INTERNATIONAL STANDARD

ISO 12281

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Aerospace — Rivets, solid, 100° normal countersunk head, in metallic material, with or without surface treatment — Dimensions

Aéronautique et espace — Rivets ordinaires, à tête fraisée 100° normale, en matériau métallique, avec ou sans traitement de surface — Dimensions

Reference number
ISO 12281:1999(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 12281 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

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Aerospace — Rivets, solid, 100° normal countersunk head, in metallic material, with or without surface treatment — Dimensions

1 Scope

This International Standard specifies the dimensions of solid rivets, 100° normal countersunk head, in metallic material, with or without surface treatment.

This International Standard is only applicable for the compilation of aerospace product standards.

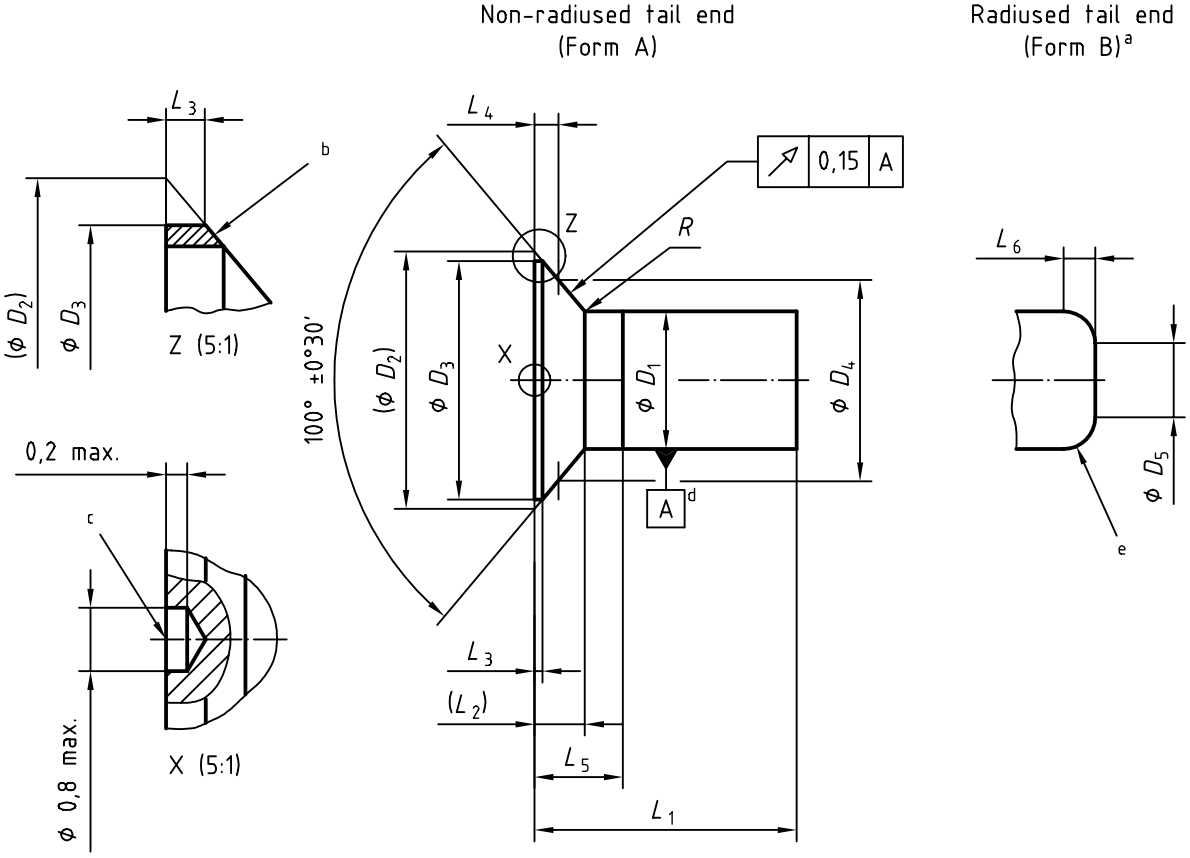
2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

3 Configuration and dimensions

See Figure 1 and Table 1. Dimensions and tolerances are expressed in millimetres. They apply after any surface coating(s).



a The length range is limited (see Tables 2 and 3).

b Blended convex form permissible within limiting dimensions

c Drill start optional, shape optional, only for corrosion-resistant steels, nickel alloys, titanium alloys

d Area of this datum shall be included between L_5 and L_5 + 1.

e Chamfer or convex radius, at manufacturer's choice

Figure 1

Table 1 — Dimensions (except length L_1)

Diameter code	D_1 [a] d11 [b]	D_2 [c]	D_3 min.	D_4	D_5 max.	D_5 min.	L_2	L_3 min.	L_4 $^{0}_{-0,08}$	L_5	L_6 max.	L_6 min.	R ± 0,08
016	1,6	3	2,7	2,25	—	—	0,59	0,03	0,31	2	—	—	0,15
020	2	3,7	3,3	2,89	—	—	0,72	0,04	0,34	2,2	—	—	
025	2,5	4,65	4,15	3,86	2	1,7	0,91	0,05	0,33	2,4	0,8	0,5	
030	3	5,55	4,95	4,5	2,4	2,1	1,07	0,06	0,44	2,5	0,9	0,6	
035	3,5	6,5	5,8	5,14	2,8	2,45	1,26	0,07	0,57	2,8	1,05	0,7	0,25
040	4	7,4	6,6	5,78	3,2	2,8	1,43	0,08	0,68	3	1,2	0,8	
050	5	9,25	8,25	7,71	4	3,5	1,8	0,1	0,65	3,8	1,5	1	
060	6	11,1	9,9	9	4,8	4,2	2,15		0,88	4,1	1,8	1,2	
080	8	14,8	13,6	12,21	6,4	5,6	2,87		1,09	4,8	2,4	1,6	
100	10	18,5	17,3	15,43	8	7	3,59		1,29	5,5	3	2	

a Over length ($L_5 - L_2$), D_1 max. may increase by 0,03.

b In accordance with ISO 286-2

c Maximum condition

Table 2 — Length L_1 for rivets in aluminium and aluminium alloys

Diameter code		016	020	025		030		035		040		050		060		080		100	
Length code	L_1 $^{+0,5}_{0}$	Shape of tail end [a]																	
		A	A	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
003	3	X	X																
004	4	X	X	X	X	X	X	X	X										
005	5	X	X	X	X	X	X	X	X										
006	6	X	X	X	X	X	X	X	X	X	X								
007	7	X	X	X	X	X	X	X	X	X	X								
008	8	X	X	X	X	X	X	X	X	X	X	X	X						
009	9	X	X	X	X	X	X	X	X	X	X	X	X						
010	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
011	11	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
012	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
013	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
014	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
015	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
016	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
017	17		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
018	18		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
019	19		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X
020	20		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X
022	22		X	X		X		X		X	X	X	X	X	X	X	X	X	X
024	24		X	X		X		X		X	X	X	X	X	X	X	X	X	X
026	26			X		X		X		X		X	X	X	X	X	X	X	X
028	28			X		X		X		X		X	X	X	X	X	X	X	X
030	30			X		X		X		X		X		X	X	X	X	X	X
032	32			X		X		X		X		X		X	X	X	X	X	X
035	35			X		X		X		X		X		X		X	X	X	X
040	40					X		X		X		X		X		X		X	
045	45							X		X		X		X		X		X	
050	50									X		X		X		X		X	
055	55											X		X		X		X	
060	60											X		X		X		X	

[a] Form A : non-radiused tail end (see Figure 1)

Form B : radiused tail end (see Figure 1)

Table 3 — Lengths L_1 for rivets in nickel alloys, corrosion-resistant steels, commercially pure titanium and titanium alloys

Diameter code		016	020	025		030		035		040		050		060	
Length code	L_1 $^{+0,5}_{0}$	Shape of tail end [a]													
		A	A	A	B	A	B	A	B	A	B	A	B	A	B
003	3	X	X												
004	4	X	X	X	X	X	X	X	X						
005	5	X	X	X	X	X	X	X	X						
006	6	X	X	X	X	X	X	X	X	X	X				
007	7	X	X	X	X	X	X	X	X	X	X				
008	8	X	X	X	X	X	X	X	X	X	X	X	X		
009	9	X	X	X	X	X	X	X	X	X	X	X	X		
010	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X
011	11	X	X	X	X	X	X	X	X	X	X	X	X	X	X
012	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X
013	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X
014	14	X	X	X	X	X	X	X	X	X	X	X	X	X	X
015	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X
016	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X
017	17		X	X		X	X	X	X	X	X	X	X	X	X
018	18		X	X		X	X	X	X	X	X	X	X	X	X
019	19			X		X		X	X	X	X	X	X	X	X
020	20			X		X		X	X	X	X	X	X	X	X
022	22					X		X		X	X	X	X	X	X
024	24					X		X		X	X	X	X	X	X
026	26							X		X		X	X	X	X
028	28							X		X		X	X	X	X
030	30									X		X		X	X
032	32									X		X		X	X
035	35											X		X	
040	40											X		X	

[a] Form A : non-radiused tail end (see Figure 1)

Form B : radiused tail end (see Figure 1)

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