



**72072-
2025**

1 . : » (« ») « -

2 336 «

3 20 2025 . 437-

4

29 2015 . 162- « 26 ». (1) « », « ». « ».

(www.rst.gov.ru)

1	.....	1
2	.....	1
3	.....	2
4	.....	5
5	.....	5
6	.....	6
6.1	.....	6
6.2	.....	7
6.3	.....	11
6.4	.....	12
6.5	.....	16
( )	.....	18
( )	.....	21
( )	.....	29
( )	.....	34
	.....	38

Earth electrodes and earthing arrangements for various purposes. Earthing arrangements for stationary telecommunication installations. Technical requirements

— 2025—07—01

1

2

464

24375

32134.1 (EN 301 489-1:2008)

1.

12.1.038

50397 (60050-161:1990)

50571.5.54 (60364-5-54:2021)

5-54.

53801

58882

59789 (62305-3:2010)

3.

70646.2

2.

62305-1

1.

62305-4

4.

62561 ()

3.8

(N) (neutral conductor):

[60050-826—2009, 826-14-07]

3.9

— (, IT),

3.10

: (+) 48- 60-

3.11

(equipotential bonding system; EBS):

[57190—2016, 01-12-42]

3.12 ; (common equipotential bonding system, common bonding network; CBN):

— -
: -
, -
, -

3.13 [()] [MESHed Bonding Network (MESH-BN)]:

3.14 [(-)] [MESHed Isolated Bonding Network (MESH-IBN)]:
) -
— -

3.15

(earth-electrode network):

[57190—2016, 01-10-67]

3.16

(system block):

3.17

(bonding):

[57190—2016, 01-13-76]

3.18

(bonding mat):

3.19

PEN- (PEN conductor):

[60050-826—2009, 826-13-25]

3.20
(),

3.21

:

- ;
- 100 2;
-

3.22

(),

3.23

(),

3.24

().

3.25

3.26

3.27

(),

3.28

),

(

3.29

(,)

3.30

« »

3.31

72072—2025

5.4	-	-	-
5.5	51317.4.1	32134.1.	-
5.6	62305-1	59789.	-
		62305-4.	-

6

6.1

6.1.1	[1],	1.7,	58882
50571.5.54.			

(1.7,	464.	[1],	-
---	------	------	------	---

6.1.2

6.1.1.

464.	6.1.3	()	()
------	-------	---	---	---	---

464.

464 -

100 - 200 — 100 -

100 (20 59789.

6.1.4

6.2

6.2.1 [1], 1.7, 58882 50571.5.54.

6.2.2

- :

- () ; (-),

6.2.3

6.2.4

6.2.5

- ;

- () (TN);

- ;

- ;

6.2.6 [2],

6.2.7

6.2.8

6.2.9

- ; /

- ()

6.2.10 .1.

- ()

3) - « »
(. .4).

- :
- , ;
- PE- , TN-S;
- , [1]
- , ;
- 6.2.18 .

6.2.19 , [1].

(« / »)
TN-S.
6.2.20

)
) ;
) ;
(, 400) , (

6.2.21 , (.6).

- ;
- ;
- (-).

6.2.22

« »

).

()

;

;

;

;

6.2.23

-48

6.2.24

()

);

);

);

);

);

);

);

);

);

);

6.2.25

TN-S,

);

1) TN-S

);

1) PEN-

2) (N)

3) (.5, 2). IT PE- , :

1) ;

2) PE- TN-S. IT ,

TN-S (.5, 1).

6.3

6.3.1

0,3—0,7 , 0,65 [3].

6.3.2

(), 2

- PE- ();
- ;
-

6.3.3

6.3.4

, (.7),

6.3.5

6.3.6

;

2 .

—

) ,

:

;

;

;

2

6.3.7

6.3.8

6.3.9

PE-

6.4

6.4.1

() ,

()

10

6.4.2

(. . . .1).

0,7 80 %

1

6.4.3

.1.

6.4.4

.2.

6.4.5

[4].

.4.

6.4.6

6.4.7

6.4.8

(. . .) (. . .) (. . .)

) (. . .) (. . .)

, (. . .) 1. ,

1—

3	I	II	III—IV
	10	15	20
—			

, , : , , -
, . -
,

6.4.9

). () -
, , -

6.4.10

6.4.11

: .5. -
.

, -
.

, -
.

, 2 . -
.

, 1 . -
.

, 1 . -
.

() -
.

, -
.

, -
.

() -
.

, -
.

-
-

).

.1— .2.

[1],

1.7,

[1],

1.7,

.4.

;

)
2,5 2—
4 2—

:

16 2.

50571.5.54

[1],

6 2
1.7,

50 2

-
-

;

;

(, .);

(

);

(.).

25 2

— 16 2,

— 50 2,

: — 6 2,

-
-

;

6.5.2

59789.

.4.

.5.

()

.1 12.1.038

« — »,

.2

« — ».

50

.1.

.1 —

50

		t,											
		0,1	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,0
« — »	^ ,	390	340	310	240	165	125	100	88	82	76	73	65
	l,	500	400	350	250	150	100	75	63	57	52	50	40
« — »	" -	1200	1170	1150	975	900	750	450	400	350	300	250	150
	l,	4000	3900	3750	3250	3000	2500	1875	1575	1425	1300	1250	300

.1

15 100

.2.

.2 —

50

		t,											
		0,1	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,0
« — »	^ ,	220	200	100	70	55	50	40	35	30	27	25	12
	l,	220	200	100	70	55	50	40	35	30	27	25	2

.4

— .4.

		t,											
		0,1	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,0
« — »	^ ,	390	310	240	220	205	195	190	180	170	160	155	50
	l,	500	350	250	220	200	190	180	170	160	150	140	100

.4 —

50

		t,							
		0,1	0,1	0,2	0,3	0,4	0,5	0,8	1,0
« — »	^ . s °	550	470	440	340	230	175	175	175
	/... , ,	710	560	500	350	210	140	120	110

.5

400

.5.

.5 —

400

		t,											
		0,1	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,0
« — »	^ ,	650	500	500	330	330	330	330	330	310	280	270	220
	/,	—	—	—	—	—	—	—	440	400	365	350	280

.6

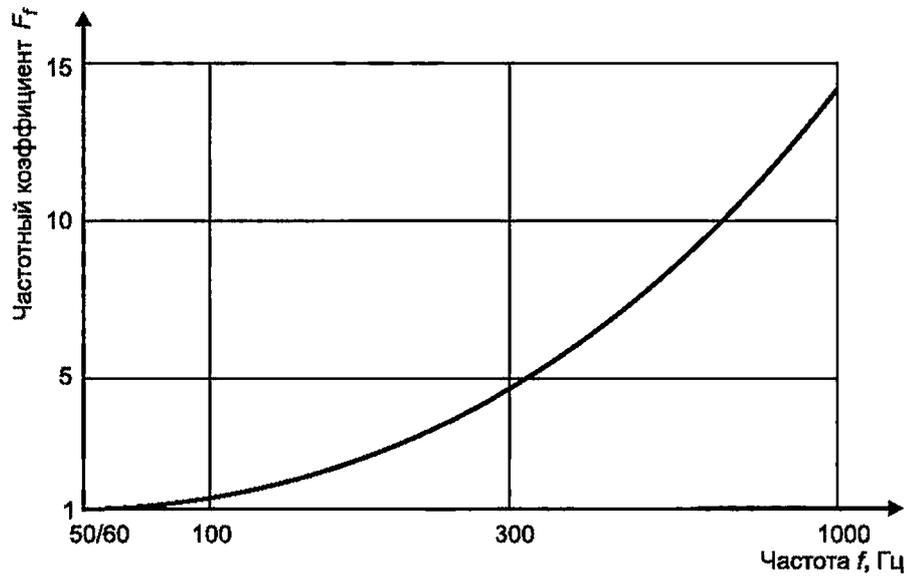
100 1000

F_f

70646.2.

)

.1.



.1 —

50 1000

1 150

.1 (50),

$$= 4,4 \cdot f,$$

(.1)

f—

72072—2025

.6—
50

		-	, t, '							
			0,1	0,1	0,2	0,3	0,4	0,5	0,8	. 1,0
« — »	,	0	550	470	440	340	230	175	130	90
		90	550	470	440	340	230	175	140	110
		120	640	550	500	390	260	200	165	130
		150	1100	950	870	680	460	350	260	180
		160	1600	1400	1300	1000	670	500	360	210
		170	3200	2700	2500	2000	1300	1000	660	300
		175	6300	5400	5000	3900	2600	2000	1200	430

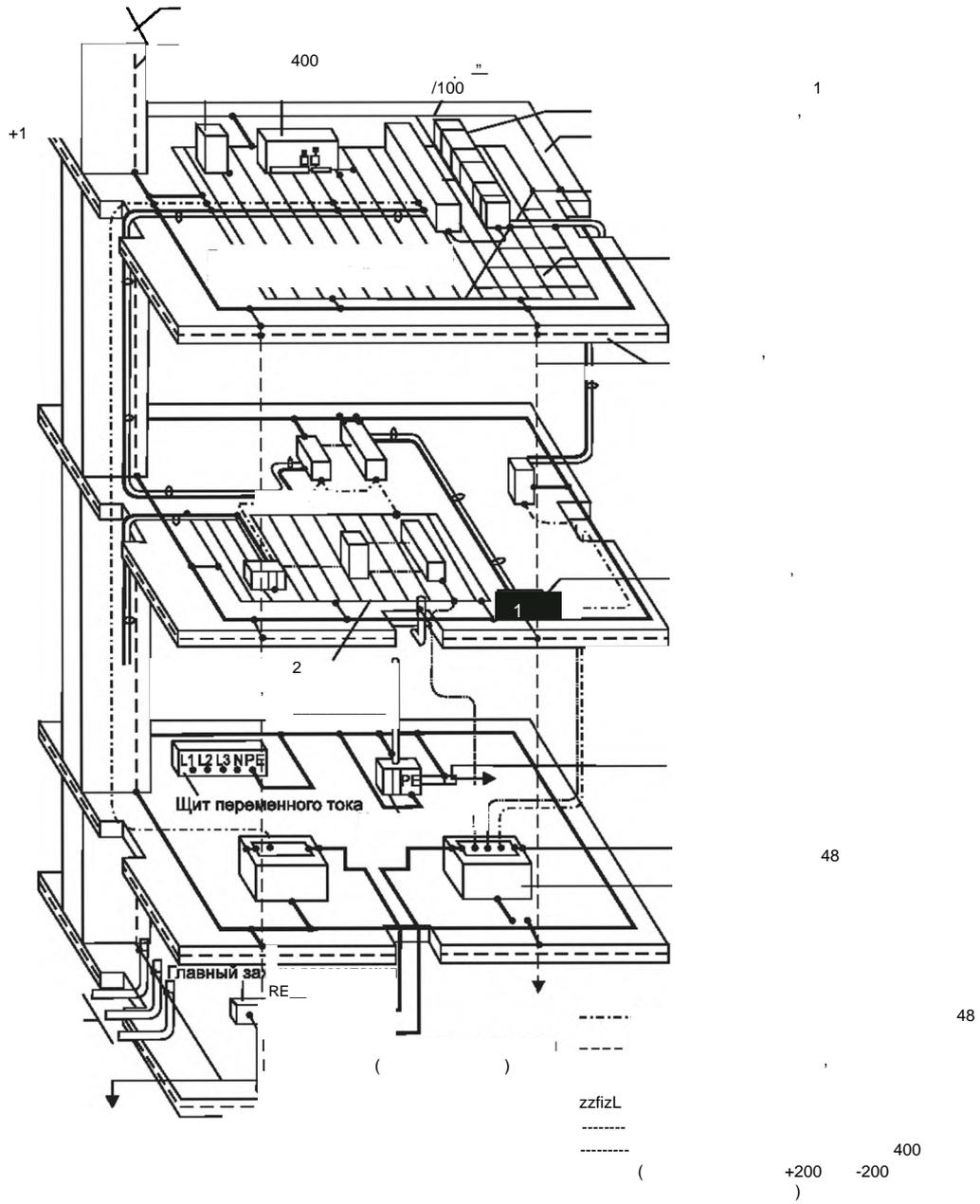
.7
0,1 10 , .7.

.7—
0,1 10

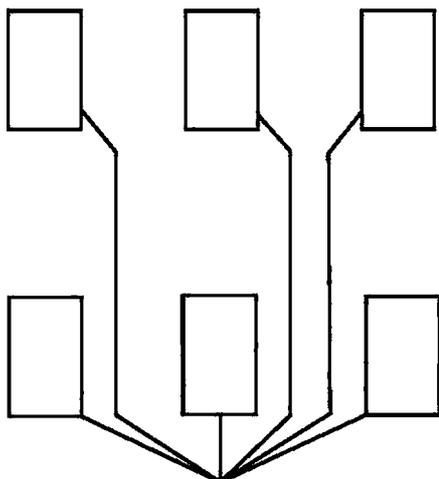
		, t, '					
		0,1	0,2	0,5	1	2	4—10
« — »	^ ' ^	3400	2000	1000	800	500	400
	/,	7000	4000	2100	1200	630	500

(-
-
62305-1) 6 ,
— 15 .

()



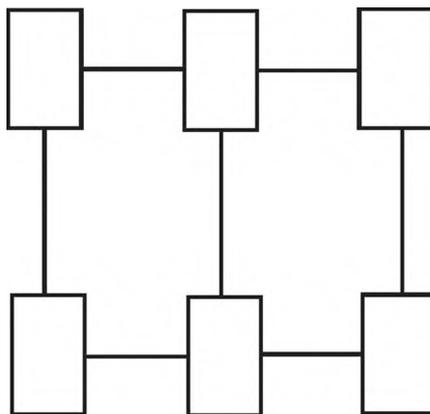
.1 —



В виде звезды

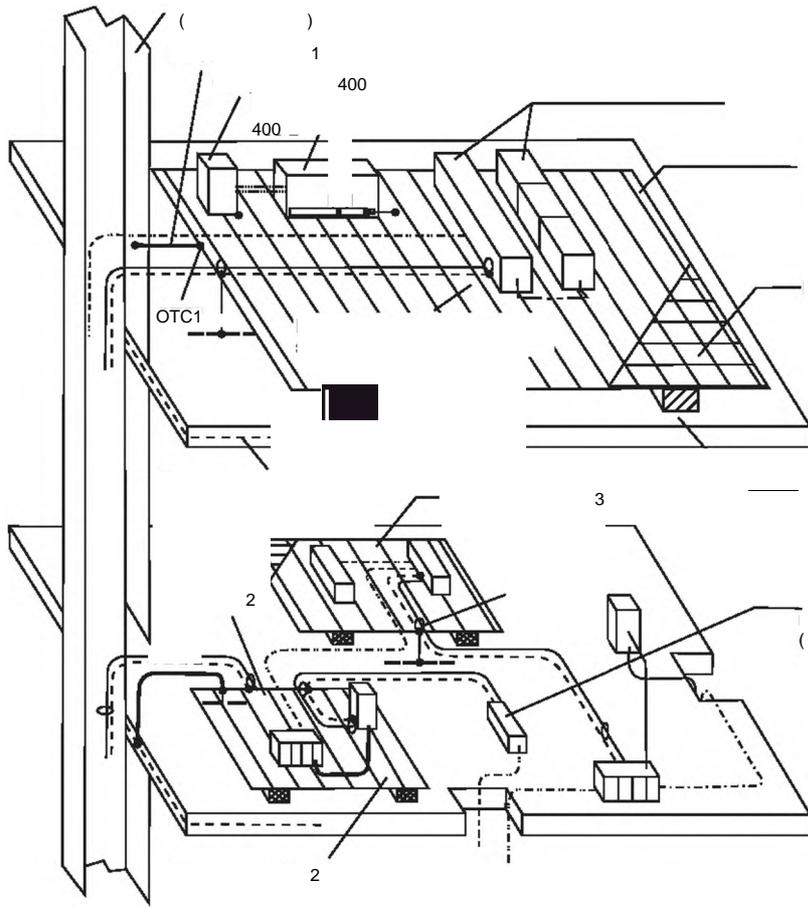


,



,

.2—



 = 0 =

) 400 (+200 -200

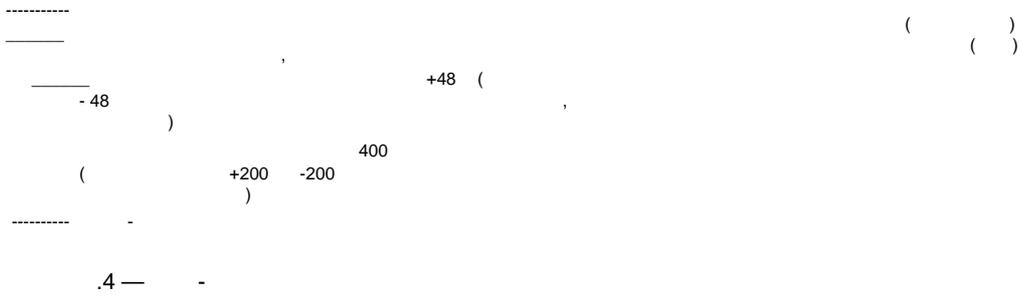
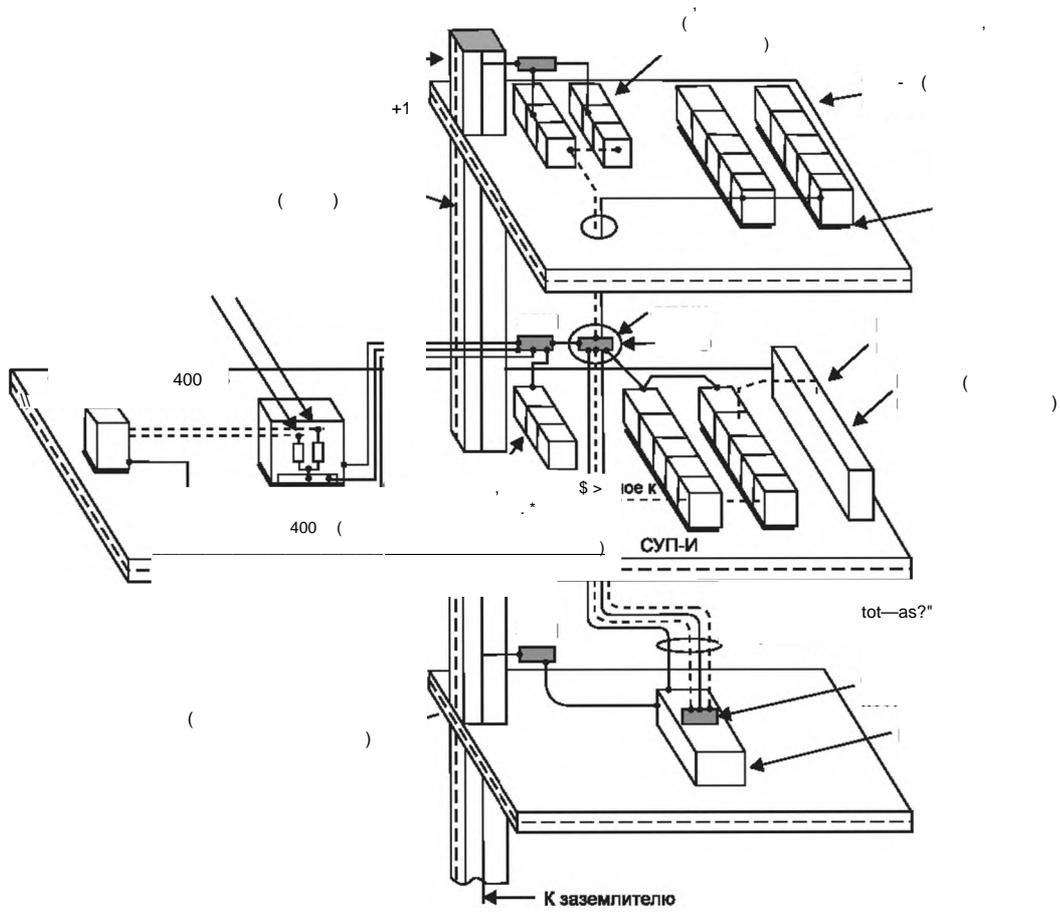
1

1, 2 3

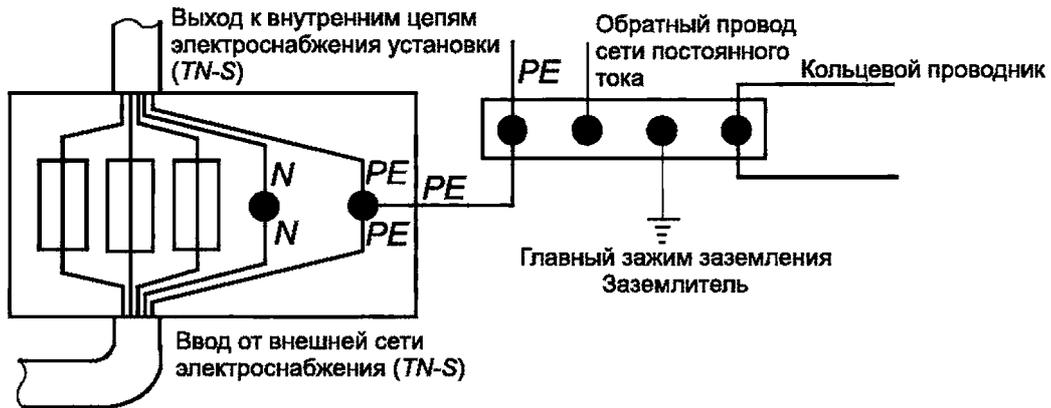
(4),

2

).

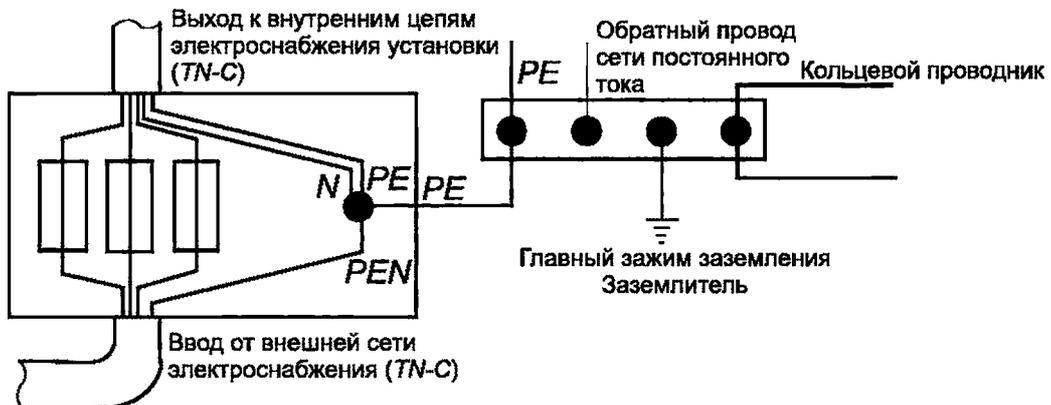


1: TN-S/TN-S

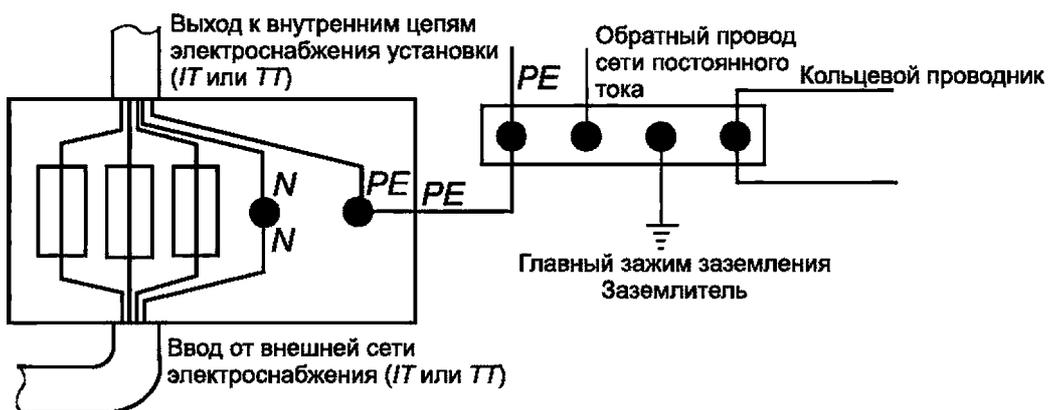


TN-S

2: TN-C/TN-S

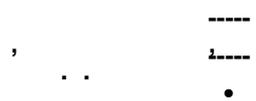
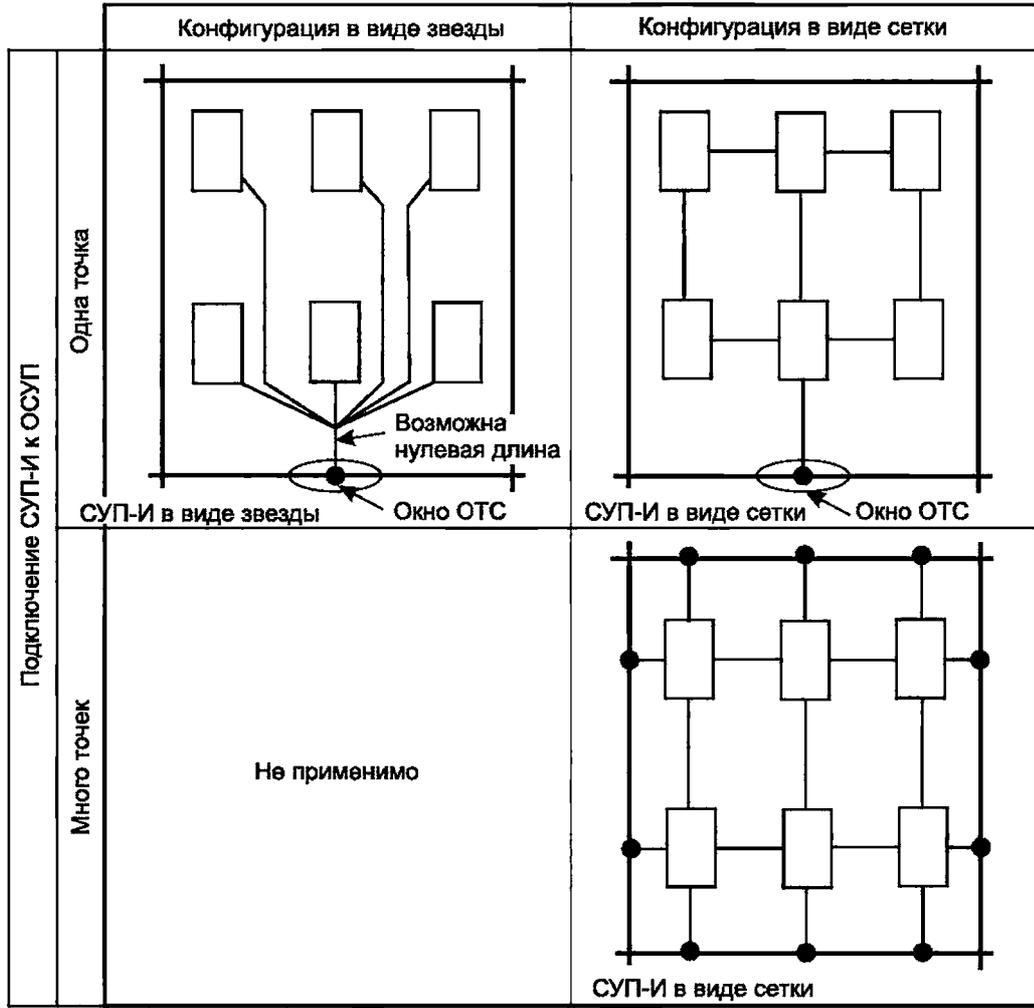


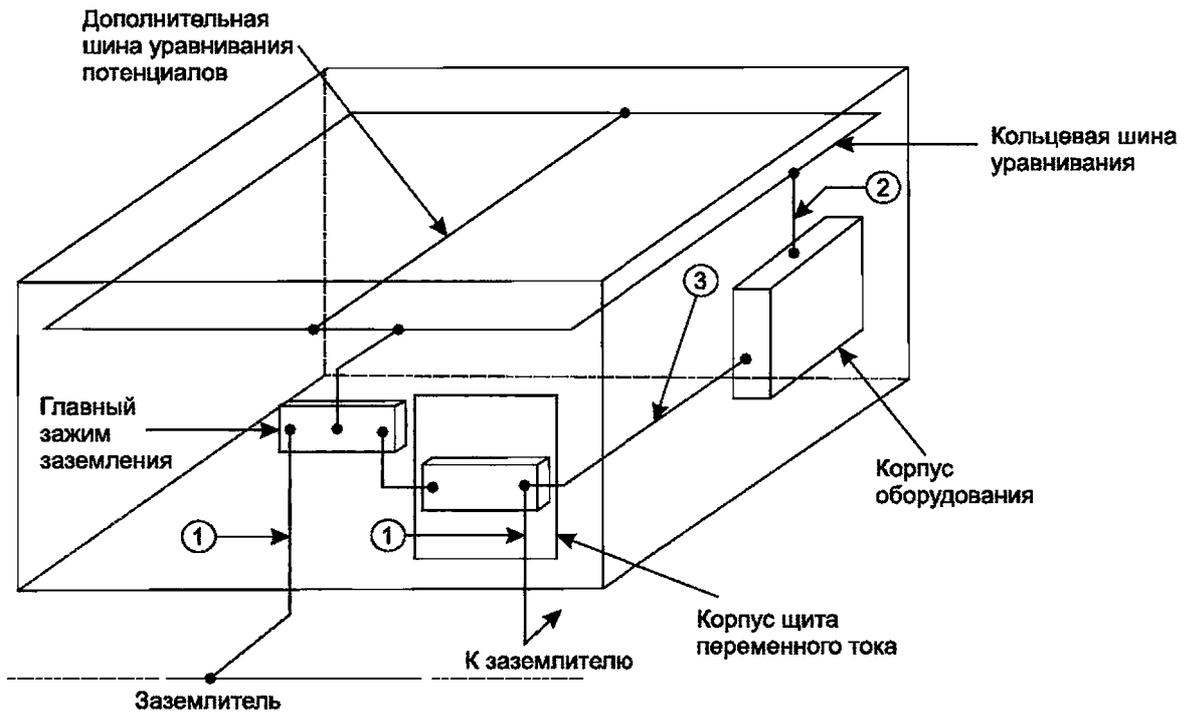
3: IT / TT



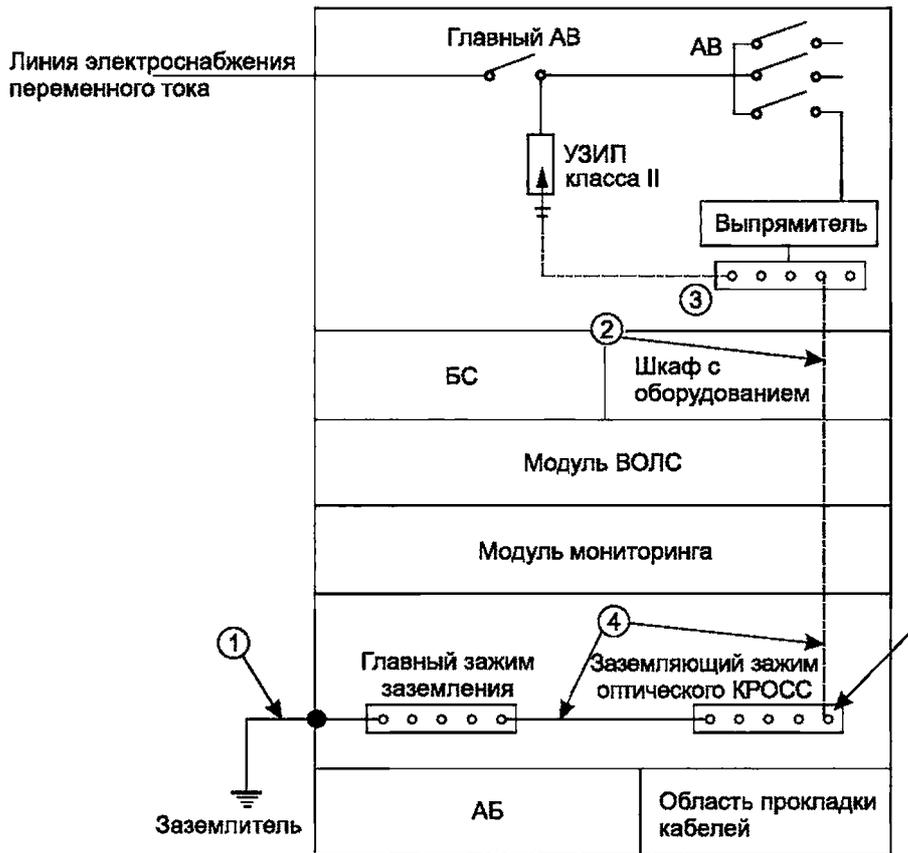
.5—

TN-S

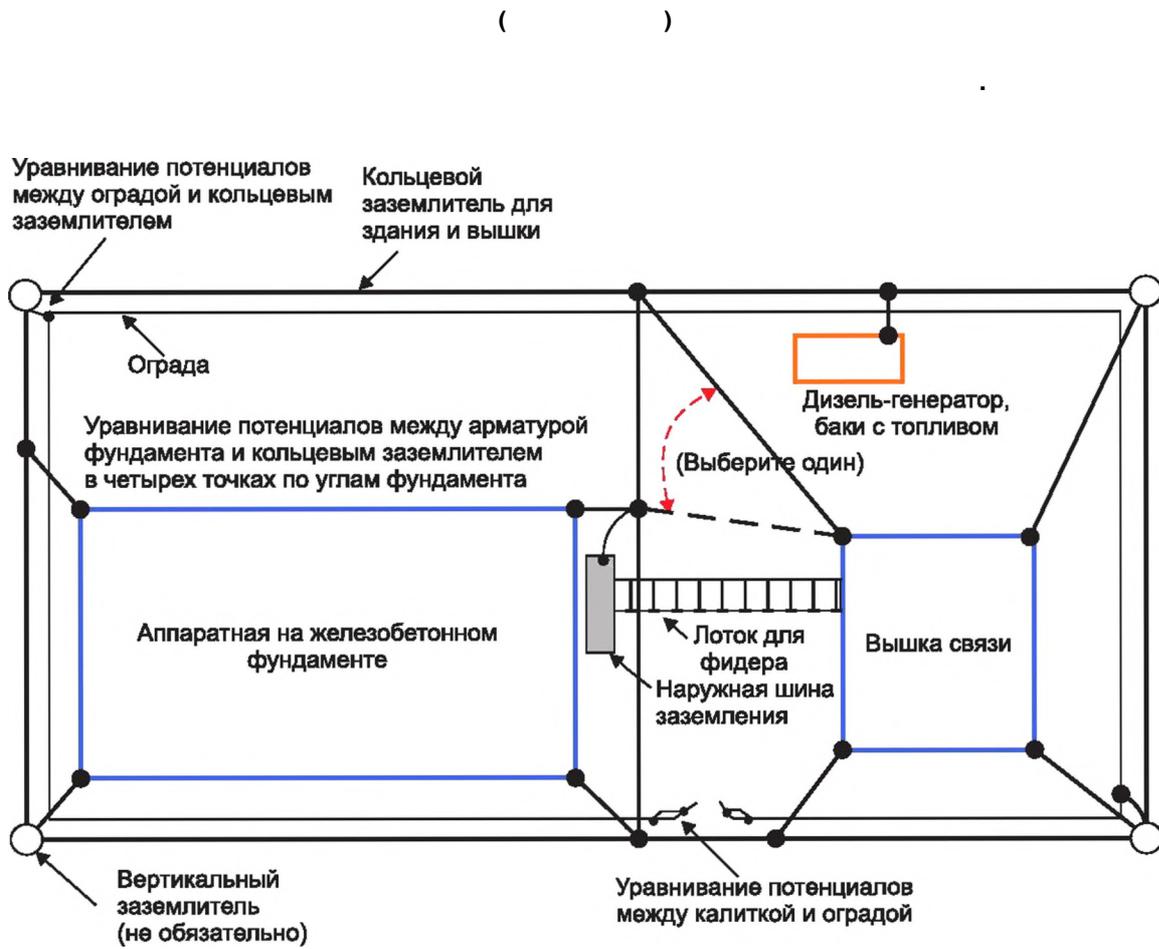




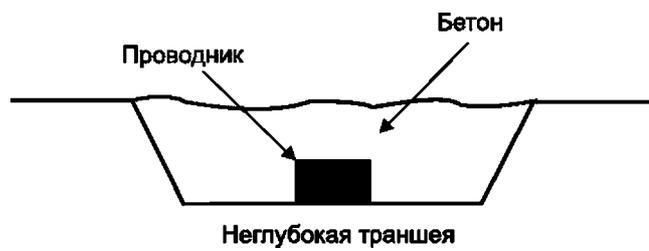
.7 —



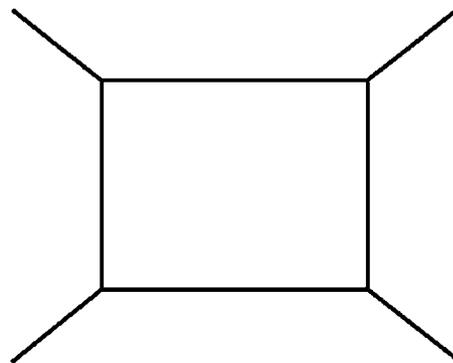
- 1 -
- 2 -
- 3 -
- 4 -

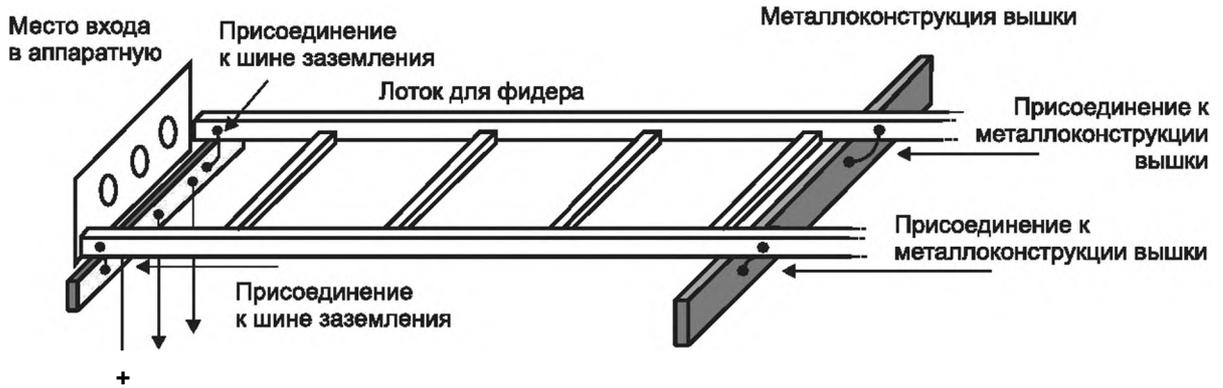


.1 —



.2 —





.4 —

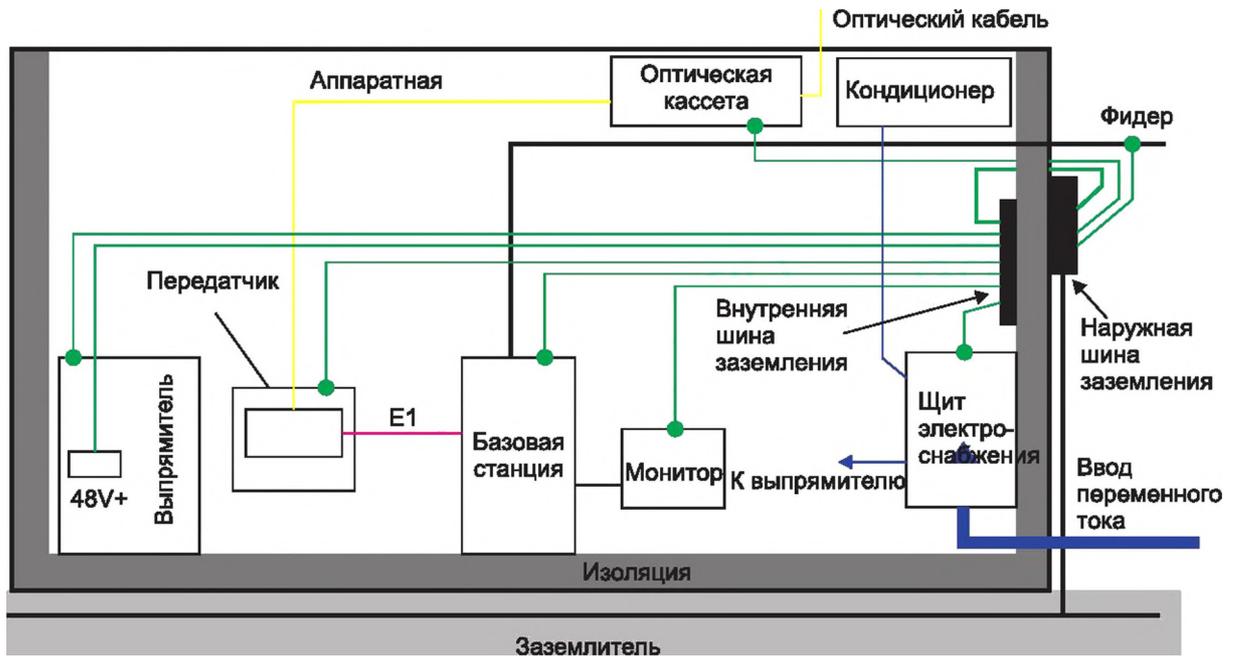
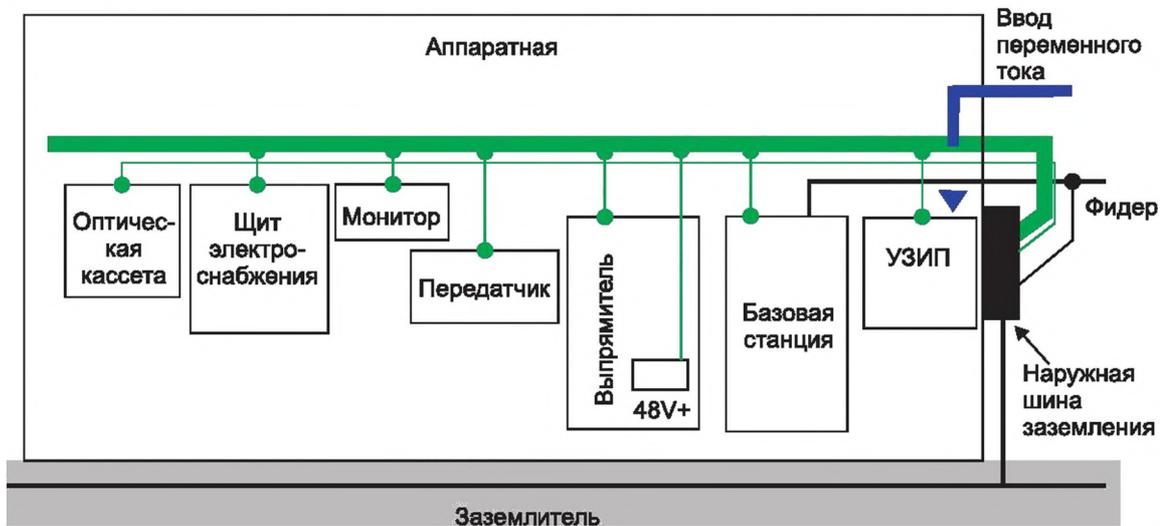


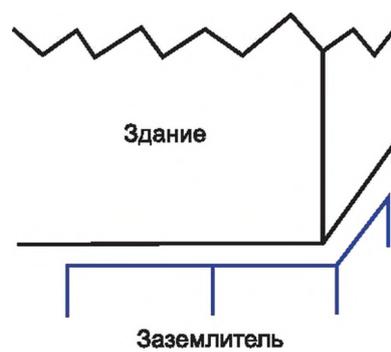
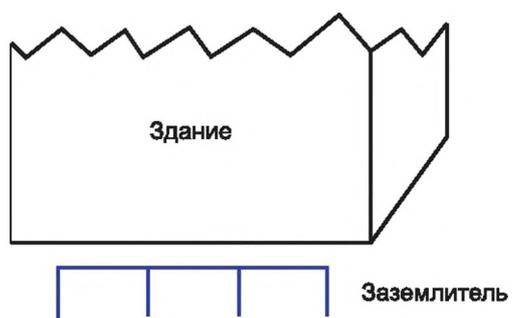
Рисунок В.5 — Система уравнивания потенциалов в аппаратной, конфигурация А



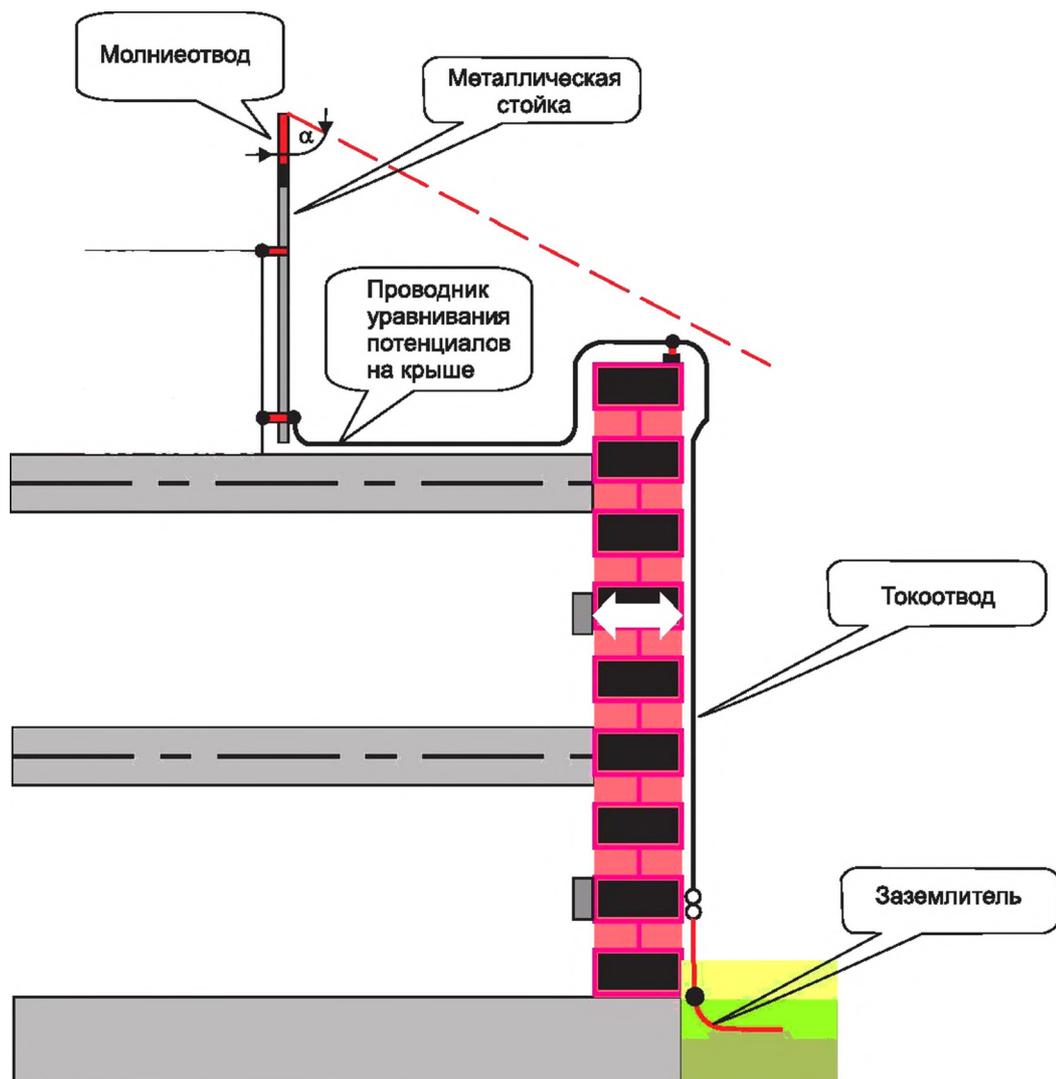
.6 —

	—	iii

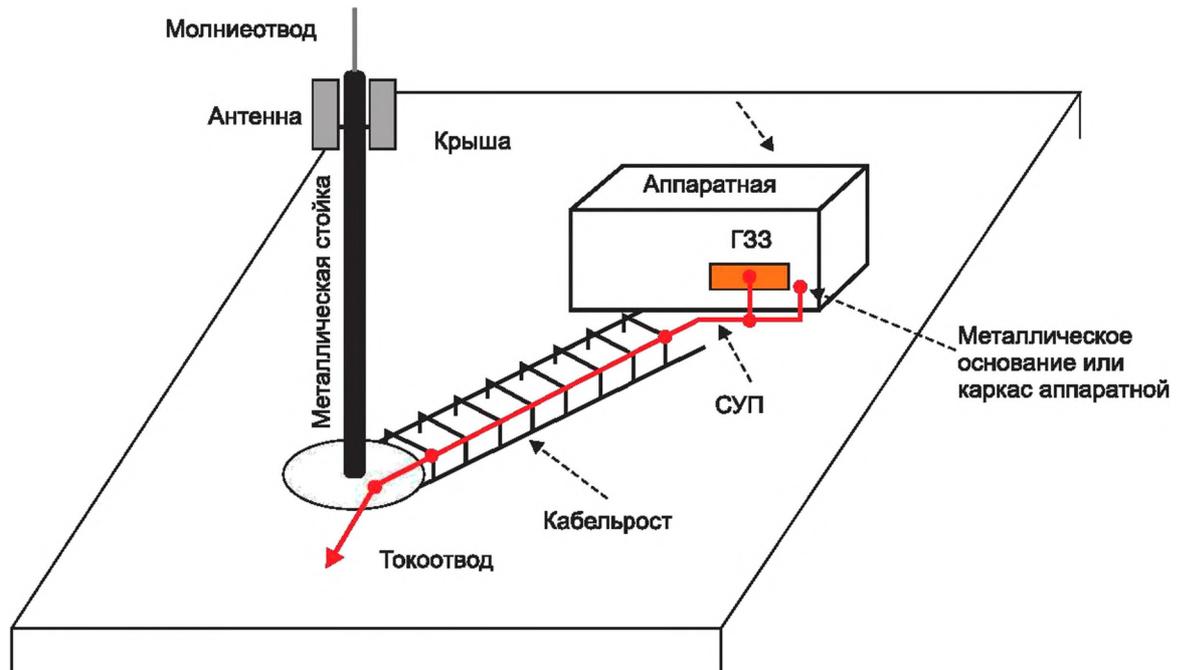
.7 —



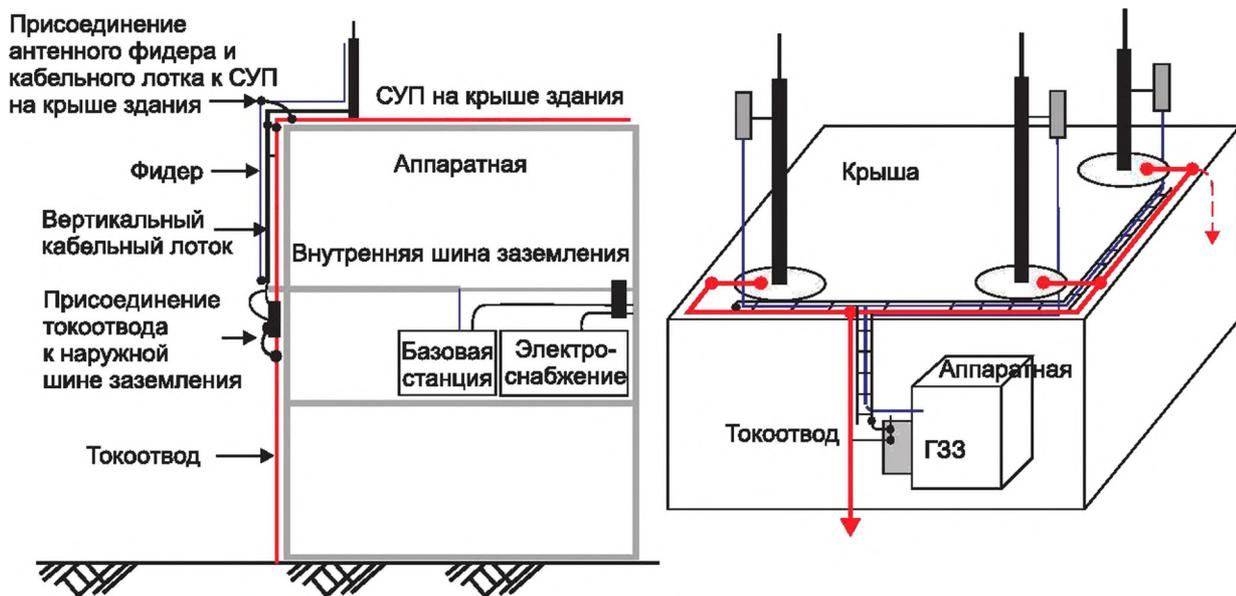
.8 —



.9 —



. 10 —



. 11 —

()

,

.1

50571.5.54

.1.

.1—

-

			- 2	,	- / 2	/
		10				
()			75	3		
8	6 / - — -		90	3	500	63
	-	16			350	45
	— -	10			350	45
		25		2	350	45
	() -		70			
			(290)	3		
-	-	(15)				2000
-	-	14				250
	— -	(8)				70
	, -		90	3		70
	6 / -		90	3		
	-	16				
	— -	10				
		25				
			50	2		
	— -		(25) 50			

1

		(12) 15				
		1,7	(25) 50			
		20	—	2		—
		—	—	(1,5)2		—
		—	—	2		—
6	>16 %, >5 %, >2 %, <0,08 %.					
		16				
			100			
		—				

.2 [1], 1.7, .2.

.2—

	:	16	—	—
	;	10		
	()	—	100	4
		—	100	4
		32	—	3,5
	:	12	—	
	;	10		—
	()	—	75	3
		25	—	2
		12	—	—
		—	50	2
		20	—	2
		1,8*	35	—

*

		2
		50
	6	50
	6	50
	6	176
		70
		50
		50
		50
	6	176
		50
		50
		50
	6	176
		50
		50
		50
	6	176

62561.

6

50² (8)

25².

9,5

1

75².

.4

.4

.5.

.4 —

-

		, ²
1—IV		16
		25
		50

.5 —

-

		, ²
I—IV		6
		10
		16

- [1] (7-)
- [2] - .20. 2022. (Recommendation ITU-T .20. 2022. Resistibility of telecommunication equipment installed in a telecommunication centre to overvoltages and overcurrents)
- [3] - .35. 2020. (Recommendation ITU-T .35. 2020. Bonding configurations and earthing at remote electronic sites)
- [4] - .112. 2021. (Recommendation ITU-T .112. 2021. Lightning protection, earthing and bonding: Practical procedures for radio base stations)

621.316.99:006.354

OKC 13.200,29.020

: , , , -
, , , -

22.05.2025.

27.05.2025.

60 847 .

. . . 4,65. . - . . 4,12.

« »

117418 , - , .31, .2.

www.gostinfo.ru info@gostinfo.ru