

The American Bearing Manufacturers Association (ABMA) is a non-profit association consisting of American manufacturers of anti-friction bearings, spherical plain bearings or major components thereof. The purpose of ABMA is to define national and international standards for bearing products and maintain bearing industry statistics. The ABMA has become the collective voice of the American bearing industry, influencing government policies and international trade. ABMA member companies manufacture 85 percent of the bearing produced in the United States.

You can contact the ABMA at <http://www.abma-dc.org>

A.B.M.A. BALL GRADES

GRADE	ALLOWABLE BALL DIAMETER VARIATION	DEVIATION FROM SPHERICAL FORM	SURFACE ROUGHNESS ARITHMETICAL AVERAGE	BASIC DIAMETER TOLERANCE	ALLOWABLE LOT DIAMETER VARIATION
3	3 μ" .000003"	3 μ" .000003"	.5 μ" .000005"	±30 μ" ±.00003"	5 μ" .000005"
5	5 μ" .000005"	5 μ" .000005"	.8 μ" .000008"	±50 μ" ±.00005"	10 μ" .00001"
10	10 μ" .00001"	10 μ" .00001"	1.0 μ" .000001"	±100 μ" ±.0001"	20 μ" .00002"
15	15 μ" .000015"	15 μ" .000015"	1.0 μ" .000001"	±100 μ" ±.0001"	30 μ" .00003"
16	16 μ" .000016"	16 μ" .000016"	1.0 μ" .000001"	±100 μ" ±.0001"	32 μ" .000032"
24	24 μ" .000024"	24 μ" .000024"	2.0 μ" .000002"	±100 μ" ±.0001"	48 μ" .000048"
25	25 μ" .000025"	25 μ" .000025"	2.0 μ" .000002"	±100 μ" ±.0001"	50 μ" .00005"
48	48 μ" .000048"	48 μ" .000048"	3.0 μ" .000003"	±200 μ" ±.0002"	96 μ" .000096"
50	50 μ" .00005"	50 μ" .00005"	3.0 μ" .000003"	±300 μ" ±.0003"	100 μ" .0001"
100	100 μ" .0001"	100 μ" .0001"	5.0 μ" .000005"	±500 μ" ±.0005"	200 μ" .0002"
200	200 μ" .0002"	200 μ" .0002"	8.0 μ" .000008"	±1000 μ" ±.001"	400 μ" .0004"
300	300 μ" .0003"	300 μ" .0003"		±1000 μ" ±.001"	600 μ" .0006"
500	500 μ" .0005"	500 μ" .0005"		±2000 μ" ±.002"	1000 μ" .001"
1000	1000 μ" .001"	1000 μ" .001"		±5000 μ" ±.005"	2000 μ" .002"
2000	2000 μ" .002"	2000 μ" .002"		±5000 μ" ±.005"	4000 μ" .004"
3000	3000 μ" .003"	3000 μ" .003"		±5000 μ" ±.005"	6000 μ" .006"

Allowable Ball Diameter Variation: is the largest variation in diameter found in any one ball from the sample lot inspection

Allowable Deviation From Spherical Form: is the greatest radial distance in any radial plane between a sphere circumscribed around the ball surface and any point on the ball surface.

Surface Roughness: is all those irregularities which form the surface relief but are not deviations of form or waviness. The measurement of this characteristic is to be made with equipment meeting the requirements of and in accordance with Standard ANSI B46.1

Basic Diameter Tolerance: is the maximum allowable deviation in any ball mean diameter from the basic diameter ordered.

Allowable Lot Diameter Variation: is the difference between the mean diameter of the largest ball and that of the smallest ball in the lot.



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