

1997 STANDARD for

APPLICATION OF SOUND RATING LEVELS OF OUTDOOR UNITARY EQUIPMENT



Standard 275

IMPORTANT

SAFETY RECOMMENDATIONS

It is strongly recommended that the product be designed, constructed, assembled and installed in accordance with nationally recognized safety requirements, appropriate for products covered by this standard.

ARI, as a manufacturer's trade association, uses its best efforts to develop standards, employing state-of-the-art and accepted industry practices. However, ARI does not certify or guarantee safety of any products, components or systems designed, tested, rated, installed or operated in accordance with these standards or that any test conducted under its standards will be non-hazardous or free from risk.

Note:

This Standard supersedes ARI Standard 275-84.

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APPLICATION OF SOUND RATING LEVELS OF OUTDOOR UNITARY EQUIPMENT

Section 1. Purpose

1.1 Purpose. The purpose of this standard is to establish for outdoor unitary equipment: definitions, procedures for estimating A-Weighted sound pressure levels, and recommended application practices.

1.1.1 Intent. This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors and users.

1.1.2 Review and Amendment. This standard is subject to review and amendment as technology advances.

Section 2. Scope

2.1 Scope. This standard applies to the outdoor sections of factory-made air-conditioning and heat pump equipment, as defined in Section 3 and ARI Standard 210/240 when rated in accordance with ARI Standard 270.

Section 3. Definitions

3.1 Definitions. All terms in this document will follow the standard industry definitions established in the current edition of ASHRAE *Terminology of Heating, Ventilation, Air Conditioning and Refrigeration*, unless otherwise defined in this section.

3.2 Sound Rating Level. That number which is assigned to equipment rated in accordance with ARI Standard 270.

3.2.1 Standard Sound Rating Level. That number assigned to equipment rated at Standard Rating Conditions in accordance with ARI Standard 270.

3.2.2 Application Sound Rating Level. A number assigned to equipment rated in accordance with ARI Standard 270 at conditions other than Standard Rating Conditions.

3.3 A-Weighted Sound Pressure Level. As used herein, the sound pressure level, as measured on the "A" scale of a sound level meter manufactured in accordance with the provisions of ANSI Standard S1.4.

3.4 C-Weighted Sound Pressure Level. As used herein, the sound pressure level, as measured on the "C" scale of a sound level meter manufactured in accordance with the provisions of ANSI Standard S1.4.

3.5 "Shall," "Should," "Recommended," or "It Is Recommended." "Shall," "should," "recommended," or "it is recommended" shall be interpreted as follows:

3.5.1 Shall. Where "shall" or "shall not" is used for a provision specified, that provision is mandatory if compliance with the standard is claimed.

3.5.2 Should, Recommended, or It Is Recommended. "Should," "recommended," or "it is recommended" is used to indicate provisions which are not mandatory but which are desirable as good practice.

Section 4. Procedure for Estimating A-Weighted Sound Pressure Levels

4.1 Introduction. ARI Standard 270 establishes a method of rating outdoor unitary equipment in terms of ARI Sound Rating Levels. The sound level of outdoor unitary equipment in various applications is dependent not only upon the ARI Sound Rating Level but also upon several significant factors related to the application of the equipment. These factors include equipment location, barrier shielding, sound path, and distance, as described in 4.1.1 through 4.1.4 and Table 1. Quantitative values for each of these factors are established to adjust the sound rating level. The summation of the sound rating levels and applied adjustments equal the estimated A-Weighted sound pressure level. The rating method in ARI Standard 270 incorporates an adjustment which is applied in the presence of tones. This method may result in slightly higher predicted sound levels than measured sound levels when following the procedures described in this standard.

4.1.1 Equipment Location Factor. This factor takes into consideration the effect of walls and other reflective surfaces adjacent to the equipment. Factors for typical equipment locations are given in Item 1, Table 1, and described with sketches.