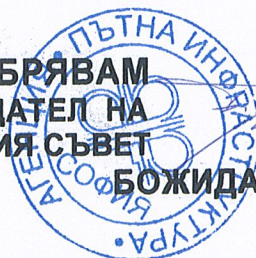




РЕПУБЛИКА БЪЛГАРИЯ
МИНИСТЕРСТВО НА РЕГИОНАЛНОТО РАЗВИТИЕ И БЛАГОУСТРОЙСТВОТО

АГЕНЦИЯ „ПЪТНА ИНФРАСТРУКТУРА”

ОДОБРЯВАМ
ПРЕДСЕДАТЕЛ НА
УПРАВИТЕЛНИЯ СЪВЕТ
БОЖИДАР ЙОТОВ



ТЕХНИЧЕСКИ ПРАВИЛА

за приложение на ограничителни системи за пътища по Републиканската пътна мрежа

СЪСТАВИЛ:

(н.с.инж. Николай Стоянов)

ДИРЕКТОР
на ЦИПТНЕНС:

(н.с.инж. Веселин Димитров)



2010 г.

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Технически правила за приложение на стоманени предпазни огради по Републиканските
пътища от 1994 г.

1.	2
1.1	2
1.2	2
1.3	3
1.4	5
2.	6
2.1	6
2.2	6
2.3	7
2.4	7
2.5	8
2.6	9
2.7	9
2.8	9
3.	10
3.1	10
3.2	10
3.3	11
3.3.1	11
3.3.1.1	12
3.3.1.2	14
3.3.1.3	15
3.3.1.4	16
3.3.1.5	20
3.3.2	21
3.3.3	22
3.3.4	23
3.4	23
3.4.1	23
3.4.1.1	24
3.4.1.2	24
3.4.2	26
3.4.3	26
3.4.4	27
3.5	27
3.5.1	27
3.5.1.1	28
3.5.1.2	28
3.5.1.3	28
3.5.1.4	28
3.5.2	28
3.5.3	28
3.5.4	29
3.6	30
3.6.1	30
3.6.1.1	30
3.6.1.2	30
3.6.1.3	31
3.6.2	31
3.7	31
3.7.1	31
3.7.2	32
3.7.3	32
3.7.4	32
4.	33

:

EN 1317

1.

1.1

EN 1317

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1.2

EN 1317-1:2010, 1:
EN 1317-2:2010, 2:
EN 1317-3:2010, 3:
ENV 1317-4, 4:
prEN 1317-4, 4:
(: ENV 1317-4:2001
EN 1317-5, 5:
prEN 1317-6, 6:
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prEN 1317-8, . 8:

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1.3 – ,
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1.3.1 ,
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1.3.3.1 , .

1.3.3.2 ,
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1.3.4 .

1.3.5

1.3.6 / , / -
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“ ” (/).

1.3.7 , ,
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1.3.8

1.3.9

1.3.10

1.3.11

1.3.12

1.3.13

1.3.14

1.3.15

1.3.16

1.3.17

1.3.18

1.3.18.1

1.3.18.2

1.3.19

EN 1317-2

1.3.20

ENV 1317-4

1.3.21

EN 1317-3

1.3.22

EN 1317-3.

1.3.23

() – W

EN 1317-2.

1.3.24

EN 1317

1.3.25

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1.3.26

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1.4

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2.

2.1

EN 1317 „ ”.

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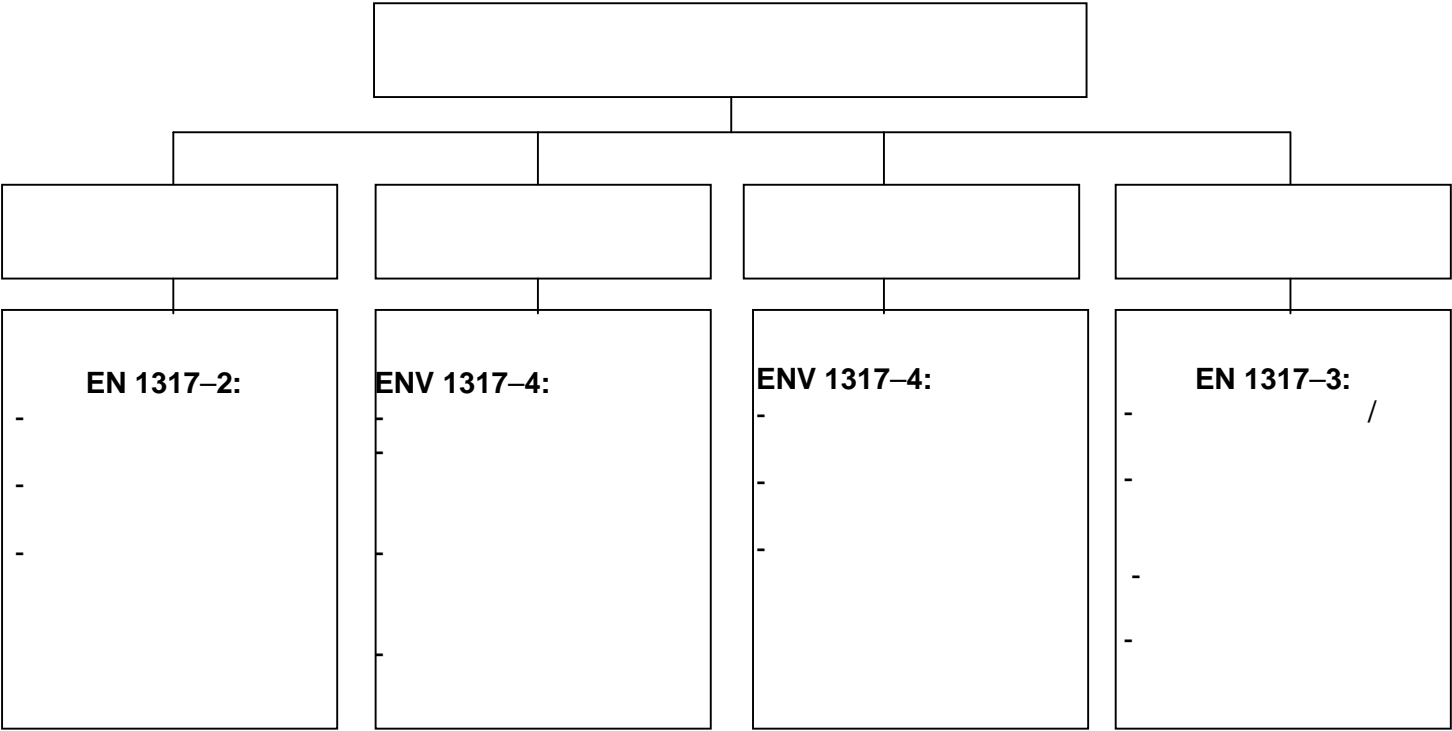
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EN 1317.
EN 1317 (1).

1

EN 1317



2.2

EN 1317-2

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-
-
:
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3

3

— , (EN 1317-2).

2.3

$$\frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) e^{-x^2} dx = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) e^{-x^2} dx$$

ENV 1317-4

1

<div> <div></div> <div>:</div> </div> <div> <div>:</div> <div></div> </div>	N2	H1	H2	H4b
N2	N2	N2	H1	H2
H1	N2	H1	H1	H2
H2	H1	H1	H2	H2
H4b	H2	H2	H2	H4b

2.4

1317-4

(6 9)

2.

2

	- P2 A
	- P2 U

3 Y4.

Z4,

/

2.5

EN 1317-3

$$R \left(\begin{array}{c} R. \\ R. \end{array} \right),$$

3.

3

V [km/h]				
	50 (R)	80 (R)	100 (R)	110 (R)
50	X			
60		X		
70		X		
80		X		
90			X	
100			X	
> 100				X

8

8

D8,

Z4.

2.6

7,5 cm.

2.7

EN 1317.

(EN 1317-2, 3, 4.),

2.8

. 2.7.

3.

3.1

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-

-

-

-

EN 12767

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3.3:

3.4:

3.5:

3.6:

3.7:

3.2

3.3

> 1 $> 1:3,$

> 3

$> 1:3,$

$> 76,1 \text{ mm}$
 $> 76,0 \text{ mm}$

$> 2,9 \text{ mm}$
 $> 3,0 \text{ mm}$

$> 1:3$

V-

3.3.1

3.3.1.1

3.3.1.2

3.3.1.3

3.3.1.4

3.3.2

3.3.3

3.3.4

7.

3.3.1.1

V

$V \leq 100$

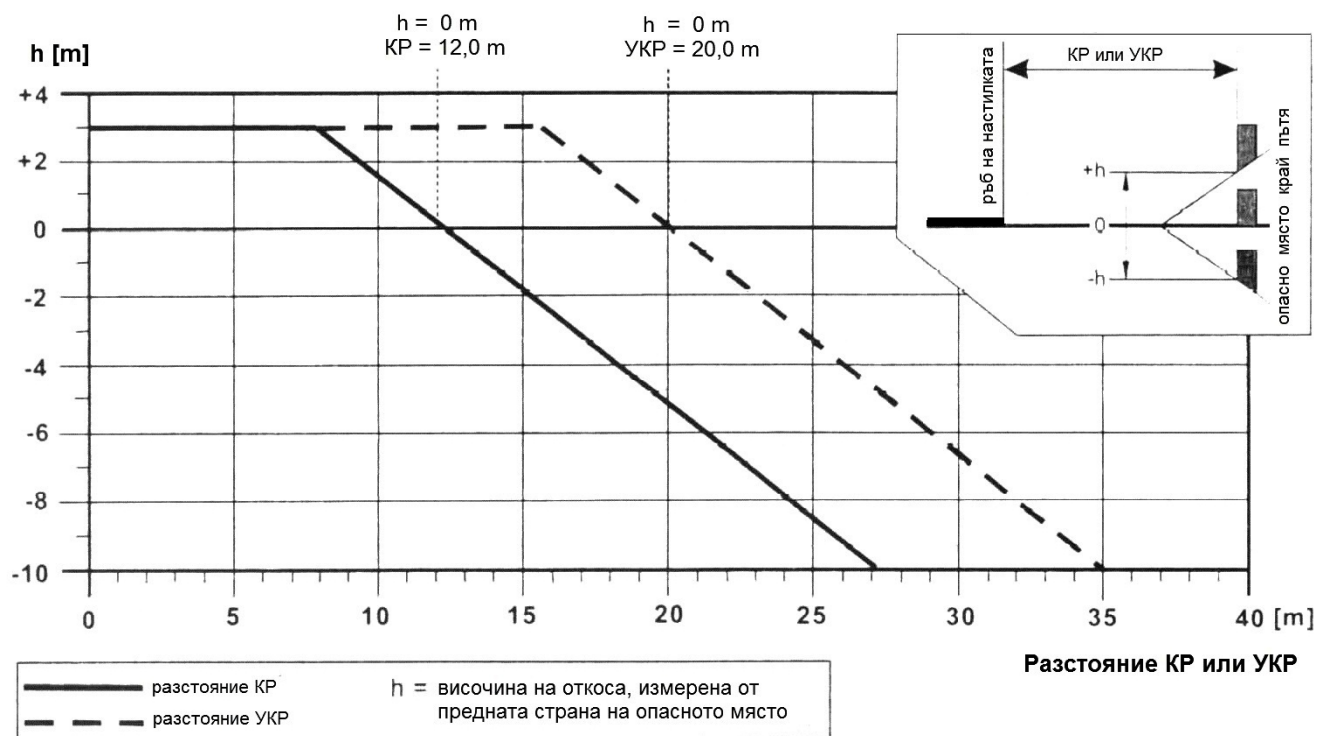
$V > 100$

85 %

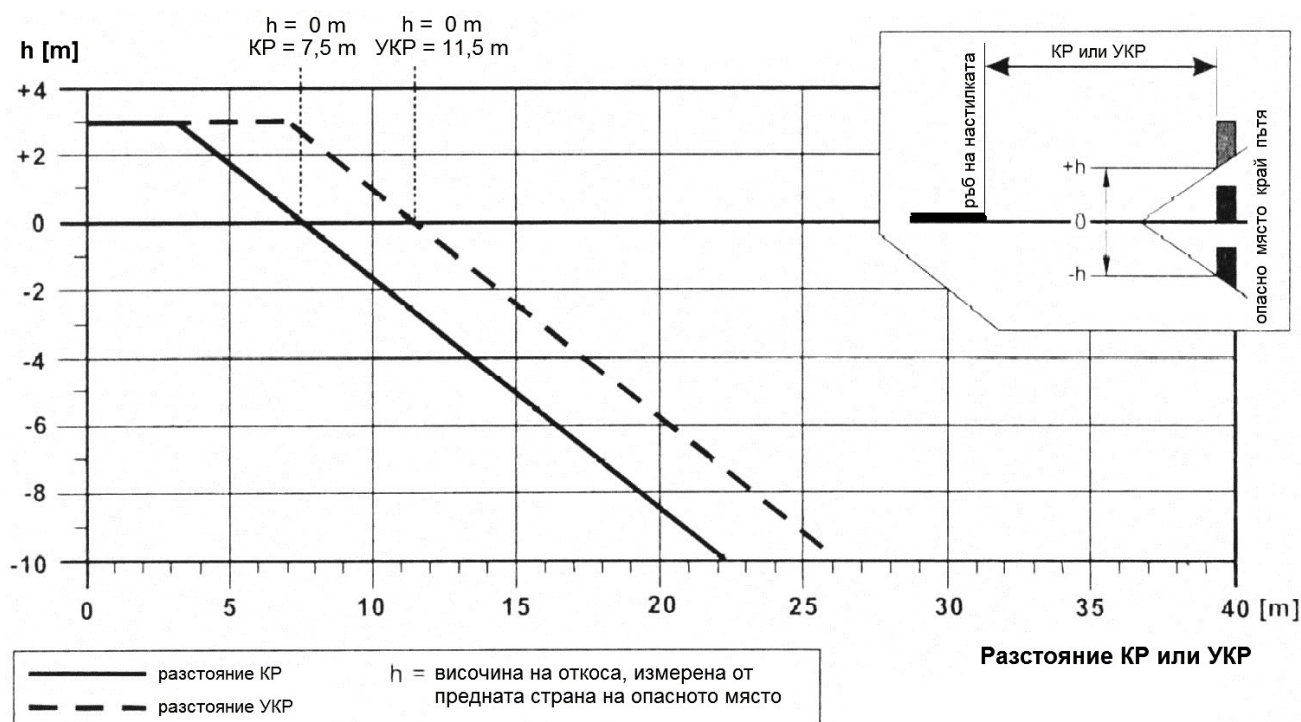
(. 5).

7 (. 3.3.1.2).

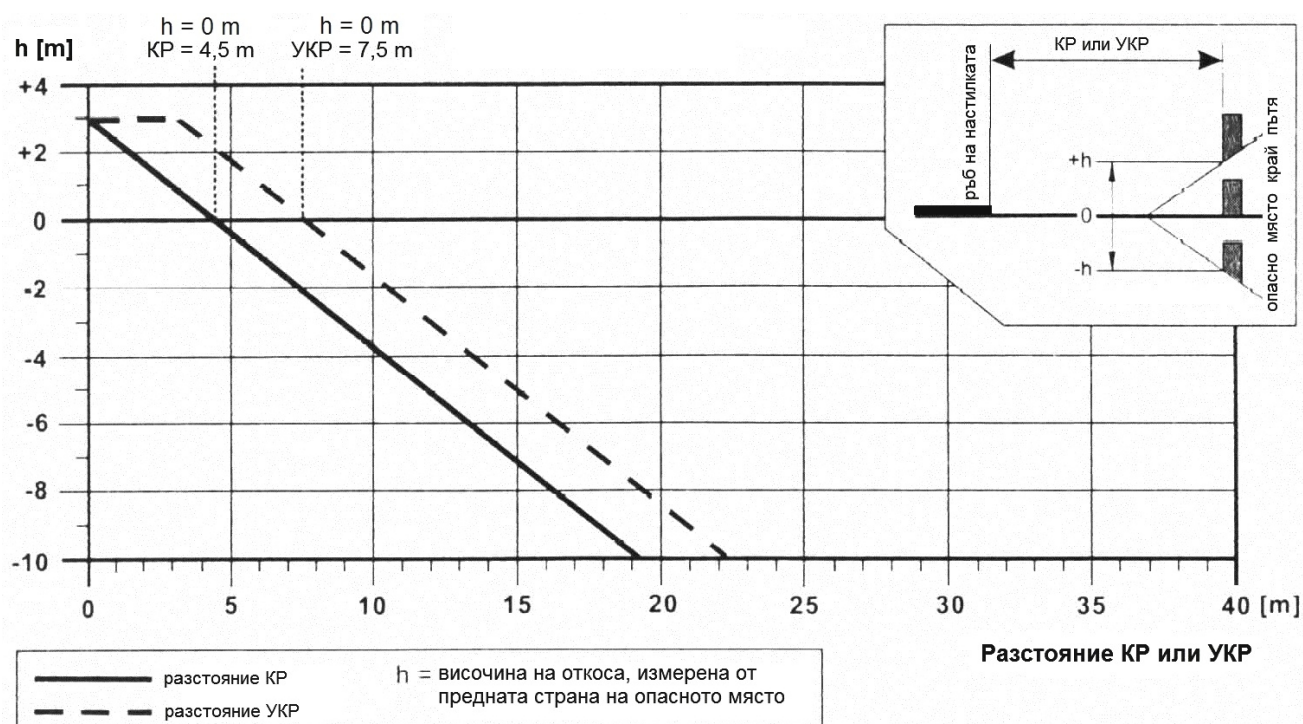
$$\begin{array}{l} V > 100 \text{ / } , \\ V \leq 100 \text{ / } \end{array}$$



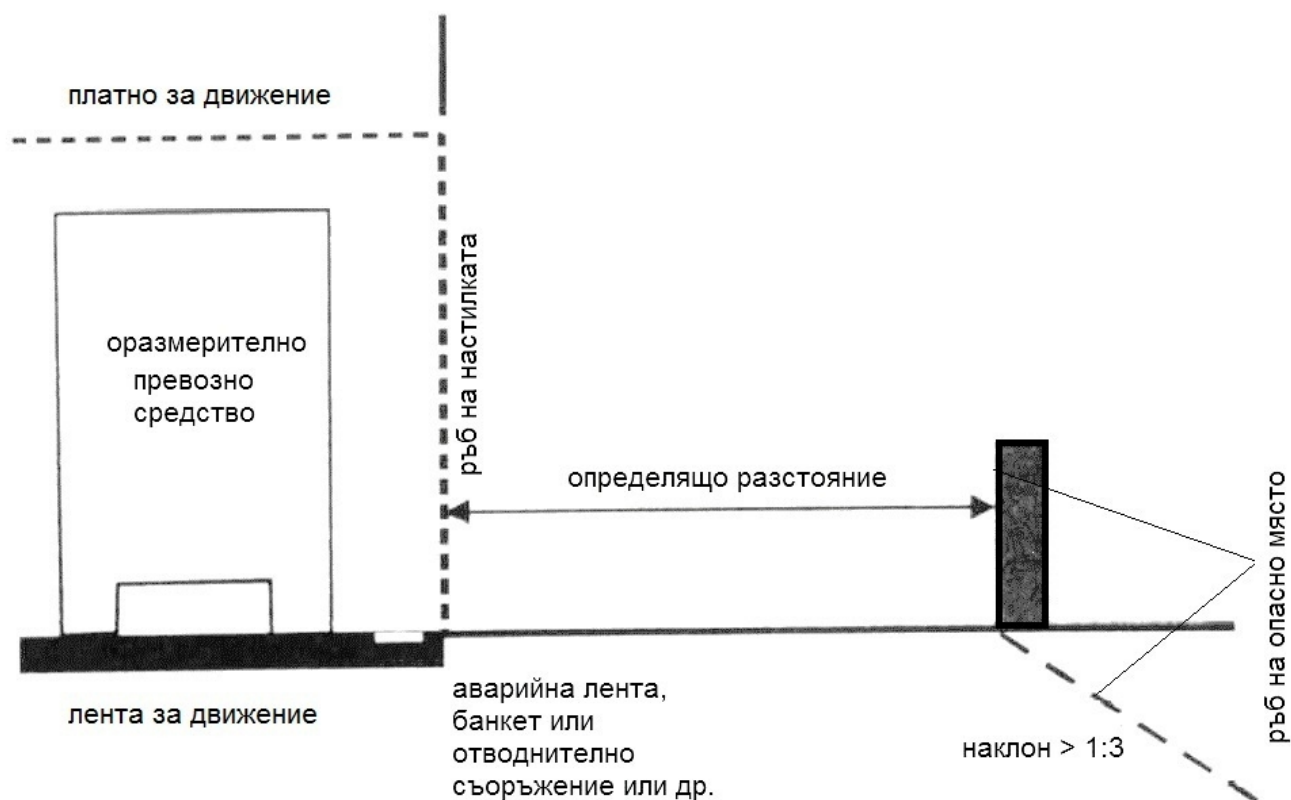
$$V \quad 80 \text{ / } 100 \text{ / }$$



V 60 / 70 /



5



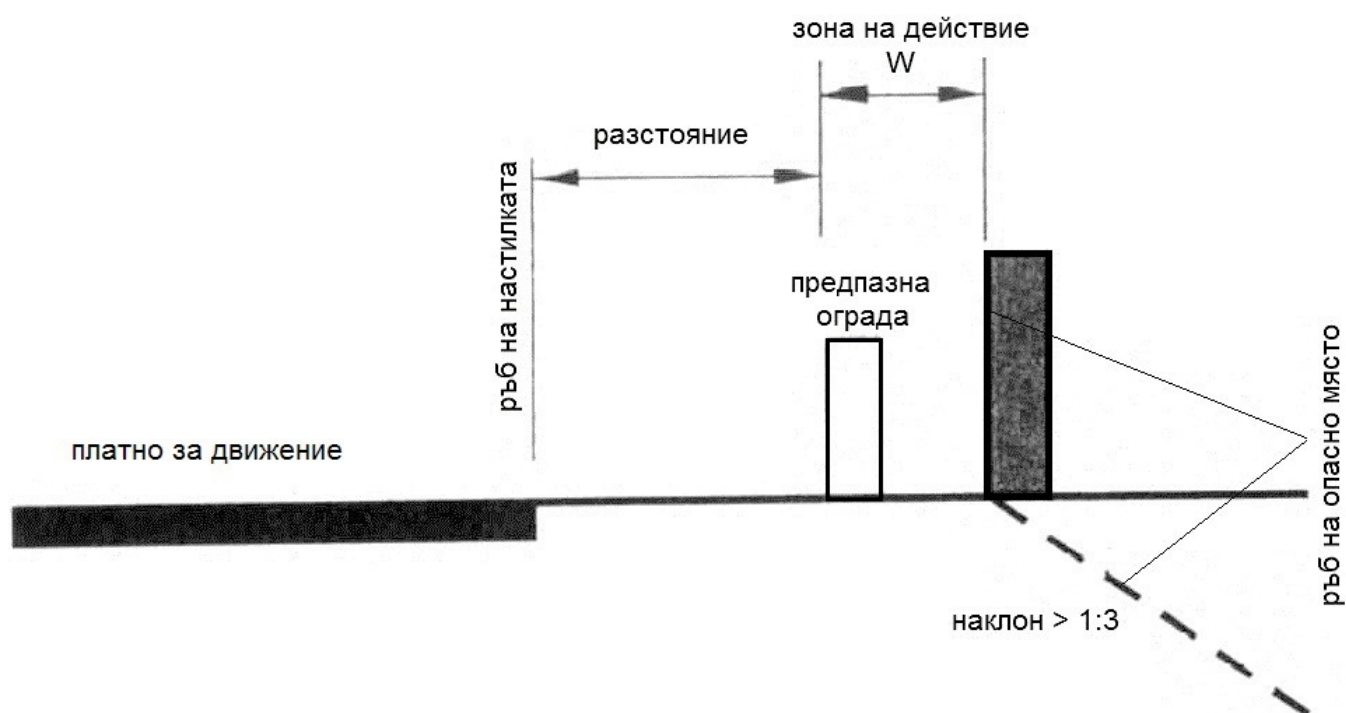
3.3.1.2

7. ,
7,
EN 1317-2:2010, 4.
4

	T1			21
	T2			22
	T3			41 21
	N1			31
	N2			32 11
	H1			42 11
	L1			42 32 11
	H2			51 11
	L2			51 32 11
	H3			61 11
	L3			61 32 11
	H4a			71 11
	H4b			81 11
	L4a			71 32 11
	L4b			81 32 11

3.3.1.3

(W) -
() (' 6) 5.
0,5 m. -
,
-
,
1,0 m 1,5 m . - ,
() ,
7, , -
- W7 W6.
- , -
EN 1317-2 ,



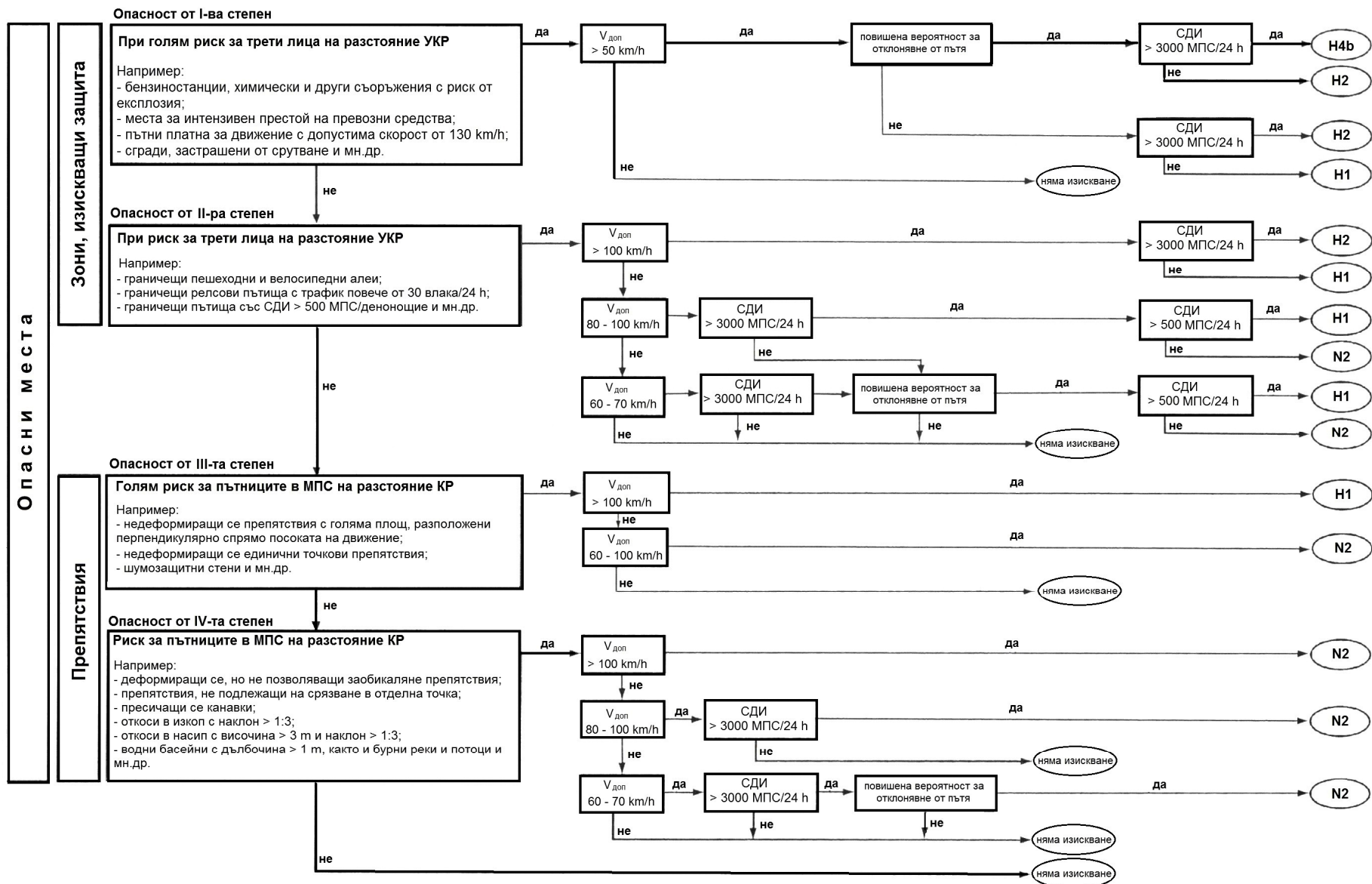
	m
<i>W1</i>	$W_1 \leq 0,6$
<i>W2</i>	$W_2 \leq 0,8$
<i>W3</i>	$W_3 \leq 1,0$
<i>W4</i>	$W_4 \leq 1,3$
<i>W5</i>	$W_5 \leq 1,7$
<i>W6</i>	$W_6 \leq 2,1$
<i>W7</i>	$W_7 \leq 2,5$
<i>W8</i>	$W_8 \leq 3,5$
:	<i>W1.</i>

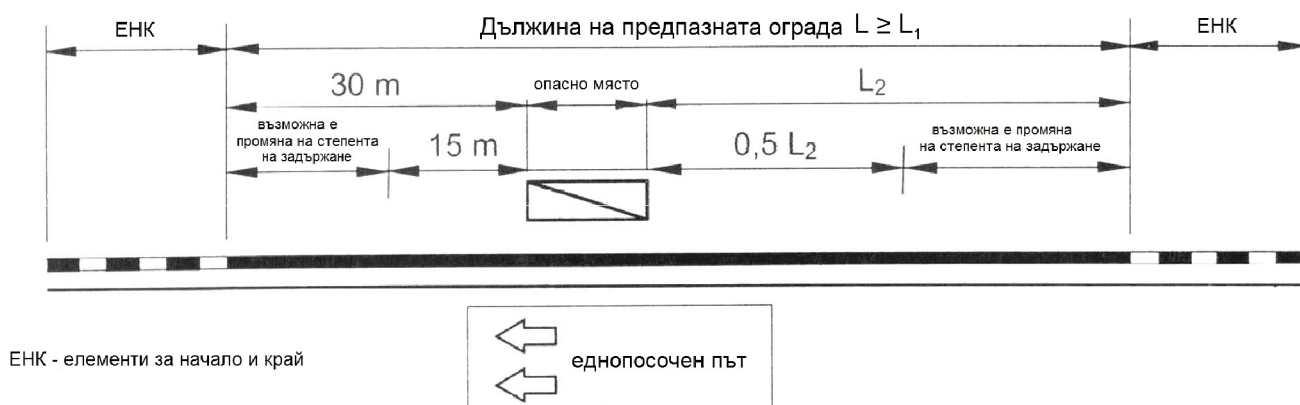
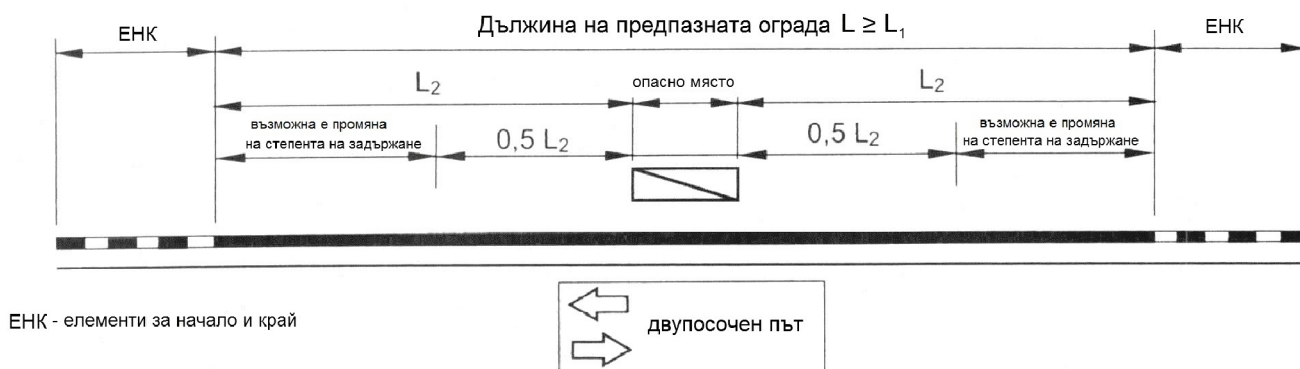
3.3.1.4

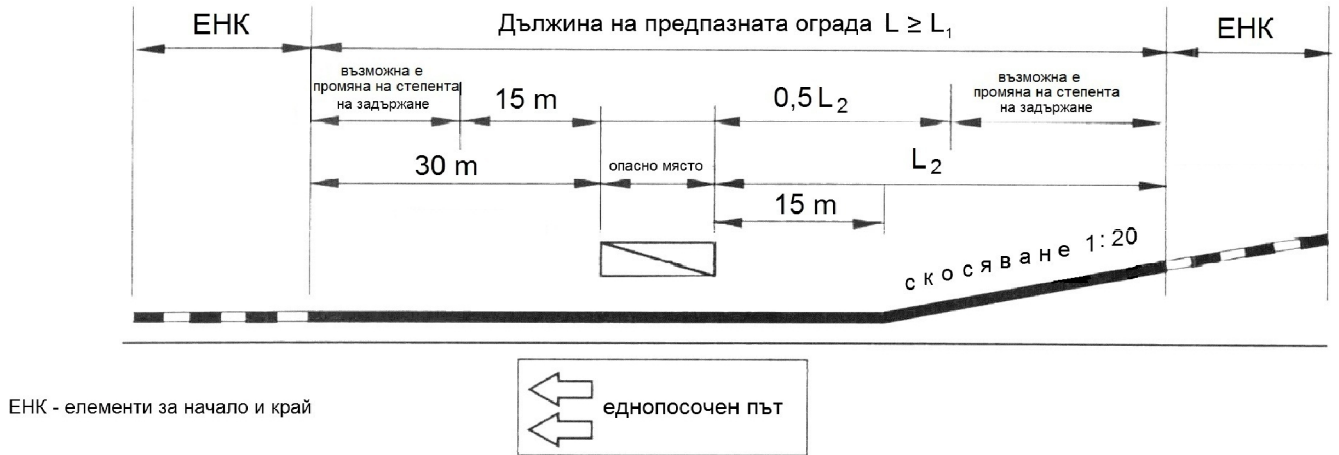
1. L_1 –
EN 1317-2

2. L_2 –

8 8).

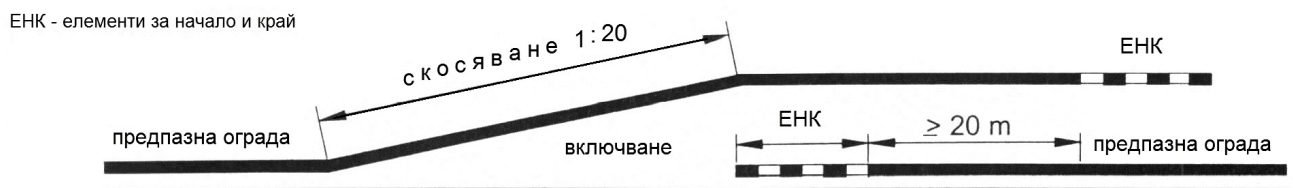


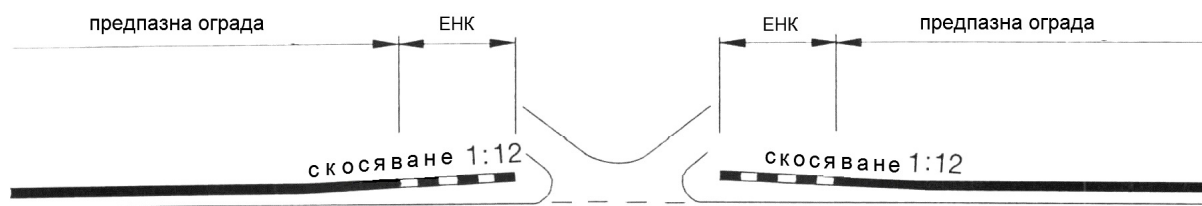




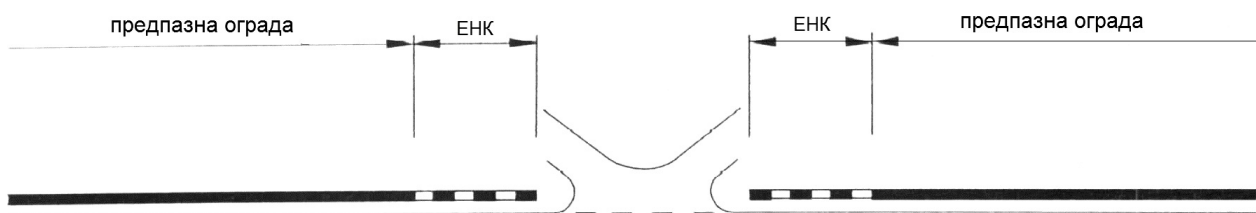
3.3.1.5

10



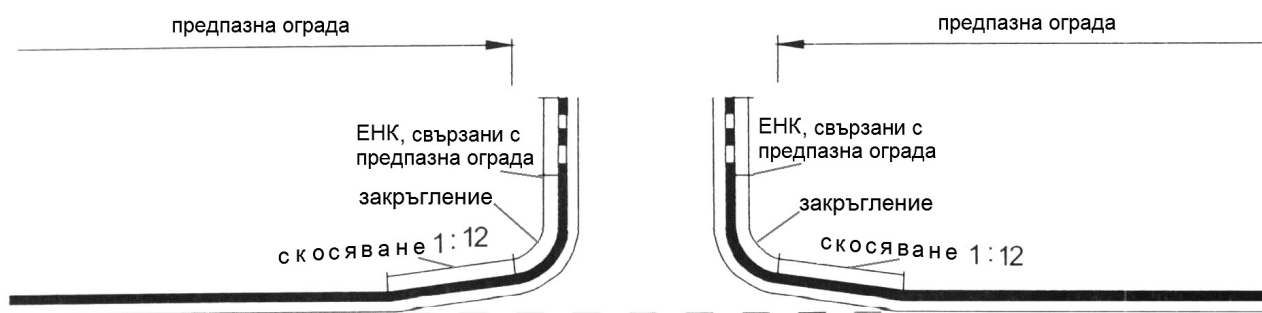


11

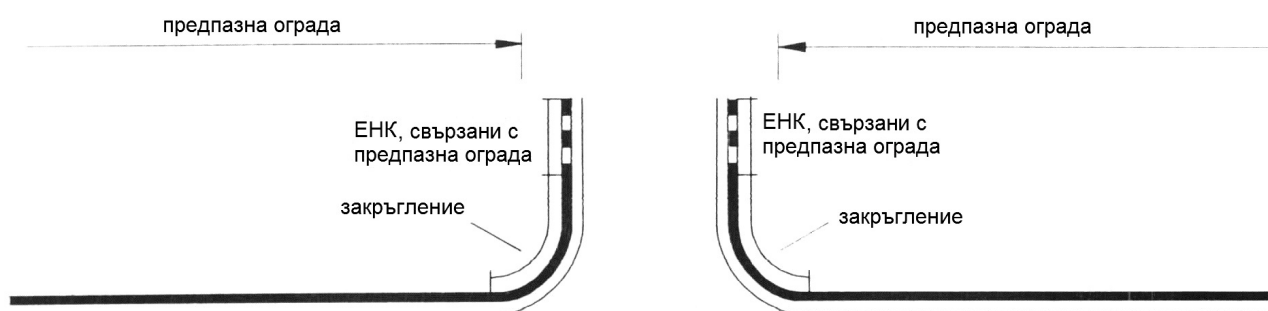


11

1:12



11



3.3.2

/ ,

2.3.

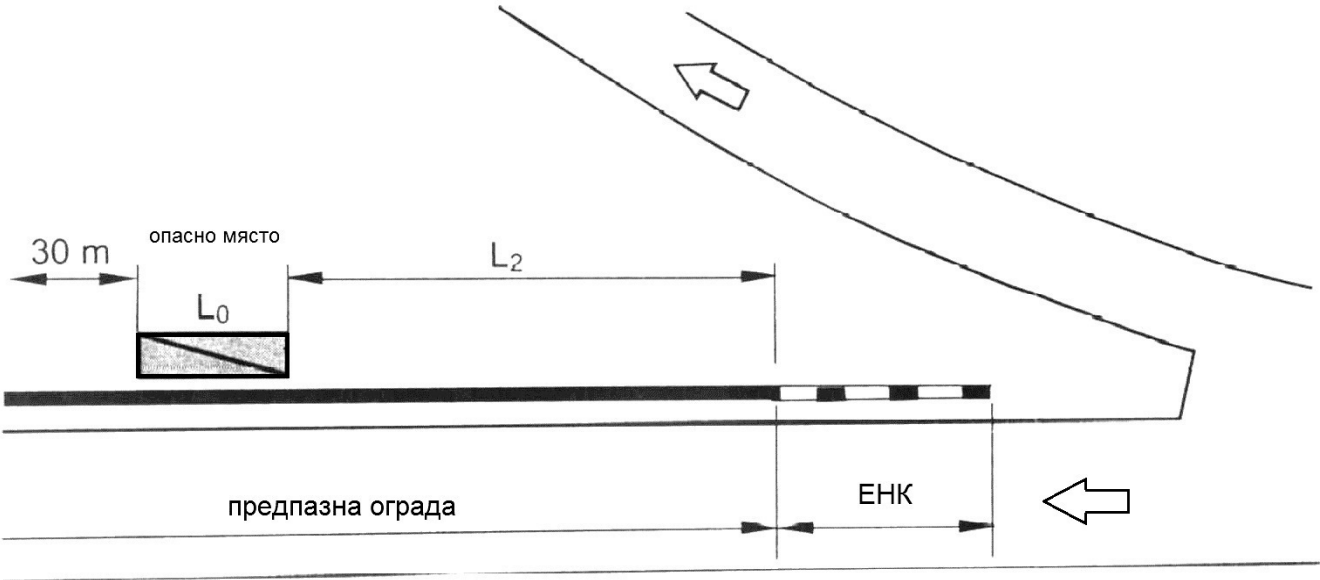
3.3.3

500

(12).

2.4.

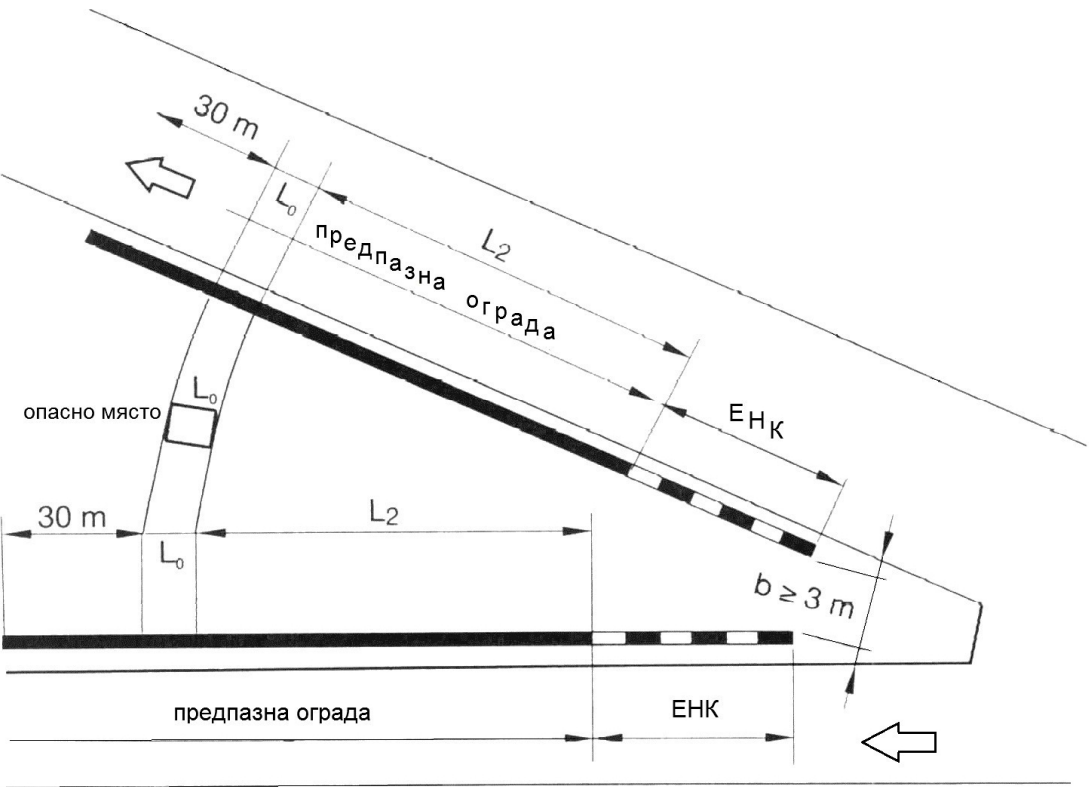
12



3 m

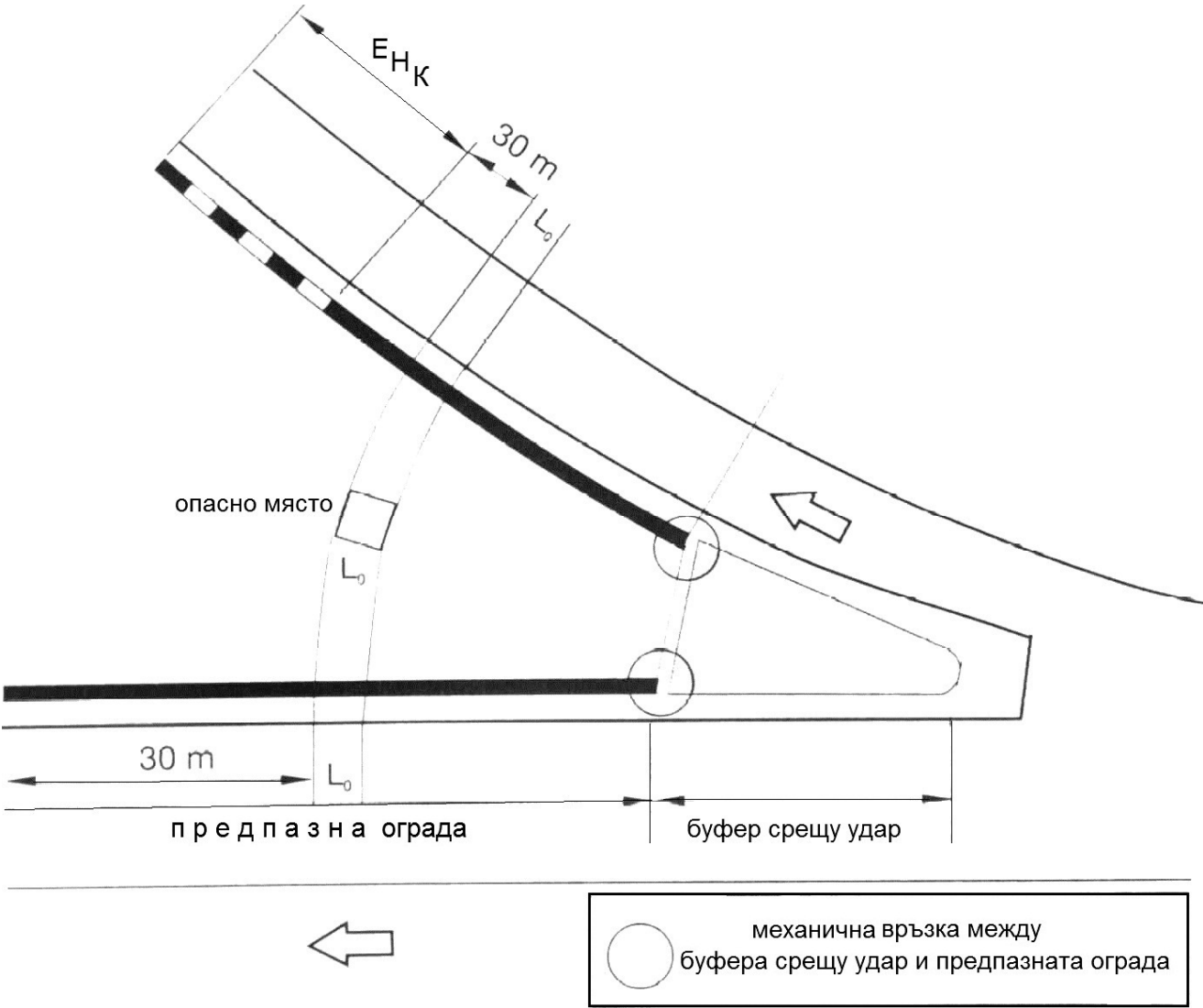
(13).

13



3.3.4

(3.3.1.1	14)	L_2
3.3.1.4	.		2.5.
			14



3.4

3.4.1

$V > 50 \text{ km/h}$

- ;
- ;
- ;
- ;

15.

(3.4.1.1).

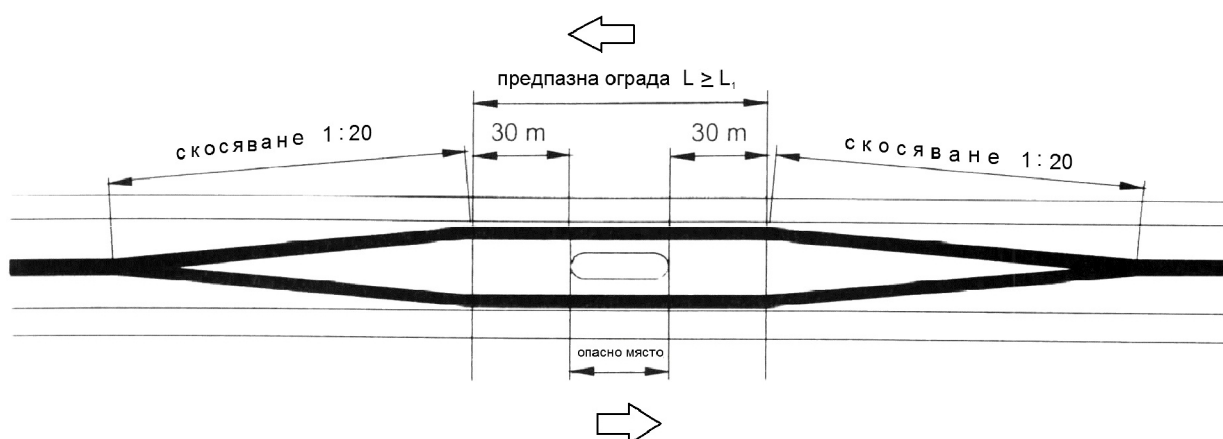
1:20.

$\geq 1:10$,

(3.4.2)

(3.4.3),
(3.4.4).

15



3.4.1.1

$V > 50 \text{ km/h}$

2.

> 3000

H4b.

$V > 50 \text{ km/h}$

1.

> 3000

H4b.

3.2.

3.4.1.2

W

(16 16).

W

W

3.3.1.3.

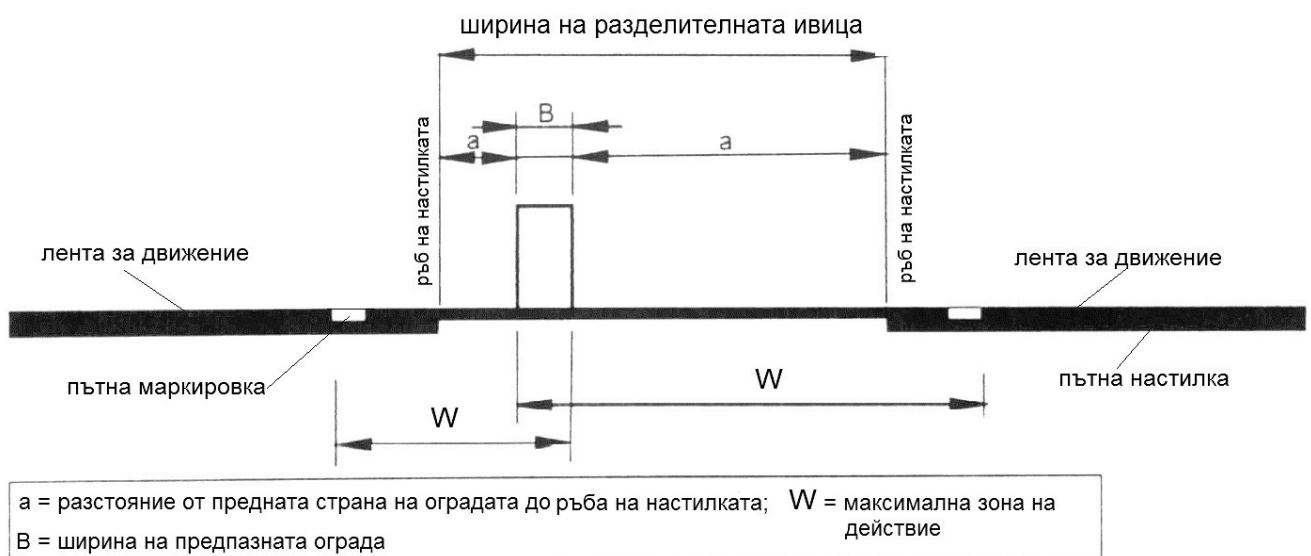
(6), 0,5 m.

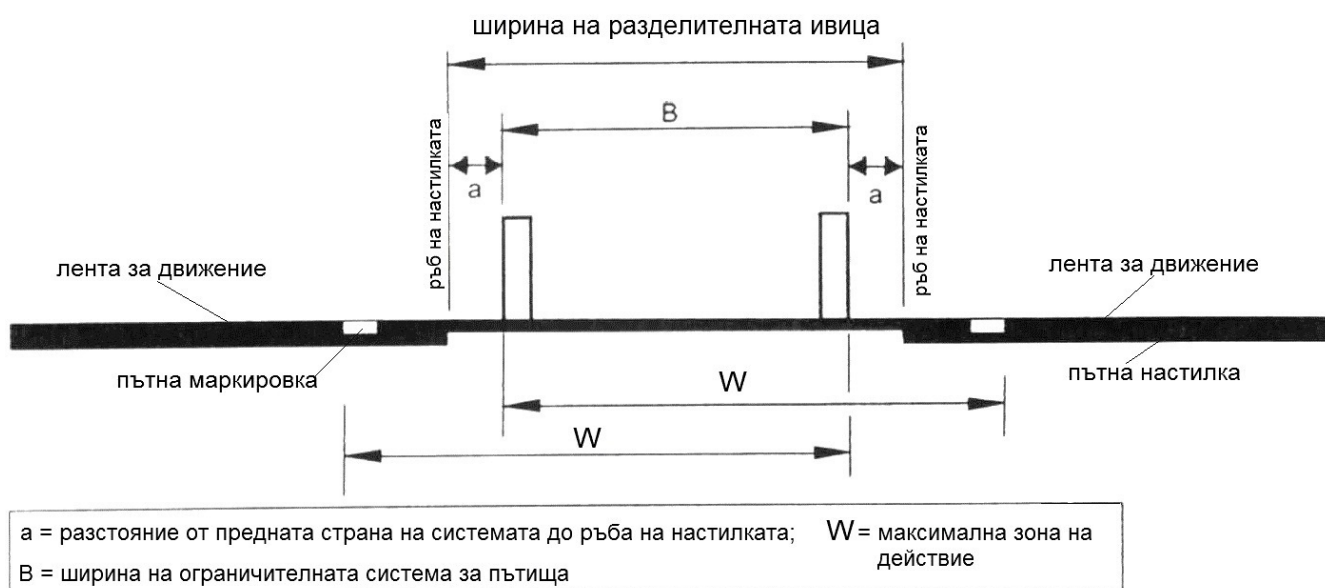
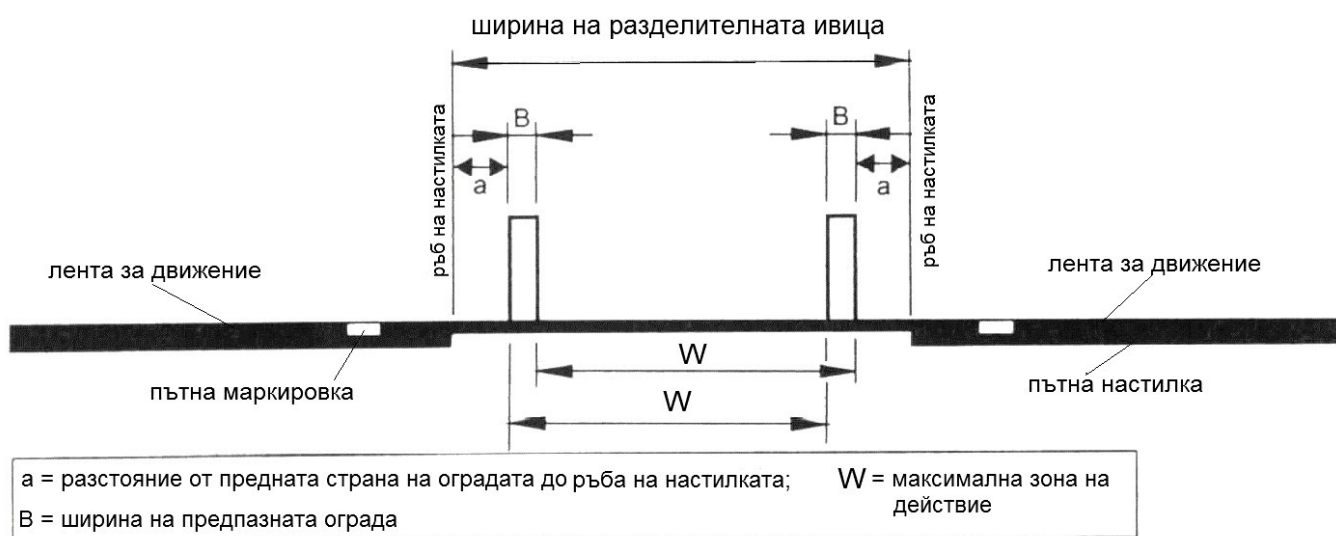
EN 1317-2,

16



16





3.4.2

3.4.3

2.4.
3.3.1.4 L_2 (17).



3.4.4

3.3.1.4

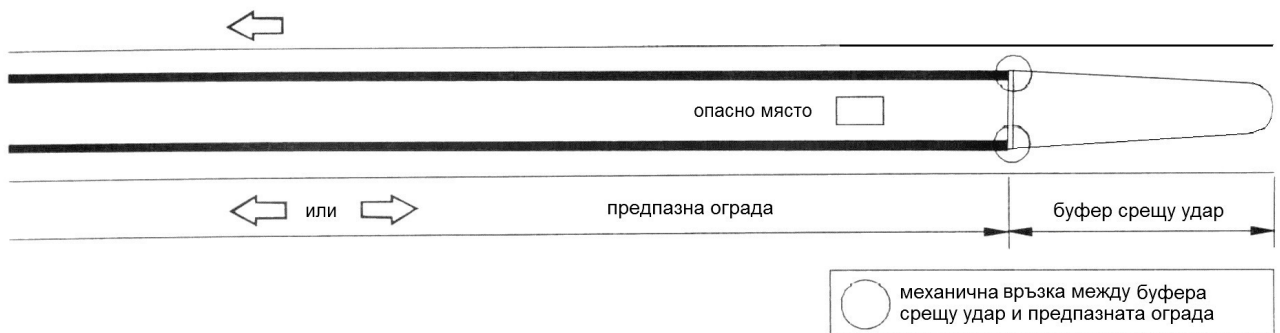
L_2

2.5. (18).

60 km/h, 50 m

(2.5).

18



3.5

2 m.

3.3.

3.5.1

H1 N2,

3.5.1.1

7.

- 10 m

3.3.1.2.

7

	V > 100 km/h	V 100 km/h > 500	V 100 km/h 500	V 50 km/h
-	H4b	H2	H2	H1
V-	H2	H2	H1	

3.5.1.2

N 1317-2.

3.5.1.3

. 3.3.1.4.

L₂

/

(19).

/

(3.3.1.4. ; 19).

2.3.

3.5.1.4

3.5.2

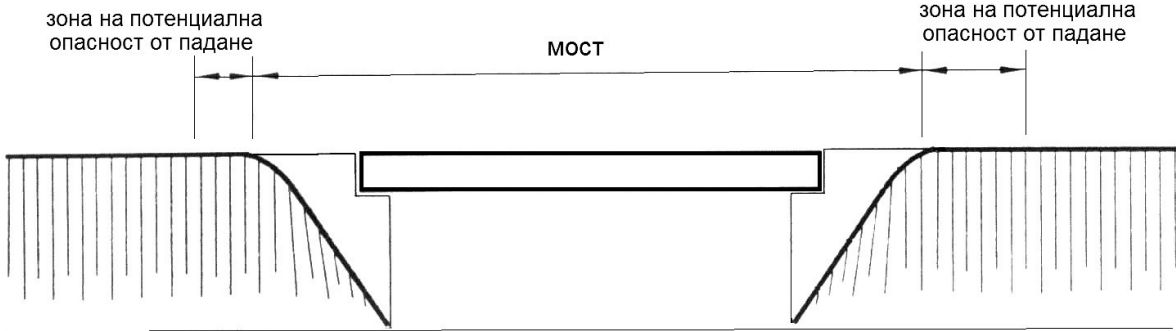
/

2.3.

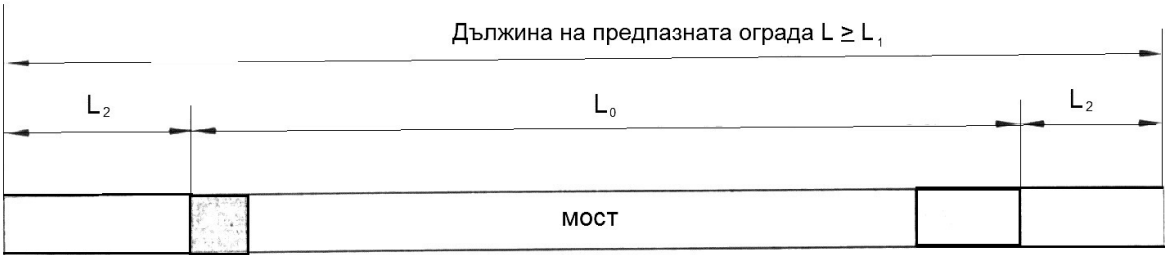
3.5.3

2.4.

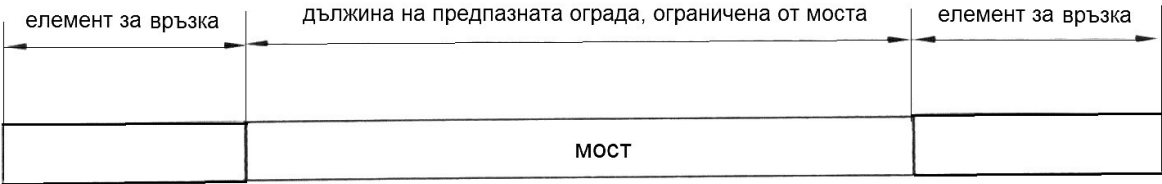
(20).
2.5.

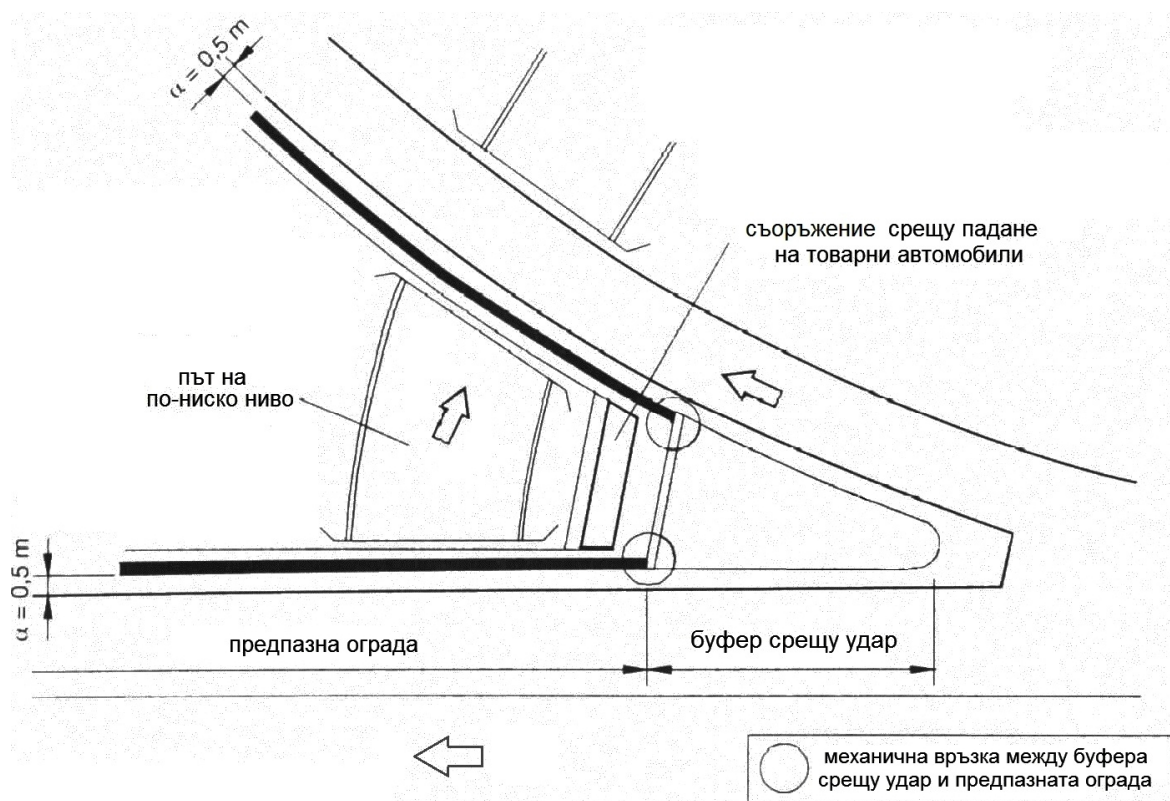


Случай а/: предпазна ограда върху мост



Случай б/: предпазна ограда върху мост с елемент за връзка





3.6

3.6.1

H1 N2,

3.6.1.1

1,5 m, - 1,5 m, - 3.4.1.1

(1,5 m,).

1,5 m /

1,5 m, 3.5.1.1.

3.6.1.2

- 0,1 m - 0,1 m, 3.4.1.2. (

).

0,1 m /

0,1 m,
3.5.1.2.

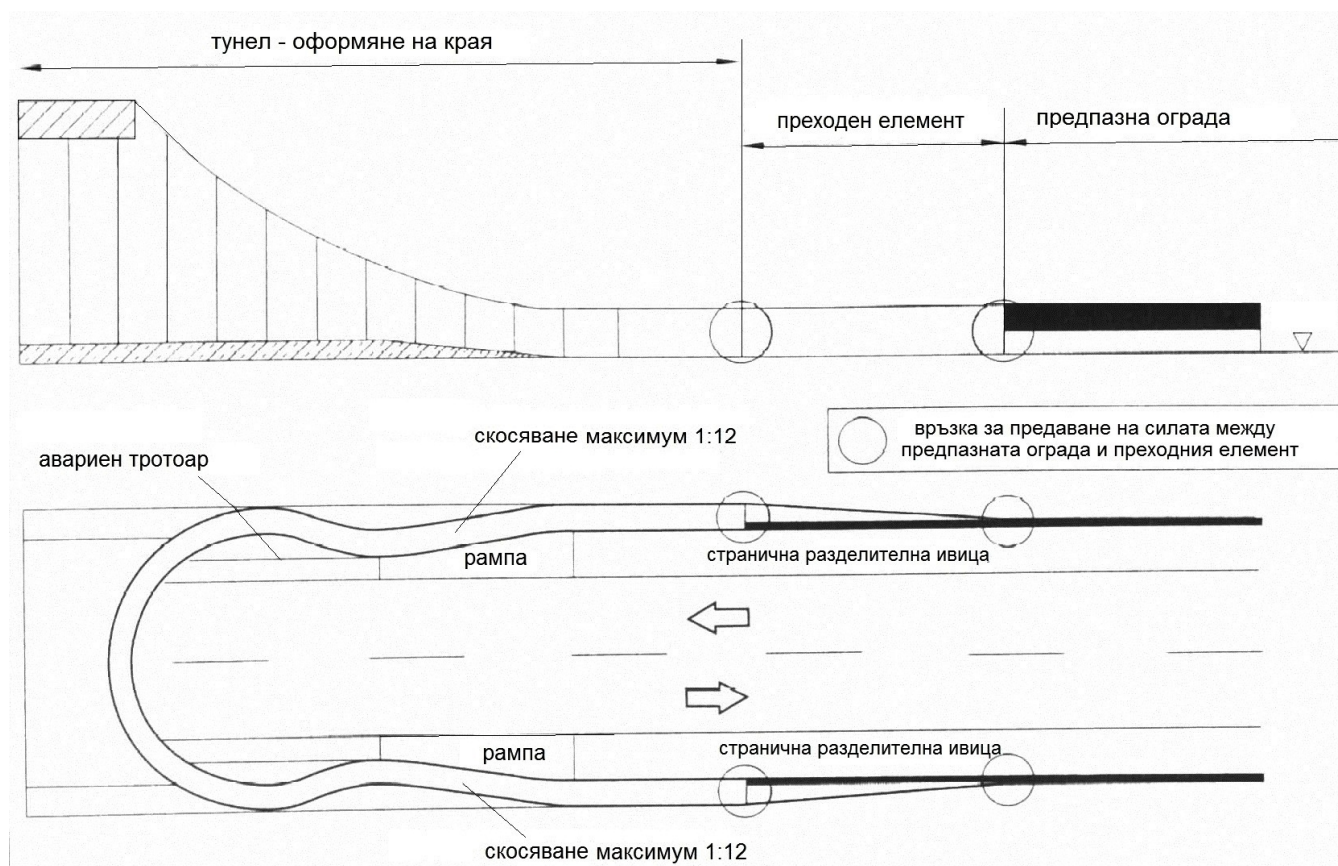
0,1 m

3.6.1.3

3.6.2

. 2.3

21



3.7

3.7.1

- 4 m
0,1 m,

0,1 m

4 m,

3.3

7

3.3.1.2),

(), ()
3.3.1.3.

,
3.3.1.4.

3.7.2

2.3.

3.7.3

2.4.

3.7.4

.

2.5.

EN 1317

1

– N 1317-2:2010

	[km/h]	[°]	[kg]	
11	100	20	900	
21	80	8	1 300	
22	80	15	1 300	
31	80	20	1 500	
32	110	20	1 500	
41	70	8	10 000	
42	70	15	10 000	
51	70	20	13 000	
61	80	20	16 000	
71	65	20	30 000	
81	65	20	38 000	

2

– EN 1317-2:2010

A	ASI ≤ 1,0		THIV ≤ 33 km/h
B	ASI ≤ 1,4		
	ASI ≤ 1,9		

3

– EN 1317-2:2010

		ASI – THIV	(VCDI)	
1	21	21	21	21
2	22	22	22	22
3	41 + 21	21	21	41
N1	31	31	31	31
N2	32 + 11	32 + 11 ⁾	32 + 11	32 + 11
H1	42 + 11	11	11	42 + 11
H2	51 + 11	11	11	51 + 11
H3	61 + 11	11	11	61 + 11
H4a	71 + 11	11	11	71 + 11
H4b	81 + 11	11	11	81 + 11
L1	42 + 32 + 11	32 + 11 ⁾	32 + 11	42 + 32 + 11
L2	51 + 32 + 11	32 + 11 ⁾	32 + 11	51 + 32 + 11
L3	61 + 32 + 11	32 + 11 ⁾	32 + 11	61 + 32 + 11
L4a	71 + 32 + 11	32 + 11 ⁾	32 + 11	71 + 32 + 11
L4b	81 + 32 + 11	32 + 11 ⁾	32 + 11	81 + 32 + 11
: VCDI				
)				
- EN 1317-1.				

– EN 1317-2:2010

	[m]	B [m]
	2,2	10
	4,4	20

– EN 1317-3:2010

a)		[kg]	[km/h]
1.1.50		900	50
1.1.80		900	80
1.1.100		900	100
1.2.80		1300	80
1.2.100			100
1.3.110		1500	110
2.1.80	, ¼	900 ^{b)}	80
2.1.100			100
3.2.80	, 15°	1300	80
3.2.100		1300	100
3.3.110		1500	110
4.2.50	, 15°	1300	50
4.2.80		1300	80
4.2.100		1300	100
4.3.110		1500	110
5.2.80	, 165°	1300	80
5.2.100		1300	100
5.3.110		1500	110
a)	1 : 2 80 ,		
b)	ATD () , - .		

(Za Zd) –

ENV 1317-4

Z		
	Za [m]	Zd [m]
Z1	4	4
Z2	6	6
Z3	4	
Z4	6	

(Da Dd)
EN 1317-3:2010

	Da [m]	Dd [m]
D1	0,5	0,5
D2	1,0	1,0
D3	2,0	2,0
D4	3,0	3,0
D5	0,5	≥ 0,5 3
D6	1,0	≥ 1,0 3
D7	2,0	≥ 2,0 3
D8	3,0	≥ 3,0 3

–
– ENV 1317-4

	e -			[kg]	[km/h]	
1			, ¼	900 kg	80	TT 2.1.80
P2	A	U	, ¼	900 kg	80	TT 2.1.80
			15°, 2/3 L	1300 kg	80	TT 4.2.80
		D	165°, 1/2 L	900 kg	80	TT 5.1.80
P3	A	U	, ¼	900 kg	100	TT 2.1.100
			–	1300 kg	100	TT 1.2.100
			15°, 2/3 L	1300 kg	100	TT 4.2.100
		D	165°, 1/2 L	900 kg	100	TT 5.1.100
P4	A	U	, ¼	900 kg	100	TT 2.1.100
			–	1500 kg	110	TT 1.3.110
			15°, 2/3 L	1500 kg	110	TT 4.3.110
		D	165°, 1/2 L	900 kg	100	TT 5.1.100

		[m]	
x	1	D_a	0,5
	2		1,5
	3		3,0
y	1	D_d	1,0
	2		2,0
	3		3,5
	4		> 3,5