



10683-  
2020

-  
(ISO 10683:2018, IDT)

1

« » ( « »)  
, 4

2

056 « »

3

13 2020 . 813-

4

10663:2018 « -  
» (ISO 10683:2018 «Fasteners —  
Non-electrolytically applied zinc flake coating systems», IDT).  
-  
-

5

10683—2013

29

2015 . Nt 162- «

26

».

)

«

(

1

»,

«

».

—  
( )

«

».

,

—

(www.gost.nj)

1	.....	1
2	.....	1
3	.....	2
4	.....	2
4.1	- .....	2
4.2	.....	2
4.3	, .....	2
4.4	, .....	3
4.5	.....	3
5	.....	3
5.1	.....	3
5.2	.....	3
5.3	( ).....	4
5.4	: / , .....	4
6	.....	4
6.1	.....	4
6.2	.....	5
6.3	.....	6
7	, .....	6
7.1	.....	6
7.2	.....	6
7.3	.....	6
7.4	.....	6
7.5	/ .....	7
7.6	.....	8
7.7	.....	8
7.8	(VI).....	8
8	.....	8
8.1	.....	8
8.2	, .....	8
8.3	, .....	8
8.4	, .....	8
9	.....	9
9.1	- .....	9
9.2	- .....	10
10	.....	10
	( ) .....	11
	( ) .....	14
	( ) , 9227. ....	20
	( ) .....	27
	.....	28

( )

( )

( )

1.

2 / (www.iso.org/directives).

(www.iso.org/patents).

( ) URL- :

www. iso. org/foreword .h tml.

10683:2018 ISO/TC 2 « »,

SC 14 « ».

( 10683:2013),

## Fasteners. Non-electrolytically applied zinc coating systems

— 2021—06—01

## 1

—  
 ( ) :  
 \* ( / ).

(2 1000 ),  
 ( .4.4).

## 2

( ).

ISO 1463, Metallic and oxide coatings. Measurement of coating thickness. Microscopical method ( )

ISO 1502, ISO general-purpose metric screw threads. Gauges and gauging ( )

ISO 3613:2010, Metallic and other inorganic coatings — Chromate conversion coatings on zinc, cadmium, aluminium-zinc alloys and zinc-aluminium alloys — Test methods ( )

ISO 6988<sup>1)</sup>, Metallic and other non-organic coatings — Sulfur dioxide test with general condensation of moisture ( )

<sup>1)</sup> ISO 22479:2019.

- ISO 9227. Corrosion tests in artificial atmospheres. Salt spray test ( ) \*
- ISO 16047, Fasteners — Torque/clamp force testing ( ) -

### 3

1891\*2.

- : <http://www.iso.org/obp>;
- : <http://www.electropedia.org/>.

### 4

#### 4.1

Cr (VI).

/

( . 2).

#### 4.2

( . 1).



1— : 2— \* ; 3— \* ;  
 4— \*  
 1— -

. 1.2.

#### 4.3

8  
320 °C. 1891-4.

4.4 .1.3.

390 HV 12.9

8 (

4.5 ( . 2).

5 5.1

5.2 9227

24 « »

1. ( ) 3

1—

( ) ,	8 ,
240	4
480	5
600	6
720	8
960	10
(VI) . ( , + . )	( ) , , ,

5.3

( )

6988

SO<sub>2</sub>

24

2.3.5.8.10.12.15

5.4

Cr (VI),

6

6.1

( . 6.2.2.8.4 8.5).

6.2

6.2.1

( . . . ).

( . 8.4).

6.2.2

1502 h —

0.001 d<sup>3</sup> ( ) W<sub>ot</sub>

0,001 D<sup>3</sup> ( • ) ( . 2).

2—

4	£>	*
3		0.03
4		0.06
5		0.13
6		0,22
8		0.51
10		1.0
12		1.7
14		2.7
16		4.1
18		5.8
20		8.0
22		11
24		14
27		20
30		27
33		36
36		47
39		59
		0,001d <sup>3</sup> 0.001D <sup>3</sup> ( - )

:  
• :  
;  
• ;  
( , 898-2)

6.3

7

7.1

[ . 10, ) h].

( . 6 .2).

7.2

)

3

5.

150 ” (

7.3

:  
- ( ):  
- ( );

);

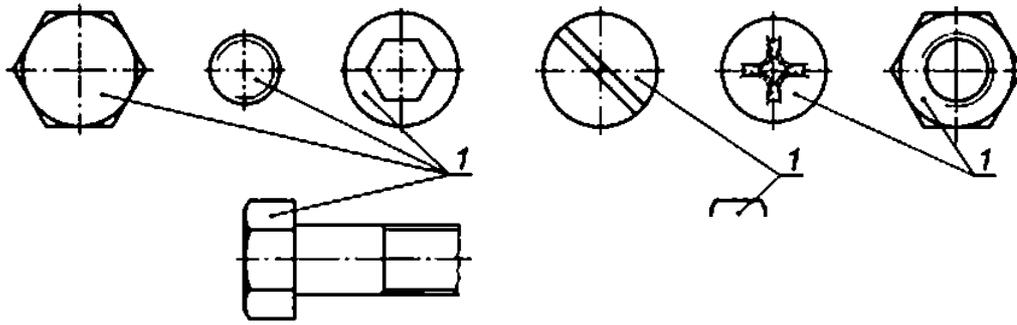
1463 (

).

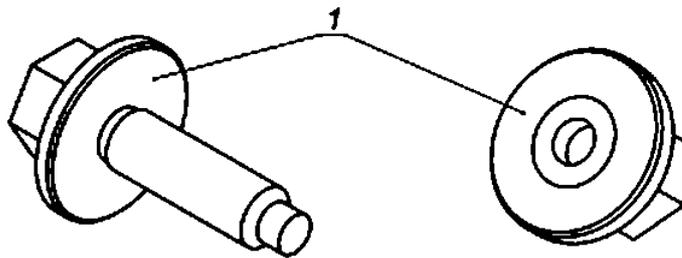
1463.

2.

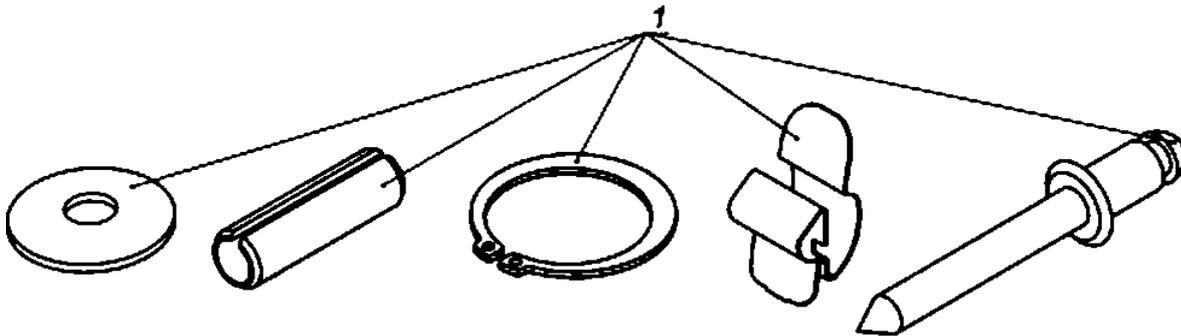
7.4



)



б) Референтные участки поверхности на невыпадающих шайбах



с) Пример референтных участков поверхности крепежных изделий без резьбы

x—

2—

7.5

/

25

(711)

7.6

0.5 ( . 5), 72 -

7.7

16047 .2.

( . .4).

7.8 (VI)

3613:2010. 5.5.2. Cr (VI)

8

8.1 5. 6 7.

8.2

( . 3269): ( . 6.2.2); ( . 7.1).

8.3

( . 16426), ( . 5.2) ( . 5.3). ( . 7.2): ( . 7.3); / ( . 7.5).

8.4

( . 3269). ( . 8.3),

( . 5.2) ( . 5.3).

( . 7.3);

- ( .7.4);
- ( .7.6);
- Cr (VI) ( .7.8).

9

9.1

8991.

3

(/).

3—

	(VI)»				
= flZn	Cr (VI)	= TL	L	480	
= fiZnL	Cr (VI) =	=			
	Cr (VI) =				
.2.1.					

1—4

1 ( ) 240 (flZn).

[ ]—flZn/2404

2 (ffZnL), Cr (VI) ( ). ) 480 , ,

[ ]—HZnL/nc480

3 Cr (VI) ( ), (TL). ) 720 , (flZn)  
 ( [0,10—0.20] ( ), :

[ ]—flZn/yc/TL/7204/C

4  
(VI) ( ). (L). (fZn)  
) 960 , ( 0,1710,03 ( ), -

[ ] — ftZn/nc/Tn/U960h/C

9.2

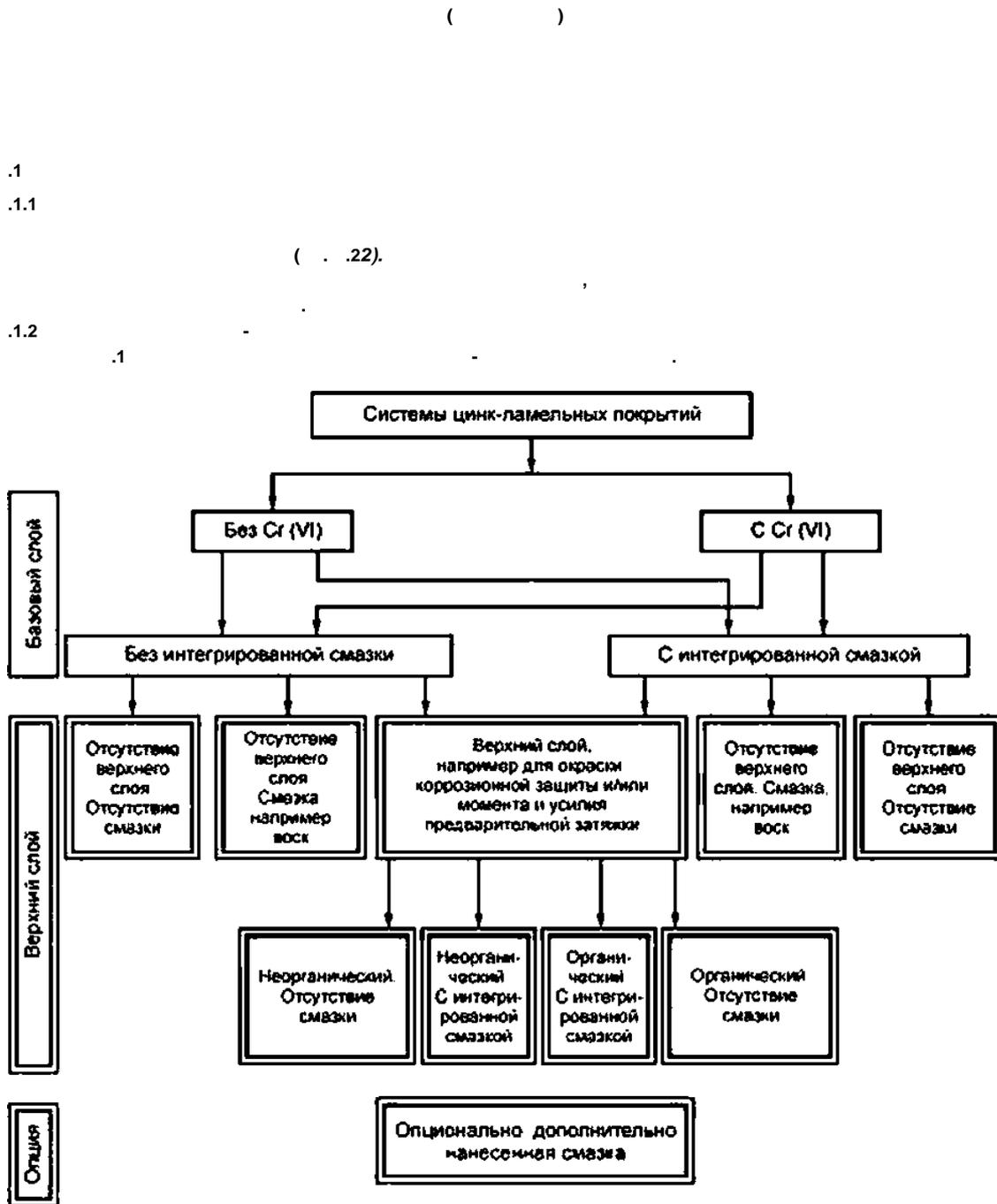
(/): ( ),  
- fZn - ( );  
• (VI) (VI);  
) , ( -

1—3

- 1 4014 — M12x80—10,9—fZn/nc/720
- 2 4032— 12—10—fZn/yc/480
- 3 7089—12—300HV—fZn/nc/240

### 10

- a) ;
  - b) ( . 9);
  - c) , ;
  - d) , ( .
- 16047);
- e) , ( ,
  - f) , / ( . 8);
  - h) , - ;
  - <) , .



.1—

.1.3

.2

.2.1

6.2

16047

.2.2

.2.2.1

.2.2.2

.2.2.

.2.2

.2.2.4

.  
.3.1

. . 2— .3.9  
( ) { } 100 %-

. 2

• { , );  
• ;  
• : < 1  
• ;

.3.3

• / {  
• );  
• ;

.3.4

.3.5

• :  
• ; < 1  
• ;

.3.6

.3.7

.3.8

.3.9

.4

/

( )

.1

6.2.

- 
- 
- 
- 

( . . 4).

( . . . );

.6

.2

t

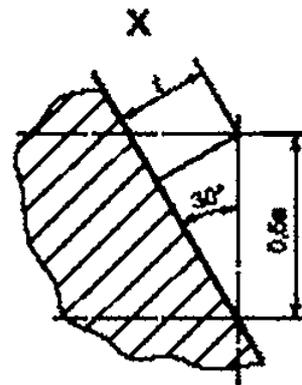
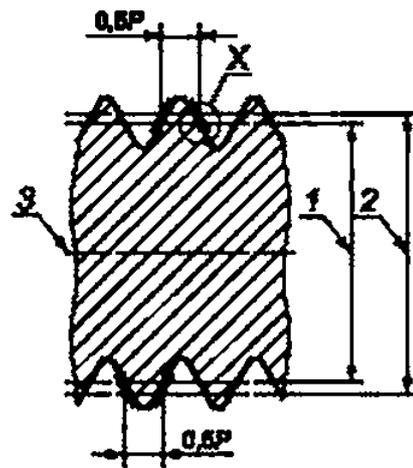
( . .

5).

d<sub>2</sub>

4f.

( . . . 1).



— ; t — ; —  
2 —

. 3 — »

d<sub>2</sub>.

. \* sm 30° « 0,5; 0,25 • J; « 4

.1 —

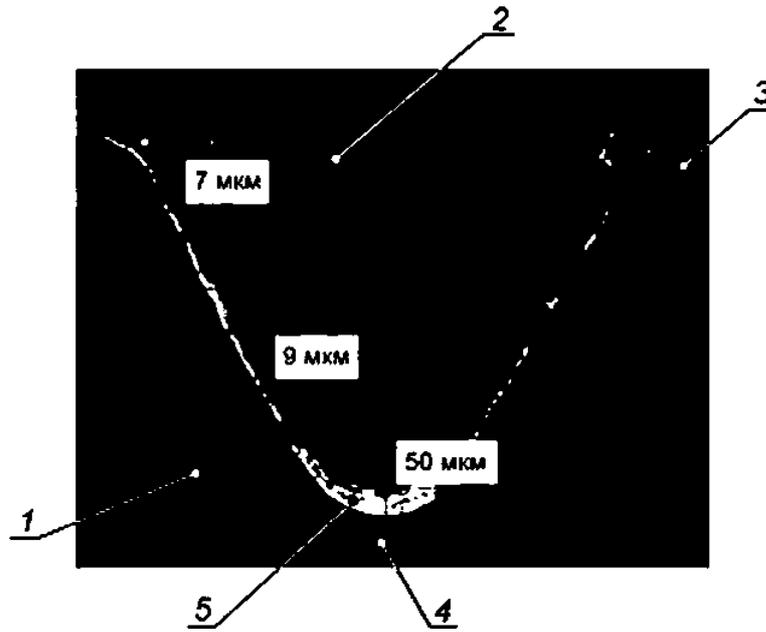
.1 —

f	4
3	12
4	16
5	20

.1

6	24
8	32
10	40
12	48
t.	( ),

t  
( . . . .2)



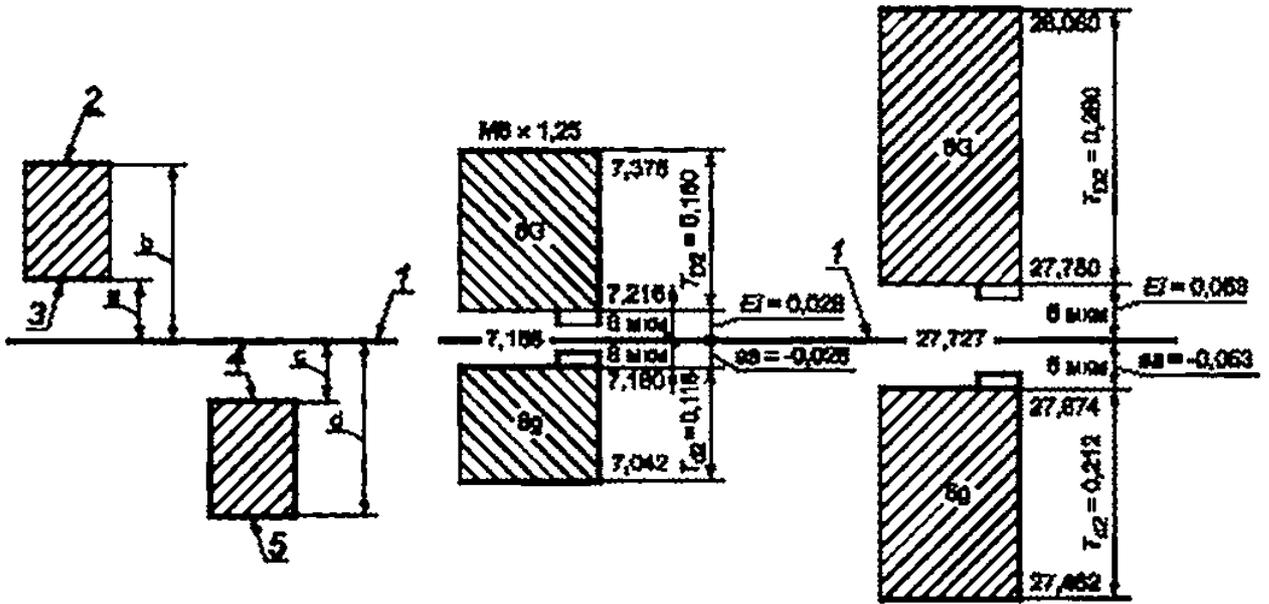
1— ; 2— ; 3— ; 4— ; 5—  
.2— < 12« 1.5)

.4

965-3.

965-1, 965-2  
.2.

- g. t. —
- G —



) ) 1 26 0

b,d

1— .2— : 3—  
 .4— . \$— €1—  
 . Tqj — : es—

.2

( . . )

.1 4.

.2—

	d 0		G	g	1	6,
0,25	1 1.2	—	+18	-18	—	—
0.3	1.4	—	+18	-18	—	—
0.35	1.5 1.8	—	+19	-19	-34	—
0.4	2	—	+19	-19	-34	—
0,45	2.2 2.5	—	+20	-20	-35	—

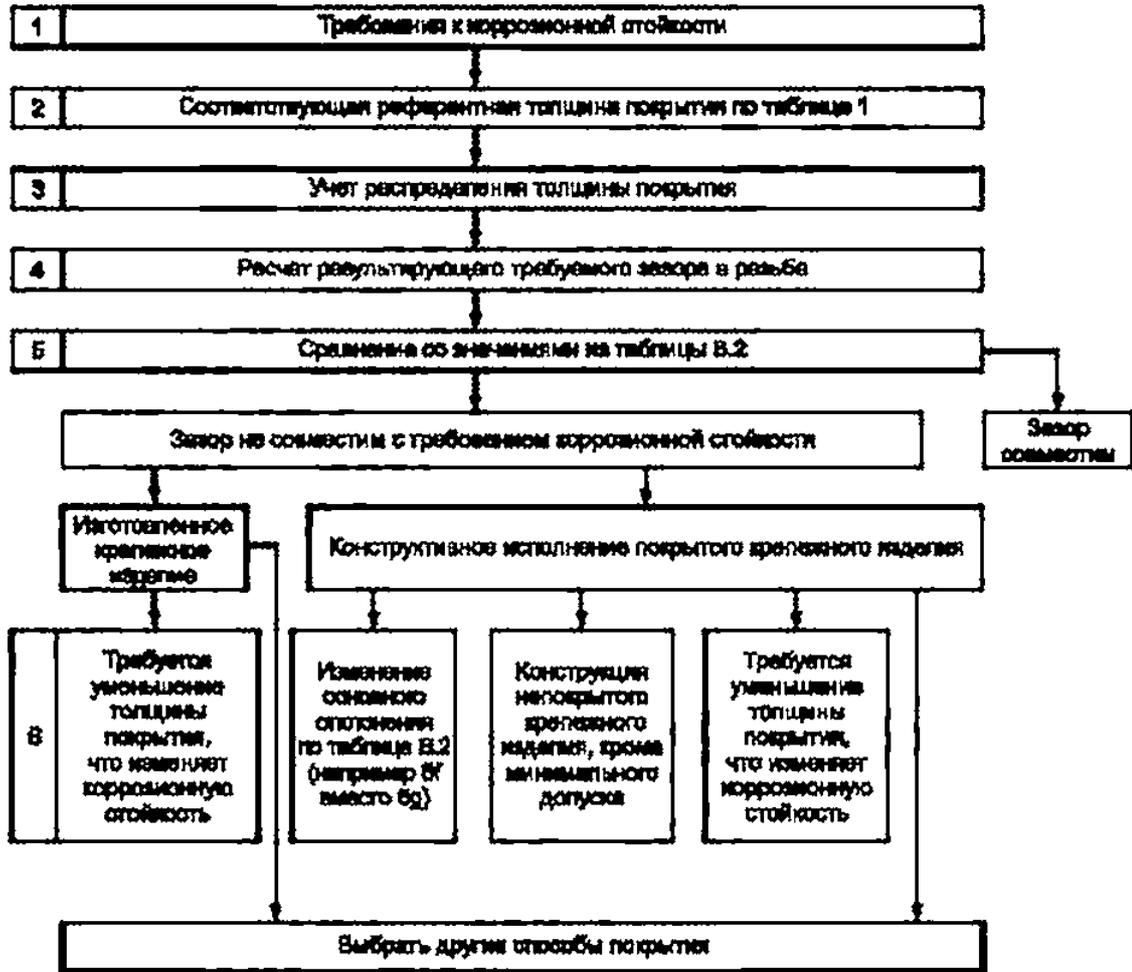
. 2

	4		1			
			G	g		
	,	,	6,	6	6	6,
0.5	3	—	+20	-20	-36	-50
0.6	3.5	—	+21	-21	-36	-53
0.7	4	—	+22	-22	-38	-56
0.75	4.5	—	+22	-22	-38	-56
0.8	5	—	+24	-24	-38	-60
1	6 7	8 10	+26	-26	-40	-60
1.25	8	10 12	+28	-28	-42	-63
1.5	10	12 22	+32	-32	-45	-67
1.75	12	—	+34	-34	-48	-71
2	14 16	20 33	+38	-38	-52	-71
2.5	18.20 22	—	+42	-42	-58	-80
3	24 27	36 48	+48	-48	-63	-85
3.5		—	+53	-53	-70	-90
4	36 39	52 64	+60	-60	-75	-95
4.5	42 45	—	+63	-63	-80	-100
5	48 52	—	+71	-71	-85	-106
5.5	56 60	—	+75	-75	-90	-112
6	64	—	+80	-80	-95	-118

0

.5

.4.



.4 —

.6					
.6.1		6			
			12	4014	
			1.75		
		480			
1					: 5
( . . )		5	* 2,5		8
.1 (8 * 4)		32			
.2 ( 6 )					: 34
:		(32 )			
.2 (34 )					
	6				
.6.2		6			
				4017	
		1			
		600			

1

: 6

6 + 3

-

( . . )

36

.1 (9 \* 4)

.2 ( 6 )

: 26

:

(36 )

,

-

.2 (26 );

8.6.3

.6.2

6f

4017

,

1

600

1

: 6

6 + 3

-

( . . )

36

.1 (9 \* 4)

.2 ( 6 )

: 40

:

(36 )

,

.2

(40 );  
6f

,

( )

9227,

.1

9227 -

9227 -

•

(  
);

-

.2

9227 -

•

•

.4

.4.1

9227.

.4.2

CR24

6932. -

(11 ± 1)

190 « 90

( .4).

:

-

•

-

•

•

.4.3

.4.3.1

24

a)

b)

•

(NaHCOj) (15 ± 2) / :

- (Na<sup>+</sup>CO<sub>3</sub>) (10 ± 2) / ;
- (Na<sub>2</sub>PO<sub>4</sub>) (20 ± 2) / ;

- (45 / 2) \* ;
- (7 ± 1) .

0 \*

40 \*

36 .

. 1

5 ;

)

( , ) ,

.4.3.2

( ,

38

50

),

.4,

160 » 80 .

.4.3.3

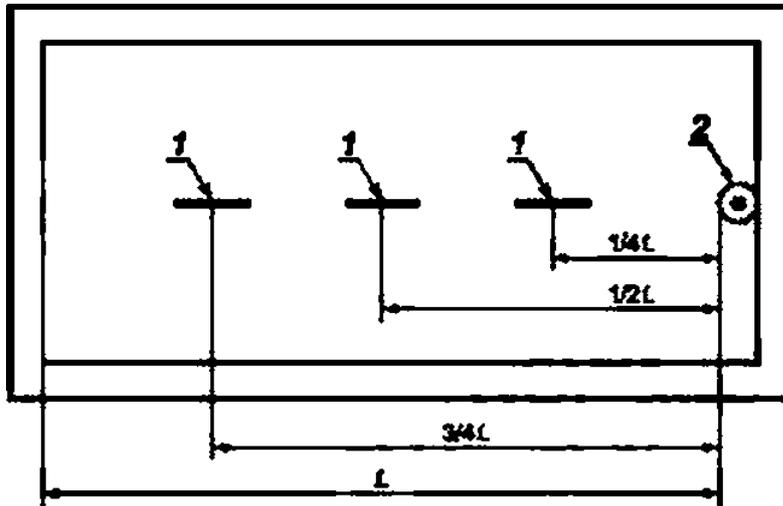
20\* ± 5\*

( . . . .1— . . ):

1/4,

1/2 3/4

9227.

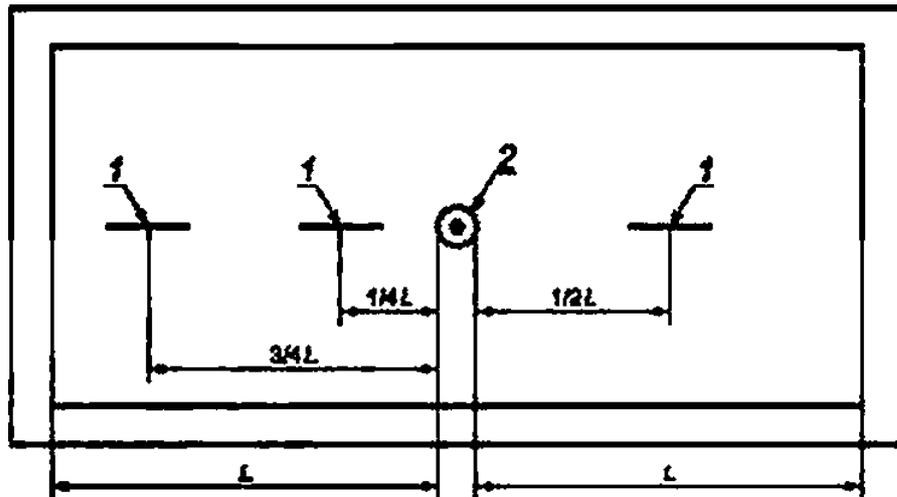


L —

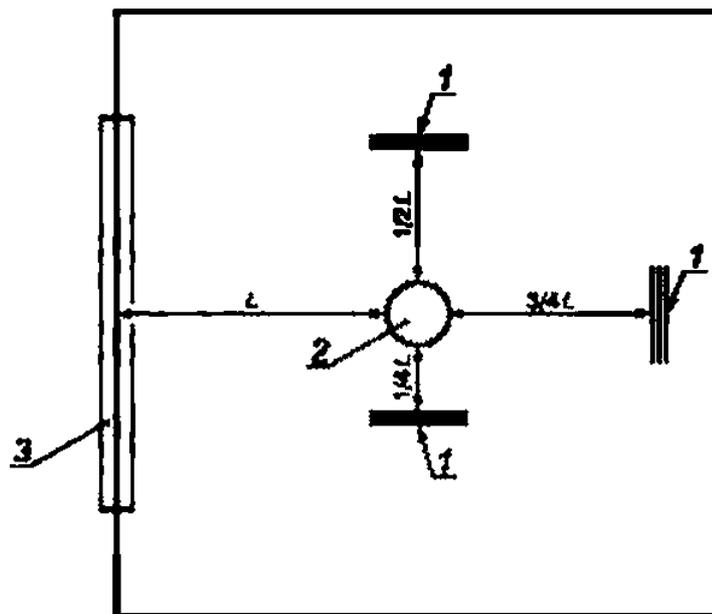
->

: 2 —

.1 —



$L$ — ; 1— ; 2—  
 .2—

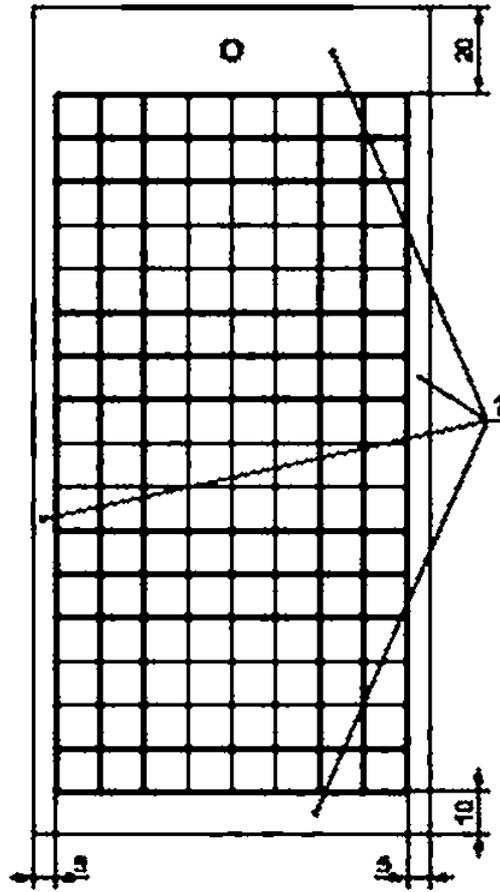


$L$ — 1— .2— .3—

.4.3.4

.4.4

( . .4).



190 \* 90 :

$$\frac{1}{128} = \dots * 0.78.$$

1 — ( . 4.3.2)

.4—

.4.5

( ) ( .

.5).

70—72 .

(24 ± 1) .

72-

( , )

24 .

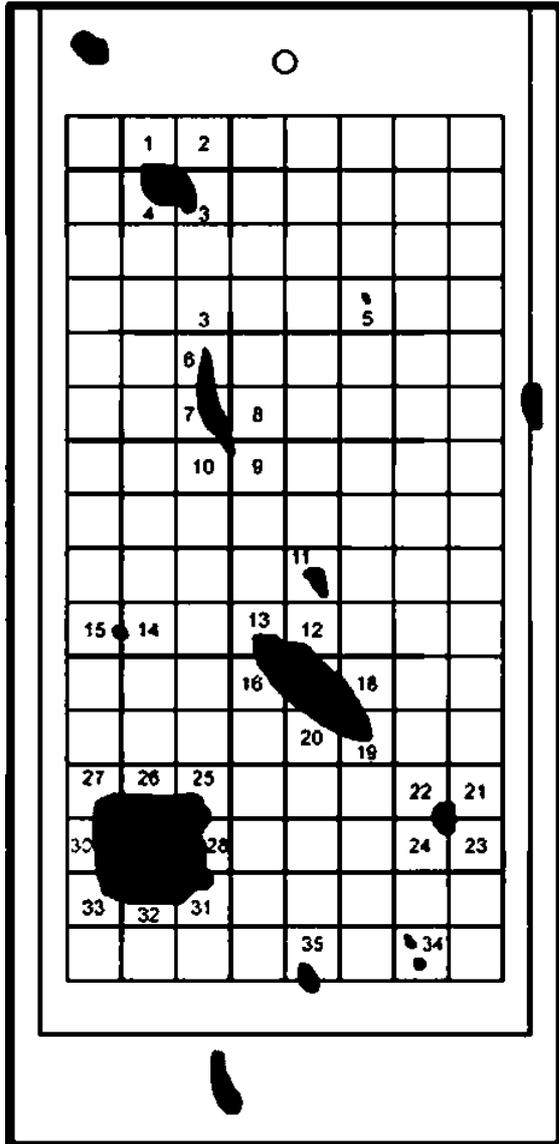
72 .

30 .

60 .

.4.6

.5.



— 35  
 :  
 (35 0.78). 27.3 %  
 f—  
 2— : 3—  
 .5—

.5

(RRT) —

5 % ( . .  
 (RRT)

.6.

.1.

.65.

.1 —

(RRT).		
RRT < 72		
72 < RRT ≤ 96		
96 < RRT ≤ 120		
RRT > 120	D	

.1.

—D

.1.

— )

( , -

.1.

.6

.6.1

:
:
:

.6.2

.		
1	2	3
<p>—</p> <p>9227 (1.5 ± 0.5) / 10 )</p> <p>( 80 <sup>2</sup> ( ) ; -</p>		

.6.3

		%.		
(RRT).		1	2	3
RRT < 72				
72 < RRT ≤ 96				
96 < RRT ≤ 120				
RRT > 120	D			
( RRR 2.5%)				

.6.4

:		

.6.5

.2 — 1;

		%.		
(RRT).		1	2	3
RRT < 72		0 :	1 : 0.78%	0 :
72 < RRTS96		3 : (3 * 0.78) 2.3 %	8 : (8 * 0.78=) 6,2 %	10 : (10x0.78=) 7,8%
96 < RRT S 120		7 : (7 * 0.78=) 5.5 %	12 : (12*0.78=) 9.4%	20 : (20 x 0.78=) 15.6%
RRT > 120	D	—	—	—
{ RRR 2 5%)				
		:		

. — 2:

		%.		
(RRT).		1	2	3
RRT < 72		0 :	0 :	0 :
72 < RRT \$ 96		1 : 0.78%	3 : (3*0.78=) 2.3%	10 : (10*0.78=) 7.8%
96 < RRTS 120		3 : (3 * 0.78=) 2.3 %	7 : (7*0.78=) 5.5%	20 : (20 *0.78=) 15.6%
RRT > 120	D	7 : (7 * 0.78=) 5.5 %	15 : (7 *0.78=) 11.7%	35 : (35*0.78=) 27.3%
( RRR 2 5%)				
		:		

( )

ISO 1463	—	•
ISO 1502	MOD	24997—2004 ( 1502:1996) « »
ISO 3613:2010	—	
ISO 6986	—	
ISO 9227	—	•
ISO 16047	IDT	ISO 16047 — 2015 « »
<p>•</p> <p>—</p> <p>:</p> <p>• — ;</p> <p>• MOD —</p>		

- [1] ISO 898\*2. Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes — Coarse thread and fine pitch thread ( )  
2.
- [2] ISO 965-1. ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data ( ISO 1. )
- [3] ISO 965-2. ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality ( ISO )
- [4] ISO 965-3. ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads ( ISO 3. )
- [5] ISO 1891-2. Fasteners — Terminology — Part 2: Vocabulary and definitions for coatings ( 2. )
- [6] ISO 1891-4. Fasteners — Terminology — Part 4: Control, inspection, delivery, acceptance and quality ( 4. )
- [7] ISO 3269. Fasteners — Acceptance inspection ( )
- [8] ISO 4014. Hexagon head bolts — Product grades A and ( )
- [9] ISO 4017. Hexagon head screws — Product grades A and ( )
- [10] ISO 4032. Hexagon regular nuts (style 1)— Product grades A and ( ( 1). )
- [11] ISO 6932. Cold-reduced carbon steel strip with a maximum carbon content of 0.25 % ( 0.25 % )
- [12] ISO 7089. Plain washers — Normal series — Product grade ( )
- [13] ISO 16426. Fasteners — Quality assurance system ( )

621.882.6:006.354

21.060.01

2 25.94.1

11—2020/170

14.10.2020.

02.11.2020.

1/1.

3.72. 3.37.

« <17416 » - . . 31. . 2.  
www.postinforu in(o@<tinroTu