 111 relating to its Laboratory Accreditation Program, and Licensee acknowledges that it is fully familiar with such Publication as well as with the test methods listed in Annex A thereof and the Check Test Tolerances set out in Annex B thereof;

NOW, THEREFORE, it is agreed by and between the parties hereto as follows:

1. Licensor does hereby grant to Licensee the license to use the description "AMCA Accredited Laboratory" for its qualified testing laboratory subject to the terms and conditions hereinafter more fully set forth.
2. Licensee hereby accepts the standard test methods as specifically referenced in the AMCA Laboratory Accreditation Program, and any and all amendments and modifications thereto from time to time promulgated by Licensor, as setting forth the proper and best available methods for testing and rating air movement and control devices. Licensee hereby accepts and agrees to be bound by the provisions of the AMCA Laboratory Accreditation Program, being Publication 111, and as the same may hereafter from time to time be revised by AMCA.

All standard test methods now or hereafter adopted or recognised by Licensor are herein sometimes referred to as "Standards".

This license agreement covers: _____

3. During the term hereof, Licensee agrees that all test data and performance ratings related to air movement and control devices issued by the Licensee shall conform to the following conditions:

- 3.1.1 **Literature or Advertisement.** The term "AMCA Accredited Laboratory" or any variation thereof shall not be used in any catalogue, product literature or advertisement **that contains product performance**, except when **ALL** products are licensed to bear the AMCA Certified Ratings Seal for all data published.
- 3.1.2 In catalogues, product literature or advertisements that are general in nature and **DO NOT CONTAIN PRODUCT PERFORMANCE DATA**, reference may be made to the fact that the company maintains an "AMCA Accredited Laboratory." In this event, the term "AMCA Accredited Laboratory" shall be marked with an asterisk referenced to the following statement which must be included on the same page:
- Product performance data based on tests in an AMCA Accredited Laboratory are not to be construed as being licensed to bear the AMCA Seal.
- 3.2 **Individual Test Data.** Individual test results shall indicate that such results were obtained in an AMCA Accredited Laboratory by use of the following statement: These test data are obtained in a laboratory accredited by AMCA for (insert appropriate test method; for example, AMCA 210 Air Performance, AMCA 500 Leakage, etc.) testing. Data is not certified by AMCA.
- 3.3 **Pretest Undertaking.** Before performing a test for a third party pursuant to any AMCA standard test method, or any other test method recognised by AMCA, in this licensed accredited laboratory, the Licensee specifically undertakes to obtain a written undertaking, from the person, firm or corporation requesting the test, respecting **each** such test.

The exact wording contained in the box below shall be reproduced on the requesting company's letterhead, signed by an officer of the company, and duly witnessed. The Licensee further undertakes to forward a copy of each undertaking to AMCA prior to any tests being performed.

Whereas _____ is licensed by Air Movement and Control Association International, Inc. of Arlington Heights, Illinois (AMCA), to conduct tests as an AMCA Accredited Laboratory of air movement and control devices in accordance with AMCA Test Standards as well as other standards recognized by AMCA; and	
The undersigned desires to engage the services of the Licensee to test the following described product (here describe the product to be tested), pursuant to the following test method (for example, AMCA 210 Air Performance),	
Accordingly, in consideration of the Laboratory performing said test as the Licensee of AMCA, so long as said product is not licensed to use the AMCA Certified Ratings Seal under the applicable AMCA Certified Ratings Program, the undersigned agrees to not use the term "AMCA Accredited Laboratory" or any variation thereof in any catalog. product literature or advertisement or in any way that implies that said product's performance is certified by AMCA, is licensed to bear the AMCA Certified Ratings Seal, that AMCA is responsible for the product's performance or that AMCA has certified the test data. AMCA shall be a direct beneficiary of this undertaking by the undersigned.	
By: _____	Date: _____
Title: _____	Witness: _____

NOTE TO LICENSEE: Copies of this undertaking are available from the AMCA office for reproducing on third party letterhead. Please forward signed copies of the letter to the AMCA office prior to performing any tests for a third party.

4. Licensee agrees to maintain or cause to be maintained control of testing by the Licensee and in connection with the "AMCA Accredited Laboratory" such that, when checked in accordance with the applicable standard, the laboratory shall perform within the Check Test Tolerances specified by the Laboratory Accreditation Program.
5. It is Licensor's present intention to continue research in the development of more accurate and simplified methods of testing and rating air movement and control devices in the interest of more scientific knowledge for the benefit of the public, the Licensee, and manufacturers of such devices. Licensor may from time to time incorporate developments and improvements into an applicable existing standard by way of an amendment thereto, or by the promulgation of new standards, which amendment or new standard will be supplied to the Licensee and will thereupon be deemed to be binding upon the parties hereto to the same extent as though the same were a part of the present standard. Licensee will comply with any such amendment to an existing standard or newly promulgated standard or any part thereof within the time limit or limits provided for therein, or, if no time limit is provided for compliance with such amendment or new standard, or any part thereof, the Licensee shall comply therewith within a reasonable time after the adoption or promulgation thereof.
6. The license granted hereby shall be a nonexclusive license. This license shall not be subject to sale, transfer, assignment, or other disposition, voluntary or involuntary, in whole or in part, by Licensee without the prior written consent of the Licensor. Licensee shall not knowingly permit any other person, firm or corporation to use the description "AMCA Accredited Laboratory" or make reference to it in any connection or for any purpose whatsoever in contravention hereof of Publication 111.
7. Licensee grants to Licensor the right at all reasonable times to inspect Licensee's test facilities.
8. It is understood that Licensor assumes no responsibility to any person, firm or corporation for the use of the description "AMCA Accredited Laboratory" by the Licensee, and the Licensee hereby agrees to indemnify and save harmless the Licensor from any claim or claims for damages or injuries on the part of any person, firm or corporation whatsoever arising out of the purchase, sale, use or handling of any product tested by Licensee, and without limiting the generality of the foregoing, particularly from any claim or claims arising out of any alleged misrepresentation of the performance ratings of any product as tested by Licensee.
9. It is understood that the work performed by Licensor and proposed hereafter to be performed by Licensor in the development of adequate methods of testing and rating air movement and control devices has been and will be done as a public service and for the purpose of assuring continued and increasing confidence in the catalogues, bulletins, representations, and products of the air movement and control industry. The provisions contained in the Agreement, and particularly the provisions relating to Licensor's right to inspect Licensee's test facilities and Licensor's right to effect termination hereof or withdrawal of the Accreditation because of default, are designed primarily for the purpose of avoiding confusion among customers and potential customers of the industry and to avoid damage to the reputation and value of the Licensor's testing programs as evidences of its impartial scientific service. To this end, the provisions hereof are to be construed liberally and without regard to the fact that this Agreement has been prepared by the Licensor. This Agreement shall be governed by and construed in accordance with the laws of the State of Illinois of the United States of America.
10. The term of this Agreement shall commence on the date of the execution hereof, and shall continue until terminated as herein provided.
 - 10.1 **Termination.** Either party may terminate this Agreement at any time on not less than thirty (30) days prior written notice to the other party, that is to say, Licensee shall have the right to terminate this Agreement at any time on not less than thirty (30) days prior written notice to AMCA, and AMCA shall have the right to terminate this Agreement at any time on not less than thirty (30) days prior written notice to Licensee. Upon termination of this Agreement, Licensee shall discontinue the use of the description "AMCA Accredited Laboratory" and return to AMCA all printed material making reference to AMCA Accreditation, including, but not limited to the this Agreement, plaque, and certificate not more than seven (7) days after termination of this Agreement.

10.2 **Notice.** Any notice required or desired to be given by either party to the other pursuant to this Agreement may be given by postage prepaid first class United States mail addressed to the recipient party at its address stated above (or at such different address as such recipient party shall furnish the other party by written notice given in accordance with this provision), and any notice so given shall be deemed and treated to have been effectively given as of the moment of the mailing thereof.

11. For Licensor's supervision of the use of the description "AMCA Accredited Laboratory" and to reimburse Licensor for a fair share of the expenses of operating the Laboratory Accreditation Program, Licensee agrees to pay Licensor in United States dollars in accordance with the schedule of charges specified in the Laboratory Accreditation Program and at such rates as shall be determined by the members of AMCA from time to time.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.

(place corporate seal here)

Signature: _____

Print Name: _____

Title: _____

ATTEST:

Witness: _____

LICENSEE,

(place corporate seal here)

Signature: _____

Print Name: _____

Title: _____

ATTEST:

Witness: _____

Annex F. Forms (Copies are available from the AMCA office.)

APPLICATION FOR ACCREDITATION OF LABORATORY

FORM LAP 2

TO: AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.

We hereby apply for a Laboratory Accreditation Program license of the Air Movement and Control Association International, Inc. We have read and agree to all of the provisions of the Laboratory Accreditation Program as described in AMCA Publication 111 and the Laboratory Accreditation License Agreement.

We, _____ of _____
(company) (business address)
_____ request the Air Movement and Control Association

International, Inc. to accredit our laboratory, located at

_____, to test in accordance with
(laboratory address)

(standard name, identification number, and figure number)

With this request we submit the following (complete requirements for submittal data can be found in Section 4.2 of Publication 111):

- Application fee.
- Dimensioned drawing of the laboratory showing the location of the test setup.
- Dimensioned drawing of the test setup.
- List of instruments.
- Catalog information on each instrument.
- Calibration record on each instrument.
- Other documentation required by the test standard, such as room qualification data of a reverberant room, or velocity traverses of a chamber.
- Two signed copies of the license agreement.

We attest that the information contained in this application is correct, and we understand that its misrepresentation could result in loss of accreditation.

By _____ By _____
(Company Officer) (Chief Engineer or Laboratory Director)

(Title) (Title)

Date _____ Date _____

AMCA has developed check lists to assist laboratory accreditation applicants assemble the documentation necessary for submittal under Section 4.2. Check lists are available from the AMCA office for the following:

ANSI/AMCA 210	Figure 7 Figure 12 Figure 15 Figure 16
AMCA Standard 300	All figures
AMCA Standard 500-D	Figure combination 5.1 – 6.3 Figure combination 5.2 – 6.5 Figure combination 5.3 – 6.5 Figure combination 5.4 – 6.3 Figure combination 5.5 – 6.5
AMCA Standard 500-L	Figure combination 5.1 – 6.3 Figure combination 5.2 – 6.5 Figure combination 5.4 – 6.3 Figure combination 5.5 – 6.5



AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.

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Arlington Heights, IL 60004-1893 U.S.A.

Tel: (847) 394-0150 • Fax: (847) 253-0088
E-Mail : info@amca.org • Web: www.amca.org

The Air Movement and control Association International, Inc. is a not-for-profit international association of the world's manufacturers of related air system equipment primarily, but limited to: fans, louvers, dampers, air curtains, airflow measurement stations, acoustic attenuators, and other air system components for the industrial, commercial and residential markets.