

BRITISH STANDARD

ISO metric screw threads

Part 2: Specification for selected limits of size

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 42, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 3643 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 November 2007. It was prepared by Subcommittee SFTSE/1, *Screws and fasteners technical specification committee*, under the authority of Technical Committee FME/9, *Nuts, bolts and accessories*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This part of BS 3643 supersedes BS 3643-2:1981, which is withdrawn.

Relationship with other publications

BS 3643 consists of the following parts:

- *Part 1: Principles and basic data;*
- *Part 2: Specification for selected limits of size.*

Information about this document

This part of BS 3643 has been revised to bring it up to date.

Text introduced by or altered Corrigendum No. 1 is indicated in the text by tags **[C1]** **[C1]**. Minor editorial corrections are not tagged.

Hazard warnings

WARNING. Attention is drawn to the fact that, with the different screw thread forms available, there is the possibility of a mismatch, which is potentially hazardous. It is the responsibility of the designer of the end product to ensure that this possibility is reduced to a minimum. For further information on mismatches of screw thread systems see PD 6494.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This part of this BS 3643 specifies the fundamental deviations, tolerances and limits of size for the tolerance classes 4H, 5H, 6H and 7H for internal threads and 4h, 6g and 8g for external threads where appropriate for:

- a coarse pitch series with the range 1 mm to 68 mm diameter;
- a fine pitch series with the range 1 mm to 33 mm diameter;
- a constant pitch series with the range 8 mm to 300 mm diameter.

For certain diameter/pitch combinations, the fundamental deviations, tolerances and limits of size for tolerance class 4H for internal threads and tolerance classes 6h and 4g for external threads, primarily for aerospace use, are specified in Annex A.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 3643-1:2007, *ISO metric screw threads – Principles and basic data*

3 Terms and definitions

For the purposes of this part of BS 3643 the terms and definitions given in BS 3643-1:2007 apply.

4 Designation

The complete designation for a screw thread shall comprise a designation for the thread system and a designation for the thread tolerance class in accordance with BS 3643-1:2007, 7.3.

EXAMPLES:

External thread

M10 – 6g

Thread of 10 mm nominal diameter in the coarse thread series _____

Tolerance class for pitch and major diameters _____

M10 x 1 – 6g

Thread of 10 mm nominal diameter having a pitch of 1 mm _____

Tolerance class for pitch and major diameters _____

Internal thread

M10 – 6H

Thread of 10 mm nominal diameter in the coarse thread series _____

Tolerance class for pitch and minor diameters _____

5 Requirements

Fundamental deviations, tolerances and limits of size shall be as specified in Table 1.

NOTE For the minor diameter of external threads Table 1 specifies the minimum dimensions only. The maximum dimensions have not been specified because of the requirement in BS 3643-1:2007, 7.9, that these dimensions are to be controlled by the GO gauge.

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Nominal diameter	Pitch			External threads						Internal threads											
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter		
						max.	tol.	min.	max.	tol.	min.					max.	tol.	min.	max.	tol.	min.
1		0.2		4h	0	1.000	0.036	0.964	0.870	0.030	0.840	0.717	4H	0	1.000	0.910	0.040	0.870	0.821	0.038	0.783
				6g	0.017	0.983	0.056	0.927	0.853	0.048	0.805	0.682									
	0.25			4h	0	1.000	0.042	0.958	0.838	0.034	0.804	0.649	4H	0	1.000	0.883	0.045	0.838	0.774	0.045	0.729
1.1				6g	0.018	0.982	0.067	0.915	0.820	0.053	0.767	0.613	5H	0	1.000	0.894	0.056	0.838	0.785	0.056	0.729
		0.2		4h	0	1.100	0.036	1.064	0.970	0.030	0.940	0.817	4H	0	1.100	1.010	0.040	0.970	0.921	0.038	0.883
				6g	0.017	1.083	0.056	1.027	0.953	0.048	0.905	0.782									
0.25				4h	0	1.100	0.042	1.058	0.938	0.034	0.904	0.750	4H	0	1.100	0.983	0.045	0.938	0.874	0.045	0.829
				6g	0.018	1.082	0.067	1.015	0.920	0.053	0.867	0.713	5H	0	1.100	0.994	0.056	0.938	0.885	0.056	0.829
		0.2		4h	0	1.200	0.036	1.164	1.070	0.030	1.040	0.917	4H	0	1.200	1.110	0.040	1.070	1.021	0.038	0.983
0.25				6g	0.017	1.183	0.056	1.127	1.053	0.048	1.005	0.882									
				4h	0	1.200	0.042	1.158	1.038	0.034	1.004	0.850	4H	0	1.200	1.083	0.045	1.038	0.974	0.045	0.929
				6g	0.018	1.182	0.067	1.115	1.020	0.053	0.967	0.813	5H	0	1.200	1.094	0.056	1.038	0.985	0.056	0.929
0.14		0.2		4h	0	1.400	0.036	1.364	1.270	0.030	1.240	1.117	4H	0	1.400	1.310	0.040	1.270	1.221	0.038	1.183
				6g	0.017	1.383	0.056	1.327	1.253	0.048	1.205	1.082									
	0.3			4h	0	1.400	0.048	1.352	1.205	0.036	1.169	0.984	4H	0	1.400	1.253	0.048	1.205	1.128	0.053	1.075
0.16				6g	0.018	1.382	0.075	1.307	1.187	0.056	1.131	0.946	5H	0	1.400	1.265	0.060	1.205	1.142	0.067	1.075
		0.2		4h	0	1.600	0.036	1.564	1.470	0.032	1.438	1.315	4H	0	1.600	1.512	0.042	1.470	1.421	0.038	1.383
				6g	0.017	1.583	0.056	1.527	1.453	0.050	1.403	1.280									
0.35				4h	0	1.600	0.053	1.547	1.373	0.040	1.333	1.117	4H	0	1.600	1.426	0.053	1.373	1.284	0.063	1.221
				6g	0.019	1.581	0.085	1.496	1.354	0.063	1.291	1.075	5H	0	1.600	1.440	0.067	1.373	1.301	0.080	1.221
													6H	0	1.600	1.458	0.085	1.373	1.321	0.100	1.221

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (*continued*)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
Nominal diameter	Pitch		External threads											Internal threads									
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter		Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter			
						max.	tol.	min.	max.	tol.	min.	min.	max.				tol.	min.	max.	tol.	min.	max.	tol.
1.8	0.35	0.2		4h	0	1.800	0.036	1.764	1.670	0.032	1.638	1.515	4H	0	1.800	1.712	0.042	1.670	1.621	0.038	1.583		
				6g	0.017	1.783	0.056	1.727	1.653	0.050	1.603	1.480											
				4h	0	1.800	0.053	1.747	1.573	0.040	1.533	1.317	4H	0	1.800	1.626	0.053	1.573	1.484	0.063	1.421		
2	0.4	0.25		6g	0.019	1.781	0.085	1.696	1.554	0.063	1.491	1.275	5H	0	1.800	1.658	0.067	1.573	1.501	0.080	1.421		
				6g								6H	0	1.800	1.658	0.085	1.573	1.521	0.100	1.421			
				4h	0	2.000	0.042	1.958	1.838	0.036	1.802	1.648	4H	0	2.000	1.886	0.048	1.838	1.774	0.045	1.729		
2.2	0.4	0.25		6g	0.018	1.982	0.067	1.915	1.820	0.056	1.764	1.610	5H	0	2.000	1.898	0.060	1.838	1.785	0.056	1.729		
				4h	0	2.000	0.060	1.940	1.740	0.042	1.698	1.452	4H	0	2.000	1.796	0.056	1.740	1.638	0.071	1.567		
				6g	0.019	1.981	0.095	1.886	1.721	0.067	1.654	1.408	5H	0	2.000	1.811	0.071	1.740	1.657	0.090	1.567		
2.5	0.45	0.25		6g	0.020	2.180	0.100	2.080	1.888	0.071	1.817	1.539	6H	0	2.200	1.830	0.090	1.740	1.679	0.112	1.567		
				4h	0	2.200	0.042	2.158	2.038	0.036	2.002	1.848	4H	0	2.200	2.086	0.048	2.038	1.974	0.045	1.929		
				6g	0.018	2.182	0.067	2.115	2.020	0.056	1.964	1.810	5H	0	2.200	2.098	0.060	2.038	1.985	0.056	1.929		
2.5	0.45	0.35		4h	0	2.200	0.063	2.137	1.908	0.045	1.863	1.585	4H	0	2.200	1.968	0.060	1.908	1.793	0.080	1.713		
				6g	0.020	2.180	0.100	2.080	1.888	0.071	1.817	1.539	5H	0	2.200	1.983	0.075	1.908	1.813	0.100	1.713		
				6g								6H	0	2.200	2.003	0.095	1.908	1.838	0.125	1.713			
2.5	0.45	0.35		4h	0	2.500	0.053	2.447	2.273	0.040	2.233	2.017	4H	0	2.500	2.326	0.053	2.273	2.184	0.063	2.121		
				6g	0.019	2.481	0.085	2.396	2.254	0.063	2.191	1.975	5H	0	2.500	2.340	0.067	2.273	2.201	0.080	2.121		
				6g								6H	0	2.500	2.358	0.085	2.273	2.221	0.100	2.121			
3	0.45	0.35		4h	0	2.500	0.063	2.437	2.208	0.045	2.163	1.885	4H	0	2.500	2.268	0.060	2.208	2.093	0.080	2.013		
				6g	0.020	2.480	0.100	2.380	2.188	0.071	2.117	1.839	5H	0	2.500	2.283	0.075	2.208	2.113	0.100	2.013		
				6g								6H	0	2.500	2.303	0.095	2.208	2.138	0.125	2.013			
3	0.5	0.35		4h	0	3.000	0.053	2.947	2.773	0.042	2.731	2.515	4H	0	3.000	2.829	0.056	2.773	2.684	0.063	2.621		
				6g	0.019	2.981	0.085	2.896	2.754	0.067	2.687	2.471	5H	0	3.000	2.844	0.071	2.773	2.701	0.080	2.621		
				6g								6H	0	3.000	2.863	0.090	2.773	2.721	0.100	2.621			
3	0.5	0.35		4h	0	3.000	0.067	2.933	2.675	0.048	2.627	2.319	5H	0	3.000	2.755	0.080	2.675	2.571	0.112	2.459		
				6g	0.020	2.980	0.106	2.874	2.655	0.075	2.580	2.272	6H	0	3.000	2.775	0.100	2.675	2.599	0.140	2.459		
				6g								7H	0	3.000	2.800	0.125	2.675	2.639	0.180	2.459			

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Nominal diameter	Pitch				External threads				Internal threads												
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter		
						max.	tol.	min.	max.	tol.	min.					max.	tol.	min.	max.	tol.	min.
3.5		0.35		4h	0	3.500	0.053	3.447	3.273	0.042	3.231	3.015	4H	0	3.500	3.329	0.056	3.273	3.184	0.063	3.121
				6g	0.019	3.481	0.085	3.396	3.254	0.067	3.187	2.971	5H	0	3.500	3.344	0.071	3.273	3.201	0.080	3.121
4	0.6			4h	0	3.500	0.080	3.420	3.110	0.053	3.057	2.688	5H	0	3.500	3.200	0.090	3.110	2.975	0.125	2.850
				6g	0.021	3.479	0.125	3.354	3.089	0.085	3.004	2.635	6H	0	3.500	3.222	0.112	3.110	3.010	0.160	2.850
4.5				4h	0	4.000	0.067	3.933	3.675	0.048	3.627	3.319	5H	0	4.000	3.755	0.080	3.675	3.571	0.112	3.459
		0.5		6g	0.020	3.980	0.106	3.874	3.655	0.075	3.580	3.272	6H	0	4.000	3.775	0.100	3.675	3.599	0.140	3.459
5	0.7			4h	0	4.000	0.090	3.910	3.545	0.056	3.489	3.058	5H	0	4.000	3.640	0.095	3.545	3.382	0.140	3.242
				6g	0.022	3.978	0.140	3.838	3.523	0.090	3.433	3.002	6H	0	4.000	3.663	0.118	3.545	3.422	0.180	3.242
4.5		0.5		4h	0	4.500	0.067	4.433	4.175	0.048	4.127	3.819	5H	0	4.500	4.255	0.080	4.175	4.071	0.112	3.959
				6g	0.020	4.480	0.106	4.374	4.155	0.075	4.080	3.772	6H	0	4.500	4.275	0.100	4.175	4.099	0.140	3.959
5	0.75			4h	0	4.500	0.090	4.410	4.013	0.056	3.957	3.495	5H	0	4.500	4.108	0.095	4.013	3.838	0.150	3.688
				6g	0.022	4.478	0.140	4.338	3.991	0.090	3.901	3.439	6H	0	4.500	4.131	0.118	4.013	3.878	0.190	3.688
5		0.5		4h	0	5.000	0.067	4.933	4.675	0.048	4.627	4.319	5H	0	5.000	4.755	0.080	4.675	4.571	0.112	4.459
				6g	0.020	4.980	0.106	4.874	4.655	0.075	4.580	4.272	6H	0	5.000	4.775	0.100	4.675	4.599	0.140	4.459
5.5	0.8			4h	0	5.000	0.095	4.905	4.480	0.060	4.420	3.927	5H	0	5.000	4.580	0.100	4.480	4.294	0.160	4.134
				6g	0.024	4.976	0.150	4.826	4.456	0.095	4.361	3.868	6H	0	5.000	4.605	0.125	4.480	4.334	0.200	4.134
5.5		0.5		4h	0	5.500	0.067	5.433	5.175	0.048	5.127	4.819	5H	0	5.500	5.255	0.080	5.175	5.071	0.112	4.959
				6g	0.020	5.480	0.106	5.374	5.155	0.075	5.080	4.772	6H	0	5.500	5.275	0.100	5.175	5.099	0.140	4.959
													7H	0	5.500	5.300	0.125	5.175	5.139	0.180	4.959

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
Nominal diameter	Pitch		External threads													Internal threads							
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter				
						max.	tol.	min.	max.	tol.	min.					max.	tol.	min.	max.	tol.	min.	max.	tol.
6		0.75		4h	0	6.000	0.090	5.910	5.513	0.063	5.450	4.988	5H	0	6.000	5.619	5.513	5.338	0.150	5.188			
				6g	0.022	5.978	0.140	5.838	5.491	0.100	5.391	4.929	6H	0	6.000	5.645	5.513	5.378	0.190	5.188			
	1			4h	0	6.000	0.112	5.888	5.350	0.071	5.279	4.663	5H	0	6.000	5.468	5.350	5.107	0.190	4.917			
7				6g	0.026	5.974	0.180	5.794	5.324	0.112	5.212	4.597	6H	0	6.000	5.500	5.350	5.153	0.236	4.917			
				8g	0.026	5.974	0.280	5.694	5.324	0.180	5.144	4.528	7H	0	6.000	5.540	5.350	5.217	0.300	4.917			
	1	0.75		4h	0	7.000	0.090	6.910	6.513	0.063	6.450	5.988	5H	0	7.000	6.619	6.513	6.338	0.150	6.188			
8				6g	0.022	6.978	0.140	6.838	6.491	0.100	6.391	5.929	6H	0	7.000	6.645	6.513	6.378	0.190	6.188			
				4h	0	8.000	0.090	7.910	7.513	0.063	7.450	6.988	5H	0	8.000	7.619	7.513	7.338	0.150	7.188			
			0.75	6g	0.022	7.978	0.140	7.838	7.491	0.100	7.391	6.929	7H	0	8.000	7.683	7.513	7.378	0.190	7.188			
9		1		4h	0	8.000	0.112	7.888	7.350	0.071	7.279	6.663	5H	0	8.000	7.468	7.350	7.107	0.190	6.917			
				6g	0.026	7.974	0.180	7.794	7.324	0.112	7.212	6.596	6H	0	8.000	7.500	7.350	7.153	0.236	6.917			
	1.25			8g	0.026	7.974	0.280	7.694	7.324	0.180	7.144	6.528	7H	0	8.000	7.540	7.350	7.217	0.300	6.917			
10				4h	0	8.000	0.132	7.868	7.188	0.075	7.113	6.343	5H	0	8.000	7.313	7.188	6.859	0.212	6.647			
				6g	0.028	7.972	0.212	7.760	7.160	0.118	7.042	6.272	6H	0	8.000	7.348	7.188	6.912	0.265	6.647			
				8g	0.028	7.972	0.335	7.637	7.160	0.190	6.970	6.200	7H	0	8.000	7.388	7.188	6.982	0.335	6.647			
11			0.75	4h	0	9.000	0.090	8.910	8.513	0.063	8.450	7.988	5H	0	9.000	8.619	8.513	8.338	0.150	8.188			
				6g	0.022	8.978	0.140	8.838	8.491	0.100	8.391	7.929	6H	0	9.000	8.645	8.513	8.378	0.190	8.188			
				8g	0.026	8.974	0.280	8.694	8.324	0.180	8.144	7.528	7H	0	9.000	8.683	8.513	8.424	0.236	8.188			
12			1	4h	0	9.000	0.112	8.888	8.350	0.071	8.279	7.663	5H	0	9.000	8.468	8.350	8.107	0.190	7.917			
				6g	0.026	8.974	0.180	8.794	8.324	0.112	8.212	7.596	6H	0	9.000	8.500	8.350	8.153	0.236	7.917			
				8g	0.026	8.974	0.280	8.694	8.324	0.180	8.144	7.528	7H	0	9.000	8.540	8.350	8.217	0.300	7.917			
13				4h	0	9.000	0.132	8.868	8.188	0.075	8.113	7.343	5H	0	9.000	8.313	8.188	7.859	0.212	7.647			
				6g	0.028	8.972	0.212	8.760	8.160	0.118	8.042	7.272	6H	0	9.000	8.348	8.188	7.912	0.265	7.647			
	1.25			8g	0.028	8.972	0.335	8.637	8.160	0.190	7.970	7.200	7H	0	9.000	8.388	8.188	7.982	0.335	7.647			

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Nominal diameter	Pitch		External threads						Internal threads													
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter			
						max.	tol.	min.	max.	tol.	min.					max.	tol.	min.	max.	tol.	min.	
10				4h	0	10.000	0.090	9.910	9.513	0.063	9.450	8.988	5H	0	10.000	9.619	0.106	9.513	9.338	0.150	9.188	
				6g	0.022	9.978	0.140	9.838	9.491	0.100	9.391	8.929	6H	0	10.000	9.645	0.132	9.513	9.378	0.190	9.188	
				8g									7H	0	10.000	9.683	0.170	9.513	9.424	0.236	9.188	
			1	4h	0	10.000	0.112	9.888	9.350	0.071	9.279	8.663	5H	0	10.000	9.468	0.118	9.350	9.107	0.190	8.917	
				6g	0.026	9.974	0.180	9.794	9.324	0.112	9.212	8.596	6H	0	10.000	9.500	0.150	9.350	9.153	0.236	8.917	
11				8g	0.026	9.974	0.280	9.694	9.324	0.180	9.144	8.528	7H	0	10.000	9.540	0.190	9.350	9.217	0.300	8.917	
		1.25		4h	0	10.000	0.132	9.868	9.188	0.075	9.113	8.343	5H	0	10.000	9.313	0.125	9.188	8.859	0.212	8.647	
				6g	0.028	9.972	0.212	9.760	9.160	0.118	9.042	8.272	6H	0	10.000	9.348	0.160	9.188	8.912	0.265	8.647	
				8g	0.028	9.972	0.335	9.637	9.160	0.190	8.970	8.200	7H	0	10.000	9.388	0.200	9.188	8.982	0.335	8.647	
	1.5			4h	0	10.000	0.150	9.850	9.026	0.085	8.941	8.018	5H	0	10.000	9.166	0.140	9.026	8.612	0.236	8.376	
12				6g	0.032	9.968	0.236	9.732	8.994	0.132	8.862	7.938	6H	0	10.000	9.206	0.180	9.026	8.676	0.300	8.376	
				8g	0.032	9.968	0.375	9.593	8.994	0.212	8.782	7.858	7H	0	10.000	9.250	0.224	9.026	8.751	0.375	8.376	
			0.75	4h	0	11.000	0.090	10.910	10.513	0.063	10.450	9.988	5H	0	11.000	10.619	0.106	10.513	10.338	0.150	10.188	
				6g	0.022	10.978	0.140	10.838	10.491	0.100	10.391	9.929	6H	0	11.000	10.645	0.132	10.513	10.378	0.190	10.188	
				8g									7H	0	11.000	10.683	0.170	10.513	10.424	0.236	10.188	
13			1	4h	0	11.000	0.112	10.888	10.350	0.071	10.279	9.663	5H	0	11.000	10.468	0.118	10.350	10.107	0.190	9.917	
				6g	0.026	10.974	0.180	10.794	10.324	0.112	10.212	9.596	6H	0	11.000	10.500	0.150	10.350	10.153	0.236	9.917	
				8g	0.026	10.974	0.280	10.694	10.324	0.180	10.144	9.528	7H	0	11.000	10.540	0.190	10.350	10.217	0.300	9.917	
	1.5			4h	0	11.000	0.150	10.850	10.026	0.085	9.941	9.018	5H	0	11.000	10.166	0.140	10.026	9.612	0.236	9.376	
				6g	0.032	10.968	0.236	10.732	9.994	0.132	9.862	8.938	6H	0	11.000	10.206	0.180	10.026	9.676	0.300	9.376	
14				8g	0.032	10.968	0.375	10.593	9.994	0.212	9.782	8.858	7H	0	11.000	10.250	0.224	10.026	9.751	0.375	9.376	
			1	4h	0	12.000	0.112	11.888	11.350	0.075	11.275	10.659	5H	0	12.000	11.475	0.125	11.350	11.107	0.190	10.917	
				6g	0.026	11.974	0.180	11.794	11.324	0.118	11.206	10.590	6H	0	12.000	11.510	0.160	11.350	11.153	0.236	10.917	
				8g	0.026	11.974	0.280	11.694	11.324	0.190	11.134	10.518	7H	0	12.000	11.550	0.200	11.350	11.217	0.300	10.917	
			1.25	4h	0	12.000	0.132	11.868	11.188	0.085	11.103	10.333	5H	0	12.000	11.328	0.140	11.188	10.859	0.212	10.647	
15				6g	0.028	11.972	0.212	11.760	11.160	0.132	11.028	10.257	6H	0	12.000	11.368	0.180	11.188	10.912	0.265	10.647	
				8g	0.028	11.972	0.335	11.637	11.160	0.212	10.948	10.177	7H	0	12.000	11.412	0.224	11.188	10.982	0.335	10.647	
			1.5	4h	0	12.000	0.150	11.850	11.026	0.090	10.936	10.012	5H	0	12.000	11.176	0.150	11.026	10.612	0.236	10.376	
				6g	0.032	11.968	0.236	11.732	10.994	0.140	10.854	9.930	6H	0	12.000	11.216	0.190	11.026	10.676	0.300	10.376	
				8g	0.032	11.968	0.375	11.593	10.994	0.224	10.770	9.846	7H	0	12.000	11.262	0.236	11.026	10.751	0.375	10.376	
16	1.75			4h	0	12.000	0.170	11.830	10.863	0.095	10.768	9.692	5H	0	12.000	11.023	0.160	10.863	10.371	0.265	10.106	
				6g	0.034	11.966	0.265	11.701	10.829	0.150	10.679	9.602	6H	0	12.000	11.063	0.200	10.863	10.441	0.335	10.106	
				8g	0.034	11.966	0.425	11.541	10.829	0.236	10.593	9.516	7H	0	12.000	11.113	0.250	10.863	10.531	0.425	10.106	

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Nominal diameter	Pitch		External threads										Internal threads									
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter		Pitch diameter		Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter		Minor diameter						
						max.	tol.	min.	max.					tol.	min.	max.	tol.	min.	max.	tol.	min.	
14			1	4h	0	14.000	0.112	13.888	13.350	0.075	13.275	12.659	5H	0	14.000	13.475	0.125	13.350	13.107	0.190	12.917	
				6g	0.026	13.974	0.180	13.794	13.324	0.118	13.206	12.590	6H	0	14.000	13.510	0.160	13.350	13.153	0.236	12.917	
				8g	0.026	13.974	0.280	13.694	13.324	0.190	13.134	12.518	7H	0	14.000	13.550	0.200	13.350	13.217	0.300	12.917	
				4h	0	14.000	0.132	13.868	13.188	0.085	13.103	12.333	5H	0	14.000	13.328	0.140	13.188	12.859	0.212	12.647	
			1.25	6g	0.028	13.972	0.212	13.760	13.160	0.132	13.028	12.257	6H	0	14.000	13.368	0.180	13.188	12.912	0.265	12.647	
				8g	0.028	13.972	0.335	13.637	13.160	0.212	12.948	12.177	7H	0	14.000	13.412	0.224	13.188	12.982	0.335	12.647	
				4h	0	14.000	0.150	13.850	13.026	0.090	12.936	12.012	5H	0	14.000	13.176	0.150	13.026	12.612	0.236	12.376	
				6g	0.032	13.968	0.236	13.732	12.994	0.140	12.854	11.930	6H	0	14.000	13.216	0.190	13.026	12.676	0.300	12.376	
2				8g	0.032	13.968	0.375	13.593	12.994	0.224	12.770	11.846	7H	0	14.000	13.262	0.236	13.026	12.751	0.375	12.376	
				4h	0	14.000	0.180	13.820	12.701	0.100	12.601	11.369	5H	0	14.000	12.871	0.170	12.701	12.135	0.300	11.835	
				6g	0.038	13.962	0.280	13.682	12.663	0.160	12.503	11.271	6H	0	14.000	12.913	0.212	12.701	12.210	0.375	11.835	
				8g	0.038	13.962	0.450	13.512	12.663	0.250	12.413	11.181	7H	0	14.000	12.966	0.265	12.701	12.310	0.475	11.835	
15		1	4h	0	15.000	0.112	14.888	14.350	0.075	14.275	13.659	5H	0	15.000	14.475	0.125	14.350	14.107	0.190	13.917		
			6g	0.026	14.974	0.180	14.794	14.324	0.118	14.206	13.590	6H	0	15.000	14.510	0.160	14.350	14.153	0.236	13.917		
			8g	0.026	14.974	0.280	14.694	14.324	0.190	14.134	13.518	7H	0	15.000	14.550	0.200	14.350	14.217	0.300	13.917		
			4h	0	15.000	0.150	14.850	14.026	0.090	13.936	13.012	5H	0	15.000	14.176	0.150	14.026	13.612	0.236	13.376		
			1.5	6g	0.032	14.968	0.236	14.732	13.994	0.140	13.854	12.930	6H	0	15.000	14.216	0.190	14.026	13.676	0.300	13.376	
				8g	0.032	14.968	0.375	14.593	13.994	0.224	13.770	12.846	7H	0	15.000	14.262	0.236	14.026	13.751	0.375	13.376	
				4h	0	16.000	0.112	15.888	15.350	0.075	15.275	14.659	5H	0	16.000	15.475	0.125	15.350	15.107	0.190	14.917	
				6g	0.026	15.974	0.180	15.794	15.324	0.118	15.206	14.590	6H	0	16.000	15.510	0.160	15.350	15.153	0.236	14.917	
16			1	8g	0.026	15.974	0.280	15.694	15.324	0.190	15.134	14.518	7H	0	16.000	15.550	0.200	15.350	15.217	0.300	14.917	
				4h	0	16.000	0.150	15.850	15.026	0.090	14.936	14.012	5H	0	16.000	15.176	0.150	15.026	14.612	0.236	14.376	
				6g	0.032	15.968	0.236	15.732	14.994	0.140	14.854	13.930	6H	0	16.000	15.216	0.190	15.026	14.676	0.300	14.376	
				8g	0.032	15.968	0.375	15.593	14.994	0.224	14.770	13.846	7H	0	16.000	15.262	0.236	15.026	14.751	0.375	14.376	
2			1.5	4h	0	16.000	0.180	15.820	14.701	0.100	14.601	13.369	5H	0	16.000	14.871	0.170	14.701	14.135	0.300	13.835	
				6g	0.038	15.962	0.280	15.682	14.663	0.160	14.503	13.271	6H	0	16.000	14.913	0.212	14.701	14.210	0.375	13.835	
				8g	0.038	15.962	0.450	15.512	14.663	0.250	14.413	13.181	7H	0	16.000	14.966	0.265	14.701	14.310	0.475	13.835	
				4h	0	17.000	0.112	16.888	16.350	0.075	16.275	15.659	5H	0	17.000	16.475	0.125	16.350	16.107	0.190	15.917	
			1	6g	0.026	16.974	0.180	16.794	16.324	0.118	16.206	15.590	6H	0	17.000	16.510	0.160	16.350	16.153	0.236	15.917	
				8g	0.026	16.974	0.280	16.694	16.324	0.190	16.134	15.518	7H	0	17.000	16.550	0.200	16.350	16.217	0.300	15.917	
				4h	0	17.000	0.150	16.850	16.026	0.090	15.936	15.012	5H	0	17.000	16.176	0.150	16.026	15.612	0.236	15.376	
				6g	0.032	16.968	0.236	16.732	15.994	0.140	15.854	14.930	6H	0	17.000	16.216	0.190	16.026	15.676	0.300	15.376	
17			1.5	8g	0.032	16.968	0.375	16.593	15.994	0.224	15.770	14.846	7H	0	17.000	16.262	0.236	16.026	15.751	0.375	15.376	

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Nominal diameter	Pitch			External threads			Internal threads															
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter			
						max.	tol.	min.	max.	tol.	min.					max.	tol.	min.	max.	tol.	min.	
18	1			4h	0	18.000	0.112	17.888	17.350	0.075	17.275	16.659	5H	0	18.000	17.475	0.125	17.350	17.107	0.190	16.917	
				6g	0.026	17.974	0.180	17.794	17.324	0.118	17.206	16.590	6H	0	18.000	17.510	0.160	17.350	17.153	0.236	16.917	
				8g	0.026	17.974	0.280	17.694	17.324	0.190	17.134	16.518	7H	0	18.000	17.550	0.200	17.350	17.217	0.300	16.917	
	1.5			4h	0	18.000	0.150	17.850	17.026	0.090	16.936	16.012	5H	0	18.000	17.176	0.150	17.026	16.612	0.236	16.376	
				6g	0.032	17.968	0.236	17.732	16.994	0.140	16.854	15.930	6H	0	18.000	17.216	0.190	17.026	16.676	0.300	16.376	
				8g	0.032	17.968	0.375	17.593	16.994	0.224	16.770	15.846	7H	0	18.000	17.262	0.236	17.026	16.751	0.375	16.376	
20	2			4h	0	18.000	0.180	17.820	16.701	0.100	16.601	15.369	5H	0	18.000	16.871	0.170	16.701	16.135	0.300	15.835	
				6g	0.038	17.962	0.280	17.682	16.663	0.160	16.503	15.271	6H	0	18.000	16.913	0.212	16.701	16.210	0.375	15.835	
				8g	0.038	17.962	0.450	17.512	16.663	0.250	16.413	15.181	7H	0	18.000	16.966	0.265	16.701	16.310	0.475	15.835	
	2.5				4h	0	18.000	0.212	17.788	16.376	0.106	16.270	14.730	5H	0	18.000	16.556	0.180	16.376	15.649	0.355	15.294
					6g	0.042	17.958	0.335	17.623	16.334	0.170	16.164	14.624	6H	0	18.000	16.600	0.224	16.376	15.744	0.450	15.294
					8g	0.042	17.958	0.530	17.428	16.334	0.265	16.069	14.529	7H	0	18.000	16.656	0.280	16.376	15.854	0.560	15.294
20	1			4h	0	20.000	0.112	19.888	19.350	0.075	19.275	18.659	5H	0	20.000	19.475	0.125	19.350	19.107	0.190	18.917	
				6g	0.026	19.974	0.180	19.794	19.324	0.118	19.206	18.590	6H	0	20.000	19.510	0.160	19.350	19.153	0.236	18.917	
				8g	0.026	19.974	0.280	19.694	19.324	0.190	19.134	18.518	7H	0	20.000	19.550	0.200	19.350	19.217	0.300	18.917	
	1.5				4h	0	20.000	0.150	19.850	19.026	0.090	18.936	18.012	5H	0	20.000	19.176	0.150	19.026	18.612	0.236	18.376
					6g	0.032	19.968	0.236	19.732	18.994	0.140	18.854	17.930	6H	0	20.000	19.216	0.190	19.026	18.676	0.300	18.376
					8g	0.032	19.968	0.375	19.593	18.994	0.224	18.770	17.846	7H	0	20.000	19.262	0.236	19.026	18.751	0.375	18.376
20	2				4h	0	20.000	0.180	19.820	18.701	0.100	18.601	17.369	5H	0	20.000	18.871	0.170	18.701	18.135	0.300	17.835
					6g	0.038	19.962	0.280	19.682	18.663	0.160	18.503	17.271	6H	0	20.000	18.913	0.212	18.701	18.210	0.375	17.835
					8g	0.038	19.962	0.450	19.512	18.663	0.250	18.413	17.181	7H	0	20.000	18.966	0.265	18.701	18.310	0.475	17.835
	2.5				4h	0	20.000	0.212	19.788	18.376	0.106	18.270	16.730	5H	0	20.000	18.556	0.180	18.376	17.649	0.355	17.294
					6g	0.042	19.958	0.335	19.623	18.334	0.170	18.164	16.624	6H	0	20.000	18.600	0.224	18.376	17.744	0.450	17.294
					8g	0.042	19.958	0.530	19.428	18.334	0.265	18.069	16.529	7H	0	20.000	18.656	0.280	18.376	17.854	0.560	17.294

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Nominal diameter	Pitch		External threads						Internal threads															
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter		Pitch diameter		Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter		Minor diameter		Tolerance class	Fund dev.	Major diameter	Pitch diameter		Minor diameter	
						max.	tol.	min.	max.					tol.	min.	max.	tol.				min.	max.	tol.	min.
22		1	4h	0	22.000	0.112	21.888	21.350	0.075	21.275	20.659	5H	0	22.000	21.475	0.125	21.350	21.107	0.190	20.917				
			6g	0.026	21.974	0.180	21.794	21.324	0.118	21.206	20.590	6H	0	22.000	21.510	0.160	21.350	21.153	0.236	20.917				
			8g	0.026	21.974	0.280	21.694	21.324	0.190	21.134	20.518	7H	0	22.000	21.550	0.200	21.350	21.217	0.300	20.917				
	1.5	4h	0	22.000	0.150	21.850	21.026	0.090	20.936	20.012	5H	0	22.000	21.176	0.150	21.026	20.612	0.236	20.376					
		6g	0.032	21.968	0.236	21.732	20.994	0.140	20.854	19.930	6H	0	22.000	21.216	0.190	21.026	20.676	0.300	20.376					
		8g	0.032	21.968	0.375	21.593	20.994	0.224	20.770	19.846	7H	0	22.000	21.262	0.236	21.026	20.751	0.375	20.376					
24		2	4h	0	22.000	0.180	21.820	20.701	0.100	20.601	19.369	5H	0	22.000	20.871	0.170	20.701	20.135	0.300	19.835				
			6g	0.038	21.962	0.280	21.682	20.663	0.160	20.503	19.271	6H	0	22.000	20.913	0.212	20.701	20.210	0.375	19.835				
			8g	0.038	21.962	0.450	21.512	20.663	0.250	20.413	19.181	7H	0	22.000	20.966	0.265	20.701	20.310	0.475	19.835				
	2.5	4h	0	22.000	0.212	21.788	20.376	0.106	20.270	18.730	5H	0	22.000	20.556	0.180	20.376	19.649	0.335	19.294					
		6g	0.042	21.958	0.335	21.623	20.334	0.170	20.164	18.624	6H	0	22.000	20.600	0.224	20.376	19.744	0.450	19.294					
		8g	0.042	21.958	0.530	21.428	20.334	0.265	20.069	18.529	7H	0	22.000	20.656	0.280	20.376	19.854	0.560	19.294					
25		1	4h	0	24.000	0.112	23.888	23.350	0.080	23.270	22.654	5H	0	24.000	23.482	0.132	23.350	23.107	0.190	22.917				
			6g	0.026	23.974	0.180	23.794	23.324	0.125	23.199	22.583	6H	0	24.000	23.520	0.170	23.350	23.153	0.236	22.917				
			8g	0.026	23.974	0.280	23.694	23.324	0.200	23.124	22.508	7H	0	24.000	23.562	0.212	23.350	23.217	0.300	22.917				
	1.5	4h	0	24.000	0.150	23.850	23.026	0.095	22.931	22.007	5H	0	24.000	23.186	0.160	23.026	22.612	0.236	22.376					
		6g	0.032	23.968	0.236	23.732	22.994	0.150	22.844	21.920	6H	0	24.000	23.226	0.200	23.026	22.676	0.300	22.376					
		8g	0.032	23.968	0.375	23.593	22.994	0.236	22.758	21.834	7H	0	24.000	23.276	0.250	23.026	22.751	0.375	22.376					
2	4h	0	24.000	0.180	23.820	22.701	0.106	22.595	21.363	5H	0	24.000	22.881	0.180	22.701	22.135	0.300	21.835						
	6g	0.038	23.962	0.280	23.682	22.663	0.170	22.493	21.261	6H	0	24.000	22.925	0.224	22.701	22.210	0.375	21.835						
	8g	0.038	23.962	0.450	23.512	22.663	0.265	22.398	21.166	7H	0	24.000	22.981	0.280	22.701	22.310	0.475	21.835						
25	3		4h	0	24.000	0.236	23.764	22.051	0.125	21.926	20.078	5H	0	24.000	22.263	0.212	22.051	21.152	0.400	20.752				
			6g	0.048	23.952	0.375	23.577	22.003	0.200	21.803	19.955	6H	0	24.000	22.316	0.265	22.051	21.252	0.500	20.752				
			8g	0.048	23.952	0.600	23.352	22.003	0.315	21.688	19.840	7H	0	24.000	22.386	0.335	22.051	21.382	0.630	20.752				
	1	4h	0	25.000	0.112	24.888	24.350	0.080	24.270	23.654	5H	0	25.000	24.482	0.132	24.350	24.107	0.190	23.917					
		6g	0.026	24.974	0.180	24.794	24.324	0.125	24.199	23.583	6H	0	25.000	24.520	0.170	24.350	24.153	0.236	23.917					
		8g	0.026	24.974	0.280	24.694	24.324	0.200	24.124	23.508	7H	0	25.000	24.562	0.212	24.350	24.217	0.300	23.917					
1.5	4h	0	25.000	0.150	24.850	24.026	0.095	23.931	23.007	5H	0	25.000	24.186	0.160	24.026	23.612	0.236	23.376						
	6g	0.032	24.968	0.236	24.732	23.994	0.150	23.844	22.920	6H	0	25.000	24.226	0.200	24.026	23.676	0.300	23.376						
	8g	0.032	24.968	0.375	24.593	23.994	0.236	23.758	22.834	7H	0	25.000	24.276	0.250	24.026	23.751	0.375	23.376						
2	4h	0	25.000	0.180	24.820	23.701	0.106	23.595	22.363	5H	0	25.000	23.881	0.180	23.701	23.135	0.300	22.835						
	6g	0.038	24.962	0.280	24.682	23.663	0.170	23.493	22.261	6H	0	25.000	23.925	0.224	23.701	23.210	0.375	22.835						
	8g	0.038	24.962	0.450	24.512	23.663	0.265	23.398	22.166	7H	0	25.000	23.981	0.280	23.701	23.310	0.475	22.835						

Table 1 ISO metric screw threads – Limits and tolerances for finished uncoated threads for normal length of engagement (continued)

All dimensions are in millimetres.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Nominal diameter	Pitch			External threads			Internal threads														
	Coarse	Fine	Constant	Tolerance class	Fund dev.	Major diameter			Pitch diameter			Minor diameter	Tolerance class	Fund dev.	Major diameter	Pitch diameter			Minor diameter		
						max.	tol.	min.	max.	tol.	min.					max.	tol.	min.	max.	tol.	min.
26			1.5	4h	0	26.000	0.150	25.850	25.026	0.095	24.931	24.007	5H	0	26.000	25.186	0.160	25.026	24.612	0.236	24.376
				6g	0.032	25.968	0.236	25.732	24.994	0.150	24.844	23.920	6H	0	26.000	25.226	0.200	25.026	24.676	0.300	24.376
				8g	0.032	25.968	0.375	25.593	24.994	0.236	24.758	23.834	7H	0	26.000	25.276	0.250	25.026	24.751	0.375	24.376
27			1	4h	0	27.000	0.112	26.888	26.350	0.080	26.270	25.654	5H	0	27.000	26.482	0.132	26.350	26.107	0.190	25.917
				6g	0.026	26.974	0.180	26.794	26.324	0.125	26.199	25.583	6H	0	27.000	26.520	0.170	26.350	26.153	0.236	25.917
				8g	0.026	26.974	0.280	26.694	26.324	0.200	26.124	25.508	7H	0	27.000	26.562	0.212	26.350	26.217	0.300	25.917
28			1.5	4h	0	27.000	0.150	26.850	26.026	0.095	25.931	25.007	5H	0	27.000	26.186	0.160	26.026	25.612	0.236	25.376
				6g	0.032	26.968	0.236	26.732	25.994	0.150	25.844	24.920	6H	0	27.000	26.226	0.200	26.026	25.676	0.300	25.376
				8g	0.032	26.968	0.375	26.593	25.994	0.236	25.758	24.834	7H	0	27.000	26.276	0.250	26.026	25.751	0.375	25.376
3			2	4h	0	27.000	0.180	26.820	25.701	0.106	25.595	24.363	5H	0	27.000	25.881	0.180	25.701	25.135	0.300	24.835
				6g	0.038	26.962	0.280	26.682	25.663	0.170	25.493	24.261	6H	0	27.000	25.925	0.224	25.701	25.210	0.375	24.835
				8g	0.038	26.962	0.450	26.512	25.663	0.265	25.398	24.166	7H	0	27.000	25.981	0.280	25.701	25.310	0.475	24.835
28				4h	0	27.000	0.236	26.764	25.051	0.125	24.926	23.078	5H	0	27.000	25.263	0.212	25.051	24.152	0.400	23.752
				6g	0.048	26.952	0.375	26.577	25.003	0.200	24.803	22.955	6H	0	27.000	25.316	0.265	25.051	24.252	0.500	23.752
				8g	0.048	26.952	0.600	26.352	25.003	0.315	24.688	22.840	7H	0	27.000	25.386	0.335	25.051	24.382	0.630	23.752
28			1	4h	0	28.000	0.112	27.888	27.350	0.080	27.270	26.654	5H	0	28.000	27.482	0.132	27.350	27.107	0.190	26.917
				6g	0.026	27.974	0.180	27.794	27.324	0.125	27.199	26.583	6H	0	28.000	27.520	0.170	27.350	27.153	0.236	26.917
				8g	0.026	27.974	0.280	27.694	27.324	0.200	27.124	26.508	7H	0	28.000	27.562	0.212	27.350	27.217	0.300	26.917
28			1.5	4h	0	28.000	0.150	27.850	27.026	0.095	26.931	26.007	5H	0	28.000	27.186	0.160	27.026	26.612	0.236	26.376
				6g	0.032	27.968	0.236	27.732	26.994	0.150	26.844	25.920	6H	0	28.000	27.226	0.200	27.026	26.676	0.300	26.376
				8g	0.032	27.968	0.375	27.593	26.994	0.236	26.758	25.834	7H	0	28.000	27.276	0.250	27.026	26.751	0.375	26.376
28			2	4h	0	28.000	0.180	27.820	26.701	0.106	26.595	25.363	5H	0	28.000	26.881	0.180	26.701	26.135	0.300	25.835
				6g	0.038	27.962	0.280	27.682	26.663	0.170	26.493	25.261	6H	0	28.000	26.925	0.224	26.701	26.210	0.375	25.835
				8g	0.038	27.962	0.450	27.512	26.663	0.265	26.390	25.166	7H	0	28.000	26.981	0.280	26.701	26.310	0.475	25.835