OG 87/2015 (7.8.2015), Ordinance on amendments to the Ordinance on fire resistance and other requirements that buildings must satisfy in the event of fire

MINISTRY OF THE INTERIOR

1720

Pursuant to Article 26 (1) of the Fire Protection Act (Official Gazette 92/10), the Minister of the Interior, with the consent of the Minister of Construction and Physical Planning, issues

REGULATIONS

ON AMENDMENTS TO THE REGULATIONS ON FIRE RESISTANCE AND OTHER REQUIREMENTS TO BE SATISFIED BY BUILDINGS IN THE EVENT OF FIRE

Article 1

In Article 1, paragraph 2 of the Ordinance on fire resistance and other requirements that buildings must satisfy in the event of fire (Official Gazette 29/13), after the words: "(design and construction)" the words "but not refer to buildings registered in the Register of Cultural Property of the Republic of Croatia or buildings located in the cultural and historical unit registered in that Register. ".

Article 2

Article 3 (1) is amended as follows:

»(1) Certain terms used in this Regulation shall have the following meanings:

(1) *Fire resistance* is the ability of a part of a building to meet the required load-bearing capacity (R) and / or completeness (E) and / or thermal insulation (I) and / or other expected property in the event of fire over time.

(2) *Fire load* is the amount of heat energy that can be developed in a space, generated by combustion of the contents of the building (moving load) and parts of the structure and building elements (constant load), and the total fire load (MJ) and specific fire load (MJ / m^2).

(3) *Firewall*is a special type of fire resistance bulkhead structure of at least REI-M 90 and is derived from non-combustible construction products (reaction to fire of at least A2 according to HRN EN 13501-1) that intersects the structure of the structure from the foundation to the roof with a specially designed roof termination that prevents the transfer of fire . The firewall must provide the required REI properties even in the event of mechanical impact (M) due to possible fall of surrounding structures, so the minimum fire resistance is indicated by a combination of markings and time: REI-M 90. The firewall prevents the transfer of fire and smoke to other structures and / or fire structures sections in the same building. Requirements for fire-resistant walls at the boundary of fire compartments not intersecting the building from the foundation to the roof, as well as fire-resistant walls at the boundary of the parcel, are given in Annex 1, Table 1, item 3 of this Ordinance.

(4) *Fire resistant* bulkheads are all bulkheads (walls, ceilings, floors) of any fire resistance that are placed at the border of a fire compartment or at the boundary of individual dwellings or business units to prevent the spread of fires and smoke in a given time.

(5) *Smoke-proof* bulkheads are all bulkheads (walls, ceilings, floors, smoke screens, etc.) of any smoke leakage that are placed at the border of the smoke compartment or at the boundary of individual dwellings or business units to prevent the spread of smoke at a given time.

(6) A *fire compartment* is a part of a building that is separated from other parts of the structure by a partition structure and elements of certain fire resistance.

(7) A *smoke compartment* is a part of a building that is separated from other parts of the structure by a partition structure and elements of a certain smoke permeability.

(8) *Occupancy of a space* is the number of persons that can be found in a space, depending on the purpose and surface of the space.

(9) A *safety and evacuation staircase* is a staircase protected from the effects of fire and smoke, leading to a safe place, which may be internal and external (fully open or partially open).

(10) A *safe place* is a place in an exterior space outside a building that belongs to a building particle or public space that is safe from fire and falling parts of the structure and elements caused by fire, and is not part of the fire access and surfaces for firefighting (manipulative surfaces) and its size meets the requirements for accepting the intended number of evacuees. A safe place may also be in the building, in another fire and smoke compartment, if by its size it meets the conditions for accepting the intended number of persons in the event of an evacuation, with fresh air supply provided, and an alternative escape route provided (window of prescribed dimensions, staircase or evacuation elevator) , depending on the purpose of the building (hospitals, nursing homes, etc.).

(11) An *atrium* is a space created by an opening in a floor or a series of floor openings connecting two or more floors, covered at the top of a series of openings and used for purposes other than a separate staircase, elevator shaft, escalator or service the pane used for installation or communication devices.

(12) The *basement* (Po) is a part of a building that is completely buried or buried more than 50% of its volume in the finally landscaped flat ground and located below the ground floor or basement.

(13) The *basement* (S) is a part of a building whose space is below the ground floor floor and is buried up to 50% of its volume in the finally arranged and leveled terrain adjacent to the facade of the building, that is, with at least one facade outside it.

(14) *Ground floor* (Pr) is a part of a building whose space is located directly on the surface, ie not more than 1.5 m above the finally arranged and level terrain, measured at the lowest point along the facade of the building or whose space is above the basement and / or basement (below floor or roof).

(15) The *floor* (K) is a part of a building whose space lies between two ceilings above the ground floor.

(16) *Floor* is the horizontal part of the building comprising the space between two successive load-bearing floor structure.

(17) *Attic* (Pk) is a part of a building whose space is above the last floor and just below the sloping or rounded roof,

(18) A *business unit* shall be considered to be premises for a specific purpose, comprising work and auxiliary premises in function of that purpose, and the total area up to the maximum permitted area of the fire compartment for that purpose.

(19) An *industrial or production building* is a building or part of a building where production, stacking, preparation of products for distribution and the like are carried out, with the possible accompanying storage of the product or goods used for production, and associated administrative and auxiliary premises located in function of the stated purpose. "

Article 3

(1) In Article 5, paragraph 2, the word "roof" is replaced by the word: "cover".

(2) After paragraph 7, it adds paragraph 8 which reads as follows:

"(8) If an automatic fire alarm and fire extinguishing system is installed in the enclosure, the structures and building elements may be one degree less fire resistant than those prescribed in Table 1 of Annex 1 to the Regulations.".

Article 4

(1) In Article 6, after paragraph 2, the following new paragraphs 3 and 4 are added:

»(3) The classes of reaction to fire of construction products of industrial buildings shall be determined according to the subgroup into which they are classified according to the complexity of fire protection in accordance with Article 4 of this Ordinance, unless otherwise provided by a special regulation. If the classification criterion is the number of persons in the building, the shift with the highest number of occupants in the building is assumed.

(4) A comparative representation of the fire reaction class (HRN EN) with the combustion classes (HRN DIN) is contained in Annex 7, which is an integral part of this Regulation. ".

(2) The previous paragraph 3 shall become paragraph 5.

Article 5

(1) In Article 7, paragraph 2, after the words "various installations" the words "at the boundaries of the fire compartments" shall be added.

(2) Paragraphs 4 and 5 are amended to read:

»(4) The surfaces of fire and / or smoke compartments and their resistance to fire shall be determined for industrial buildings according to Table 2 in Annex 1 to this Ordinance.

(5) For residential floors above ground, a fire compartment may have a maximum net floor area of up to 1200.00 m2 and office uses of up to 1600,00 m2. The length of the compartment may not exceed 60,00 m, and the fire compartment may extend up to 4 floors above. The size of the fire compartment of the space in the underground floors that serve residential and office purposes may not exceed 800,00 m2. ".

(3) After paragraph 5, paragraphs 6 to 8 are added, which read as follows:

»(6) The sizes of fire and / or smoke compartments of spaces in underground floors that serve other purposes (garages, warehouses, etc.) shall be in accordance with a special regulation for the specific purpose.

(7) For buildings of other uses, the surface of fire and / or smoke compartments and their resistance to fire shall be determined in accordance with a special regulation.

(8) Exceptionally, the provisions of the paragraphs of this Article shall not apply to buildings for which the division into sections is inappropriate or justified for functional reasons (sports halls, fair exhibition pavilions, concert halls, etc.). Fire safety in the design of such structures shall be demonstrated by the application of budgetary methods and / or models based on proven technical solutions and / or recent developments in the field. ".

Article 6

In Article 8, paragraph 1, subparagraph 2, after the words "fire", the words "and / or" are deleted.

Article 7

In Article 9, paragraph 1, subparagraph 2, the words: "factory halls" are replaced by the words: "industrial buildings".

Article 8

In Article 10, paragraph 2, after the words "from 0.50 meters on each side", the words "but without the mechanical impact (M) for the bracket" are added, and after the words "cover and" the word "is deleted:" / or «.

Article 9

(1) In Article 11, paragraph 1, after the words: "meter", the words "or one-sidedly to one side are added so that the total length is 2.00 meters, except for buildings of groups ZPS2, ZPS3 and ZPS4, where this total distance may be 1.00 m. "and the words" (at least 2.00 m in total) "are deleted.

(2) In paragraph 3, the words: “in 30 minutes” are replaced by the words: “by one degree”.

Article 10

(1) In Article 12, paragraph 1, after the words: "this Ordinance.", The following sentence is added: "For buildings of subdivisions ZPS2, ZPS3 and ZPS4 a length of 3,00 meters is allowed."

(2) In paragraph 3, the words "less than 30 minutes" are replaced by the words: "one degree less".

Article 11

(1) In Article 14, paragraph 2 is deleted.

(2) The previous paragraph 3 shall become paragraph 2.

(3) In the former paragraph 3, which becomes paragraph 2, the words: "provided for in Article 12 of this Ordinance, paragraphs 1 and 2 of this Article" shall be replaced by the words: "provided for in Article 13 of this Ordinance and paragraph 1 of this Article. "

Article 12

In Article 15, paragraphs 2 to 5 are added after paragraph 1 to read as follows:

»(2) On building elements preventing the transfer of fire in the horizontal direction referred to in Article 11 (1) and (2) and Article 12 (1), as well as for building elements between openings preventing the transfer of fire vertically between different fire of the sections referred to in Article 14, paragraph 1 of this Ordinance, in the construction of thermal contact systems of the fuel thermal insulation facade, a belt of non-combustible thermal insulation (reaction to fire A1 or A2-s1d0) must be carried out in width and intermittent distance (Annex 3 of the Ordinance). . For the construction of suspended ventilated façade elements, it is necessary to prevent the transmission of fire through the ventilation layer in the width of the intermittent distance, in the case of combustible and non-combustible thermal insulations, by a barrier, which is carried out according to the manufacturer's instructions in classified systems.

(3) For buildings of subdivision ZPS4 which are one fire compartment (including a staircase which can be a separate fire compartment) and which use a contact system of facades with fuel thermal insulation, directly around the openings lateral and above (windows, doors and other) or just horizontally above the opening greater than 30 cm to the left and right of the far edge of the opening, a fire bar (thermal insulation barrier) of at least 20 cm wide shall be installed in the reaction class A1 or A2-s1d0 to prevent the spread of fire by front of the building.

(4) Instead of the described method of implementation referred to in paragraph 3 of this Article, thermal insulation of the A1 or A2-s1d0 fire reaction class may be performed as a horizontal continuous band of at least 30 cm wide around the entire building on every second floor, not more than 50 cm above the upper edge. of the opening. Non-combustible barriers are anchored and mechanically anchored to the façade wall in such a way as to prevent the loss of thermal insulation in the event of fire.

(5) In the case of the buildings referred to in paragraph 3 of this Article, the construction of suspended ventilated façade elements shall prevent the transfer of fire through the ventilation layer through openings in the façade or at least on every other floor along the entire circumference of the building in the case of combustible and non-combustible thermal insulations. The performance of this barrier for classified facade systems shall be ensured according to the manufacturer's instructions and for systems with individual components according to recognized rules of technical practice. ".

Article 13

In Article 16, paragraph 4, the word "rotary" is replaced by the word "rotary".

Article 14

In Article 18 (1), subparagraph 1, in the bracket after the words "clamp" the words "and other" are added and the words "E 30" are replaced by the words "EI 15".

Article 15

In Article 22, the words: "(less than 1000 MJ / m ^{2})" shall be added after the words "low fire load ".

Article 16

(1) In Article 23, paragraph 1 is amended to read:

"(1) When one of the adjacent buildings with a fire load of 1000 MJ / m ^{2} and greater, the mutual safety distance is determined by budget (NFPA 80A - Recommended Practice for Bildings from Exterior Fire Exposures or other equally valuable budget)." .

(2) In paragraph 4, the words "with a higher fire load" are replaced by the words: "with a fire load greater than 1000 MJ / m ^{2} "

Article 17

In Article 24, paragraph 3, the words: "in 30 minutes" are replaced by the words: "by one degree".

Article 18

Above Article 25, the title of the head: "Flue and / or heat and exhaust systems and pressure systems" is amended to read: "VI. SMOKING AND HEAT DRAIN SYSTEMS AND PRESSURE SYSTEMS ".

Article 19

In Article 25, after the words: "Regulations", the point and comma are deleted and the words "unless otherwise provided by a special regulation" are added.

Article 20

Article 26 (1) is amended as follows:

»(1) The smoke and heat exhaust systems must be provided in the following cases:

- safety stairways in accordance with Table 3 in Annex 1 to this Ordinance;

- basement spaces without basement windows or other openings leading to the outer space (openings of the atrium, escalators, stairs, etc.) when:

a) a capacity of that space exceeding 100 persons, or

b) a floor occupied by people more than 9.10 meters below the lowest level of the clearance area (exit level of the outer space) or when there is more than one level for a residence located below the lowest level of the clearance space;

- enclosed atrium spaces;

- fire compartments without windows or doors on the front of a building that can be opened with a fire load of 600 MJ / m ^{2} to 999 MJ / m ^{2} and a fire compartment area greater than 200,00 m ^{2} , or a fire compartment area greater than 400,00 m ^{2} for fire compartments incorporating an automatic fire extinguishing and fire extinguishing system;

- fire compartments without windows or doors on the front of a building that can be opened with a fire load of 1000 MJ / m ^{2} to 1999 MJ / m ^{2} and a fire compartment area greater than 100 m ^{2} , or a fire compartment area greater than 200.00 m2 if an automatic fire alarm and extinguishing system is installed;

- in other cases fire compartments with no windows or doors on the front of the building to be opened and with a fire load exceeding 2000 MJ / m ^{2} and a compartment area greater than 50,00 m ^{2} , or 100,00 m ^{2} if a system is installed for automatic fire alarm and extinguishing. ".

Article 21

Article 31 is amended as follows:

»(1) There must be at least two evacuation routes, or rescue routes, leading in different directions to the outside space, or a safe place in the building and not ending in the same fire and / or smoke compartment.

(2) Depending on the number of space users, the number of evacuation or rescue routes shall be:

- at least 2 evacuation times, if the number of users is less than 500;

- at least 3 evacuation times, if the number of users is from 500 to 1000;

- at least 4 evacuation times if the number of users exceeds 1000.

(3) By way of derogation from paragraph 1 of this Article, only one evacuation route may be designed for sales and service premises within a building if the number of users is less than 50, the area of the space is less than 280,00 m2, the fire load is less than 1000 MJ / m2 and the length of the common part of the evacuation route is less than 23.00 m or less than 30.00 m with a built-in automatic fire alarm and extinguishing system.

(4) For multi-storey buildings, evacuation routes lead through stairways, of which at least one staircase must be constructed in accordance with the requirements set out in Table 3 of Annex 1 to this Ordinance, and the rest in smoke-free construction, provided that the stairways lead to different exits the building, that is, they do not end up in the same fire and / or smoke compartment.

(5) In the case of buildings referred to in paragraph 4 of this Article, except for buildings of subgroup 5 (ZPS 5) in which the floors are not exclusively residential and buildings consisting predominantly of underground floors or occupied by immovable and reduced mobility persons, and persons which cannot be self-evacuated (hospitals, nursing homes, psychiatric institutions, nurseries, kindergartens, etc.), or in which persons with reduced mobility for security reasons (penal institutions, etc.) reside, as well as buildings where they exist individual gathering areas for more than 300 persons, with an escape route via a staircase made in accordance with the requirements set out in Table 3 of Annex 1 to this Ordinance, one of the escape routes may be through a rescue window. That window shall be at least 0.80 x 1.20 meters in size,

(6) In the case of a fixed glass element facade window, these elements shall be made of safety glass that can be easily broken using simple tools at the disposal of firefighters. The fixed glass elements or windows referred to in paragraph 5 of this Article shall be marked externally in order to be easily observed by firefighters.

(7) In floor buildings requiring more than two evacuation routes, rescue windows may only be used as one of the evacuation routes.

(8) Exceptionally, for buildings where it is not possible to perform rescue windows and / or to provide adequate operational fire surfaces for technical or other reasons (protected buildings, urban areas, etc.), it is sufficient to provide a single exit with a staircase for an evacuation route provided that the staircase is designed as overpressure if the prescribed lengths of the escape route to the staircase are met.

(9) The provision of paragraph 8 of this Article does not apply to buildings where it is necessary to provide more than two evacuation routes or exits, and to buildings of subgroup 5 (ZPS 5), which mainly consist of underground floors or occupied by immovable and occupants reduced mobility and persons who cannot be evacuated

independently (hospitals, homes for the elderly and infirm, psychiatric institutions, nurseries, kindergartens, etc.), or in which persons with reduced mobility for security reasons (penal institutions, etc.) reside, as well as buildings where there are individual spaces for the gathering of more than 300 persons. ".

Article 22

(1) In Article 34, paragraph 2, the words "to the nearest staircase" are deleted.

(2) Paragraph 3 is amended to read:

»(3) Unless otherwise specified by a special regulation, the maximum permitted length of the blind corridor referred to in Article 33 of this Ordinance shall be:

- 15,00 meters in buildings with built-in automatic fire extinguishing and fire extinguishing systems, industrial buildings and underground floors,

- 6,00 meters in buildings without automatic fire alarm and extinguishing system.

- the preceding provisions of the blind corridor shall not apply to residential buildings which have prescribed evacuation windows from each dwelling unit accessible to firefighters for safe rescue and extinguishing action, or up to 10.00 m of the blind corridor if these conditions are not met. ".

Article 23

Article 35 (1) is amended as follows:

"(1) The width of the escape staircase shall be determined by the number of persons on the floor with the highest occupancy of the space, provided that the width of the escape staircase does not decrease on the lower floors of the building."

Article 24

Article 40 is amended as follows:

»Doors on an evacuation route, excluding residential buildings, and premises of buildings and structures that gather less than 50 persons, must be equipped with anti-knock, anti-lock locks, pressure plates, pressure bars and the like, in accordance with Croatian standards HRN EN 179 and / or HRN EN 1125 and the guidelines adopted by the European Confederation of Fire-Fighting Associations CFPA-E Guideline No 2 Panic & emergency exit devices and open in the exit direction or individually, with appropriate automatic or manual opening in case of fire. ".

Article 25

(1) In Article 43, paragraph 2 is amended to read:

»(2) The minimum dimensions of the swing windows referred to in paragraph 1 of this Article shall be 0.80 x 1.20 meters, with the height of the parapets on the inside of the facade not less than 0.90 meters and not more than 1.20 meters. The sash windows of this article must be visibly marked on the outside by a sign of minimum dimensions 20.00 x 20.00 cm in RAL 3000 color, of the following appearance:

The window opens from the outside with equipment and tools available to firefighters. The inscription "RESCUE WINDOW", printed in green RAL 6005 Font Arial green, must be affixed on the visible side in the immediate vicinity of that window, the font size being determined by the project depending on the size of the room. ".

(2) Paragraph 4 is amended to read:

»(4) In addition to the internal elements referred to in paragraph 3 of this Article, there shall be a visible hammer in the visible position and in the immediate vicinity of a toughened glass breaker with the inscription:" RESCUE WINDOW - SHatter glass in case of danger "in green letters RAL 6005 Font Arial, font size is determined by the project depending on the size of the room. The elements of the facade referred to in paragraph 3 of this Article must be marked on the outside with the following sign of minimum dimensions 20.00 x 20.00 cm, color RAL 3000 of the following appearance:

". ".

(3) Paragraph 5 is deleted.

Article 26

Tables 1, 2 and 3 in Schedule 1 to the Fire Resistance Ordinance and other requirements that buildings must meet in the event of fire are replaced by the new Tables 1, 2 and 3 in Schedule 1 to this Ordinance and its are an integral part.

Article 27

Tables 4, 5, 6 and 7 in Schedule 2 to the Fire Resistance Ordinance and other requirements that buildings must meet in the event of fire are replaced by the new Tables 4, 5, 6 and 7 contained in Annex 2 to this Ordinance and its constituent part.

Article 28

(1) In Annex 3 to the Regulation on fire resistance and other requirements that buildings must satisfy in the event of fire, the following text is added below Figure 1:

»Length of straight barrier for buildings ZPS2, ZPS3 and ZPS4 ≥ 1.00 m

Barrier length in the inner corner of the building for ZPS2, ZPS3 and ZPS4 ≥ 3.00 m «.

(2) Below Figure 2, the following text is added:

"ZPS2, ZPS3 and ZPS4 ≥ 3.00 m".

(3) Figure 5 is replaced by the new Figure 5 and the text appearing in Annex 3 to this Ordinance and forming an integral part thereof.

Article 29

In Annex 4, SPACE OWNERSHIP in Table 1. In the heading "Business (office)" the following line is added:

Garages	2 persons / parking space

Article 30

After Schedule 6 is added Schedule 7, which becomes an integral part of the Regulations on fire resistance and other requirements that buildings must satisfy in the event of fire, and which reads as follows:

»ANNEX 7

Table 1. Comparison of fire reaction classes (HRN EN) with combustion classes (HRN DIN)

	ADDITIONAL REQUEST		HRN EN 13501-1	HR DIN 4102-1
	No smoke development	Do not burn with flames		
COMBUSTIBLE WITHOUT FUEL BUILDING PRODUCTS	x	x	A1	A1
COMBUSTIBLE WITH FUEL BUILDING PRODUCTS	x	x	A2-s1 d0	A2
HEAVY FUEL	x	x	B, C-s1 d0	B1
		x	A2, B, C-s2 d0	
		x	A2, B, C-s3 d0	

	x		A2, B, C-s1 d1	
	x		A2, B, C-s1 d2	
			A2, B, C-s3 d2	
NORMAL FUEL	x	x	D-s1 d0	B2
		x	D-s2 d0	
		x	D-s3 d0	
	x		D-s1 d2	
			D-s2 d2	
			D-s3 d2	
			E	
			E-d2	
Highly flammable			F	B3

s - smoke (s1 = little or no smoke, s2 = medium smoke, s3 = thick smoke)

d - droplet (d0 = no droplets within 600 seconds, d1 = droplets within 600 seconds but not burning longer than 10 seconds, d2 = not as d0 or d1, very drops and worse)

Table 2. Comparative view of floor reaction classes (HRN EN) with combustion classes (HRN DIN)

REQUEST	HRN EN 13501-1	additional request	HR DIN 4102-1
NEGORIV	A1 $_{fl}$		A1
	A2 $_{fl}$ -s1	No smoke development	A2
HEAVY FUEL	B $_{fl}$ -s1	No smoke development	B1
	C $_{fl}$ -s1		
NORMAL FUEL	A2 $_{fl}$ -s2		B2
	B $_{fl}$ -s2		
	C $_{fl}$ -s2		
	D $_{fl}$ -s1		
	D $_{fl}$ -s2		
	E $_{fl}$		
Highly flammable	F $_{fl}$		B3

«

TRANSITIONAL AND FINAL PROVISIONS

Article 31

(1) Special regulations laying down requirements relating to fire resistance and reaction, and other requirements in the fire protection area that special purpose buildings must meet, shall apply if they comply with the applicable fire protection standards.

(2) Issues such as calculation of fire compartment areas, fire load, need for the introduction of individual systems (sprinkler and other) and other issues not regulated by the Fire Resistance Ordinance and other requirements that buildings must satisfy in the event of fire or a special regulation , foreign guidelines and regulations may apply as rules of technical practice (Österrichisches Institut für Bautechnik OIB), British Standard (BS), National Fire Protection Association (NFPA) and others), if approved in the process of issuing special construction and / or issuing conditions certificates from the field of fire protection. If foreign guidelines are applied, only one guideline can be applied, not a combination of guidelines, subject to the mandatory application of applicable EU standards that are accepted as Croatian standards.

Article 32

This Ordinance shall enter into force on the eighth day after its publication in the Official Gazette.

No: 511-01-152-44907-2015

Zagreb, 31 July 2015

Minister
Ranko Ostojic, mp

ANNEX 1.

FIRE RESISTANCE

Table 1. Requirements for fire resistance of structures and building elements

	Building class (ZPS)	**ZPS1**	**ZPS2**	**ZPS3**	**ZPS4**	**ZPS5**	**Tall buildings**
1	**Wearable parts (except ceilings and walls at the boundary of the fire compartment)**						
1.1	the last floor or attic	WITHOUT REQUEST	R 30	R 30	R 30	R 60	BY SPECIFIC REGULATION
1.2	basement, ground floor and floors	R 30	R 30	R 60	R 60	R 90	
1.3	basement (underground floors)	R 60	R 60	R 90	R 90	R 90	
2	**Partition walls between apartments, business units, premises for various purposes, and evacuation corridors**						
2.1	the last floor or attic	NOT APPLICABLE	EI 30	EI 30	EI 60	EI 60	BY SPECIFIC REGULATION
2.2	basement, ground floor and floors	NOT APPLICABLE	EI 30	EI 60	EI 60	EI 90	
2.3	basement (underground floors)	NOT APPLICABLE	EI 60	EI 90	EI 90	EI 90	
3	**Walls and ceilings at the fire compartment and parcel boundary (REI load-bearing walls, EI partition walls)**						

3.1	walls at the boundary of the plot	REI 60 EI 60	REI 90 EI 90	REI 90 EI 90	REI 90 EI 90	REI 90 EI 90	BY SPECIFIC REGULATION
3.2	other walls and ceilings at the boundary of the fire compartment	NOT APPLICABLE	REI 90 EI 90	REI 90 EI 90	REI 90 EI 90	REI 90 EI 90	
4	**Ceilings and sloping roofs for residential or commercial use with a slope not exceeding 60 degrees to the horizontal**						
4.1	Ceilings above the top floor	WITHOUT REQUEST	R 30	R 30	R 30	R 60	BY SPECIFIC REGULATION
4.2	Intersections above other floors	WITHOUT REQUEST	REI 30	REI 60	REI 60	REI 90	
4.3	Ceilings between basements (underground floors)	R 60	REI 60	REI 90	REI 90	REI 90	
5	**Balcony panel**	WITHOUT REQUEST	WITHOUT REQUEST	WITHOUT REQUEST	R 30 or at least A2	R 30 and at least A2	BY SPECIFIC REGULATION

Table 2. Permissible areas of fire and smoke compartments (m2) in above-ground industrial buildings in relation to the resistance of the structure and installed systems, and the number of connected above-ground floors.

Equipped with security systems	Total number of connected above ground floors of industrial buildings			
	1		2	
	Fire resistance of load-bearing and stiffeners / permissible surface area fire compartments in (m2)			
	no requirements	R30	R30	R60 [(1)]
No system	1 800,00	3 000,00	800,00	1 600,00
Automatic fire alarm system	3 200,00	5 400,00	1 200,00	2 400,00
Automatic fire extinguishing system	7 500,00	10 000,00	5 000,00	7 500,00

NOTES:

[(1)] The fire resistance of R30 is sufficient for the primary roof structure

[(2)] For primary roof construction, fire resistance R60 is sufficient.

Table 3. Fire resistance of safety stairwells

	The subject	ZPS2 [(1)]	ZPS3 [(1)]	ZPS4
1	Staircase walls			
1.1	basement, ground floor and floors [(2)]	REI 30 EI30	REI 60 EI 60	REI 60 [(2)] EI 60 [(2)]
1.2	basement (underground floors)	REI 30 EI 30	REI 90 [(2)] EI 90 [(2)]	

2	Ceiling Above Stairs [4]	REI 30	REI 60 EI 60	REI 60 [2] EI 60 [2]
3	Doors in staircase walls without barrier			
3.1	for flats, offices and other spaces that lead directly to the staircase	EI $_2$ 30	EI $_2$ 30-C	EI2 30-C-S
3.2	for the hallways leading to the staircase at basement, ground floor and floors	WITHOUT REQUEST	E 30-C	
3.3	for corridors and rooms in underground floors leading directly to the staircase	EI $_2$ 30	EI $_2$ 30-C	
4	Doors in staircase walls with effective ventilation in the apron (barriers)			
4.1	from the gate to the corridor and staircase	Not required		
4.2	from residential or commercial units, as well as other spaces towards the gate	Not required		
5	Legs and stairways			
5.1	in stairways without an apron	R 30	R 60	R 60 and at
5.2	in stairways with a lock, which is guided by an automatic self-closing door, E 30-C and / or EI2 30-C, EI2 30-C-Sm	WITHOUT REQUEST	R 30 or at least A2	R 30 and at
6	Automatic fire alarm system in staircases, without barrier	Not required		
7	Mechanical ventilation in stairways without a lock	Not required		
8	SMOKING DEVICE [5,6]			

8.1	Location	at the top of the stairs
8.2	Size	free area of 1.00 m²
8.3	opening devices	On the last landing and ground floor or floor that can be accessed by the fire department. The opening must be in of the general power supply. In order to ensure the natural buoyancy of smoke extraction from the staircase, it is r provide external air supply by means of a duct or window of sufficient cross-section with a permanent opening or connected to an external space equipped with a fixed open position device. The open air inlets must be below one mean structural height of the staircase.
9	OUTDOOR STAIR	at least A2 provided that the staircase is protected from fire and smoke penetration through the openings in the fa

NOTES:

(1) Not applicable for buildings up to and including 3 apartments.

(2) Fire resistance requirements are not required for exterior staircase walls derived from construction products classified by reaction to fi endangered by adjacent parts of the building connected to those exterior walls.

(3) The building elements must be constructed within the staircase of construction products classified by reaction to fire in at least A2.

(4) The requirement may be waived if the transfer of fire from adjacent building elements to the staircase can be prevented by appropriate

(5) A smoke extraction system is not required if an overpressure system is provided.

(6) For buildings of class ZPS2, no smoke extraction system is required if there are windows on each floor leading directly to an open outc opened from a standing position without additional aids.

(7) An autonomous alarm device shall be used in a security staircase for buildings that do not have a stable automatic fire alarm system, co detector in the highest part of the staircase, and manual activation buttons in the lowest and highest part of the staircase.

(8) A smoke prevention or dilution system in a staircase without a gate does not need to be provided for buildings of subdivision ZPS5 if a Chapter 8 of the table.

(9) Requirements for stairways for tall buildings are laid down in a separate regulation.

(10) There is no requirement for ZPS1.

(11) The requirements for fire resistance and smoke permeability shall not apply to corridor doors that do not directly exit the staircase and

ANNEX 2.

REACTION TO FIRE

Table 4. Facades

Construction parts	**Subgroup Building (ZPS)**													
		ZPS1			ZPS2			ZPS3			ZPS4			
Suspended ventilated facade elements														
Classified system		E			D-d1			D-d1		C -d1				
or														
Performance with the following classified components														

The outer layer		E			D			D		A2-d1		B-d1							
Substructure																			
- rod-shaped		E			D			D		D	or	D							
- dotted		E			D			A2		A2		A2							
Isolation		E			D			D		B		A2							
Thermal contact system of the facade																			
Classified system	E		D			D-d1			C-d1										
or																			
Layer composition with the following classified components																			
- cover layer		E	D			D			C										
- insulation layer		E		D			C				B								

Table 5. Interior wall coverings and finishes

Construction parts	Subgroup Building (ZPS)																		
	ZPS1			ZPS2			ZPS3			ZPS4						ZPS5			
Interior wall coverings, excluding evacuation routes																			
Classified system		D			D			D		D							D		
or																			
Performance with the following classified components																			
- lining	D	or	B	D	or	B	D	or	B	C	or	B	C	or					
- insulation	C		E	C		E	C		D	B		D	B						
Interior wall coverings, in evacuation routes																			
Classified system	NOT APPLICABLE			D			C			B							A2		
or																			
Performance with the following classified components																			
- lining	NOT APPLICABLE			D		C		A2	B		A2	B							
- substructure	NOT APPLICABLE			D		A2	or	A2	A2	or	A2	A2	or						
-insulation	NOT APPLICABLE			C		B		D	A2		C	A2							
Internal finishes of the wall within the escape routes																			

- corridors	NOT APPLICABLE		D			C-s1, d0			C-s1, d0			B-
- staircase	NOT APPLICABLE		D			C-s1, d0			A2-s1, d0			A2

Table 6. Construction products for floors and ceilings

Construction parts	**Subgroup Building (ZPS)**			
	ZPS1	ZPS2	ZPS3	ZPS4
Flooring on evacuation routes				
- corridors	Dfl	Cfl-s1	Cfl-s1	Cfl-s1
- staircase	Dfl	Cfl-s1	Cfl-s1	A2fl
Flooring in undeveloped parts of the attic	Dfl	Dfl	Dfl	A2fl
Floor structures				
Classified system	D	D	D	D
or Performance with the following classified components				
Wearable part Insulation layer	D E	C C	OR	C D	C C	OR	C D	C B	OR	B C
Structures below the unworked ceiling panel including fastenings except for the ceiling paneling				
Classified system	D-d0	D-d0	D-d0	D-d0	D
or Performance with the following classified components				
Substructure Insulation layer Lining or suspended ceiling	D C-d0 D-d0	OR	D D B-d0	D C-d0 D-d0	OR	D D B-d0	A2 C-d0 D-d0	OR	A2 D B-d0	A2 B-d0 C-d0	OR	A D B
Ceiling lining on evacuation routes				
- corridors	NOT APPLICABLE	D	C-s1, d0	C-s1, d0
- staircase	NOT APPLICABLE	D	C-s1, d0	A-s1, d0

Table 7. Roofs

Construction	**Subgroup Building (ZPS)**			
	ZPS 1	**ZPS 2**	**ZPS 3**	**ZPS 4**
Flat roofs				

Top layer of at least 5 cm thick gravel or equivalent material				
- Insulation (waterproofing and the like)	E	E	E	E
- Thermal insulation *	E	D	D	C
When the top layer does not match the previous point				
- Isolation	BKROV (t1)	BKROV (t1)	BKROV (t1)	BKROV (t1)
- Thermal insulation *	E	E	E	C
Oblique roofs (20 ° ≤ slope ≤60 °)				
- Cover	BKROV (t1)	BKROV (t1)	BKROV (t1)	BKROV (t1)
- Roofing cardboard and foil	E	E	E	E
- Roof construction	E	E	E	A2
- Thermal insulation	E	D	C	A2

** applies to thermal insulation laid on a reinforced concrete slab or a non-combustible substrate*

Note:

In the attic of residential use, the reaction to fire class A2 for roof structures ZPS4 and ZPS5 is achieved by constructing a roof structure made of non-combustible elements or of timber lined with non-combustible construction products. A solution is also acceptable in which the wooden roof structure is externally enclosed on all sides by non-combustible elements of the prescribed reaction to the fire, provided that there are no installations inside that space. Then the timber of the roof structure is allowed to have a fire reaction class D in accordance with HRN EN 13986. If the attic is commercial (eg office), fire resistant coatings for open roof structures are permitted if a fire reaction class B with the installed and functionally correct sprinkler system.

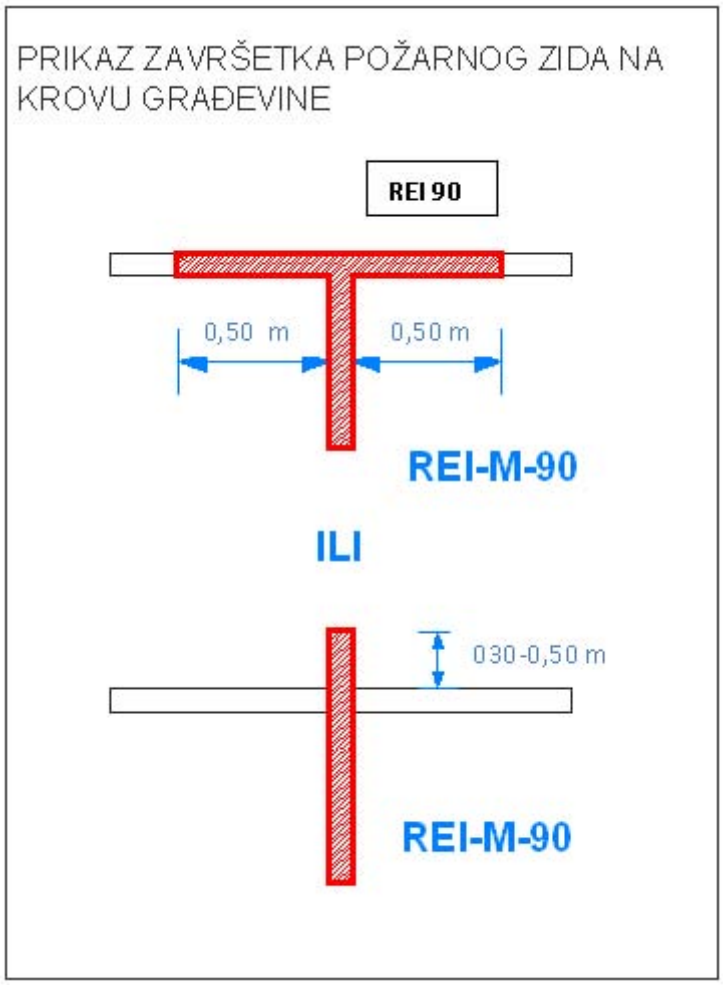
If it is a non-residential or non-residential roof space (ordinary ceiling) then the roof structure wood shall be allowed to have at least a fire reaction class D in accordance with HRN EN 13986 if the ceiling is separated from the residential part and adjacent buildings by a cover is A2 fire reaction class.

In the same way, if the reconstruction of an existing structure that encroaches on a part of the existing wooden structure of the attic roof is allowed, it is allowed to be solved in the same way as in the previous case.

ANNEX 3.

GRAPHIC ANNEXES TO THE REGULATION

Figure 5.



no requirement is required for the console - property M as for walls