

# PRODUCT APPLICATION GUIDE

A technical bulletin for engineers, contractors and students in the air movement and control industry.

## Why AMCA? Because you need the performance you specify.



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

The engineers and designers who select and specify products of all types for building projects carry a great deal of responsibility. That's why you need to specify fan, damper, and louver products

that are AMCA licensed and that each individual product bear the AMCA Certified Rating Seal.

The following summarizes what you need to know about AMCA. Read on to learn more about:

- What is AMCA (What the AMCA Certified Rating Program means)
- AMCA certified rating seals
- AMCA published standards (test standards)
- Other AMCA publications
- Greenheck's commitment
- How to get what you really want

### What is AMCA (What the AMCA Certified Rating Program means)

AMCA is an international, non-profit association which administers the certified ratings program. The program incorporates the certification of laboratories, manufacturer's product ratings, and assures continued compliance through check test verification.

The present AMCA membership includes the majority of the world's leading manufacturers of air movement and control equipment. AMCA provides you with independent "third party" verification of

performance ratings. In addition to verifying performance ratings, AMCA provides important application information to the fan and damper industry. (Refer to AMCA Publications listed on page 3.)

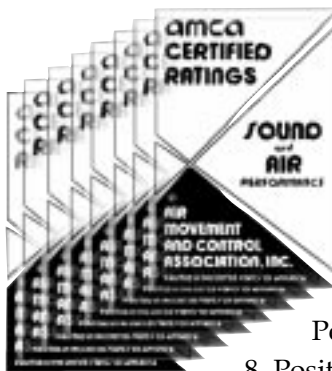
As stated by AMCA, "the associations' mission is to promote the health and growth of the air movement and control industry consistent with the interest of the public." AMCA is a valuable resource and a strong means of self-regulation for our industry. People who buy and specify fans need to be aware of the value of the AMCA seal.

### AMCA Certified Rating Seals

The AMCA certified rating program seal assures you that a product line has been tested to the appropriate AMCA standards in accordance with a legal license agreement and that the manufacturer's catalogued certified ratings have been submitted to the AMCA staff for approval prior to publication.

The eight certified programs covered by AMCA are as follows:

1. Air Performance
2. Sound and Air Performance
3. Air Leakage/Air Performance
4. Air Leakage
5. Water Penetration/Air Performance
6. cfm/Watt - Air Performance
7. Airflow Measurement Station - Air Performance
8. Positive Pressure Ventilators - Air Performance



For a product to be licensed to bear the AMCA seal under the certified rating program, it must first be tested in an accredited lab (usually the

manufacturer's or an independent testing facility accredited by AMCA's technical staff). To obtain a license to use the AMCA seal, each manufacturer agrees to eight major requirements:

1. Published ratings will be based on tests conforming to the appropriate AMCA standard.
2. All tests will be made in a laboratory accredited by the AMCA technical staff.
3. Test results will be submitted to the AMCA staff for checking.
4. A unit selected by the AMCA staff will be sent to the AMCA laboratory for a "Precertification Check".
5. All catalogs containing "Certified Ratings" will be submitted to the AMCA staff for approval before publication.
6. Every three years each licensed product line will be subject to continuing check tests in the AMCA laboratory.
7. Licensed products will also be liable to challenge tests initiated by competing manufacturers who may challenge published versus actual tested performance of a product. The AMCA license will be withdrawn if the product does not continue to perform as cataloged.
8. Fees and assessments will be paid to fund the program.

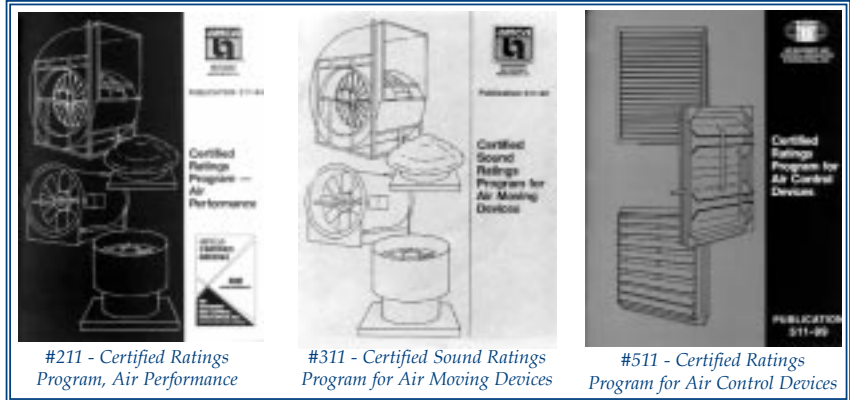
### AMCA Certified Ratings Program

There are three AMCA rating standards that apply to air moving and control products. These are the standards under which AMCA license agreement are granted. Publication 211 is the testing procedure that applies to fans for air performance. Publication 311 applies to fans for sound performance. Publication 511 applies to dampers and louvers for air performance, air leakage, and water leakage.

### Other AMCA Publications

For complete information on all materials, visit [www.amca.org](http://www.amca.org) AMCA's web site. Some of the available publications include:

**Publications List:** Lists all available AMCA Publications and Standards along with pricing and ordering instructions.



**Directory of Licensed Products,** AMCA Publication 261: A listing of all the products licensed by AMCA to bear the Certified Rating Seal. (This is only available via AMCA's web site, [www.amca.org](http://www.amca.org))

**Fans and Systems,** Publication 201: Includes information on how fans are tested in the laboratory, how performance tables and curves are developed and published, and how system connections will affect fan performance. The adverse effects of specific system connections and of other poor inlet and outlet conditions are expressed numerically in the form of "System Effect Factors".

**Troubleshooting,** Publication 202: Intended to help identify and correct problems with the performance and operation of the fan system after installation.

**Field Performance Measurements,** Publication 203: Reviews the problems of making field measurements of fan-systems and discusses in detail how to measure and calculate the actual performance of the fan and system. It discusses the accuracy that may be expected and gives examples of how to test typical fan systems and allow for the effects of the system connections on fan performance.

**Methods for Calculating Fan Sound Ratings from Laboratory Test Data,** Standard 301: This document establishes standard methods for calculating consistent sound ratings from laboratory test data. Data must come from AMCA 300, 320, and 330 test standards.

**Application of Sone Ratings,** Publication 302: Lists recommended sone level and outlines a method for determining the loudness of fans as installed taking into account room size and acoustical characteristics.

**Application of Sound Power Level Ratings,**

Publication 303:  
Outlines a method for calculating and applying LwA and dBA sound ratings.

**Application Manual for Air Louvers,**

Publication 501:  
Provides general information and comments on important points to consider when designing or specifying installations requiring louvers.



#111 Laboratory Registration Program

(ratings, pressure drop, leakage) of fans, dampers, and louvers plus one (one of 16 in the world) sound testing laboratory using the reverberant room method. This means that Greenheck has passed a rigid inspection by AMCA and has met all of the requirements of AMCA Publication 111 (Laboratory Accreditation Program) for facilities, personnel qualifications, and equipment calibration and maintenance. AMCA and Greenheck have conducted tests on identical pieces of equipment with test results being within one half of the CRP (certified ratings program) tolerance. In addition, our labs are accredited by Underwriters Laboratories to participate in the U.L. Client Test Data Program.

Greenheck has a few products that are not licensed to bear AMCA Certified Rating Seals. The few

**Greenheck's Commitment**

Greenheck is a strong advocate of AMCA, having more testing facilities and personnel dedicated to performance testing than any of our major competitors. We also have the most people of any competitor serving on AMCA committees. All of this results in the combination of more fan, damper, and louver products licensed to bear AMCA Certified Rating Seals than any of our competitors.

Greenheck has three AMCA accredited laboratories for air testing

Greenheck's Sound Room



Air testing being conducted on a centrifugal roof fan



Damper being put through the test cycle on the wind driven rain tunnel



Damper Leakage Testing



Greenheck catalogs and selection programs containing performance not licensed by AMCA are completely accurate and all performance is guaranteed by Greenheck. The testing has been done in accordance with the appropriate AMCA standard in an AMCA Accredited Lab.

**How to get what you really want**

Using the following criteria will assure you that the product you specify will perform as expected.


- Identify products that are licensed to bear the AMCA Seal. The latest issue of AMCA publication 261 "Directory of Licensed Products" is your best source of current information.

Note: Listing in this directory does not imply that all of a company's products are licensed to use the AMCA Seal - only the specific products that are listed. The listing also differentiates between products licensed to bear the Air Certified Rating Seal or the Sound and Air Certified Rating Seal.


- When using manufacturers' catalogs and selection programs, make sure that the product you select shows the appropriate label and AMCA Statement. (See samples below.)

**Some Pitfalls to Avoid**

Some manufacturers' literature carries the statement, "Tested in accordance with AMCA



Greenheck certifies that the backward inclined and airfoil centrifugal fans shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Greenheck certifies that the model SMD-21 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs.

standards". This is NOT the same as "Products licensed to bear the AMCA Certified Ratings Seal".

Literature containing this notation indicates products are tested according to standards developed and published by AMCA. Such a note, however, only ensures the methods used in testing. It does not ensure that the test equipment, test laboratory, or the published data meet AMCA standards. Without a laboratory that conforms to an accepted industry-wide standard, (the AMCA testing laboratory) performance data obtained conforms only to other measurements made in that particular lab. Data may be suspect, and the product may not perform as required.

Another area where a distinction needs to be very clear is the functional difference between the AMCA Certified Ratings Seal and the member logo. There are some manufacturers who have used the AMCA member logo in their literature where it might have been misinterpreted as licensed products. The orange and white logo shown below signifies membership in AMCA. Only the blue and yellow Certified Ratings Seals denote products that are licensed.

When comparing performance of different manufacturers, only compare ratings of manufacturer products that are licensed to bear AMCA seals. Avoid comparing sound data to a manufacturer that has both the AMCA Sound and Air Seal to another with only the AMCA Air Seal. In comparing catalog performances, pay attention to statements regarding product testing, for example: inlet, outlet, or total sound, with/without ducts, with/without drive loss.



*This logo only signifies membership in AMCA. When shown in catalogs, the logo does not denote products that are licensed to bear a certified rating seal*

- Specify that each individual product bears the AMCA Certified Rating Seal.
- For specialized products (not AMCA licensed) specify products manufactured by the company that has the best reputation for accurate data.

Remember, you can always count on Greenheck.