



American  
Gear Manufacturers  
Association

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Technical Resources

Revision of ANSI/AGMA 6025-C90  
Reaffirmed January 2010

## **American National Standard**

# **Sound for Enclosed Helical, Herringbone and Spiral Bevel Gear Drives**

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## ***Sound for Enclosed Helical, Herringbone and Spiral Bevel Gear Drives***

ANSI/AGMA 6025-D98

(Revision of ANSI/AGMA 6025-C90)

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Approved June 19, 1998

### **ABSTRACT**

The standard describes a recommended method of acceptance testing and reporting of the sound pressure levels generated by a gear speed reducer or increaser when tested at the manufacturer's facility. The results obtained should represent only the sound of the gear unit. Other systems influenced such as the prime mover or driven equipment are minimized. The purchaser should not expect to translate the manufacturer's test results directly to the system installation because of differences in environment, mounting and system effects. An annex is included for use in those instances where sound power levels are required by the purchaser.

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## Foreword

[The foreword, footnotes and annexes, if any, in this document are provided for informational purposes only and are not to be construed as a part of ANSI/AGMA Standard 6025–D98, *Sound for Enclosed Helical, Herringbone and Spiral Bevel Gear Drives.*]

Concern with industrial noise created a need for acoustical standards covering all types of gear products. Noise measurement and control is dependent upon the individual characteristics of the prime mover, gear unit and driven machine as well as their combined effects as a system in addition to the effects of the acoustic environment.

The complexity makes most sound standards difficult to apply or interpret properly. The AGMA Acoustical Technology Committee developed this standard for the purpose of providing improved communication between purchaser, gear manufacturer and user in the areas of sound instrumentation, sound measurements and test procedures.

Because of the many variations of system response in different acoustic environments, this standard identifies certain areas where special test conditions might be necessary and should be part of the contractual agreement between purchaser and gear manufacturer.

The first draft of ANSI/AGMA 6025–C90 was prepared in January 1989 as a revision of AGMA 297.02. AGMA 297.01 was first approved by the AGMA membership in July of 1973. The standard presented the A-weighted sound pressure level measurement procedures for enclosed helical, herringbone and spiral bevel gear drives. Work began on a revision of AGMA 297.01 in 1979 to update the terminology and to add an appendix, a procedure for sound power measurements. AGMA 297.02 was approved for printing and distribution in 1983. This revision of AGMA 297.02 also incorporates AGMA 295.04 and AGMA 298.01, which were similar in content.

ANSI/AGMA 6025–C90 was approved by the AGMA membership and the American National Standards Institute in 1990. This revision of the 1990 standard is a modification incorporating the procedures from ISO 8579–1:1993 as a normative annex, updating of references and including additional information.

There are four annexes in this standard. Annex A is normative and is considered part of this standard when specified; Annexes B, C and D are informative and are not considered part of this standard.

ANSI/AGMA 6025–D98 was approved by the AGMA membership in March 1998. It was approved as an American National Standard on June 19, 1998.

Suggestions for improvement of this standard will be welcome. They should be sent to the American Gear Manufacturers Association, 1500 King Street, Suite 201, Alexandria, Virginia 22314.

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# American National Standard – Sound for Enclosed Helical, Herringbone and Spiral Bevel Gear Drives

## 1 Scope

This standard describes the instrumentation, measuring methods and test procedures necessary for the determination of a gear unit's sound pressure levels for acceptance testing. Sound power measurement methods are provided in annexes A, B and C for use when required by specific contract provisions between the manufacturer and purchaser.

### 1.1 Application

This standard is applicable to gear drives designed and rated in accordance with the following standards: ANSI/AGMA 6010-F97, *Standard for Spur, Helical, Herringbone and Spiral Bevel Enclosed Drives*; ANSI/AGMA 6011-H97, *Practice for High Speed Helical and Herringbone Gear Units*; ANSI/AGMA 6019-B89, *Standard for Gearmotors Using Spur, Helical, Herringbone, Straight Bevel or Spiral Bevel Gears*; and ANSI/AGMA 6021-G89, *Standard for Shaft Mounted and Screw Conveyor Drives Using Spur, Helical and Herringbone Gears*.

ANSI/AGMA 6025-D98 applies to only those gear units which are lubricated in accordance with manufacturer's recommendations and tested in a system of connected rotating parts free from serious critical speeds, torsional vibrations or overloads as tested at the gear unit manufacturer's facility.

Where performance of actual shop tests to determine sound level is required, it shall be the responsibility of the purchaser to so state in his inquiry and order.

**NOTE:** The gear unit is only part of the total acoustic system which includes, in addition to the gear unit, the

prime mover, driven equipment, gear unit mounting, foundation and acoustic environment. Each of these might affect the measured level of sound emitted from the gear unit. Unless otherwise agreed, the gear manufacturer's responsibility is to ensure that the level of noise emitted from a gear unit under the test conditions in his factory is within contractually specified or negotiated limits.

Special contractual considerations are discussed in annex D.

**CAUTION:** Compliance with this standard does not constitute a warranty of the measured gear unit sound levels under installed field service conditions.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI S1.1(1994), *Acoustical terminology*

ANSI S1.4 (1983), *Specification for sound level meters*

ANSI S1.6 (1984), *Preferred frequencies and band numbers for acoustical measurements*

ANSI S1.11 (1986), *Octave, half-octave and third-octave band filter sets*

ANSI S1.13 (1995), *Methods for the measurement of sound pressure level*

**NOTE:** These standards may be obtained from:

American National Standards Institute  
11 West 42nd Street  
New York, NY 10036  
(212) 642-4900

## 3 Definitions

The following definitions are provided to identify specific terms and phrases used in this standard.