Terms and definitions

Nominal ball diameter : The diameter value that is used for the purpose of general identification of a ball size;

Single ball diameter : The distance between two parallel planes tangent to the surface of a ball.

Mean ball diameter : Arithmetic mean of the largest and the smallest of the single diameters of a ball.

Variation of ball diameter : Difference between the largest and the smallest of the single diameters of a ball.

Deviation from spherical form : The greatest radial distance, in any equatorial radial plane, between the smallest circumscribed sphere and the greatest inscribed sphere with their center common to the least square sphere center.

Waviness : Surface irregularities of random or periodical deviation from the spherical ideal form. (Lacking standardized practices in this field, the specifications and tolerances for waviness are subject to agreement between manufacturer and purchaser.)

Surface roughness : Surface irregularities with relatively small spacing, which usually include irregularities resulting from the method of manufacture being used and/or other influences. Values are expressed as arithmetic averages.

Surface defect : Any deviation of the surface from the ideal spherical form. Surface defects include irregularities originating from manufacture (inhomogenous surface texture), mechanical damage, cracks or staining.

Ball lot : Definite quantity of balls manufactured under conditions presumed uniform and which is considered as an entity.

Mean diameter of a ball lot : Arithmetic mean of the mean diameters of the largest ball and the smallest ball in a ball lot.

Variation of ball lot diameter : Difference between the mean diameters of the largest ball and the smallest ball in a ball lot.

Ball grade : Specific combination of dimensional, form, surface roughness and sorting tolerances for balls.

Ball gauge : The amount by which the mean diameter of a lot or a subset of a lot, differs from the nominal ball diameter, rounded to a whole multiple of the ball gauge interval.

Ball diameter variation within a gauge : The difference between the largest and the smallest mean ball diameters established for a particular gauge.

Gauge interval : One of the intervals into which the limit deviation for a nominal diameter of a ball is divided.

Hardness : The measure of resistance to penetration of the ball surface or truncated flat of the ball by a specific indenting shape as determined by specified methods.

Case depth : The distance measured radially from the surface of the ball to a point where the hardness becomes the equivalent to 50 HRC. This term is applicable to case hardened balls only.

Passivation : A chemical treatment to remove corrodible surface impurities and to provide a protective film. This term is applicable to corrosion resisting balls only.