Profile deviation, total
Overlaid profile form deviation and profile slope deviation.

Profile form deviation
Form deviation of the profile without consideration of the slope deviation.

Profile slope deviation
Slope deviation of the profile without consideration of the form deviation.

Profile tip relief
Correction of the profile through material removal on the tooth tip. Avoids jamming with the mating gear under load.

Profile root relief
Correction of the profile through material removal on the tooth root. Avoids jamming with the mating gear under load.

Profile crowning
Correction of the profile through convex curving over a defined range of the tooth height. Compensates for elastic deformations of the tooth under load.

Helix deviation, total
Overlaid helix form deviation and helix slope deviation.

Helix form deviation
Form deviation of the helix without consideration of the slope deviation.

Helix slope deviation
Slope deviation of the helix without consideration of the form deviation.

Helix end relief at datum face
Correction of the helix through material removal on the flank ends of the datum face. Avoids jamming with the mating gear under load.

Helix end relief at non-datum face
Correction of the helix through material removal on the flank ends of the non-datum face. Avoids jamming with the mating gear under load.

Helix crowning
Correction of the helix through convex curving over the face width. Compensates for elastic deformations of the tooth under load.

Pitch deviation, total
Range of the positional deviation of all right (left) flanks to the nominal position, with the flanks being analyzed independently.

Single pitch deviation
Greatest unsigned positional deviation of all individual right (left) flanks to the proceeding right (left) flank.

Adjacent pitch deviation
Greatest unsigned difference of all individual single pitch deviations of all right (left) flanks.

Radial runout deviation
Range of the radial positional deviation of all gaps. Measured by placing a measuring sphere on both flanks of all gaps.

Eccentricity
Eccentricity of the gearing to the reference system axis (boreshaft).

Diameter
Tip circle diameter
Greatest (smallest) diameter of an external gear (internal gear) at the tooth tip.

Root circle diameter
Smallest (greatest) diameter of an external gear (internal gear) at the tooth root.

Tooth thickness
Tooth thickness
Arc length of the distance of a right to a left flank in a transverse section plane on the reference diameter.

Radial dimension
Radial distance of the gear axis to the outermost (innermost) point of a defined measuring sphere fitted in a gap on both flanks of an external gear (internal gear).

Diametral dimension
Distance of two defined measuring spheres (cylinder) fitted in two opposing gaps on both flanks of an external gear (internal gear).

Base tangent length
Distance of two parallel measuring planes that intersect a right and left flank over k teeth (gaps) of an external gear (internal gear) and also lie in a tangential plane on the base circle.

ZEISS Gear Metrology
www.zeiss.com