



**ПНСТ  
405-  
2020  
( IEC 63056:2020)**

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-

**(IEC 63056:2020, MOD)**

**Москва  
Стандартинформ  
2020**

405—2020

1 « » ( -  
 « »)  
 4 ,

2 044 « »

3 -

28 2020 . N 14-

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63056:2020 « , -  
 » (IEC 63056:2020 «Secondary cells and  
 batteries containing alkaline or other -add electrolytes — Safety requirements for secondary lithium cells  
 and batteries for use in electrical energy storage systems». MOD) , ,  
 / -  
 -  
 -

1.16—2011 ( 5 6).

42. . 1. . VI. / : 109074 , . 7. . 1. : 105094 4 , . . ,

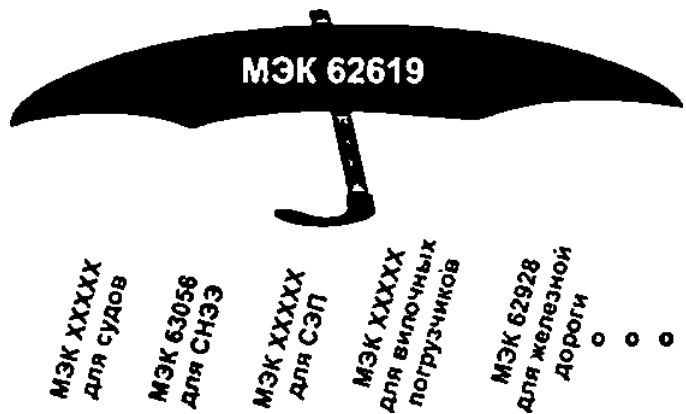
« »

(www.gost.fu)

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1	.....	1
2	.....	2
3	.....	3
4	.....	4
5	.....	4
5.1	.....	4
5.2	.....	5
5.3	.....	5
6	.....	5
6.1	.....	5
6.2	.....	6
7	.....	6
7.1	.....	6
7.2	.....	6
7.3	.....	7
7.4	.....	7
7.5	.....	7
7.6	.....	7
7.7	.....	6
7.6	.....	8
7.9	.....	10
8	.....	10
9	.....	10
( )	.....	11
( )	.....	12
( )	.....	19
	.....	20

«      »  
62619 (      1).



1 — 62619 «      »      ,  
)

—      ,      «      ».

405—2020  
( 63056:2020)

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Secondary cells and batteries containing alkaline or other non-acid electrolytes.  
Safety requirements for secondary lithium cells and batteries for use in electrical energy storage systems

— 2020—11—01  
2023—11—01

1

( . 2)

1500 ( ),

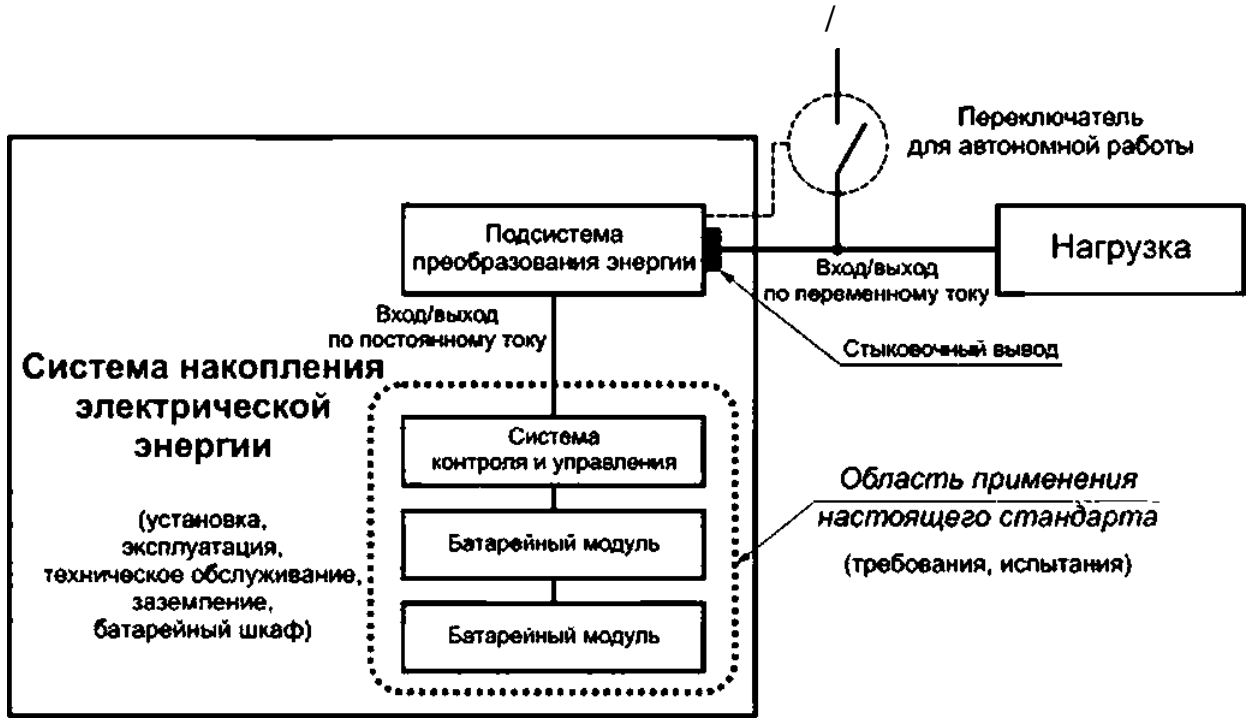
( ).

500

[1].

62619.

- ;
- ;
- ;
- ;
- ( ) ;
- : /



2 —

2

12423 (ISO 291:2008)	.		
( )			
IEC 60950*1—2014 (IEC 60950*1:2005)	.		*
1.			
IEC 62366*1—2014 (IEC 62368-1:2010)	.		*
1.			
57149/ISO/IEC Guide 51	.		
58593	.		
60695-10*2 (IEC 60695-10*2:2003)	.	10-2.	-
62133*2—2019 (IEC 62133-2:2017)	.		-
		2.	-
62619 (IEC 62619:2017)	.		-
62620—2016 (IEC 62620:2014)	.		*
			-
»,			« -
«		1	-
»			

( ) .

3

58593 57149. -

3.1 (safety):

3.2 (risk):

3.3 (harm):

3.4 (hazard):

3.5 (intended use):

3.6 (reasonably foreseeable misuse): -

3.7 (secondary lithium cell, cell): / -

3.6 (cell block): ( ) -

3.9 (module): / ( ) -

3.10 (battery pack): ( / ) -

3.11 (battery system, battery): , -

1

2

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3.12 ; (battery management system; BMS):

1

2

3

4

3.13 (leakage):

3.14 (venting):

3.15 (rupture):

3.16 (explosion):

3.17 (fire):

3.18 (rated capacity):

62620—2016, 6.3.1.

4

a)  $\pm 0,5\%$  — ;

b)  $\pm 1\%$  — ;

c)  $\pm 2^*$  — ;

d)  $\pm 0,1\%$  — ;

e)  $\pm 1\%$  — ;

f)  $\pm 1\%$  — .

5

5.1

62619.



a) ;  
b) ;  
c) ;  
d) ;  
e) ;

( 2).

5.2

IEC 60950\*1—2014.

3.1 3.2 ( )

5.3

6

6.1

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!

75\* .

6.2

( )

6

7.2.

0.2/ , (25 ± 5) “

(25 ± 5)\* .

6

6

1.

1—

7.3	1
7.5	1
7.6	1
7.7	1
7.8	1
7.9 ( )	1

7

7.1

7.2

0.2/ .

(25 ± 5) ’

1

6

$$I(\dots) = \dots / \dots ( \dots ) ( \dots [2] ) .$$

( „ - ) .

2 , 0.2/c . , -

7.3 , -

60695-10-2.

( + \* 15 ' ) ± 2 °C. ( —

(25 ± 5) °C; —  
)

7.4 , -

V-2, V-1 V-O.

V-1.

V-2.

13 V1. , -

7.5 , -

a) , 0.2/c . ( -

7.2.

(25 ± 5) "" .

(30 ± 10)

( 5 , 100 , -

100

6

80 %

b) , -

7.6 , -

62133-2—2019.

(25 ± 5) \* .

5.2

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7.7

a)

(25 ± 5) °C.

0,2/..

1

1

1

b)

7.8

7.8.1

2.

2—

?	< 7		100.0
7Sm	< 20	311	100.0
20 S	» < 50	81	50.0
50Sm	< 100	—	5.0
m2	100	—	2.5
>			

7.8.2

50

)

0.2/..

7.2.

2.

7 . -  
 7 s < 50 . -  
 1 . -  
 )  
 7.8.3  
 a) 50 .  
 0.2/c . -  
 7.2. -  
 2. -  
 3—5. -  
 / . -  
 1 . -  
 b) -

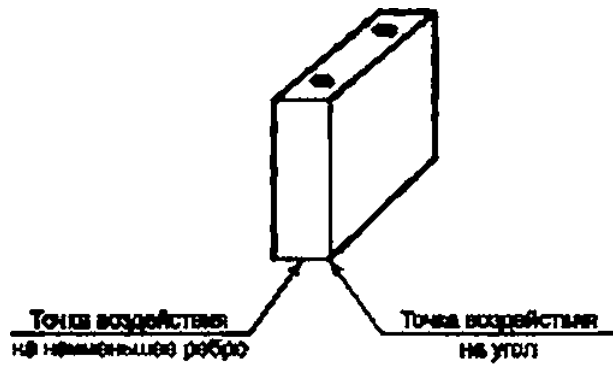
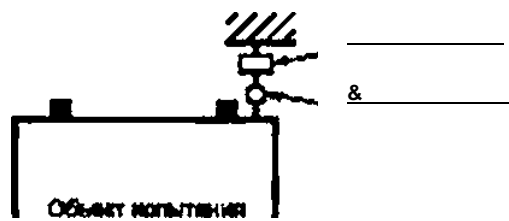


Рисунок 3 — Место удара



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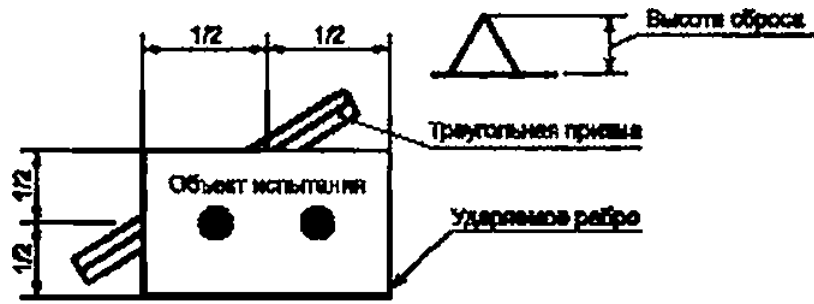


Рисунок 5 — Схема испытания на падение на угол

7.9

( )

a)

$(25 \pm 5) *$

30 %

$0.2/r$

( )

1

b)

8

62619.

9

5

62620—2016.

( )

.1 , IEC 60950-1.  
 — IEC 60950-1—2014.

3.1.1		3.1.9	
.2		3.1.10	
3.1.3		3.2.1.2	-
3.1.4		3.2.5.2	
3.1.6	,	3.2.6	
3.1.7	-	3.2.7	
3.1.8		3.2.8	

2 , IEC 62368-1.  
 .2 — IEC 62368-1—2014.

5.4	( )
G.9	
G.9.1	
G.9.2 <sup>1</sup> *	
G.9.3	
G.9.4	
G.9.5	

IEC 62368-1—2014

G.4 G.9.1.

-

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( )

(V — ( ) — . [3]).

.1

.2

(50110) %.

12423.

.1.3

(23 ± 2) “

.4

20 %.

(70 ± 2) ’ .

.5

5-

100 %-

.2

.2

.2.1

.2.2

« »

48

(23 ± 2) ’

(50 ± 10) %.

30

.2.3

( . .1.4)

(168 ± 2)

4 .

(70 ± 2) ’ .

24

30

(125 ± 2) ’ .

.2.4

24

30

.2.5

15 \* 35 ‘

40% 75 %.

.3.1

6

(300 ± 10)

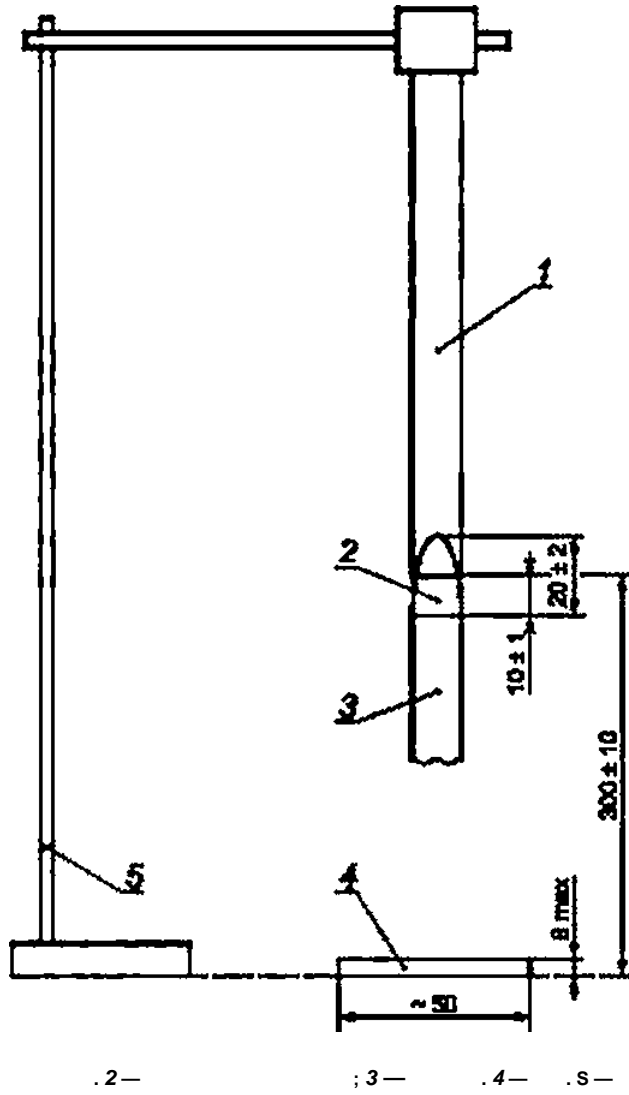
50 \* 50 \* 6

0.08

( . .1.5).

( . .1).





3.2

( [4]).  
 a)  
 b)  
 c)

5

50

5

( $10 \pm 0.5$ ) ( $10 \pm 1$ )

10

( [4]). 2)

45\* ( )

( $10 \pm 1$ )

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(10 ± 0.5)

< , — 150

(10 ± 0.5)

(1011)

(10 ± 0.5)

$f_2$  1\$

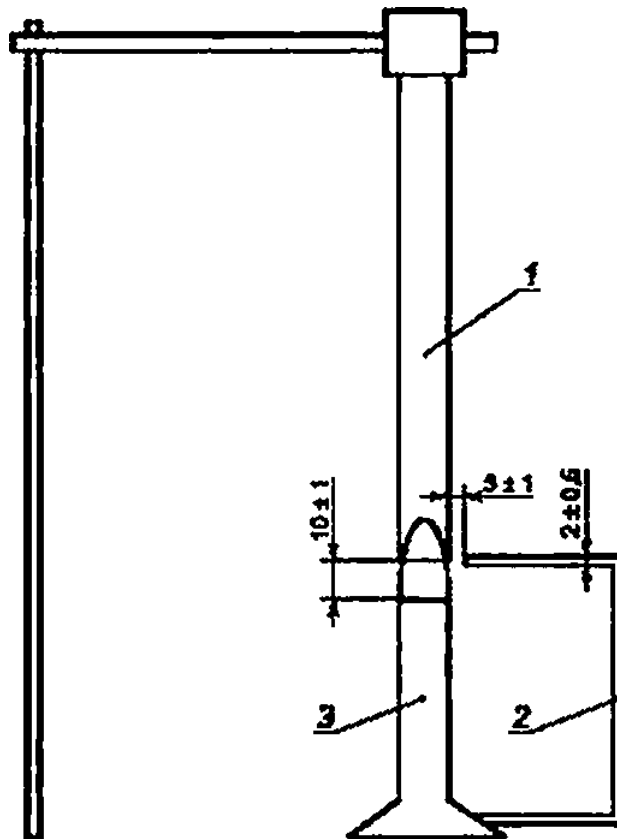
a)  $t_2 \cdot 1$ t_2 * t_j-$  ( . .1.5);

b) ( . .3.4).

1  $l?$  1\$

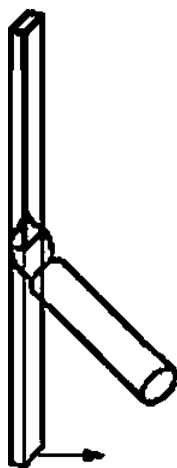
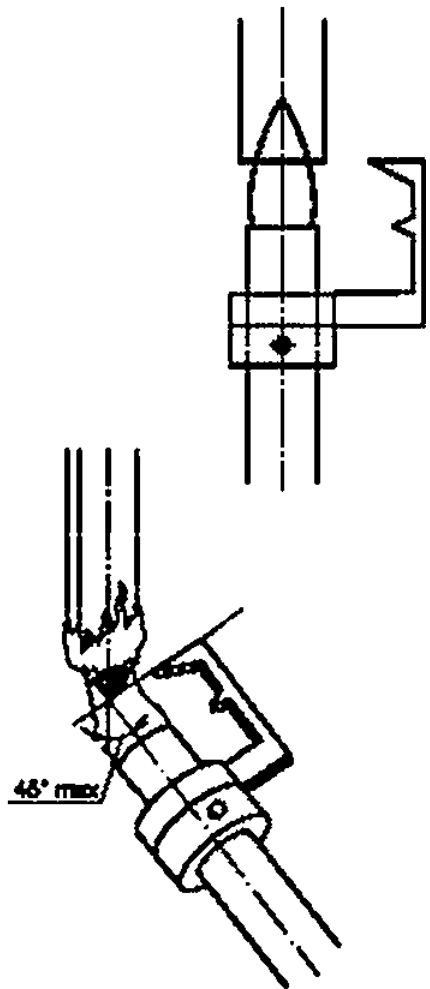
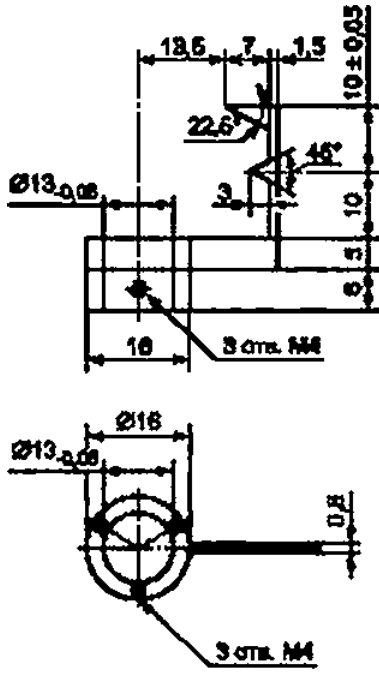
2 150  $t_2$

.2.2. .2.3.



t— : 2— : 2—

.2—

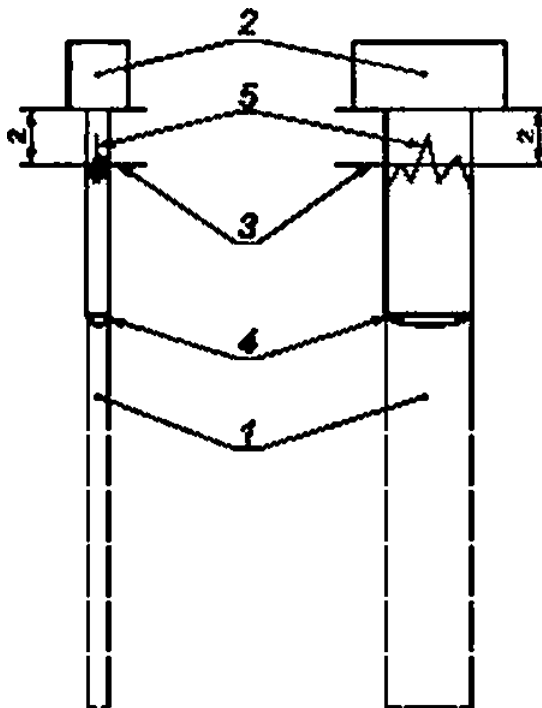


)  
.4—

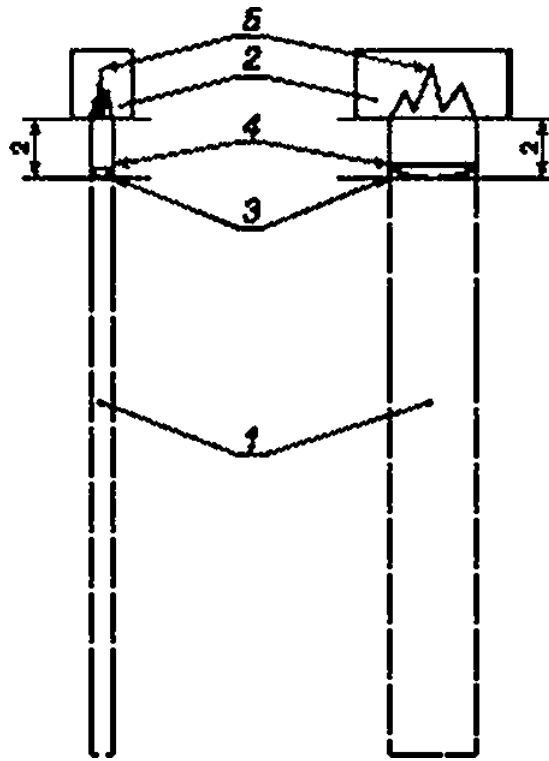
1

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.3.4 « »  
, « »  
2 , , -  
(2 ) , -  
», « -  
( . 5 .6). « »



f — — 2 — , .3 — (2 , ) ;  
4 — . \$ —  
.5 — « »



$i$  — ; 2 — ; 3 — ; 4 — ; 5 — ; S — (2 ) ;

.6 — « »

.3.5

51 55 V-0 251 255 V-1 V-2 ( . .5).

.4

$t_f$

$t_p$

$$= \sum_{j=1}^5 + \quad ( )$$

$f$  —

$f_{21}$  —

.5

V-0. V-1 V-2 (V — )

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	V0	V-1	V-2
	$(I_1, I_2)$	S	\$30
-	S50c	3 250	«250
$(I_2 + I_3)$	S30c	S60c	560
-			
?			
?			

( 66). V-2, 225 / ( 210 / ( 96 %- 90 %- 70 % ) ( . [5]).

.6

a) ;

b) , . -

c) ;

• 1.0 ;

• 1.0 . 0.1 : 0.001 ;

d) ( );

e) ;

f) ;

g) ;

h)  $I_1, I_2, I_3, I_2 + I_3$  ;

i) 1, -

j) ( . 2.1 2.2);

k) ;

l) , «V-0@ 1.5 ».

( )

,

.1

IEC 60950-1—2014		IEC 60950-1:2005 « 1.»	-
IEC 62368-1—2014		IEC 62368-1:2010 « 1.»	-
571492016		iSO/IEC Guide 51:2014 «	-
60695-10-2—2010		IEC 60695-10-2:2003 « 10-2.»	-
62133-2—2019		IEC 62133-2:2017 « 2.»	-
62619—2020		IEC 62619:2017 «	-
62620—2016		1 62620:2014 «	-
- IDT —			-

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- [?] 61960-3  
3.  
(Secondary cells and batteries containing alkaline or other non-acid electrolytes — Secondary lithium cells and batteries for portable applications — Part 3: Prismatic and cylindrical lithium secondary cells and batteries made from them)
- [2] 61434  
(Secondary cells and batteries containing alkaline or other non-acid electrolytes — Guide to designation of current in alkaline secondary cell and battery standards)
- [3] 60695-11-10:2013 11-10.  
50 (Fire hazard testing — Part 11-10: Test flames — 50 W flame horizontal and vertical flame test methods).
- [4] 60695-11-4:2011 11-4. 50  
(Fire hazard testing — Part 11-4: Test flames — 50 W flame — Apparatus and confirmation test method)
- [5] 307:2019 (Plastics—Polyamides — Determination of viscosity number)

621.355.9:006.354

OKC 29.220.99

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03.06.2020.

15.04.2020.

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