



S T A T E S T A N D A R D O F U S S R

**BOLTS WITH HEXAGONAL HEAD
OF CLASS OF ACCURACY A**

Design and dimensions

GOST 7805-70

Official Publication

State Committee of USSR on standards

MOSCOW

Translated by:

M/s SWYAZ

2/453, Viram Khand, Gomti Nagar

Lucknow – 226010

☎: 0522-3098139 / 2345145

Visit us: [http\\:www.swyaz.com](http://www.swyaz.com)

S T A T E S T A N D A R D O F U S S R

**Bolts with hexagonal head
of class of accuracy A**

**GOST
7805-70**

Design and dimensions

(CT CЭB 4727-84)

OKП 12 8200

Date of introduction 01.01.72

As a part of dimension << for spanner >> $S = 13$ mm.

01.01.73

1. This standard pertains to the bolts with hexagonal heads of class of accuracy A with diameter of thread from 1.6 upto 48 mm.

Standard completely corresponds to CT CЭB 4727-84.

(Amended edition, amendment No. 4).

2. Design and dimensions of bolts should corresponds to those specified in drawing and in table 1 and 2.

(Amended edition, amendment No. 2-6).

3. Thread – according to GOST 24705. Run out and under cut of threads - according to GOST 27148. Ends of bolts – according to GOST 12414.

(Amended edition, amendment No. 5).

3a. Radius for head – according to GOST 24670.

3б. Dimensional tolerances, deviation of shapes and position of surface and inspection methods- according to GOST 1759.1 are not established by this standard.

3B. Permissible surface defects of bolts and inspection method – according to GOST 1759.2.

3a – 3B. **(Introduced additionally, amendment No. 4).**

4. According to the agreement between manufacturer and consumer, it is permitted to manufacture the bolts with nominal diameter of threads from 36 upto 48 mm with pitch of thread 2 mm.

(Amended edition, amendment No. 4).

5. Manufacturer sets the alternate for making of head.

5a. It is permitted to manufacture the bolts with diameter of smooth portion of shank d_1 approximately equal to the average diameter of threads.

(Introduced additionally, amendment No. 3).

5б. For application of marking signs, it is permitted to manufacture the bolts of make 1 and 2 with hole on the end face of surface of head with dimensions, which do not decrease the strength of head, in this case the depth of hole should be not more than 0.4 k.

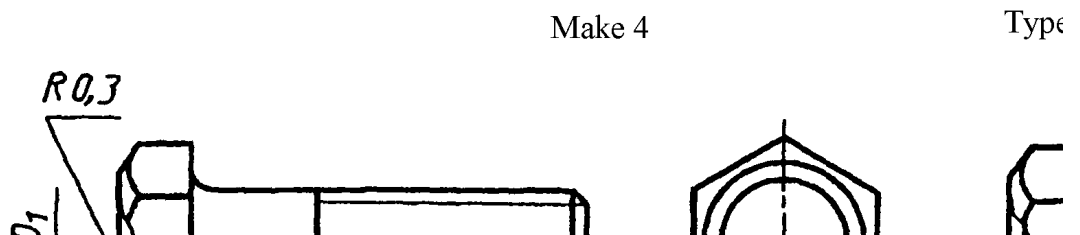
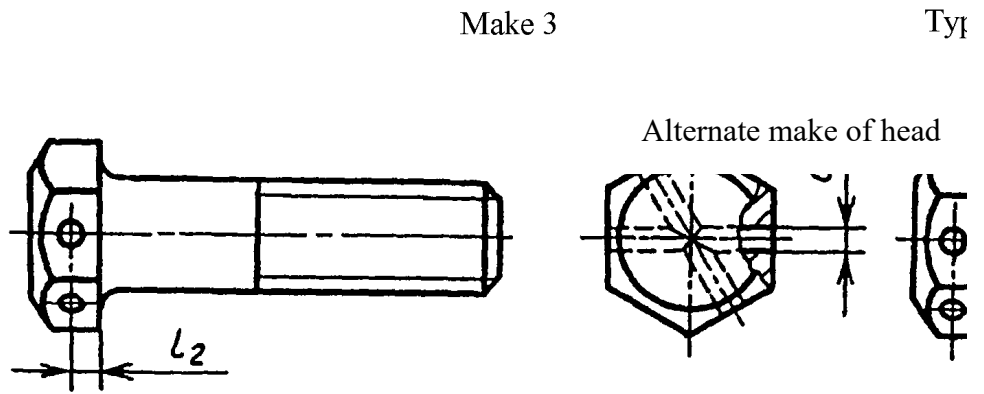
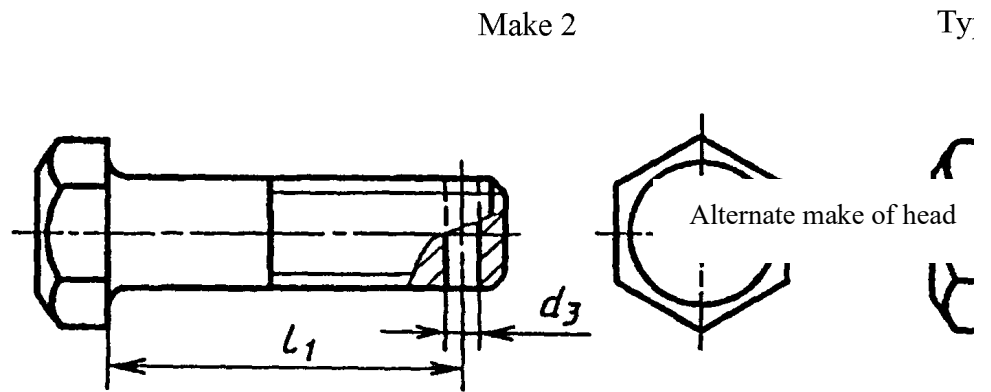
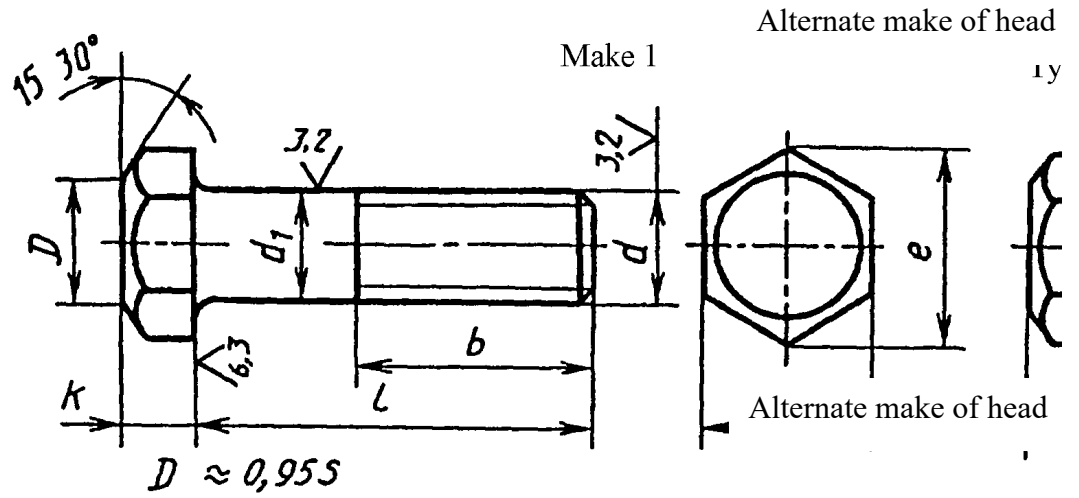
(Introduced additionally, amendment No. 5).

6. Technical requirement – according to GOST 1759.0.

7. **(Deleted, amendment No. 2).**

8. Weight of bolts, specified in appendix 1.

9. **(Deleted, amendment No. 4).**



MM

Nominal diameter of threads d		1,6	2	2,5	3	(3,5)	4	5	6	8	10	12	(14)	16	(18)	20	(22)	
Coarse																		
Pitch of	Fine	0,35	0,4	0,45	0,5	0,6	0,7	0,8	1	1,25	1,5	1,75	2	2,5				
Diameter of shank, d_1		—								1	1,25		1,5					
Width across flat, S <small>Diameter of tool d</small>		1,6	2	2,5	3	3,5	4	5	6	8	10	12	14	16	18	20	22	
Head height, k Dimension <<for spanner >> S		3,2	4	5	5,5	6	7	8	10	13	16	18	21	24	27	30	34	
Height of heat k		1,1	1,4	1,7	2,0	2,4	2,8	3,5	4,0	5,3	6,4	7,5	8,8	10,0	12,0	12,5	14,0	
Diameter of circumscribed circle e , not less than		3,4	4,3	5,5	6,0	6,6	7,7	8,8	11,1	14,4	17,8	20,0	23,4	26,8	30,1	33,5	37,7	
d_w , not less than		2,3	3,1	4,1	4,6	5,1	5,9	6,9	8,9	11,6	14,6	16,6	19,6	22,5	25,3	28,2	31,7	
h_w	Not less than	—			0,15								0,20					
	Not more than	—			0,4			0,5		0,6								
Diameter of hole in rod d_3		—					1,0	1,2	1,6	2,0	2,5	3,2	4,0					
Diameter of hole in head d_4																		4,0

Note:

1. It is not recommended to use the dimension of bolts, which are enclosed in brackets.
2. It is permitted to manufacture the bolts with dimensions, specified in appendix 2.

mm

Length of bolts l	Length of threads b and distance from supporting surface at head upto axis of hole																								
	1,6		2		2,5		3		3,5		4		5		6		8		10		12				
	b	b	b	b	b	b	b	b	l ₁	b	l ₁	b	l ₁	b	l ₁	b	l ₁	b	l ₁	b	l ₁	b	l ₁		
2	x	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3	x	x	x	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
4	x	x	x	x	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
5	x	x	x	x	x	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
6	x	x	x	x	x	—	x	—	x	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
8	x	x	x	x	x	—	x	—	x	—	x	—	x	—	x	—	x	—	x	—	x	—	x	—	
10	x	x	x	x	x	7,5	x	—	x	—	x	—	x	—	x	—	x	—	x	—	x	—	x	—	
12	9	x	x	x	x	9,5	x	9,5	x	—	x	—	x	—	x	—	x	—	x	—	x	—	x	—	
14	9	10	11	12	13	11,5	x	11,5	x	10	x	—	x	—	x	—	x	—	x	—	x	—	x	—	
16	—	10	11	12	13	13,5	14	13,5	x	12	x	12	x	—	x	—	x	—	x	—	x	—	x	—	
(18)	—	10	11	12	13	15,5	14	15,5	16	14	x	14	x	14	x	14	x	—	x	—	x	—	x	—	
20	—	—	11	12	13	17,5	14	17,5	16	16	x	16	x	16	x	16	x	15	x	—	x	—	x	—	
(22)	—	—	11	12	13	19,5	14	19,5	16	18	18	18	x	18	x	18	x	17	x	—	x	—	x	—	
25	—	—	11	12	13	22,5	14	22,5	16	21	18	21	x	21	x	21	x	20	x	—	x	—	x	—	
(28)	—	—	—	12	13	25,5	14	25,5	16	24	18	24	22	24	x	24	x	23	x	—	x	—	x	—	
30	—	—	—	12	13	27,5	14	27,5	16	26	18	26	22	26	x	26	x	25	x	—	x	—	x	—	
(32)	—	—	—	—	—	29,5	14	29,5	16	28	18	28	22	28	26	28	26	27	x	—	x	—	x	—	
35	—	—	—	—	—	32,5	14	32,5	16	31	18	31	22	31	26	31	26	30	30	—	x	—	x	—	
(38)	—	—	—	—	—	35,5	14	35,5	16	34	18	34	22	34	26	34	26	33	30	—	x	—	x	—	
40	—	—	—	—	—	37,5	14	37,5	16	36	18	36	22	36	26	36	26	35	30	—	x	—	x	—	
45	—	—	—	—	—	42,5	14	42,5	16	41	18	41	22	41	26	41	26	40	30	—	x	—	x	—	
50	—	—	—	—	—	47,5	14	47,5	16	46	18	46	22	46	26	46	26	45	30	—	x	—	x	—	
55	—	—	—	—	—	52,5	14	52,5	16	51	18	51	22	51	26	51	26	50	30	—	x	—	x	—	
60	—	—	—	—	—	57,5	14	57,5	16	56	18	56	22	56	26	56	26	55	30	—	x	—	x	—	
65	—	—	—	—	—	—	—	62,5	16	61	18	61	22	61	26	61	26	60	30	—	x	—	x	—	
70	—	—	—	—	—	—	—	67,5	16	66	18	66	22	66	26	66	26	65	30	—	x	—	x	—	
75	—	—	—	—	—	—	—	72,5	16	71	18	71	22	71	26	71	26	70	30	—	x	—	x	—	
80	—	—	—	—	—	—	—	77,5	16	76	18	76	22	76	26	76	26	75	30	—	x	—	x	—	
(85)	—	—	—	—	—	—	—	—	—	81	18	81	22	81	26	81	26	80	30	—	x	—	x	—	
90	—	—	—	—	—	—	—	—	—	86	18	86	22	86	26	86	26	85	30	—	x	—	x	—	
(95)	—	—	—	—	—	—	—	—	—	—	—	91	22	91	26	91	26	90	30	—	x	—	x	—	
100	—	—	—	—	—	—	—	—	—	—	—	96	22	96	26	96	26	95	30	—	x	—	x	—	
(105)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	101	26	100	30	—	x	—	x	—
110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106	26	105	30	—	x	—	x	—
(115)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	111	26	110	30	—	x	—	x	—
120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	116	26	115	30	—	x	—	x	—
(125)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	121	26	120	30	—	x	—	x	—
130	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	126	32	125	30	—	x	—	x	—
140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136	32	135	30	—	x	—	x	—

Note: It is recommended to use the bolts with dimensions of length enclosed in brackets.

Example of conventional code: Bolts of make 1 with diameter of thread of d 12 mm, with strength class 5.8, without coating:

Also, make 2, with width across flat S 19 mm, with fine pitch of thread with with tolerance

Weight of steel bolts (make 1) with coarse pitch of thread

Length of bolts <i>l</i> , in mm	Theoretical weight of 1000 pieces of bolts in kg \approx , at nominal diameter of thread, <i>d</i> in mm																					
	1.6	2	2.5	3	3.5	4	5	6	8	10	12	14	16	18	20	22	24	27	30	36	42	48
2	0,104	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	0,118	0,216	0,390	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	0,132	0,238	0,425	0,609	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	0,146	0,260	0,460	0,660	0,887	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	0,160	0,282	0,495	0,711	0,951	1,461	2,190	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	0,188	0,326	0,565	0,813	1,080	1,641	2,472	4,306	8,668	—	—	—	—	—	—	—	—	—	—	—	—	—
10	0,216	0,370	0,635	0,915	1,209	1,821	2,754	4,712	9,394	16,68	—	—	—	—	—	—	—	—	—	—	—	—
12	0,250	0,414	0,705	1,017	1,337	2,001	3,036	5,118	10,120	17,82	—	—	—	—	—	—	—	—	—	—	—	—
14	0,281	0,469	0,787	1,122	1,466	2,181	3,318	5,524	10,850	18,96	27,89	—	—	—	—	—	—	—	—	—	—	—
16	—	0,518	0,864	1,234	1,595	2,368	3,600	5,930	11,570	20,10	29,48	43,98	—	—	—	—	—	—	—	—	—	—
18	—	0,567	0,941	1,344	1,723	2,566	4,062	6,336	12,300	21,23	31,12	46,21	65,54	—	—	—	—	—	—	—	—	—
20	—	—	1,019	1,456	1,852	2,763	4,371	6,742	13,020	22,37	32,76	48,45	68,49	95,81	—	—	—	—	—	—	—	—
22	—	—	1,096	1,567	1,981	2,961	4,679	7,204	13,750	23,51	34,40	50,69	71,44	99,52	—	—	—	—	—	—	—	—
25	—	—	1,211	1,733	2,174	3,257	5,142	7,871	14,840	25,22	36,86	54,05	75,87	105,10	133,3	—	—	—	—	—	—	—
28	—	—	—	1,900	2,367	3,553	5,605	8,537	16,330	26,92	39,32	57,40	80,29	110,60	140,2	—	—	—	—	—	—	—
30	—	—	—	2,011	2,496	3,750	5,913	8,981	17,120	28,52	40,96	59,64	83,24	114,30	144,8	193,0	—	—	—	—	—	—
32	—	—	—	—	—	3,948	6,222	9,426	17,910	29,43	42,59	61,87	86,19	118,00	149,4	198,6	237,0	—	—	—	—	—
35	—	—	—	—	—	4,244	6,685	10,090	19,090	31,28	45,34	65,24	90,62	123,60	156,3	207,0	246,9	—	—	—	—	—
38	—	—	—	—	—	4,540	7,147	10,760	20,280	33,18	48,00	68,59	95,04	129,20	163,2	215,4	256,9	—	—	—	—	—
40	—	—	—	—	—	4,738	7,456	11,200	21,070	34,36	49,78	71,25	97,99	132,90	167,8	221,0	263,5	—	—	—	—	—
45	—	—	—	—	—	5,231	8,227	12,310	23,040	37,45	54,22	77,30	105,70	142,10	179,4	235,0	280,1	—	—	—	—	—
50	—	—	—	—	—	5,725	8,999	13,420	25,020	40,53	58,67	83,35	113,60	152,40	190,9	249,0	296,7	—	—	—	—	—
55	—	—	—	—	—	6,218	8,769	14,530	26,990	43,62	63,11	89,39	121,50	162,40	203,7	263,1	313,3	—	—	—	—	—

Continuation

Length of bolts l , in mm	Theoretical weight of 1000 pieces of bolts in kg \approx , at nominal diameter of thread, d in mm																					
	1.6	2	2.5	3	3.5	4	5	6	8	10	12	14	16	18	20	22	24	27	30	36	42	48
90	—	—	—	—	—	—	—	—	—	22,310	40,810	65,21	94,20	131,70	176,80	232,40	290,1	368,5	437,6	516,7	606,8	706,9
95	—	—	—	—	—	—	—	—	—	—	42,790	68,30	98,64	137,80	184,70	242,40	302,4	383,4	455,4	536,4	627,4	728,4
100	—	—	—	—	—	—	—	—	—	—	44,760	71,38	103,10	143,80	192,60	252,40	314,7	398,3	473,2	557,8	642,4	736,9
105	—	—	—	—	—	—	—	—	—	—	—	74,47	107,50	149,90	200,50	262,40	327,1	413,3	490,9	578,5	666,1	753,7
110	—	—	—	—	—	—	—	—	—	—	—	77,55	112,00	155,90	208,40	272,30	339,4	428,2	508,7	598,2	687,7	777,2
115	—	—	—	—	—	—	—	—	—	—	—	80,63	116,40	162,00	216,30	282,30	351,8	443,1	526,5	612,8	700,1	787,4
120	—	—	—	—	—	—	—	—	—	—	—	83,72	120,90	168,00	224,20	292,30	364,1	458,1	544,2	632,3	720,4	808,5
125	—	—	—	—	—	—	—	—	—	—	—	86,80	125,30	174,00	232,10	302,30	376,4	473,0	562,0	652,0	742,0	832,0
130	—	—	—	—	—	—	—	—	—	—	—	89,89	129,70	180,10	240,00	312,30	388,8	487,9	579,8	673,7	768,6	863,5
140	—	—	—	—	—	—	—	—	—	—	—	96,06	138,60	192,20	255,80	332,30	413,5	517,8	615,3	715,6	815,9	916,2
150	—	—	—	—	—	—	—	—	—	—	—	102,18	147,50	204,30	271,60	352,30	438,1	547,6	650,8	756,9	863,0	969,1
160	—	—	—	—	—	—	—	—	—	—	—	108,38	156,40	216,40	287,40	372,30	462,8	577,5	686,4	798,7	910,0	1021,3
170	—	—	—	—	—	—	—	—	—	—	—	114,58	165,30	228,50	303,20	392,30	487,5	607,4	721,9	839,8	951,7	1063,6
180	—	—	—	—	—	—	—	—	—	—	—	120,68	174,20	240,60	319,00	412,30	512,2	637,2	757,5	881,0	1008,5	1136,0
190	—	—	—	—	—	—	—	—	—	—	—	126,88	183,10	252,70	333,80	432,30	536,9	667,1	793,0	923,0	1057,0	1191,0
200	—	—	—	—	—	—	—	—	—	—	—	133,08	191,90	264,70	350,60	452,20	561,5	697,0	828,6	965,2	1106,8	1248,4
220	—	—	—	—	—	—	—	—	—	—	—	—	209,70	228,90	382,20	492,20	610,9	756,7	899,6	1042,5	1185,4	1328,3

For determination of weight of bolts made of other materials, value of weight, specified in table should be multiplied by the coefficient:
 0.356 – for aluminium alloys; 1.080 - for brass.

APPENDIX 1. (Amended edition, amendment No. 4).

APPENDIX 2
Reference

Additional requirement, which are reflecting the needs of national economy

Dimension in mm

Nominal diameter of threads d	10	12	14	22	Nominal diameter of threads d	10	12	14	22		
Width across flat, S	17	19	22	32	Width across flat, S	17	19	22	32		
Diameter of circumscribed circle, e , not less than	18.9	21.1	24.5	35.7	Diameter of circumscribed circle, e , not less than	18.9	21.1	24.5	35.7		
d_w , not less than	15.6	17.4	20.6	30.0	d_w , not less than	15.6	17.4	20.6	30.0		
Length of bolt, l	Theoretical weight of 1000 pieces of bolts (make 1) with coarse pitch of thread, in kg \approx	10	18,10	—	—	Length of bolt, l	Theoretical weight of 1000 pieces of bolts (make 1) with coarse pitch of thread, in kg \approx	85	63,55	91,63	128,20
		12	19,24	—	—			90	66,63	96,06	134,20
		14	20,38	29,75	—			95	69,72	100,50	140,30
		16	21,52	31,34	46,52			100	72,80	105,00	146,30
		18	22,65	32,98	48,75			105	75,89	109,40	152,40
		20	23,79	34,62	50,09			110	78,97	113,90	158,40
		22	24,93	36,26	53,23			115	82,05	118,30	164,50
		25	26,64	38,72	56,59			120	85,14	122,80	170,50
		28	28,34	41,18	59,94			125	88,22	127,20	176,50
		30	29,48	42,82	62,18			130	91,31	131,60	182,60
		32	30,85	44,45	64,41			140	97,48	140,50	194,70
		35	32,70	47,20	67,78			150	103,60	149,40	206,80
		38	34,55	49,86	71,13			160	109,80	158,30	218,90
		40	35,78	51,64	73,79			170	116,00	167,20	231,00
		45	38,87	56,08	79,84			180	122,10	176,10	243,10
		50	41,95	60,53	85,89			190	128,30	185,00	255,20
55	45,04	64,97	91,93	200	134,50	193,80	267,20				
60	48,12	69,41	97,98	220	—	211,60	291,40				

APPENDIX 2. (Amended edition, amendment No. 6).

REFERENCE OF NORMATIVE- TECHNICAL DOCUMENTS

Code of HTД on which reference is given	Point Number	Code of HTД on which reference is given	Point Number
GOST 1759.0-87	6	GOST 24670-81	3a
GOST 1759.1-82	36	GOST 24705-81	3
GOST 1759.2-82	3B	GOST 27148-86	3
GOST 12414-94	3		

Restriction of validity is removed under the protocol No 5-94 of intergovernmental inter state council, on standardization, metrology and certification. (ИYC 11-12-94)

REPUBLICATION (April 1998) with amendment No. 2, 3, 4, 5, 6, certified in February 1974, March 1981, March 1985, March 1989, June 1995 (ИYC 3-74, 6-81, 6-85, 6-89, 9-95)