A.F.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	3µ"	3µ"	5µ"	30µ"	5µ"
	.000003"	.000003"	.0000005"	±.00003"	.000005"
	0.0762µm	0.0762µm	0.127µm	0.762µm	0.127µm
5	5µ"	5µ"	8µ"	50µ"	10µ"
	.000005"	.000005"	.0000008"	±.00005"	.00001"
	0.127µm	0.127µm	0.2032µm	1.27µm	0.254µm
10	10µ"	10µ"	1.0µ"	100µ"	20µ"
	.00001"	.00001"	.000001"	j-0001"	.00002"
	0.254µm	0.254µm	0.0254µm	2.54µm	0.508µm
15	15 µ"	15 µ"	1.0 µ"	100 µ"	30 µ"
	.000015"	.000015"	.000001"	±.0001"	.00003"
	0.381µm	0.381µm	0.0254µm	2.54µm	0.762µm
16	16 µ"	16 µ"	1.0 µ"	100 µ"	32 µ"
	.000016"	.000016"	000001'	+ 0001"	.000032"
	0.4064µm	0.4064µm	0.0254µm	2.54µm	0.8128µm
24	24 µ"	24 µ"	2.0 µ"	100 µ"	48 µ"
	.000024"	.000024"	.000002"	±.0001"	.000048"
	0.6096µm	0.6096µm	0.0508µm	2.54µm	1.2192µm
25	25 µ"	25 µ"	2.0 µ"	100 µ"	50 µ"
	.000025"	.000025"	.000002"	± .0001''	.00005"
	0.635µm	0.635µm	0.0508µm	2.54µm	1.27µm
48	48 µ"	48 µ"	3.0 µ"	200 µ"	96 µ"
	.000048"	.000048"	.000003"	±.0002"	.000096"
	1.2192µm	1.2192µm	0.0762µm	5.08µm	2.4384µm
50	50 µ"	50 µ"	3.0 µ"	300 µ"	100 µ"
	0.00005"	0.00005"	.000003"	±.0003·	0.0001
	1.27µm	1.27µm	0.0762µm	7.62µm	2.54µm
100	100 µ"	100 µ"	5.0 µ"	500 µ"	200 µ"
	0.0001"	0.0001"	.000005"	±.0005"	.0002"
	2.54µm	2.54µm	0.127µm	12.7µm	5.08µm
200	200 µ"	200 µ"	8.0 µ"	1000 µ"	400 µ"
	.0002"	.0002"	0.000008	±.001.	.0004"
	5.08µm	5.08µm	0.2032µm	25.4µm	10.16µm
300	300 µ"	300 µ"		1000 µ"	600 µ"
	.0003"	.0003"		±.001"	.0006"
	7.62µm	7.62µm		25.4µm	15.24µm
500	500 µ"	500 µ		2000 µ"	1000 µ"
	.0005"	0005"		±.002'	.001"
	12.7µm	12.7µm		50.8µm	25.4µm
1000	1000 µ"	1000 µ"		5000 µ"	2000 µ"
	.001"	.001"		±.005"	.002"
	25.4µm	25.4µm		127µm	50.8µm
2000	2000 µ"	2000 µ"		5000 µ"	4000 µ''
	.002''	002"		±.005"	.004"
	50.8µm	50.8µm		127µm	101.6µm
3000	3000 µ"	3000 µ"		5000 µ"	6000 µ"
	.003"	.003"		±.005"	.006"
	76.2µm	76.2µm		127µm	152.4µm

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 B 46.1.

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.