International Standard 8677

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Cup head square neck bolts with large head — Product grade C

Vis à métaux à tête bombée à collet carré à tête large — Grade C

First edition — 1986-12-01

UDC 621.882.622 **Ref. No. ISO 8677-1986 (E)**

Descriptors : fasteners, bolts, specifications, dimensions, designation.

Price based on 4 pages

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8677 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Printed in Switzerland

Cup head square neck bolts with large head — Product grade C

1 Scope and field of application

This International Standard specifies the characteristics of cup head square neck bolts with large head, with metric dimensions and thread sizes from M5 to M20 inclusive, of product grade C.

If, in special cases, other specifications are required, it is recommended that they should be selected from existing International Standards, for example ISO 261, ISO 888, ISO 898/1, ISO 965, ISO 4759/1.

2 References

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 888, *Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts.*

ISO 898/1, *Mechanical properties of fasteners — Part 1 : Bolts, screws and studs.*

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

ISO 1461, *Metallic coatings — Hot dip galvanized coatings on fabricated ferrous products — Requirements.*

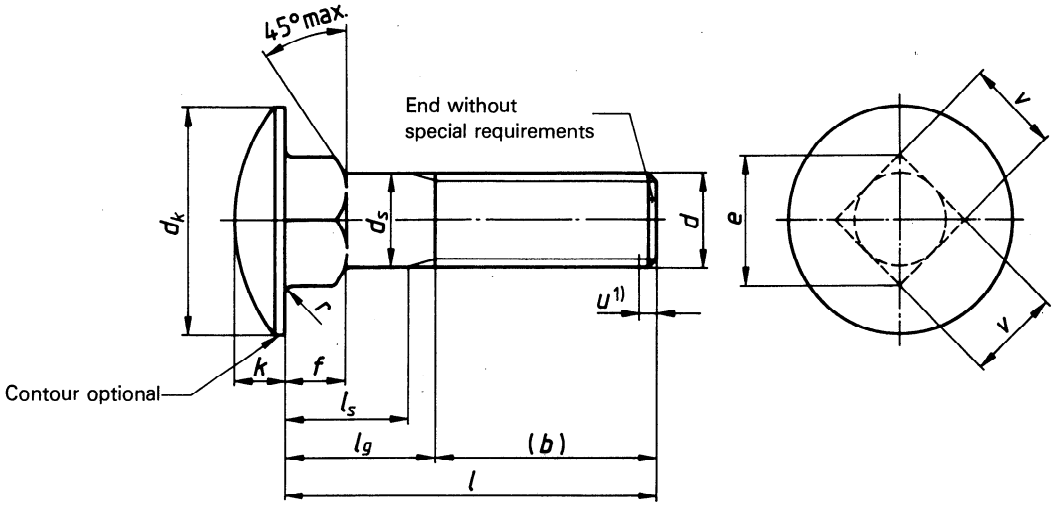
ISO 3269, *Fasteners — Acceptance inspection.*

ISO 4042, *Threaded components — Electroplated components.* [1)]

ISO 4759/1, *Tolerances for fasteners — Part 1 : Bolts, screws and nuts with thread diameters* ⩾ 1,6 *and* ⩽ 150 mm *and product grades A, B and C.*

1) At present at the stage of draft.

3 Dimensions



1) Incomplete thread $u_{max} + 2P$

Dimensions in millimetres

Thread size, d		M5	M6	M8	M10	M12	M16	M20
$P^{1)}$		0,8	1	1,25	1,5	1,75	2	2,5
$b^{2)}$ ref.	3)	16	18	22	26	30	38	46
	4)	—	—	28	32	36	44	52
	5)	—	—	—	—	—	57	65
d_k	max. = nom.	13	16	20	24	30	38	46
	min.	11,9	14,9	18,7	22,7	28,7	36,4	44,4
d_s	max.	5,48	6,48	8,58	10,58	12,7	16,7	20,84
	min.	≈ Pitch diameter						
$e^{6)}$	min.	5,9	7,2	9,6	12,2	14,7	19,9	24,9
f	max.	4,1	4,6	5,6	6,6	8,8	12,9	15,9
	min.	2,9	3,4	4,4	5,4	7,2	11,1	14,1
k	max.	3,1	3,6	4,8	5,8	6,8	8,9	10,9
	min.	2,5	3	4	5	6	8	10
r	max.	0,4	0,5	0,8	0,8	1,2	1,2	1,6
v	max.	5,48	6,48	8,58	10,58	12,7	16,7	20,84
	min.	4,52	5,52	7,42	9,42	11,3	15,3	19,16

Dimensions in millimetres

Thread size, d			M5		M6		M8		M10		M12		M16		M20	
l [7]			Shank lengths l_s [8] and grip length l_g [9], [10]													
nom.	min.	max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.
20	19	21		4												
25	24	26	5	9												
30	29	31	10	14	7	12										
35	33,7	36,3	15	19	12	17										
40	38,7	41,3	20	24	17	22	11,75	18								
45	43,7	46,3	25	29	22	27	16,75	23	11,5	19						
50	48,7	51,3	30	34	27	32	21,75	28	16,5	24						
55	53,5	56,5			32	37	26,75	33	21,5	29	16,25	25				
60	58,5	61,5			37	42	31,75	38	26,5	34	21,25	30				
65	63,5	66,5					36,75	43	31,5	39	26,25	35	17	27		
70	68,5	71,5					41,75	48	36,5	44	31,25	40	22	32		
75	73,5	76,5					46,75	53	41,5	49	36,25	45	27	37	16,5	29
80	78,5	81,5					45,75	52	40,5	48	35,25	44	26	36	15,5	28
90	88,3	91,7							50,5	58	45,25	54	36	46	25,5	38
100	98,3	101,7							60,5	68	55,25	64	46	56	35,5	48
110	108,3	111,7									65,25	74	56	66	45,5	58
120	118,3	121,7									75,25	84	66	76	55,5	68
130	128	132											64	74	52,5	65
140	138	142											74	84	62,5	75
150	148	152											84	94	72,5	85
160	156	164											94	104	82,5	95
180	176	184											114	124	102,5	115
200	195,4	204,6											134	144	122,5	135

1) P = pitch of the thread

2) For nominal lengths $l_{nom} \leqslant 75$ mm and sizes $d \leqslant$ M12 the length of thread, b, may be the whole of the shank length up to the square neck.

3) For nominal lengths $l_{nom} \leqslant 120$ mm.

4) For nominal lengths $130 < l_{nom} \leqslant 200$ mm.

5) For nominal lengths $l_{nom} > 200$ mm.

6) e_{min} applies only for a length equal to $0{,}5\,f_{min}$ under the head measured from the bearing surface ($e_{min} = 1{,}3\,v_{min}$).

7) For nominal lengths $l_{nom} > 200$ mm, steps of 20 mm should be used.

8) $l_{s\,min} = l_{g\,max} - 5P$

9) $l_{g\,max} = l_{nom} - b$

10) l_g is the minimum grip length.

4 Specifications and reference International Standards

Material		Steel
Thread	Tolerance	8g (6g for property class 8.8.)
	International Standards	ISO 261, ISO 965
Mechanical properties	Product class	4.6, 4.8, 8.8
	International Standard	ISO 898/1
Tolerances	Product grade	C
	International Standard	ISO 4759/1
Finish		As processed Black oxide (thermic or chemical) for product class 8.8 Requirements for electroplating are covered in ISO 4042. If different electroplating requirements are desired or if requirements exist for other finishes, they should be negotiated between supplier and customer. For hot dip galvanizing, see ISO 1461.
Acceptability		The acceptance procedure is covered in ISO 3269.

5 Designation

Example for the designation of a cup head square neck bolt with large head with thread size d = M12, nominal length l = 80 mm and property class 4.6 :

Cup head square neck bolt ISO 8677 - M12 × 80 - 4.6

This page intentionally left blank

This page intentionally left blank