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General tolerances for linear and angular dimensions and geometrical tolerances

(not to be used for new designs)

DIN 7168

Allgemeintoleranzen; Längen- und Winkelmaße, Form und Lage
(nicht für Neukonstruktionen)

Supersedes May 1981 edition of DIN 7168 Part 1 and July 1986 edition of DIN 7168 Part 2.

This standard is not to be used for new designs. General tolerances for these are now covered by ISO 2768 Parts 1 and 2. See also clause 1 and the Explanatory notes.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

1 Scope

This standard is intended to ensure that all drawings prepared to date in which general tolerances have been specified on the basis of DIN 7168 will remain intelligible and be interpreted correctly, and also to inform the user of this standard that, for all new designs, tolerances are to be specified on the basis of ISO 2768 Parts 1 and 2.

2 Field of application

General tolerances as specified in this standard are applicable for the dimensions of parts produced by metal removal (i.e. chip removal)[1]), unless this involves special manufacturing processes for which other standards specifying general tolerances apply.

General tolerances as specified here shall apply when reference is made to this standard in drawings or associated documents (e.g. delivery conditions) in accordance with clause 5.

If special general tolerances are specified in accordance with other standards (cf. page 6), the standards concerned shall be indicated on the drawing or in the associated documents. If, in cases where production specifications contain references to more than one standard on general tolerances, there is any doubt as to which standard is to apply for a given linear or angular dimension, then the standard specifying the larger tolerance shall be deemed to apply.

Accordingly, a dimension between an unfinished and a finished surface on a blank (e.g. on a casting blank or forging blank), for which no individual tolerance has been indicated, will be required to meet the general tolerance given in the relevant standard on blanks, provided that is indeed the larger tolerance. However, for a dimension between two finished surfaces, the general tolerance specified in DIN 7168 shall always apply.

Production specifications in which linear or angular dimensions (but not auxiliary dimensions) appear without individually indicated tolerances shall be considered incomplete if there is no reference, or inadequate reference, to general tolerances.

General tolerances as specified in this standard apply for:

a) linear dimensions, such as external sizes, internal sizes, step sizes, diameters, clearances (cf. table 1), external radii and chamfer heights for broken edges (cf. table 2);
b) angular dimensions (cf. table 3), both those indicated and those not usually indicated on drawings, such as 90° angles or the angles of regular polygons;
c) linear and angular dimensions produced by machining assembled parts;
d) workpiece features for which no individual tolerances of form and position are indicated.

General tolerances as specified in this standard do not apply for:

a) linear and angular dimensions and workpiece features for which tolerances have been individually indicated;
b) linear and angular dimensions and workpiece features for which other standards on general tolerances are specified in drawings or associated documents;
c) auxiliary dimensions enclosed in brackets (cf. DIN 406 Part 2);
d) theoretically exact dimensions enclosed in rectangular frames as specified in ISO 1101;
e) angular dimensions on circular graduations;
f) 90° angles, not indicated on the drawing, between lines forming coordinate axes;
g) linear and angular dimensions produced by the assembly of parts;
h) workpiece features which are not produced by removal of material, in accordance with the indication of a semi-finished product on drawings.

[1]) For concepts relating to manufacturing processes, see DIN 8580.

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