

Tolerances for fasteners —

**Part 1: Specification for tolerances of
bolts, screws and nuts with thread
diameters ≥ 1.6 mm and ≤ 150 mm and
product grades A, B and C**

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	Water-tube Boilermakers' Association

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

British Industrial Fasteners Federation	Gauge and Tool Makers' Association
British Railways Board	Washer Manufacturers' Association of Great Britain
British Steel Industry (Wire Section)	
Federation of British Hand Tool Manufacturers	

This British Standard, having been prepared under the direction of the Mechanical Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 29 October 1982

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National foreword

This British Standard, which has been prepared under the direction of the Mechanical Engineering Standards Committee, is identical with ISO 4759-1:1978 *“Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters ≥ 1.6 and ≤ 150 mm and product grades A, B and C”* published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards: attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

Cross-references

International standard	Corresponding British Standard
ISO/R 286:1962	BS 4500 <i>ISO limits and fits</i> Part 1:1969 <i>General, tolerances and deviations</i> (Technically equivalent)
ISO 965-3:1980	BS 3643 <i>ISO metric screw threads</i> Part 1:1981 <i>Principles and basic data</i> (Technically equivalent)
ISO/R 1101-1:1969	} BS 308 <i>Engineering drawing practice</i> Part 3:1972 <i>Geometrical tolerancing</i> (Technically equivalent)
ISO 1101-2:1974	

NOTE *Textual errors.* When adopting the text of the international standard, the textual errors listed below were noticed. They have been marked in this British Standard and have been reported to ISO in a proposal to amend the text of the international standard.

Table 3

For nominal dimension 3 and tolerance field Js9 “ $\pm 0,0125$ ” should be read as “ $\pm 0,012$ ”.
For nominal dimensions 3 to 6 and tolerance field EF8 “ $+ 0,028$ ” should be read as “ $+ 0,032$ ”.
For nominal dimensions 10 to 18 and tolerance field D12 “ $+ 0,2$ ” should be read as “ $+ 0,23$ ”.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope and field of application

This International Standard gives a selection of tolerances specified in ISO/R 286, *ISO system of limits and fits — Part I: General, tolerances and deviations*, and in ISO 965-111, *ISO general purpose metric screw threads — Tolerances — Part III: Deviations for constructional threads*, for use in the preparation of ISO product standards for bolts, screws and nuts with thread diameters from 1,6 up to and including 150 mm and product grades A, B and C.

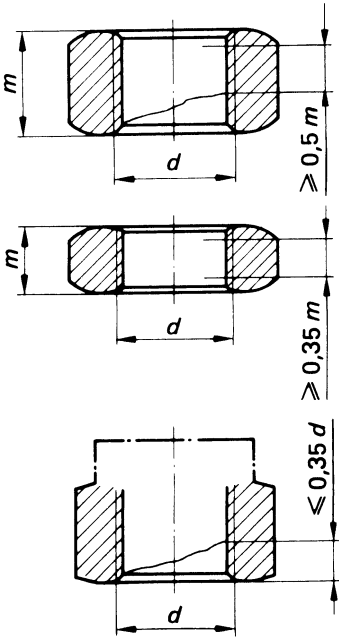
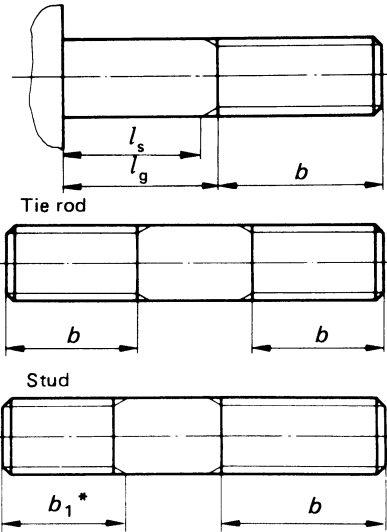
Deviations from the tolerances in this International Standard are permitted in product standards only for valid technical reasons.

It is recommended that these tolerances should also be used for non-standardized fasteners.

The tolerances of form and of position conform to ISO/R 1101-I, *Technical drawings — Tolerances of form and of position — Part I: Generalities, symbols, indications on drawings*.

In cases where the maximum material principle according to ISO 1101-II, *Technical drawings — Tolerances of forms and of position — Part II: Maximum material principle*, is appropriate to certain features of certain products in these ISO product standards, other tolerances may be applicable.

NOTE The product grades refer to the quality of the product and to the size of the tolerances where grade A is the most precise and grade C is the least precise.

Feature	Tolerance for product grades			Notes
	A	B	C	
2 Tolerance level Shank and bearing surface Other features	close close	close wide	wide wide	
3 Thread 3.1 Internal (nuts)	6H	6H	7H	For electroplated coatings and hot dip galvanizing, International Standards are in preparation. For all nuts of heights $\geq 0,8 d$ the minor diameter shall be within the specified tolerances for a minimum of 0,5 m nominal (only for sizes $\geq M3$). For all nuts of heights $\geq 0,5 d < 0,8 d$ the minor diameter shall be within the specified tolerances for a minimum of 0,35 m nominal. For prevailing torque type nuts the minor diameter may exceed the specified tolerance for a maximum height of 0,35 d from the non-restricted end.
				
3.2 External (bolts and screws)	6g	6g	8g	For electroplated coatings and hot dip galvanizing, International Standards are in preparation.
4 Thread length				P = pitch of thread l_s is the minimum length of the unthreaded (plain) shank. l_g is the maximum length of the unthreaded shank (thread run-out included) and is therefore the minimum clamping length. Tolerance $+2 P$ only for such bolts where l_s and l_g are not fixed in the product standard * Only stud end of studs.
	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	
	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	
	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	$b \begin{smallmatrix} +2 P \\ 0 \end{smallmatrix}$	
	$b_1 j_s 16$	$b_1 j_s 17$	$b_1 j_s 17$	