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AGMA TECH

Aimed at providing a common language for the evaluation of gear products, learn more about the “how and why” of standards development.

Gear products are among the most-reliable mechanical systems used in our economy today. This has been achieved through progressive changes in gear manufacturing technology, gear design methods, and the continual development and refinement of gearing standards.

The Role of Standards

Gear standards are common language through which manufacturers and users can evaluate products. In business relationships, prudent steps should be taken to establish consistent engineering specifications for equitable bidding. Then a buyer cannot only assess cost effectiveness of various bids, but also technical and manufacturing expertise of suppliers. Standards serve this role. They are also used as trade and marketing tools by manufacturers, either in penetrating new markets or protecting established markets.

AGMA History

Development of AGMA Standards has been market driven, ever since the first rating standard appeared in 1919 and the first gear-quality standard was established in the late 1930s. Recently the AGMA Board of Directors, acknowledging a global marketplace, has reaffirmed the commitment to promote national and international standards development.

In the 1980s, the American National Standards Institute (ANSI) approved AGMA as the accredited national developer for gear standards, and as Technical Advisory Group Administrator for establishing the national position on international gear standards.

Another “milestone” was achieved in 1993, when AGMA—through ANSI—was approved as the Secretariat of Technical Committee 60 (TC 60), Gears, by the International Standards Organization (ISO) in Geneva, Switzerland. AGMA is responsible for the administration of gear-related standards development worldwide.

Standards in the Making

The development and balloting of both ISO and AGMA standards is a consensus process. However, individual positions may be expressed that can enhance the contents. Members of AGMA and other interested persons develop new—and continue to revise—over 60 standards and information sheets.

They contain rating, design, manufacturing, and inspection of gears, gear drives, and related components.

Source data used to develop AGMA standards differs markedly from other well-known gearing standards, some of which are international. With AGMA standards development, heavy reliance is placed on the actual experience of gear system

performance in related applications, whereas some others are based on theoretical and laboratory research data.

Standards that reached publication stage during the last quarter of 2003 include:

- *Design Manual for Bevel Gears*—this revision improves formulas for design of bevel and hypoid gears;
- *Specification for High Speed Helical Gear Units*—this revision updates design, manufacturing, and application requirements;
- *Tolerance Specification for Gear Hobs*—new classification and tolerance requirements for cutting tools; and
- *Standard for Design and Specification of Gearboxes for Wind Turbines*—the latest, most-comprehensive enclosed drive

standard, with component and lubrication requirements included.

These are only a few of the active standards development projects in AGMA committees.

Manufacturers can produce gears to any standard, including hybrids of standards plus their own experience. It is important to understand the specifics of applicable standards so that you can benefit from their strengths.

Detailed information on all of the subjects discussed is provided on the AGMA Web site at www.agma.org. Send e-mail to tech@agma.org.

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