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American National Standard
for Rolling Element Bearings –
Aircraft Engine, Engine Gearbox,
and Accessory Applications –
Surface Visual Inspection

Secretariat

Anti-Friction Bearing Manufacturers Association, Inc.

Approved February 21, 1992

American National Standards Institute, Inc.

National Standard

approval have been met by the standards developer.

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This American National Standard was prepared by a task force consisting of representatives of companies which manufacture rolling element bearings and aircraft, or aircraft engines, or both, in the United States. This standard is issued by the Accredited Standards Committee B3 of the American National Standards Institute as an industrial standard that is intended to be used by aircraft manufacturers, or aircraft engine manufacturers, or both, for the procurement of rolling element bearings for aircraft engine and accessory applications.

Suggestions for improvement of this standard will be welcome. They should be sent to the Anti-Friction Bearing Manufacturers Association, Inc., 1101 Connecticut Avenue, NW, Suite 700, Washington, DC 20036.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Ball and Roller Bearings, B3. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the B3 Committee had the following members:

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American National Standard for Rolling Element Bearings – Aircraft Engine, Engine Gearbox, and Accessory Applications – Surface Visual Inspection

1 Scope

This standard establishes a system for uniform visual acceptance criteria for aircraft engine, gearbox and accessory anti-friction bearings in continuous rotation applications made of the material listed in table 1. The standard requirements are in a flow chart format; the written text is supplementary and is used as support for the flow charts.

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.

MIL-STD-130 G-1988, *Identification marking of US military property*¹⁾

3 Definitions

3.1 Surfaces

3.1.1 functional surface: All active surfaces of a bearing, specifically the following:

- *rolling elements:* All surfaces (except roller corners for class C);

- *rings:* Raceway surfaces; guide rib adjacent to raceway (roller bearings);

- *cage (retainer):* Entire pocket (except retention features); piloting (land riding) surface.

3.1.2 nonfunctional surface: All surfaces other than those defined as functional including, but not limited to, faces, outside diameters, inside diameters, slots, corners, flanges, etc.

3.2 Limits on spacing and number of imperfections

3.2.1 individual limits: Individual limits on the size of imperfections of the same type, without regard to their number or spacing. (A lower size limit may apply if there is a cluster of imperfections of the same type.)

3.2.2 cluster limits: Cluster limits on size and number applying to two or more imperfections of the same type, clearly separated, which can be contained within a circle of the maximum diameter allowed by the assigned standard. (Imperfections lying outside the circle are treated as individual when they lie at least the distance of the circle apart from each other.)

3.3 Imperfections

3.3.1 bulge: A swelling or protuberance caused by deformation of the part. This does not include intentional deformation required for rolling element retention.

3.3.2 burrs: Flakes of metal or roughness (feather-edge) found attached at intersecting surfaces such as corners, drilled holes, milled slots, grooves, and identification stamps.

¹⁾ Available from the Naval Publications and Forms Center, Attention NPFC-3064, 5801 Tabor Avenue, Philadelphia, PA 19120.