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2021

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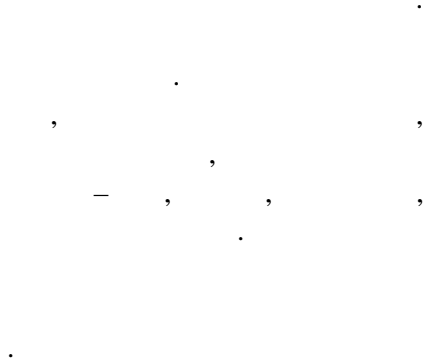


” “ “ ” ,  
14 2020 . 135  
, 3 , 36 , 10 ,  
104 , ,  
” ” ” .

18 2021 . 11,00 “ ”  
” “ ”  
, -226 .

# I.

## I.1.



## I.2.

1.

2.

3.

4.

1.

2.

13.

**II.**

, 3 , 36 , 10 135 ,

104 ,

**III.**

( .) , , , [2].

## 1.1.

ISO 817:2014.

➤ ODP -

➤ GWP -

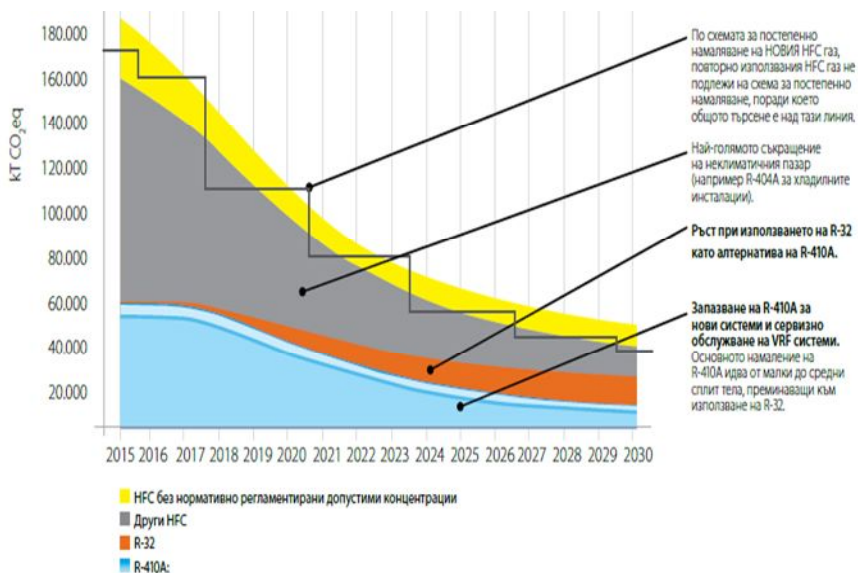
( GWP x kg).

(HFC)

CO<sub>2</sub>

. 1.1  
( HFC +  
[26].

HFC ),



1.1.

HFC

, , .  
, -  
( - - )

HFC,



1.2.

[29]

➤ ( ) 517/20141 [30]  
( FC),

➤ 11, 6 ; ( ) 517/2014 [31]

➤ ;  
( ) 842/2006

[32];

- 2020-2030 .COM/2014/015 [33];
- EN 13136 – ( , , ) [34];
- N 13445 – [37].

- ISO CD 5149 – ;
- AUS IN 1254 –

- 1.
- 2.
- 3.
- 4.
- 5.

## 2.1.

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2.2.

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[47]:

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[48]: “

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[49]

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### 2.3.

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**2.4.**

**2.4.1.**

• ;  
 1.1 1.2,  
 2.1;  
 • ;  
 • ;  
 5 5

**2.4.2.**

( )

➤ ,  
 ,  
 ,  
 :  
 5  
 5 , 5 , 5 5  
 1 - 4;  
 ( 5.2)  
 5 , 5 5  
 ( 5.1);  
 10 m

### 2.4.3.

1 ( ).  
 :  
 ➤ ;  
 ➤ ;  
 ➤ ( ;  
 ➤ );  
 : ,

### 2.5.

#### 2.5.1.

REI (EI) 120 ( )  
 2. ( )  
 2 h 30 min.

( , " )  
 -F,  
 - .2.1.

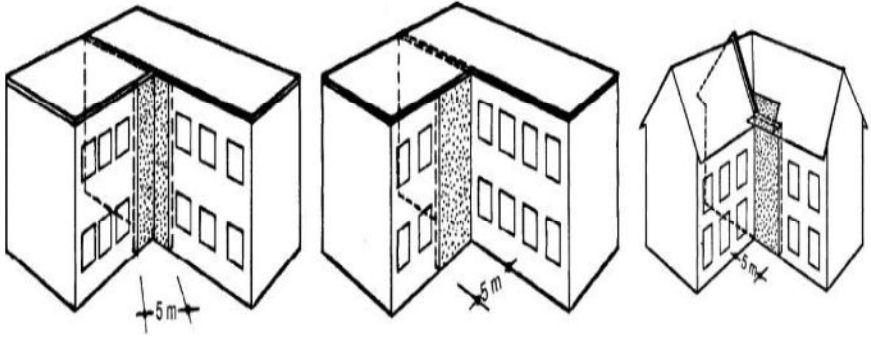


2.1.

180°,  
 EI ( W) 60  
 2, 3 m  
 ;



- 4 m - .2.2.



2.2.

**2.5.2.**

:  
 ➤ - 6 m;  
 ➤ -  
 - 1 2 II  
 ;  
 ➤ ;  
 ➤ ;

7,50 mm/min  
120 min.

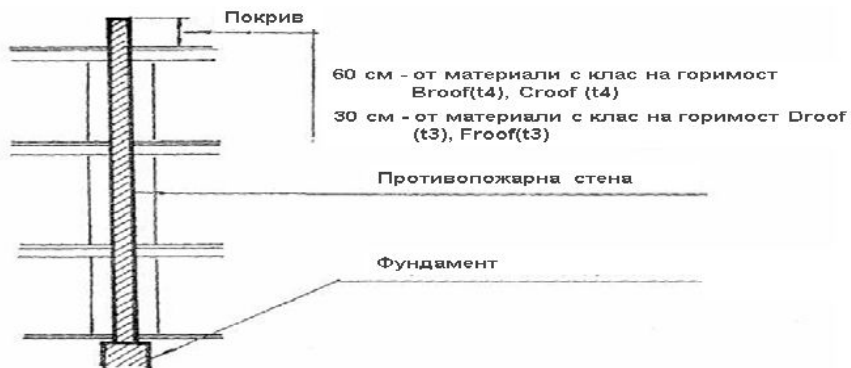
**2.5.3.**

REI 60 ( EI 60)

2;

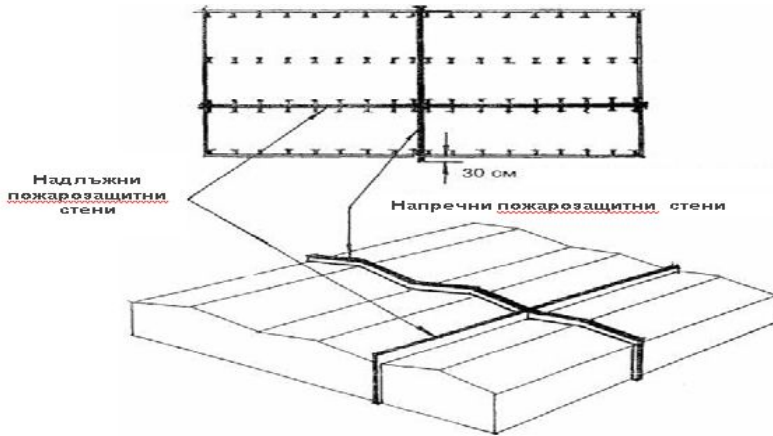
5 - 5 ;

60 cm  
Broof (t4) roof (t4) - 30 cm  
Droof (t3), Froof (t3) – . 2.3 [61].



2.3.

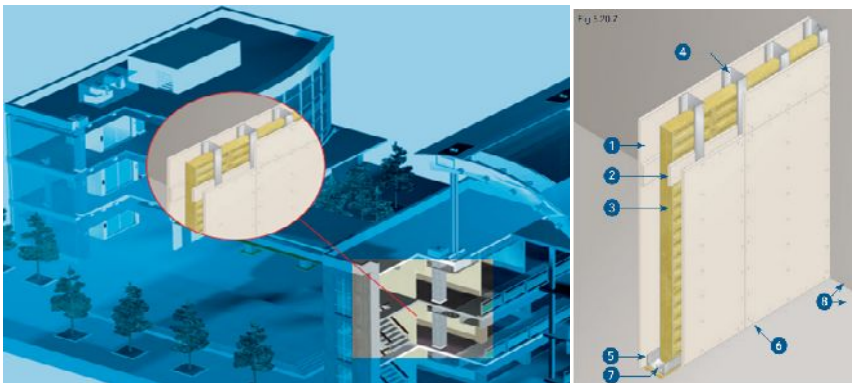
– . 2.4 [62].



2.4.

2.5.4.

– . 2.5 [63].



2.5.

1-

;4-

;2-

;5-

;3-

;6-8

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28 m

5 5 ,

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## 2.6.

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. 2.10 [68].

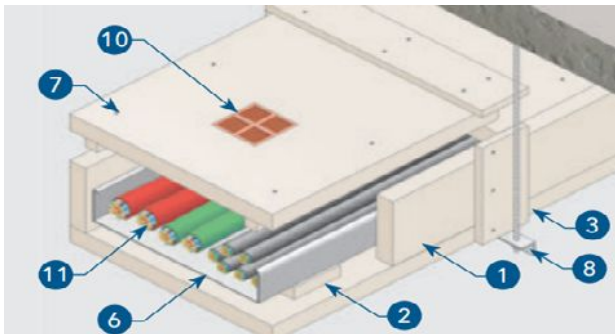


2.10.

– . 2.11

, ,

[69].



2.11.

1- ; 2- ; 3-  
 ; 4-8 - ; 6,11 ;  
 10-

[70].

2.16

CW



2.16.

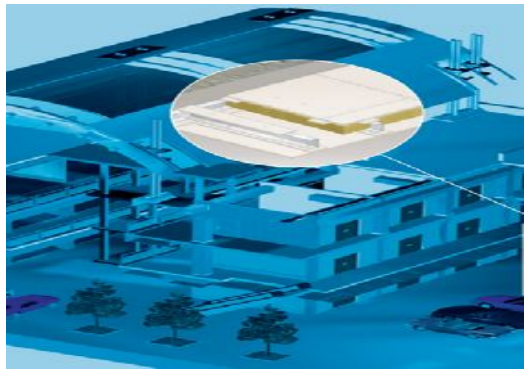
CW

2.7.

- 
-

- ; ,
- ( ).  
(600 x 600 mm 600 x 1200 mm),  
( ) – . 2.17

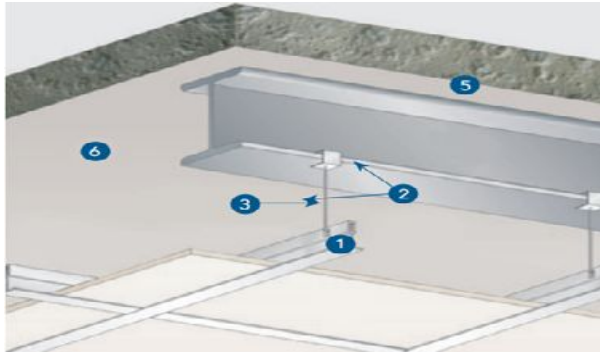
[71].



2.17.

, ,  
( ,  
EN 13381-1).  
,  
,  
, / ( ,

. 2.18 [64].



2.18.

1- ; 2- ; 3- ; 5,6-

- [69]

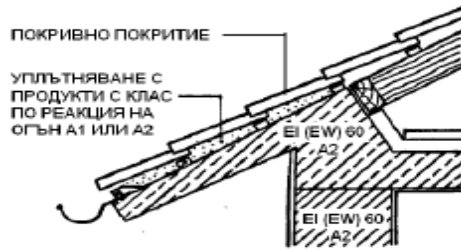
- 0,25 m 0,6 m.

( ), 2000 . ,  
 , - 3 m,



40 m. [70].

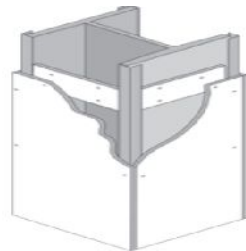
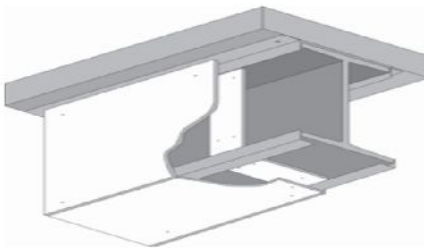
. 2.19,



2.19.

.2.22

( )



2.22.

**2.8.**

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3.

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4.

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**3.1.**

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[91] .

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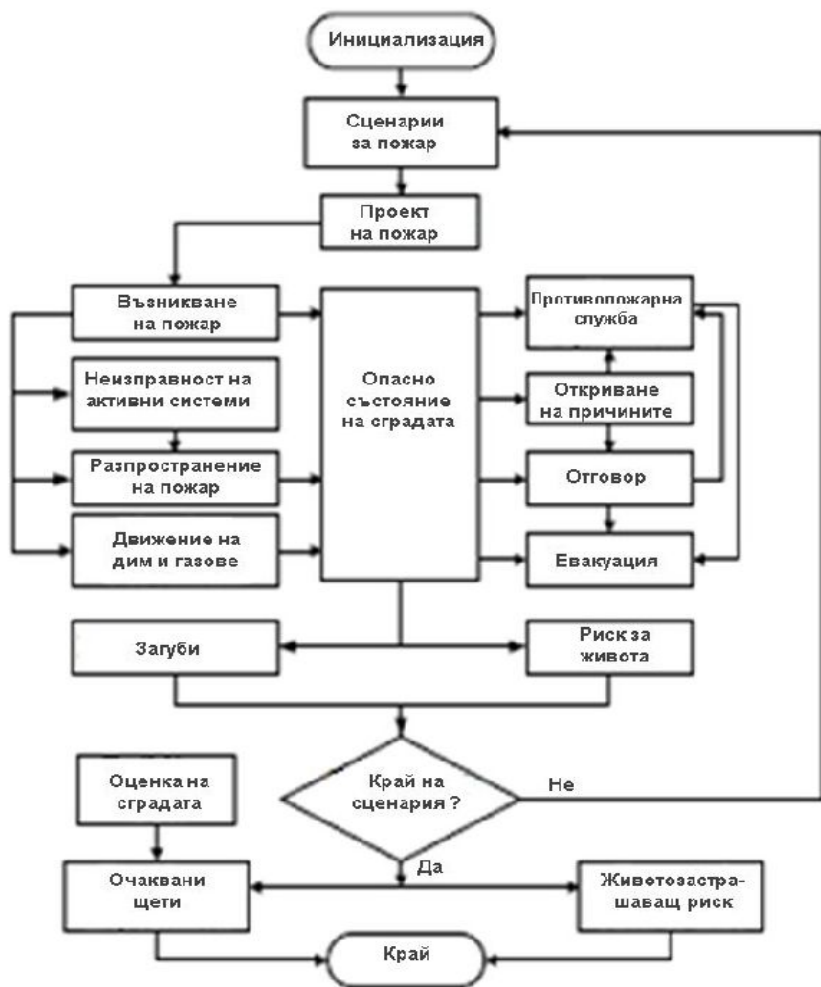


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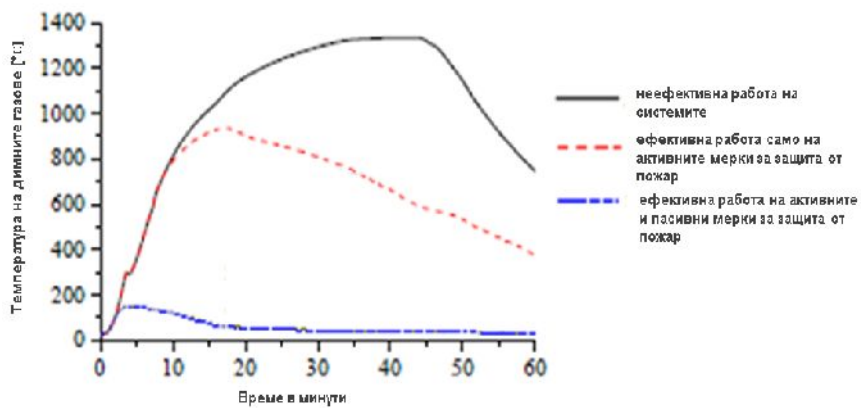
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3.1. -

3.2.

3.2



3.2.

1300 ° .

10 ,

17-

60

400 °C –

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5 ,

180 °C

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3.3.

3-

10

18

18

500 MJ / m<sup>2</sup>.

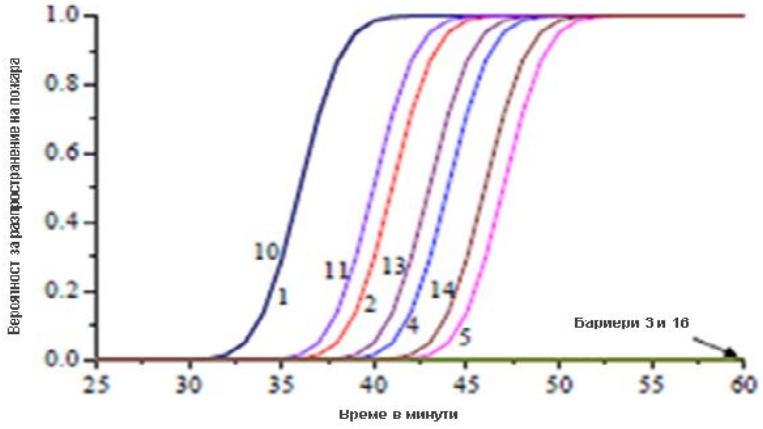
750 MJ/m<sup>2</sup> 825 MJ/m<sup>2</sup>.

825 MJ/m<sup>2</sup>.

0,19 kW/s,

17,6 MW.

. 3.5



3.5.

100 %

1,0.

10 1

35÷45

30

3 16.

1.



2.

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3.

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4.

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## IV.

### IV.1.

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1.

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2.

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## **IV.2.**

1.

2.

3.

4.

## **V.**

1.Kabali, M., FIRE ZONE IN INDUSTRIAL PLANTS, VIII  
INTERNATIONAL SCIENTIFIC CONFERENCE n  
ARCHITECTURE AND CIVIL ENGINEERING ArCivE 2017 1-3

June 2017, Varna, Bulgaria;

2. „ , „ .

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ArCivE 2019.

31 - 02 , , .

3. „ , „ , „ .

. e-Journal VFU, .12, 2019  
, ISSN 1313-7514.