

WG3

Integrated Design

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WG3 INTRODUCTION

On the framework of WG3 – Integrated Design, several questions were prepared to find out which are the current design practice in the member countries regarding fire safety in buildings. Thirteen countries have responded to the call: Belgium, Czech Republic, Finland, France, Germany, Greece, Hungary, Italy, Poland, Portugal, Slovakia, Spain, and United Kingdom.

Questions about building regulations, design codes approvals process, insurance companies, qualification requirements for designers, precedence of performance-based fire engineering projects and passive fire protection have been made.

The aim is to provide information to participants about the practice in other countries. Building and design to other countries meet often a variety of problems because of different procedure and acceptance. To help in this and also in co-operation between researchers from different countries this questionnaire has been gathered. Although EU should make this kind of interaction easier, the national regulations vary a lot and therefore this kind of information is valuable.

All the answers have been collected and put together in this document so that a comparison could be made between them. The way in which designers, regulators and authorities currently deal with the issues of fire safety in buildings in the WG3 member countries, can be checked hereafter.

The following questions, mostly suggested by Dr. Florian Block, have been sent to the members, together with comments (*in italics*) on the returned information:

1. Building Regulations

- 1.1 Are the Building Regulation Prescriptive / performance-based (i.e. is it possible to design from first principles using finite element analysis, CFD, etc to show that the intents of the Building Regulations are met?)

Most of the countries allow for performance-based design and the use of advanced calculation methods. Only in Greece, Hungary and Slovakia the regulations are purely prescriptive and do not allow for the use of advanced calculation methods.

- 1.2 What are the Building Regulations relevant for fire called and who is the issuing body?

Each country provided a list of their Building Regulation for Fire Safety.

- 1.3 Is there additional guidance available to interpret the Building Regulations for fire?

Some Countries have guides and FAQ's. France, Greece and Italy do not have this type of information from the authorities.

- 1.4 Are there different regulations for certain types of buildings (i.e. schools, hospitals, airports, railway stations)?

In all the Countries the regulation covers the most type of buildings

2. Design Codes

- 2.1 What are the relevant national or international/European standards required to undertake the design of:

- Means of escape
- Smoke management
- Fire resistance of the construction

Fire fighting

Fire safety systems (alarm, suppression, ...)

Most of the Countries do not have relevant regulation for Means of escape, Smoke management, Fire fighting and Fire safety systems (alarm, suppression, ...), but some guidance are given in the National Regulation for fire safety or some rules are used from NFPA. Only Poland has referred the EN 12101 - Smoke and heat control systems, which also should be used in the other European Countries. All the countries have adopted the structural Eurocodes for checking fire resistance of constructions.

- 2.2 Is it possible to use Eurocodes or other international fire standards in lieu of the local code?

All the countries have adopted the structural Eurocodes.

- 2.3 Are there available the translations of the fire parts of Eurocodes? Which ones?

For the time being only Greece, Hungary and Italy do not have any translation available.

- 2.4 Are the national annexes available in internet

Only Finland, Greece and UK provide the National Annexes in the internet.

3. Approvals process

- 3.1 What is the normal route to get a project approved?

- Via a public body
- Via a private body
- Self-certified

The projects are approved in most of the Countries via a public body.

- 3.2 What is the position of the fire brigade in the process?

In all the Countries the fire brigade plays an important role in the approval process.

- 3.3 Is there a third party review process common?

In all the Countries it is not common to have a third party review process.

- 3.4 Is it necessary to follow an alternative route of approvals for performance-based design and what would that route be?

For the Countries where it is possible to use performance-based design the project follows the same route as for prescriptive approach, i.e. the authorities must approve the project.

- 3.5 What is the normal time frame for the approvals process?

Not easy to define. The time depends on the complexity of the project.

- 3.6 What level of information must be provided to the approving body?

In all the Countries the normal details of a project of fire safety of buildings.

- 3.7 Are any specific facilitators required to help the engineer in the approvals process?

In most of the countries there are no specific facilitators required to help the engineer in the approvals process, but in Czech Republic, Greece, Hungary, Portugal and Spain the support can be asked to the authorities.

4. Insurance companies

4.1 Are insurance companies involved in the design process?

In most of the countries no, but in Spain requirements of insurance companies are more restrictive than authorities for important projects, for instance; skyscrapers or industrial installations.

4.2 Are insurance companies open to a discussion on fire safety?

In most of the countries insurance companies are not particularly concerned with this matter when establishing insurance premium, they are normally conservatives. Only in Belgium and Finland the insurance companies open to a discussion on fire safety.

5. Qualification requirements for designers

5.1 Is it required to hold specific certificates/licenses in the member state to undertake fire safety design and fire engineering?

In some Countries no (Belgium, France, Germany in some federal states, Greece, Spain and UK) and in other yes (Czech Republic, Finland, Germany in some federal states, Hungary, Italy, Poland, Portugal and Slovakia).

5.2 Are there certain types of buildings for which specific design licences are required?

In most of the countries no, but in Finland, Poland, Portugal and Spain there are certain types of buildings for which specific design licenses are required.

5.3 Is the licence-holder an individual or an organisation?

In most of the countries the license is individual. In France and Hungary the license holder is an organization.

5.4 Is a specific insurance required?

In all the Countries a specific insurance is not required.

6. Precedence of performance-based fire engineering projects

6.1 Project details.

It depends on the Country the amount of the details. Normally are the temperature of the compartment according to the adopted fire scenario, and calculation in agreement with the standards.

6.2 What was performance-based?

In most cases the fire scenario and structural fire behaviour, but also the evacuation time of the building.

6.3 What techniques were used to justify the non-compliance?

Normally Fire Safety Engineering.

6.4 What approvals route was used?

Usual route through the authorities.

7. Passive fire protection

7.1 What are the possible product approvals of fire protection materials and methods (National, ETA or CE marking)?

In most of the Countries products with CE making, but in some Countries (Belgium, Finland, Germany, Poland, Spain and UK) National and/ ETA products can also be used.

If there are any mistakes in these answers, or changes needed, the writers ask the readers kindly to send comments and corrections to: Professor Paulo Vila Real [pvreal@ua.pt].

Responses:

The following table shows the colleagues who returned the questionnaire.

| Country | Family name | First name | Institution |
|----------|--------------|------------|---|
| Belgium | DE NAEYER * | Andre | Association University & Hogeschool Antwerpen |
| CZ | KUČERA* | Petr | Technical University of Ostrava |
| Finland | OUTINEN * | Jyri | Ruukki Construction |
| France | DHIMA * | Dhionis | CSTB - Département Sécurité, Structure et Feu |
| Germany | KIRSCH * | Thomas | Institute for Steel Construction |
| Greece | MISTAKIDIS * | Euripdis | University of Thessaly |
| Hungary | SZILAGYI * | Csaba | OPTOMM Kft. |
| Italy | MAZZOLANI * | Federico | University of Naples "Federico II" |
| Poland | KOWALSKI * | Robert | Warsaw University of Technology |
| Portugal | VILA REAL * | Paulo | University of Aveiro |
| Slovakia | VARGOVSKY * | Kamil | |
| Spain | MARIMON * | Frederic | Universitat Politècnica de Catalunya |
| UK | JENKINS * | Paul | London Fire Brigade |

Questionnaire responses from WG3 Members

BUILDING REGULATIONS

Question 1.1: Prescriptive or performance-based

Are the Building Regulation prescriptive or performance-based (i.e. is it possible to design from first principles using finite element analysis, CFD, etc to show that the intents of the Building Regulations are met?)

Answers:

BELGIUM

The regulations are prescriptive. For industrial buildings: mixture of prescriptive & performance-based design and use some calculation methods.

CZECH REPUBLIC

The regulation allows performance-based design and use of advanced calculation methods (technical expertise). Law No. 133/1985 Coll. on fire protection (Section 99): Certified engineer in fire protection can use during the design of fire safety of building approach which is determined by technical standart or another technical document of fire protection.

FINLAND

The regulation allows both: design based on prescriptive rules, performance-based design and use of advanced calculation methods.

FRANCE

The building regulation is mostly prescriptive, but allows performance-based design and use of advanced calculation methods.

GERMANY

The regulations in exceptionally allow performance-based design and use of advanced calculation methods. These methods have to be discussed with the public authorities for every project.

GREECE

The regulation doesn't allow the use of advanced calculation methods (finite element analysis, CFD, etc)

HUNGARY

The regulations are really prescriptive.

ITALY

The regulations are basically prescriptive and concern several types of building use. However, the performance-based design and advanced calculation methods may be applied either in the lack of prescriptive rules or in the case of "derogation" with respect to prescriptive rules.

POLAND

Generally building regulations are still prescriptive, but they allow performance-based design and use of advanced calculation methods.

PORTUGAL

The regulation allows performance-based design and use of advanced calculation methods.

SLOVAKIA

Is not possible to use the engineering access.

SPAIN

There are excellent codes in Spain based in modern concepts of Fire Engineering in harmony with European regulations. Spanish designers can use advanced models with supervision of local officers.

UNITED KINGDOM

The regulation allows performance-based design and use of advanced calculation methods.

Question 1.2: Relevant Building Regulations

What are the Building Regulations relevant for fire called and who is the issuing body?

Answers:

BELGIUM

Les Normes de Base:

7 Juillet 1994. - Arrêté royal fixant les normes de base en matière de prévention contre l'incendie et l'explosion, auxquelles les bâtiments nouveaux doivent satisfaire plus modifications

Plus a lot of regulations for all sort of building types such as hotels, hospitals, homes for elderly people...

CZECH REPUBLIC

Law No. 133/1985 Coll., on Fire Protection

This Law includes obligations of state authorities, legal and natural persons on fire protection field (e.g. classification of performed business by fire risk, content evaluation of fire risk)

Decree No. 246/2001 Coll., on stipulation of fire safety conditions and on State fire supervision performance (Decree on fire prevention)

- basic requirements of fire safety
- types of dedicated fire technique, fire protection material means and fire safety equipment
- requirements to Design and installation of fire safety equipment
- type of fire protection documentation
- method of managing the fire protection documentation
- contents and scope of fire safety design etc.

Decree No. 23/2008 Coll., on the technical requirements for the fire protection of buildings

This Decree lays down the technical requirements for fire protection in the design, construction and use of buildings.

FINLAND

The National Building Code of Finland, Series E, especially parts E1 and E2, issued by the Finnish Ministry of the Environment. Link to page with unofficial English translations of said documents:

<http://www.ymparisto.fi/default.asp?contentid=357799&lan=fi&clan=en#a4>

Also the Finnish NA's to the Eurocodes are available on this page.

FRANCE

The principal document is "Le code de la construction et de l'habitation: The Code of the Construction and the buildings"

There are some décrets :

Décret n° 69-596 of 14-06-1969 which fix the general rules of construction of dwelling buildings

Décret n°67-1063 of 15-11-1967 which deals with the construction of high-rise buildings and their fire protection

Décret n°54-856 of 13-08-1954 relating to protection against the panic and fire hazards in the establishments receiving of the public.

The issuing body is the Direction of the Civil Safety of the Ministry for the Interior :

http://www.interieur.gouv.fr/sections/a_l_interieur/defense_et_securite_civiles/presentation/ddsc/view

GERMANY

For the reason that Germany is a federal state, every state (Bavaria, Lower Saxony, North-Rhine-Westphalia, etc.) has its own building regulations. All are based on the Musterbauordnung “MBO” which is a template and could be translated by “Master building regulation”. The general requirements are written down there.

Fire resistance time for different structural members of buildings can be determined by DIN 4102. As the Eurocodes (parts 1-2) will be established, the DIN 4102 will become invalid

For industrial buildings according to Musterindustriebaurichtlinie (see below) there are calculation methods listed in DIN 18230.

GREECE

The main regulations are:

Greek Presidential Edict (71/88) ‘Building Fire Protection’.- Greek Government Decision(no 5905/1995) ‘Industrial Fire Protection’

HUNGARY

From the Ministry of Local Government:

9/2008. (II. 22.) ÖTM rendelet az Országos Tűzvédelmi Szabályzat kiadásáról

ITALY

Decree of the Republic President n.37, 12/01/1998, “Regolamento recante disciplina dei procedimenti relativi alla prevenzione incendi”.

Decree of the Ministry of the Interior, 04/05/1998, “Disposizioni relative alle modalità di presentazione ed al contenuto delle domande per l’avvio dei procedimenti di prevenzione incendi, nonché all’uniformità dei connessi servizi resi dai Comandi Provinciali dei Vigili del Fuoco”.

Decree of the Ministry of the Interior, 16/02/2007 “Classificazione di resistenza al fuoco di prodotti ed elementi costruttivi di opere da costruzione”.

Decree of the Ministry of the Interior, 09/03/2007, “Prestazioni di resistenza al fuoco delle costruzioni nelle attività soggette al corpo nazionale dei vigili del fuoco”.

Decree of the Ministry of the Interior, 09/05/2007 “Direttive per l’attuazione all’approccio ingegneristico alla sicurezza antincendio”.

NUOVE NORME TECNICHE PER LE COSTRUZIONI, Decree of the Infrastructure Ministry 14/01/2008.

Infrastructure Ministry n.617 of 02/02/2009, “Istruzioni per l’applicazione delle Nuove Norme Tecniche di cui al DM 14 Gennaio 2008”

POLAND

Ustawa z dnia 7 lipca 1994 r. Prawo budowlane (Dz.U. z 2006 r. Nr 156, poz. 1118 z późn. zm.) – Sejm RP (Sejm of the Republic of Poland – Polish Parliament)

Ustawa z dnia 24 sierpnia 1991 r. o ochronie przeciwpożarowej (t.j. Dz. U. Nr 178 z 2009 r. poz. 1380 z późn. zm.) – Sejm RP (Sejm of the Republic of Poland – Polish Parliament)

Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 w sprawie warunków technicznych jakim powinny odpowiadać budynki i ich usytuowanie (Dz. U. Nr 75 z 2002 r. poz. 690 z późn. zm.) – Ministerstwo Infrastruktury (Ministry of Infrastructure)

Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 7 czerwca 2010 roku w sprawie ochrony przeciwpożarowej budynków, innych obiektów budowlanych i terenów (Dz. U. Nr 109, poz. 719) – Ministerstwo Spraw Wewnętrznych i Administracji (Ministry of the Interior and Administration).

PORTUGAL

The law Decreto-Lei n.º 220/2008, de 12 de Novembro, which establishes the juridical rules for buildings fire safety Regime Jurídico da Segurança Contra Incêndio em edifícios (RJ-SCIE);

Technical regulation for buildings fire safety Regulamento Técnico de Segurança contra Incêndio em Edifícios e Recintos (RT-SCIE), que constitui a Portaria n.º 1532/2008, de 29 de Dezembro de 2008;

Despacho n.º 2074/2009, de 15 de Janeiro, do Presidente da Autoridade Nacional de Protecção Civil on the technical criteria for determining the modified fire load density.

SLOVAKIA

The law n.º 314/2001; The protection for the fires;

Announcement of Ministry of Interior of the Slovak Republic n. 121/2002; The fire prevention

Part of government, which prepare jurical decree is Ministry of Interior of the Slovak Republic. In the law 314/2001 are the basic duty on the part of protection for the fire and the details solve the Annoucements of Ministry of interior of the Slovak Republic with technical contents;

Fire security of buildinds solve the Announcement of MI SR, n. 94/2004, which describe the technical requests on fire protection by the construction of building, so by the using of buildings

SPAIN

We have two relevant codes in Spain;

The Spanish Technical Building Code (CTE) for residential, commercial and administrative buildings, from Ministry for Housing. It's a true performance-based code but it has the prescriptive rules too.

CTE - Código Técnico de la Edificación

<http://www.codigotecnico.org/web/cte/>

A second code for industrial buildings is the Spanish Security Code against to Fire in Industrial Activities (RSIEI) from Ministry of Industry, Tourism and Trade. It's a specific legislation for industrial safety.

RSIEI - Reglamento de Seguridad contra Incendios en los Establecimientos Industriales

http://www.ffii.nova.es/puntoinfomcyt/Archivos/Dis_4539.pdf

UNITED KINGDOM

2010 No. 2214 - Building And Buildings, England And Wales - The Building Regulations 2010

2010 No. 2215 - Building And Buildings, England And Wales - The Building (Approved Inspectors etc.) Regulations 2010

Question 1.3: Additional guidance

Is there additional guidance available to interpret the Building Regulations for fire?

Answers:

BELGIUM

Not answered.

CZECH REPUBLIC

Fire rescue service of Czech Republic provides some technical notes on fire safety of building.

For example interpretation of laws about fire protection:

<http://www.hzscr.cz/clanek/odpovedi-na-nejcastejsi-dotazy.aspx>

FINLAND

Guidance is available in Finnish and Swedish, e.g.

Ympäristöopas 39 (YO39 Rakennusten paloturvallisuus & Paloturvallisuus korjausrakentamisessa) – a guidebook related to E1 / In Finnish and Swedish.

RIL 221-2003 Paloturvallisuussuunnittelu (guidebook on fire safety engineering design) / In Finnish

FRANCE

No.

GERMANY

Yes. For every state building regulations comments and reasons exist.

GREECE

No.

HUNGARY

We have some national pre standards

1. MSZE 595-1:2009 Építmények tűzvédelme. 1. rész: Fogalommeghatározások

2. MSZE 595-3:2009 Építmények tűzvédelme. 3. rész: Épületszerkezetek tűzállósági követelményei

3. MSZE 595-5:2009 Építmények tűzvédelme. 5. rész: Tűzszakaszolás, tűzterjedés elleni védelem

4. MSZE 595-6:2009 Építmények tűzvédelme. 6. rész: Kiürítés

5. MSZE 595-7:2009 Építmények tűzvédelme. 7. rész: A számított tűzterhelés és a mértékadó tűzidőtartam meghatározása

6. MSZE 595-8:2009 Építmények tűzvédelme. 8. rész: Hő és füst elleni védelem

7. MSZE 595-9:2009 Építmények tűzvédelme. 9. rész: Robbanási túlnyomás lefúvatása

ITALY

No, in Italy there isn't a guide available to interpret the Building Regulations for fire. However, the National Body of Fire provides some technical notes (named "Lettere Circolari") related to several decrees.

POLAND

Some instructions are published by Instytut Techniki Budowlanej (Building Research Institute)

PORTUGAL

ANPC – National Authority of Civil Protection, provides some technical notes on fire safety of buildings:

<http://www.proxiv.pt/Pages/Detailhe4.aspx?IDitem=41>

SLOVAKIA

The basic requests are described in juristical decree – announcements. Concrete requests specify the Slovak technical standards.

SPAIN

Yes, there are some guides and FAQ's to interpret the practical application of these rules. In several cases this additional information is very relevant.

CTE

<http://www.codigotecnico.org/web/cte/faqs/>

RSIEI - Technical Guide

http://www.ffii.nova.es/puntoinfomcyt/Archivos/InstProtInc/GUIA_TECNICA_RSCI.pdf

UNITED KINGDOM

Practical guidance on ways to comply with the functional requirements in the Building Regulations is outlined in a series of 'Approved Documents' published by the Department for Communities and Local Government.

Each document contains:

- general guidance on the performance expected of materials and building work in order to comply with each of the requirements of the Building Regulations; and
- practical examples and solutions on how to achieve compliance for some of the more common building situations.

All of the latest 'Approved Documents' can be downloaded free on the Planning Portal at:

www.planningportal.gov.uk/approveddocuments

Question 1. 4: Different regulations for certain types of buildings

Are there different regulations for certain types of buildings (I.e. schools, hospitals, airports, railway stations)?

Answers:

BELGIUM

Yes, for every type of buildings there is a different regulation:

- Industrial buildings (part of “les normes de base”)
- Hospitals,
- All sort of different hotels
- All sort of different homes for elderly people,
- Schools,
- Homes for youngsters
- Homes for disabled people
- Homes for childcare
- ...

CZECH REPUBLIC

Decree No. 23/2008 Coll., on the technical requirements for the fire protection of buildings

This Decree specifies basic technical requirements for following types of buildings:

1. Family homes and buildings for family recreation
2. Apartment buildings
3. Hostel buildings
4. Health care and social welfare buildings
5. Buildings with assembly areas
6. Lookout tower buildings
7. Garage buildings
8. Filling station, servicing and repair buildings
9. Buildings used for school and educational establishment activities
10. Agricultural buildings
11. Production and storage buildings
12. Listed buildings
13. Building site buildings

FINLAND

Buildings are categorised into three fire classes, P1, P2 and P3, based on the use, size and occupancy of the building. P1 is the highest class and these buildings are usually not allowed to suffer structural collapse due to a fire.

Schools, hospitals, airports etc. are usually Class P1 buildings due to their size and the amount of people using them.

FRANCE

There are some other regulations:

Arrêté du 31-01-1986, relating to the protection of the apartment buildings against fire.

Arrêté du 25-06-1980, relating to protection against the panic and fire hazards in the establishments receiving the public.

Arrêté du 18-10-1977, relating to protection against the panic and fire hazards in the high-rise buildings.

There are different regulations (arêtes) for:

- Car parks
- Industrial installation,
- Warehouse,
- Nuclear installations

GERMANY

As mentioned above, every state has its own code in Germany. This is the same for every building type code. The list includes the “template-versions”:

Musterindustriebaurichtlinie (industrial buildings)

Mustergaragenverordnung (car parks)

Musterversammlungsstättenverordnung (meeting halls)

Musterverkaufsstättenverordnung (shopping centres)

Musterschulbauordnung (schools)

Musterbeherbergungsstättenverordnung (hotels)

Musterkrankenhausbauverordnung (abandoned, hospitals)

GREECE

Greek Presidential Edict (71/88), Section 1, covers the following utilization-types of buildings :

- Type I «Dwelling»
- Type II « Hotels
- Type III «Schools»
- Type IV «Offices»
- Type V «Shops»
- Type VI «Places of public meetings»
- Type VII «Industrial, workshops and storage»

- Type VIII «Hospitals and nursing homes»
- Type IX «Parking places and fuel stations»

HUNGARY

We use different groups according the fire resistance of the building materials.

In the first group there are high-rise buildings, and the middle high-rise buildings if there is in a crowd staying room above 13m.

In the second group there are kindergartens, social homes, closed garages, handicap people staying room if the building is taller than 2 floor, middle high-rise buildings, buildings which are not in the first group with the two and three underground floors.

In the third group there are schools, living buildings which taller than 2 level, community buildings if the top floor is not over 13,65m, more than one floors open garages, handicap people staying room.

In the forth group the one floor living and holiday buildings, the one floor community buildings minimum 25 maximum 50 person.

In the fifth group, maximum ground floor living and holiday buildings maximum 25 person.

ITALY

The Decree of the Ministry of Interior 16/02/1982 (“Modificazioni del decreto ministeriale 27 settembre 1965, concernente la determinazione delle attività soggette alle visite di prevenzione incendi”) defines 97 types of building use, which are subjected to the control of the Fire Brigades.

For many building uses the Ministry provides specific Technical Rules of Fire Fighting, generally based on a prescriptive approach.

POLAND

Regulations are general for all kinds of buildings, nevertheless they divide building into three main groups:

- Housing and public utility buildings; involving endangering people (ZL)
- Production plants and warehouses (PM)
- Agricultural (IN)

PORTUGAL

The RJ-SCIE covers the following twelve utilization-types:

- Type I «Dwelling»
- Type II «Car parks»
- Type III «Administrative»
- Type IV «Schools»
- Type V «Hospitals and nursing homes»
- Type VI «Theatres/cinemas and public meetings»
- Type VII «Hotels and restaurants»
- Type VIII «Shopping and transport centres»
- Type IX «Sports and leisure»

- Type X «Museums and art galleries»
- Type XI «Libraries and archives»
- Type XII «Industrial, workshops and storage»

Due to the big dimension in plan and height the building can be classified as “atypical danger”.

SLOVAKIA

Yes they are specified in technical decrees:

Announcements of MI SR n.94/2004 – there are described technical requests on Fire safety by construction and using of the buildings.

Announcements of MI SR n.96/2004, there are described principles fire protection by manipulation and the storage of flammable liquids, hard fuel oils and flowers and animal fat and oils.

Announcements of MI SR n.121/2002 – about fire prevention

Announcements of MI SR n.124/2000- here by the work with the flammable gasses

Announcements of MI SR n.142/2004 about the fire safety by the construction and using the spaces, where are used pain materials.

Announcements of MI SR n.258/2007 about demands of fire security by the storage and manipulation with solid flammable materials.

SPAIN

The Spanish Technical Building Code (CTE) covers the most types of buildings.

The industrial building or big storage building are covered by the Spanish Security Code against to Fire in Industrial Activities (RSIEI).

Specific activities are out of both codes, for instance; nuclear or mineral extraction.

UNITED KINGDOM

2 (a) Institutional

2 (a) Other residential: a. in bedrooms; b. in bedrooms corridors; c. elsewhere

3 office

4 Shop and commercial

5 Assembly and recreation: a. building primarily for disabled people; b. areas with seating in rows; c. elsewhere

6. Industrial: normal hazard; higher hazard

7. Storage and other non-residential: normal hazard; higher hazard

2-7 Place of special fire hazard

2-7 Plant room or rooftop plant: a. distance within the room; b. escape route not in open air (overall travel distance); c. escape route in open air (overall travel distance)

DESIGN CODES

Question 2.1a: Relevant national or international/European standards - Means of escape

What are the relevant national or international/European standards required to undertake the design of means of escape?

Answers:

BELGIUM

There are no relevant standards on this matter.

CZECH REPUBLIC

CSN 73 0802 - Fire protection of buildings - Non-industrial buildings

CSN 73 0804 - Fire protection of buildings - Industrial buildings

FINLAND

No information on design standards, but the relevant regulations include:

National decree No. 805/2005 concerning lighting and signalling of escape routes, in Finnish.

Regulations given also in Finnish National Building Code Part E1 Chapter 10 (see link above).

FRANCE

There are no relevant standards on this matter.

GERMANY

Musterbauordnung and regulation for certain type of building.

GREECE

There are no relevant standards on this matter.

HUNGARY

There are no relevant standards on this matter.

ITALY

There are national standards depending on the use of building (within the quoted prescriptive technical rules of fire fighting concerning the specific building use).

POLAND

Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 w sprawie warunków technicznych jakim powinny odpowiadać budynki i ich usytuowanie (Dz. U. Nr 75 z 2002 r, poz. 690 z późn. zm.) – Ministerstwo Infrastruktury (Ministry of Infrastructure)

Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 7 czerwca 2010 roku w sprawie ochrony przeciwpożarowej budynków, innych obiektów budowlanych i terenów (Dz. U. Nr 109, poz. 719) – Ministerstwo Spraw Wewnętrznych i Administracji. (Ministry of the Interior and Administration).

PN-ISO 8421-6 Ochrona przeciwpożarowa. Terminologia. Ewakuacja i środki ewakuacji.

PN-92/N-01256/02 Znaki bezpieczeństwa. Ewakuacja.

PORTUGAL

There are no relevant standards on this matter.

SLOVAKIA

The escape ways, which are saved for the fire and secured with air ventilation.

SPAIN

Section SI-3 of CTE is devoted to provision of a safe route(s) for emergency evacuation by horizontal and vertical escape.

Moreover, RSIEI has additional requirements for industrial buildings.

UNITED KINGDOM

BS EN's or Eurocodes primarily, but functional regulations so any guidance permissible.

Question 2.1b: Relevant national or international/European standards - Smoke management

What are the relevant national or international/European standards required to undertake the design of: smoke management?

Answers:

BELGIUM

There is not a general legislation only a these standards

NBN S 21-208-1 : 1995 - Protection incendie dans les bâtiments - Conception et calcul des installations d'évacuation de fumées et de chaleur (EFC) - Partie 1 : Grands espaces intérieurs non cloisonnés s'étendant sur un niveau

NBN S 21-208-2 : 2006 - Protection incendie dans les bâtiments - Conception des systèmes d'évacuation des fumées et de la chaleur (EFC) des bâtiments de parking intérieurs

NBN S 21-208-2/prA1 : 2010 - Protection incendie dans les bâtiments - Conception des systèmes d'évacuation des fumées et de la chaleur (EFC) des parkings fermé

CZECH REPUBLIC

CSN 73 0802 - Fire protection of buildings - Non-industrial buildings (Annex H – natural smoke and heat exhaust)

CSN P CEN/TR 12101-5 - Smoke and heat control systems - Part 5: Guidelines on functional recommendations and calculation methods for smoke and heat exhaust ventilation systems

FINLAND

No information on design standards, but the relevant regulations include:

Regulations given in Finnish National Building Code Part E1 Chapter 11 (see link above).

FRANCE

There are :

Technical instruction n° 246, relating to receiving smoke clearing in the establishments of the public.

Technical instruction n° 263 relating to the construction and the receiving smoke clearing of interior free volumes (atriums) in the establishments of the public

GERMANY

VFDB-guideline, Muster-Versammlungsstättenverordnung, Muster-Industriebaurichtlinie

GREECE

There are no specific regulations on this matter.

HUNGARY

We use MSZ EN 12101 Smoke and heat control system standard.

ITALY

There are national standards depending on the use of building (within the quoted prescriptive technical rules of fire fighting concerning the specific building use).

POLAND

Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 w sprawie warunków technicznych jakim powinny odpowiadać budynki i ich usytuowanie (Dz. U. Nr 75 z 2002 r, poz. 690 z późn. zm.) – Ministerstwo Infrastruktury (Ministry of Infrastructure)

PN-B-02877-4 Ochrona przeciwpożarowa budynków -- Instalacje grawitacyjne do odprowadzania dymu i ciepła -- Zasady projektowania. (Fire protection of buildings - Installation of gravitational devices for smoke and heat drainage - Design rules

PN-EN-12101-1 System kontroli rozprzestrzeniania dymu i ciepła – Część 1: Wymagania techniczne dotyczące kurtyn dymowych. (Smoke and heat control systems -- Part 1: Specification for smoke barriers.)

PN-EN-12101-2 System kontroli rozprzestrzeniania dymu i ciepła – Część 2: Wymagania techniczne dotyczące klap dymowych. (Smoke and heat control systems -- Part 2: Specification for natural smoke and heat exhaust ventilators.)

PN-EN-12101-3 System kontroli rozprzestrzeniania dymu i ciepła – Część 3: Wymagania techniczne dotyczące wentylatorów oddymiających. (Smoke and heat control systems -- Part 3: Specification for powered smoke and heat exhaust ventilators.)

PN-EN-12101-6 System kontroli rozprzestrzeniania dymu i ciepła – Część 6: Wymagania techniczne dotyczące systemów różnicowania ciśnień -- Zestawy urządzeń (Smoke and heat control systems -- Part 6: Specification for pressure differential systems – Kits.)

PN-EN-12101-10 System kontroli rozprzestrzeniania dymu i ciepła – Część 10: Zasilacze (Smoke and heat control systems -- Part 10: Power supplies.)

PORTUGAL

There are no specific regulations on this matter but documents / different rules, for example, the NFPA and APSARD.

SLOVAKIA

Systems for offtake of heat and combustion gasses. The rules are from the producers or from Slovak Technical Standards 12101. Accepted are technical standards DIN, NFS and the directions VDS.

SPAIN

The Article 8 of Section SI-3 of CTE to remit to national standard UNE 23585:2004 and to Euronorm EN 12101-6:2005 for smoke and heat control systems.

Nowadays, this Euronorm is Spanish standard UNE-EN 1991-1-2:2004 since 2006.

The Annex II of RSIEI has additional requirements and allows using others international standards.

UNITED KINGDOM

BS EN's or Eurocodes primarily, but functional regulations so any guidance permissible

Question 2.1c: Relevant national or international/European standards - Fire resistance of the construction

What are the relevant national or international/European standards required to undertake the design of: Fire resistance of the construction?

Answers:

BELGIUM

There is a standard for the fire resistance of

NBN 713-020 Protection contre l'incendie - Comportement au feu des matériaux et éléments de construction - Résistance au feu des éléments de construction

Part 1.2 (Structural fire design) from Eurocodes.

CZECH REPUBLIC

Requirements on fire resistance:

CSN 73 0802 - Fire protection of buildings - Non-industrial buildings

CSN 73 0804 - Fire protection of buildings - Industrial buildings

CSN 73 0810 - Fire protection of buildings - General requirements

Eurocodes.- Part 1.2 (Structural fire design)

CSN 73 0821 - Fire protection of buildings - Fire resistance of engineering structures

FINLAND

Parts 1.2 (Structural fire design) of the Eurocodes (or the Finnish National Building Code Series B, for as long as it is valid (probably until spring 2011)).

FRANCE

Part 1.2 (Structural fire design) from Eurocodes.

GERMANY

Part 1.2 (Structural fire design) from Eurocodes, DIN 4102.

GREECE

National *prescriptive rules* require a certain standard *fire resistance* of walls and floors, depending on their use and geometry.

HUNGARY

(Structural fire design) from Eurocodes.

ITALY

The Decree of the Ministry of the Interior, 16/02/2007 ("Classificazione di resistenza al fuoco di prodotti ed elementi costruttivi di opere da costruzione") is applicable to assess the fire resistance of the building. In addition, the Decree allows the use of the Parts 1.2 of the relevant Eurocodes.

POLAND

Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 w sprawie warunków technicznych jakim powinny odpowiadać budynki i ich usytuowanie (Dz. U. Nr 75 z 2002 r, poz. 690 z późn. zm.) – Ministerstwo Infrastruktury (Ministry of Infrastructure)

Eurocodes: Part 1.2 (Structural fire design).

Other codes (based on European codes)

PN-EN 1363-1:2001 Badania odporności ogniowej -- Część 1: Wymagania ogólne (Fire resistance test – Part 1: General requirements)

PN-EN 1364-1:2001 Badania odporności ogniowej elementów nienośnych -- Część 1: Ściany (Fire resistance tests for non-loadbearing elements: Part 1: Walls)

PN-EN 1365-1:2001 Badania odporności ogniowej elementów nośnych -- Część 1: Ściany (Fire resistance tests for loadbearing elements: Part 1: Walls)

Other parts of PN-EN 1363, 1364, 1365.

PORTUGAL

Part 1.2 (Structural fire design) from Eurocodes.

SLOVAKIA

(Structural fire design) is from estimation of proof or calculation with help of Eurocodes.

SPAIN

Section SI-6 of CTE is devoted to requirements for structural fire resistance and his verification for several structural materials:

Annex C Concrete Structures

Annex D Steel Structures

Annex E Timber Structures

Annex F Masonry

The Spanish rules for structural verification under fire are very similar of the rules of Eurocodes

UNITED KINGDOM

BS EN's or Eurocodes primarily but functional regulations so any guidance permissible.

Question 2.1d: Relevant national or international/European standards - Fire fighting

What are the relevant national or international/European standards required to undertake the design of: Fire fighting?

Answers:

BELGIUM

Portable fire extinguishers

The NBN S21-011 to NBN S21-018 range should have been replaced by the NBN EN3 -1 to EN3-6. Because the Dutch version of EN3 doesn't exist, the NBN preserved this range (against all CEN-rules). These standards have become obsolete. In practice, most fire extinguishers are in accordance with the EN3 ranges, of which the last valid standard is the EN3-7: 2004

| Numéro de norme | Titre | Date de publication | Langue | Statut |
|------------------------|---|---------------------|--------|--------|
| NBN S 21-011/A1 : 1977 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Prescriptions communes applicables à tous les types d'extincteurs | 1977 | NL/FR | Actif |
| NBN S 21-011/A2 : 1977 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Prescriptions communes applicables à tous les types d'extincteurs | 1977 | NL/FR | Actif |
| NBN S 21-011/A3 : 1987 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Prescriptions communes applicables à tous les types d'extincteurs | 1987 | NL/FR | Actif |
| NBN S 21-011/A4 : 1988 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Prescriptions communes applicables à tous les types d'extincteurs | 1988 | NL/FR | Actif |
| NBN S 21-011 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Prescriptions communes applicables à tous les types d'extincteurs | 1974 | NL/FR | Actif |
| NBN S 21-012 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à eau | 1974 | NL/FR | Actif |
| NBN S 21-013 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à réaction chimique | 1974 | NL/FR | Actif |
| NBN S 21-014 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à poudre | 1974 | NL/FR | Actif |
| NBN S 21-015/A1 : 1977 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à anhydride carbonique (CO2) | 1977 | NL/FR | Actif |
| NBN S 21-015/A2 : 1987 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à anhydride carbonique (CO2) | 1987 | NL/FR | Actif |
| NBN S 21-015 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à anhydride carbonique (CO2) | 1974 | NL/FR | Actif |
| NBN S 21-016/A1 : 1977 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à hydrocarbures halogénés | 1977 | NL/FR | Actif |
| NBN S 21-016 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Extincteurs à hydrocarbures halogénés | 1974 | NL/FR | Actif |
| NBN S 21-017/A1 : 1977 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Foyers-types et puissance minimale d'extinction | 1977 | NL/FR | Actif |
| NBN S 21-017/A2 : 1987 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Foyers-types et puissance minimale d'extinction | 1987 | NL/FR | Actif |
| NBN S 21-017 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie portatifs - Foyers-types et puissance minimale d'extinction | 1974 | NL/FR | Actif |
| NBN S 21-018 : 1974 | Matériel de sauvetage et de lutte contre l'incendie - Extincteurs d'incendie - Essai de vibration - Essai d'efficacité - Essai diélectrique - Procès-verbal d'essai - Certificat d'agrément | 1974 | NL/FR | Actif |

CZECH REPUBLIC

CSN 73 0873 - Fire protection of buildings - Equipment for fire-water supply (Annex B – Fundamentals for analyses fire fighting)

FINLAND

No information on design standards, but the relevant regulations include:

Regulations given in Finnish National Building Code Part E1 Chapter 11 (see link above).

FRANCE

There are no relevant standards on this matter.

GERMANY

Fw DV 3, Fw DV 4 (fire brigade codes), Fire Protection Law

GREECE

There are no relevant standards on this matter.

HUNGARY

There are no relevant standards on this matter.

ITALY

There are national standards depending on the use of building (within the quoted prescriptive technical rules of fire fighting concerning the specific building use).

POLAND

Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 7 czerwca 2010 roku w sprawie ochrony przeciwpożarowej budynków, innych obiektów budowlanych i terenów (Dz. U. Nr 109, poz. 719) – Ministerstwo Spraw Wewnętrznych i Administracji (Ministry of the Interior and Administration).

Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 24 lipca 2009 r. w sprawie przeciwpożarowego zaopatrzenia w wodę oraz dróg pożarowych (Dz.U. Nr 124, poz. 1030).

Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 29 grudnia w sprawie szczegółowych zasad organizacji krajowego systemu ratowniczo-gaśniczego (Dz. U. 111, poz.1311)

PN-B-02864 Ochrona przeciwpożarowa budynków. Przeciwpożarowe zaopatrzenie wodne. Zasady obliczania zapotrzebowania na wodę do zewnętrznego gaszenia pożaru.

PN-B-02865 Ochrona przeciwpożarowa budynków. Przeciwpożarowe zaopatrzenie wodne. Instalacja wodociągowa przeciwpożarowa.

PN-82/B-02857 Ochrona przeciwpożarowa w budownictwie. Przeciwpożarowe zbiorniki wodne. Wymagania ogólne.

PORTUGAL

There are no relevant standards on this matter.

SLOVAKIA

It is solved the adequate conditions for efficient of fire fighting units.

SPAIN

Section SI-5 of CTE is devoted to accessibility for fire fighting

UNITED KINGDOM

BS EN's or Eurocodes primarily but functional regulations so any guidance permissible.

Question 2.1e: Relevant national or international/European standards - Fire safety systems (alarm, suppression, ...)

What are the relevant national or international/European standards required to undertake the design of: Fire safety systems (alarm, suppression, ...)?

Answers:

BELGIUM

There are specific standards for only some demands in the regulations

NBN EN 54 part 1,2,3,4,5,7,10,11,12,13,16,17,18, 20, 21, 23, 24, 25; specifies requirements for all component parts of a fire alarm system

| Numéro de norme | Titre | Date de publication | Langue | Statu |
|------------------------|---|---------------------|-------------|-------|
| NBN EN 54-1 : 1996 | Systèmes de détection et d'alarme incendie - Partie 1: Introduction | 05/1996 | NL/FR/EN | Actif |
| NBN EN 54-2 : 1998 | Systèmes de détection et d'alarme incendie - Partie 2: Equipement de contrôle et de signalisation (+ AC:1999) | 01/1998 | FR/EN | Actif |
| NBN EN 54-2/A1 : 2007 | Systèmes de détection et d'alarme incendie - Partie 2: Equipement de contrôle et de signalisation | 05/2007 | FR/EN/DE | Actif |
| NBN EN 54-3 : 2001 | Systèmes de détection et d'alarme incendie - Partie 3 : Dispositifs sonores d'alarme feu | 08/2001 | FR/EN/DE | Actif |
| NBN EN 54-3/A1 : 2002 | Systèmes de détection et d'alarme incendie - Partie 3: Dispositifs sonores d'alarme feu | 09/2002 | FR/EN/DE | Actif |
| NBN EN 54-3/A2 : 2006 | Systèmes de détection et d'alarme incendie - Partie 3: Dispositifs sonores d'alarme feu | 10/2006 | FR/EN/DE | Actif |
| NBN EN 54-4 : 1998 | Systèmes de détection et d'alarme incendie - Partie 4: Equipement d'alimentation électrique (+ AC:1999) | 01/1998 | FR/EN | Actif |
| NBN EN 54-4/A1 : 2003 | Systèmes de détection et d'alarme incendie - Partie 4: Equipement d'alimentation électrique | 04/2003 | FR/EN/DE | Actif |
| NBN EN 54-4/A2 : 2006 | Systèmes de détection et d'alarme incendie - Partie 4: Equipement d'alimentation électrique | 12/2006 | FR/EN/DE | Actif |
| NBN EN 54-5/A1 : 2002 | Systèmes de détection et d'alarme incendie - Partie 5: Détecteurs de chaleur - Détecteurs ponctuels | 09/2002 | FR/EN/DE | Actif |
| NBN EN 54-5 : 2001 | Systèmes de détection et d'alarme incendie - Partie 5: Détecteurs de chaleur - Détecteurs ponctuels | 02/2001 | NL/FR/EN/DE | Actif |
| NBN EN 54-7 : 2001 | Systèmes de détection et d'alarme incendie - Partie 7: Détecteurs de fumée - Détecteurs ponctuels fonctionnant suivant le principe de la diffusion de la lumière, de la transmission de la lumière ou de l'ionisation | 02/2001 | FR/EN/DE | Actif |
| NBN EN 54-7/A1 : 2002 | Systèmes de détection et d'alarme incendie - Partie 7: Détecteurs de fumée - Détecteurs ponctuels fonctionnant suivant le principe de la diffusion de la lumière, de la transmission de la lumière ou de l'ionisation | 09/2002 | FR/EN/DE | Actif |
| NBN EN 54-7/A2 : 2006 | Systèmes de détection et d'alarme incendie - Partie 7: Détecteurs de fumée - Détecteurs ponctuels fonctionnant suivant le principe de la diffusion de la lumière, de la transmission de la lumière ou de l'ionisation | 12/2006 | FR/EN/DE | Actif |
| NBN EN 54-10 : 2002 | Systèmes de détection et d'alarme incendie - Partie 10: Détecteurs de flamme - Détecteurs ponctuels | 03/2002 | FR/EN/DE | Actif |
| NBN EN 54-10/A1 : 2006 | Systèmes de détection et d'alarme incendie - Partie 10: Détecteurs de flamme - Détecteurs ponctuels | 03/2006 | FR/EN/DE | Actif |
| NBN EN 54-11 : 2001 | Systèmes de détection automatique d'incendie - Partie 11 : Déclencheurs manuels d'alarme | 08/2001 | FR/EN/DE | Actif |
| NBN EN 54-11/A1 : 2006 | Systèmes de détection et d'alarme incendie - Partie 11 : Déclencheurs manuels d'alarme | 03/2006 | FR/EN/DE | Actif |
| NBN EN 54-12 : 2003 | Systèmes de détection et d'alarme incendie - Partie 12: Détecteurs de fumée - Détecteurs linéaires fonctionnant suivant le principe de la transmission d'un faisceau d'ondes optiques rayonnées | 03/2003 | FR/EN/DE | Actif |
| NBN EN 54-13 : 2005 | Systèmes de détection et d'alarme incendie - Partie 13 : Evaluation de la compatibilité des composants d'un système | 10/2005 | FR/EN/DE | Actif |
| NBN EN 54-16 : 2008 | Systèmes de détection et d'alarme incendie - Partie 16: Elément central du système d'alarme incendie vocale | 09/2008 | FR/EN/DE | Actif |
| NBN EN 54-17 : 2006 | Systèmes de détection et d'alarme incendie - Partie 17 : Isolateurs de court-circuit (+ AC:2007) | 03/2006 | FR/EN/DE | Actif |
| NBN EN 54-17/AC : 2007 | Systèmes de détection et d'alarme incendie - Partie 17: Isolateurs de court-circuit | 10/2007 | | Actif |
| NBN EN 54-18 : 2006 | Systèmes de détection et d'alarme incendie - Partie 18: Dispositifs d'entrée/sortie (+ AC:2007) | 03/2006 | FR/EN/DE | Actif |
| NBN EN 54-18/AC : 2007 | Systèmes de détection et d'alarme incendie - Partie 18: Dispositifs d'entrée/sortie | 01/2007 | | Actif |
| NBN EN 54-20 : 2006 | Systèmes de détection et d'alarme incendie - Partie 20 : Détecteurs de fumée par aspiration (+ AC:2008) | 11/2006 | FR/EN/DE | Actif |
| NBN EN 54-20/AC : 2008 | Systèmes de détection et d'alarme incendie - Partie 20 : Détecteurs de fumée par aspiration | 11/2008 | | Actif |
| NBN EN 54-21 : 2006 | Systèmes de détection et d'alarme incendie - Partie 21 : Dispositif de transmission de l'alarme feu et du signal de dérangement | 11/2006 | FR/EN/DE | Actif |
| NBN EN 54-23 : 2010 | Systèmes d'alarme feu et de détection d'incendie - Partie 23: Dispositifs d'alarme feu - Alarmes visuelles | 08/2010 | FR/EN/DE | Actif |
| NBN EN 54-24 : 2008 | Systèmes de détection et d'alarme incendie - Composants des systèmes d'alarme vocale - Partie 24 : Haut-parleurs | 09/2008 | FR/EN/DE | Actif |
| NBN EN 54-25 : 2008 | Systèmes de détection et d'alarme incendie - Partie 25: Composants utilisant des liaisons radioélectriques (+ AC:2010) | 09/2008 | FR/EN/DE | Actif |
| NBN EN 54-25/AC : 2010 | Systèmes de détection et d'alarme incendie - Partie 25: Composants utilisant des liaisons radioélectriques | 09/2010 | | Actif |

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NBN EN 12094: parts 1- 13, 16 specifies requirements for fixed firefighting systems:

| Numéro de norme | Titre | Date de publication | Langue | statut |
|---------------------------|--|---------------------|-------------|--------|
| NBN EN 12094-1 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 1: Exigences et méthodes d'essais applicables aux dispositifs électriques automatiques de commande et de temporisation | 10/2003 | NL/FR/EN/DE | Actif |
| NBN EN 12094-2 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 2: Exigences et méthodes d'essai pour les dispositifs non électriques de commande et de temporisation | 06/2003 | NL/FR/EN/DE | Actif |
| NBN EN 12094-3 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 3: Exigences et méthodes d'essai pour dispositifs manuels de déclenchement et d'arrêt d'urgence | 05/2003 | NL/FR/EN/DE | Actif |
| NBN EN 12094-4 : 2004 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 4: Exigences et méthodes d'essai pour les vannes de réservoir et leurs déclencheurs | 09/2004 | FR/EN/DE | Actif |
| NBN EN 12094-5 : 2006 | Installations fixes de lutte contre l'incendie - Eléments constitutifs des installations d'extinction à gaz - Partie 5: Exigences et méthodes d'essai pour vannes directionnelles haute et basse pression et leurs déclencheurs | 10/2006 | FR/EN/DE | Actif |
| NBN EN 12094-6 : 2006 | Installations fixes de lutte contre l'incendie - Eléments constitutifs des installations d'extinction à gaz - Partie 6: Exigences et méthodes d'essai pour dispositifs non électriques de mise hors service | 10/2006 | FR/EN/DE | Actif |
| NBN EN 12094-7 : 2001 | Installations fixes de lutte contre l'incendie - Eléments constitutifs des installations d'extinction à gaz - Partie 7: Exigences et méthodes d'essai pour les diffuseurs de systèmes à CO2 | 02/2001 | FR/EN/DE | Actif |
| NBN EN 12094-7/A1 : 2005 | Installations fixes de lutte contre l'incendie - Eléments constitutifs des installations d'extinction à gaz - Partie 7 : Exigences et méthodes d'essai pour les diffuseurs de systèmes à CO2 | 04/2005 | FR/EN/DE | Actif |
| NBN EN 12094-8 : 2006 | Installations fixes de lutte contre l'incendie - Eléments constitutifs des installations d'extinction à gaz - Partie 8: Exigences et méthodes d'essai pour raccords | 10/2006 | FR/EN/DE | Actif |
| NBN EN 12094-9 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 9: Exigences et méthodes d'essai pour détecteurs spéciaux | 05/2003 | FR/EN/DE | Actif |
| NBN EN 12094-10 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 10: Exigences et méthodes d'essai pour manomètres et contacts à pression | 06/2003 | FR/EN/DE | Actif |
| NBN EN 12094-11 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 11: Exigences et méthodes d'essai pour dispositifs de pesée mécaniques | 05/2003 | FR/EN/DE | Actif |
| NBN EN 12094-12 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour systèmes d'extinction à gaz - Partie 12: Exigences et méthodes d'essai pour dispositifs pneumatiques d'alarme | 05/2003 | FR/EN/DE | Actif |
| NBN EN 12094-13 : 2001 | Installations fixes de lutte contre l'incendie - Eléments d'installation d'extinction à gaz - Partie 13: Exigences et méthodes d'essai pour clapet anti-retour (+AC:2002) | 05/2001 | FR/EN/DE | Actif |
| NBN EN 12094-13/AC : 2002 | Installations fixes de lutte contre l'incendie - Eléments d'installation d'extinction à gaz - Partie 13: Exigences et méthodes d'essai pour clapets anti-retour | 02/2002 | | Actif |
| NBN EN 12094-16 : 2003 | Installations fixes de lutte contre l'incendie - Eléments constitutifs pour installations d'extinction à gaz - Partie 16: Exigences et méthodes d'essai pour dispositifs odorisants pour installations à CO2 basse pression | 05/2003 | FR/EN/DE | Actif |

CZECH REPUBLIC

CSN EN 54 – x (Fire detection and fire alarm systems)

CSN 73 0875 - Fire protection of buildings – Design of fire detection systems

FINLAND

SFS-EN 12845 + A2 Kiinteät palonsammutusjärjestelmät. Automaattiset sprinklerilaitteistot. Suunnittelu, asennus ja huolto. (Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance)

prNS-INSTA 900-1: Residential sprinkler systems – Part 1: Design, installation and maintenance

CEA 4001 Sprinkler Systems: Planning and Installation

A national decree on extinguishing methods is under preparation.

CEN / TC 72 published standards, list available at

<http://www.cen.eu/CEN/Sectors/TechnicalCommitteesWorkshops/CENTechnicalCommittees/Pages/Standards.aspx?param=6055&title=CEN%2FTC+72>

CEA 4040 Fire Protection Systems - Specifications for automatic fire detection and fire alarm systems - Planning and Installation.

ST-ohjeisto 1 Paloilmoittimen suunnittelu, asennus, huolto ja kunnossapito 2009 (guidance in Finnish)

FRANCE

European standards and the NFPA documents.

GERMANY

EN 54, DIN 14675, DIN VDE 0833

GREECE

National standards and NFPA documents.

HUNGARY

European standards and the NFPA documents.

ITALY

There are national standards depending on the use of building (within the quoted prescriptive technical rules of fire fighting concerning the specific building use).

POLAND

Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 7 czerwca 2010 roku w sprawie ochrony przeciwpożarowej budynków, innych obiektów budowlanych i terenów (Dz. U. Nr 109, poz. 719) – Ministerstwo Spraw Wewnętrznych i Administracji (Ministry of the Interior and Administration).

PN-EN 54-1 Systemy sygnalizacji pożarowej – Wprowadzenie. Fire detection and fire alarm systems – Part 1: Introduction.

PN-EN 54-2 Systemy sygnalizacji pożarowej – Część 2: Centrale sygnalizacji pożarowej. Fire detection and fire alarm systems – Part 2: Introduction.

PN-EN 54-3 Systemy sygnalizacji pożarowej -- Część 3: Pożarowe urządzenia alarmowe -- Sygnalizatory akustyczne.

PN-EN 54-4 Systemy sygnalizacji pożarowej -- Część 4: Zasilacze.

PN-EN 54-5 Systemy sygnalizacji pożarowej -- Część 5: Czujki ciepła -- Czujki punktowe.

PN-EN 54-7 Systemy sygnalizacji pożarowej -- Część 7: Czujki dymu -- Czujki punktowe działające z wykorzystaniem światła rozproszonego, światła przechodzącego lub jonizacji.

PN-EN 54-10 Systemy sygnalizacji pożarowej -- Część 10: Czujki płomienia -- Czujki punktowe.

PN-EN 54-11 Systemy sygnalizacji pożarowej -- Część 11: Ręczne ostrzegacze pożarowe.

PN-EN 54-12 Systemy sygnalizacji pożarowej -- Część 12: Czujki dymu -- Czujki liniowe działające z wykorzystaniem wiązki światła przechodzącego.

PN-EN 54-13 Systemy sygnalizacji pożarowej -- Część 13: Ocena kompatybilności podzespołów systemu.

PN-EN 54-16 Systemy sygnalizacji pożarowej -- Część 16: Dźwiękowe systemy ostrzegawcze – Centrale.

PN-EN 54-17 Systemy sygnalizacji pożarowej -- Część 17: Izolatory zwarc.

PN-EN 54-18 Systemy sygnalizacji pożarowej -- Część 18: Urządzenia wejścia/wyjścia.

PN-EN 54-20 Systemy sygnalizacji pożarowej -- Część 20: Czujki dymu zasysające.

PN-EN 54-21 Systemy sygnalizacji pożarowej -- Część 21: Urządzenia transmisji alarmów pożarowych i sygnałów uszkodzeniowych.

PN-EN 54-23 Systemy sygnalizacji pożarowej -- Część 23: Pożarowe urządzenia alarmowe -- Sygnalizatory optyczne.

PN-EN 54-24 Systemy sygnalizacji pożarowej -- Część 24: Dźwiękowe systemy ostrzegawcze – Głośniki.

PN-EN 54-25 Systemy sygnalizacji pożarowej -- Część 25: Urządzenia wykorzystujące łączność radiową.

PKN-CEN/TS 54-14 Systemy sygnalizacji pożarowej -- Część 14: Wytyczne planowania, projektowania, instalowania, odbioru, eksploatacji i konserwacji.

PN-EN 1838 Zastosowania oświetlenia -- Oświetlenie awaryjne. Lighting applications – Emergency lighting.

PN-EN 50172 Systemy awaryjnego oświetlenia ewakuacyjnego.

PN-EN 12845 Stałe urządzenia gaśnicze -- Automatyyczne urządzenia tryskaczowe -- Projektowanie, instalowanie i konserwacja. Fixed firefighting systems – Automatic sprinkler systems – Design, installation and maintenance.

PN-EN 15004-1 Stałe urządzenia gaśnicze -- Urządzenia gaśnicze gazowe -- Część 1: Ogólne wymagania dotyczące projektowania i instalowania.

PN-EN 60849 Dźwiękowe systemy ostrzegawcze.

PORTUGAL

European standards and the NFPA documents.

SLOVAKIA

European standards.

SPAIN

Section SI-4 of CTE is devoted to fire safety systems. More requirements are described in Annex II of Spanish Security Code against to Fire in Industrial Activities (RSIEI) with reference to Euronormes

UNITED KINGDOM

BS EN's or Eurocodes primarily but functional regulations so any guidance permissible

Question 2.2: Use of Eurocodes or other international fire standards

Is it possible to use Eurocodes or other international fire standards in lieu of the local code?

Answers:

BELGIUM

Yes, but you must request a deviation. When documenting your file, you can apply these standards.

CZECH REPUBLIC

Yes.

FINLAND

Yes.

FRANCE

Yes.

GERMANY

Yes (in clearance with authorities).

GREECE

Yes.

HUNGARY

Yes. In some cases we have to use fire models prove the situation.

ITALY

Yes. At the present the National annexes have not yet been published; however, some Eurocodes (EN1992-1-2; EN1993-1-2; EN1994-1-2; EN1995-1-2) may be applied assuming the suggested values as NDPs.

POLAND

Yes.

PORTUGAL

Yes.

SLOVAKIA

Yes.

SPAIN

Yes, the Technical Guide of Spanish Security Code against to Fire in Industrial Activities (RSIEI) allows using Eurocode 2, 3, 4, 5, and 6 for checking structural fire resistance. The rules for structural verification under fire of CTE SI-6 are very similar of the rules of Eurocodes.

UNITED KINGDOM

Yes

Question 2.3: Translations of the fire parts of Eurocodes

Are there available the translations of the fire parts of Eurocodes? Which ones?

Answers:

BELGIUM

| | | | | | |
|-----|----|----------|----|----|----|
| NBN | EN | 1991-1-2 | FR | GE | NL |
| NBN | EN | 1992-1-2 | FR | GE | NL |
| NBN | EN | 1993-1-2 | FR | GE | NL |
| NBN | EN | 1994-1-2 | FR | GE | NL |
| NBN | EN | 1995-1-2 | FR | GE | NL |
| NBN | EN | 1996-1-2 | FR | GE | |
| NBN | EN | 1999-1-2 | FR | GE | |

CZECH REPUBLIC

| | | | |
|-----|----|----------|-----|
| CSN | EN | 1991-1-2 | Yes |
| CSN | EN | 1992-1-2 | Yes |
| CSN | EN | 1993-1-2 | Yes |
| CSN | EN | 1994-1-2 | Yes |
| CSN | EN | 1995-1-2 | Yes |
| CSN | EN | 1996-1-2 | Yes |
| CSN | EN | 1999-1-2 | Yes |

FINLAND

| | | | |
|-----|----|----------|-----|
| SFS | EN | 1991-1-2 | Yes |
| SFS | EN | 1992-1-2 | Yes |
| SFS | EN | 1993-1-2 | Yes |
| SFS | EN | 1994-1-2 | Yes |
| SFS | EN | 1995-1-2 | Yes |
| SFS | EN | 1996-1-2 | Yes |
| SFS | EN | 1999-1-2 | No |

Available for purchase at <http://sales.sfs.fi>

FRANCE

| | | | |
|-----|----|----------|-----|
| NBN | EN | 1991-1-2 | Yes |
| NBN | EN | 1992-1-2 | Yes |
| NBN | EN | 1993-1-2 | Yes |
| NBN | EN | 1994-1-2 | Yes |

| | | | |
|-----|----|----------|-----|
| NBN | EN | 1995-1-2 | Yes |
| NBN | EN | 1996-1-2 | Yes |
| NBN | EN | 1999-1-2 | Yes |

GERMANY

Yes.

GREECE

No.

HUNGARY

No.

ITALY

No, the translations of the final versions of the Eurocodes are not yet available at the present.

POLAND

| | | | |
|----|----|----------|------------------------|
| PN | EN | 1990 | Yes |
| PN | EN | 1991-1-2 | Yes |
| PN | EN | 1992-1-2 | Yes |
| PN | EN | 1993-1-2 | Yes |
| PN | EN | 1994-1-2 | Yes |
| PN | EN | 1995-1-2 | Yes |
| PN | EN | 1996-1-2 | Yes |
| PN | EN | 1999-1-2 | Will be available soon |

PORTUGAL

| | | | |
|----|----|----------|----------------------------|
| NP | EN | 1991-1-2 | Yes |
| NP | EN | 1992-1-2 | Yes |
| NP | EN | 1993-1-2 | Yes |
| NP | EN | 1994-1-2 | No. Will be available soon |
| NP | EN | 1995-1-2 | No. Will be available soon |
| NP | EN | 1996-1-2 | No. Will be available soon |
| NP | EN | 1999-1-2 | No. Will be available soon |

SLOVAKIA

| | | | |
|-----|----|----------|-----|
| STN | EN | 1991-1-2 | Yes |
| STN | EN | 1992-1-2 | Yes |
| STN | EN | 1993-1-2 | Yes |
| STN | EN | 1994-1-2 | Yes |

| | | | |
|-----|----|----------|-----|
| STN | EN | 1995-1-2 | Yes |
| STN | EN | 1996-1-2 | Yes |
| STN | EN | 1999-1-2 | Yes |

SPAIN

The Spanish translations of Eurocodes are managed by AENOR (Asociación Española de Normalización) and they are adapted as Spanish standard UNE-EN. These translations UNE-EN are available in paper or electronic format.

Nowadays, the state of relevant documents is as follows:

| | | | |
|-----|----|---------------|----------------------------------|
| UNE | EN | 1991-1-2:2004 | Available since 14/05/2004 |
| UNE | EN | 1992-1-2 | Only ENV available |
| UNE | EN | 1993-1-2 | Preprint. Will be available soon |
| UNE | EN | 1994-1-2 | Only ENV available |
| UNE | EN | 1995-1-2 | Only ENV available |
| UNE | EN | 1996-1-2 | Only ENV available |
| UNE | EN | 1999-1-2 | Only ENV available |

UNITED KINGDOM

Not applicable.

Question 2.4: National annexes

Are the national annexes available in internet?

Answers:

BELGIUM

No. The national annexes are part of the translations of the Eurocodes. You have to command them via the NBN.

CZECH REPUBLIC

No. The national annexes are part of the Czech translations of the Eurocodes.

FINLAND

Yes, at:

<http://www.ymparisto.fi/default.asp?contentid=357799&lan=fi&clan=en#a4>

FRANCE

No. The national annexes are part of French Office of Standardisation AFNOR: <http://www.afnor.org/>

GERMANY

No

GREECE

Yes. Many national annexes are available at the internet site : www.fireservice.gr

HUNGARY

Yes. The fire code is a law so we can use it free.

ITALY

No, the national annexes were discussed and approved by a National Committee, but they have not yet been published.

POLAND

No. The national annexes are part of the Polish translations of the Eurocodes.

PORTUGAL

No. The national annexes are part of the Portuguese translations of the Eurocodes.

SLOVAKIA

No the standards are not available on internet.

SPAIN

No.

UNITED KINGDOM

Yes.

APPROVALS PROCESS

Question 3.1: Route to get a project approved

What is the normal route to get a project approved?

Answers:

BELGIUM

Via a public body.

CZECH REPUBLIC

Via a public body.

FINLAND

Via a public body.

FRANCE

Via a public body. Local fire safety commission and with a favourable opinion of a notified body for not prescriptive fire safety engineering projects.

GERMANY

Via a public body.

Via a private body. In eastern and some northern federal states by inspection engineers.

GREECE

Via a public body.

HUNGARY

Via a public body.

Self-certified. It depends the type of the licence.

ITALY

Via a public body.

POLAND

Via a public body.

PORTUGAL

Via a public body.

SLOVAKIA

Via a public body.

SPAIN

Via a public body is the usual route. In Spain the local government gives the permission to open the commercial or industrial activity. The local officer analyses the project of fire safety and sometimes he orders a not compulsory report to Fire Service for more complex problems.

Via a private body is another possible route. In Spain some local governments use outsourcing to delegate the supervision and control of projects of fire safety by authorized private body.

Self-certified. In the future the local government will authorize the project by a “responsible statement” of designer but only for a small project or activity without risk.

UNITED KINGDOM

Via a public body.

Via a private body.

Self-certified.

Question 3.2: Fire brigade in the process

What is the position of the fire brigade in the process?

Answers:

BELGIUM

For public buildings you need a report of the fire brigade before you receive building permission.

CZECH REPUBLIC

Fire protection documentation shall be prepared, managed or supplied to State fire supervision body for approval and control.

If the supplied background or documentation show imperfections with respect to fire safety of buildings, the state fire supervision body stipulates conditions in the approving opinion according to the importance of the imperfections.

FINLAND

The building authority usually consults the relevant fire safety authority (usually employed by the fire brigade) for a statement.

FRANCE

They are consulted at the beginning of the project.

GERMANY

Consultation with the authorities / inspection engineers.

GREECE

Principal role regarding to approval of fire safety design projects, fire inspections etc.

HUNGARY

There are two levels in the legislation. In normal situation just the local Fire Department give the licence. If we need deviation from the code the Civil Defence is the authority having jurisdiction.

ITALY

The fire brigades control and approve the projects and issue the "Certificate of Fire Prevention".

POLAND

Projects must be agreed with a fire expert (fire engineer) appointed after passing the state exam, by the Chief Commandant of the State Fire Service. Before putting building into operation/use it must be checked and officially approved by the fire officer (State Fire Service).

PORTUGAL

Nowadays, due to the responsibility of technicians, is more limited with regard to approval of projects but will continue to play a role in the act of inspections and monitoring.

SLOVAKIA

Fire brigade is responsible for the process of accreditation.

SPAIN

Fire Service has a position only advisory but its reports have an important role in complex projects of fire safety.

UNITED KINGDOM

Statutory consultees to the building control approvals process.

Question 3.3: Third party review

Is a third party review process common?

Answers:

BELGIUM

No.

CZECH REPUBLIC

No.

FINLAND

Third-party review is usually required for FSE design.

FRANCE

No.

GERMANY

No.

GREECE

No.

HUNGARY

No.

ITALY

No.

POLAND

No.

PORTUGAL

No.

SLOVAKIA

I do not know the answer.

SPAIN

No.

UNITED KINGDOM

No.

Question 3.4: Alternative route of approvals for performance-based design

Is it necessary to follow an alternative route of approvals for performance-based design and what would that route be?

Answers:

BELGIUM

Yes via a request for deviation.

Only in the regulations of fire protections in industrial buildings is there a possibility to use performance-based design methods

CZECH REPUBLIC

The legislation has an article that allows engineers to develop projects based on fire safety engineering.

In case of any doubts which scope shall be prepared or managed the fire protection documentation, the decision appertains to the State fire supervision body, which shall decide on the basis of local conditions and after the examination of necessary documents.

FINLAND

No, because all approvals go through the local Building Authority.

FRANCE

No.

GERMANY

No.

GREECE

No.

HUNGARY

This is only possible for buildings to which it is not possible to apply the law. In these cases it is always required the agreement of the OKF The Civil Defence.

ITALY

Yes, the Performance-based Approach may be applied within a Derogation procedure according to the Decree of the Ministry of the Interior 09/05/2007.

POLAND

For new buildings (only) – there is so called “Departure from Regulation”: an investor applies to the Ministry of Infrastructure via a local building authority; The Ministry issues the final approval (usually after consultation with the State Fire Service).

Existing buildings - so called „substitute solution”: fire expert/fire engineer prepares the expert’s technical report of the substitute solution which must be agreed with the Regional Chief Fire Officer of the State Fire Service.

PORTUGAL

The legislation has an article that allows engineers to develop projects based on fire safety engineering. This is only possible for buildings to which it is not possible to apply the law. In these cases it is always required the agreement of ANPC – National Authority of Civil Protection.

SLOVAKIA

Our legislation do not adapt the conditions for possibility of proceed building design. For example engineering access. If there are some buildings do not have respect to prescription of Slovak Republic, they are adapted after consultation with other concrete departments.

SPAIN

In practice the designers use the Prescriptive Rules and only for exceptional projects the Performance-Based Code is allowed but in this case it isn't necessary to use an alternative route.

UNITED KINGDOM

No - functional regulations allow fire engineering as normal part of process.

Question 3.5: Time frame for the approvals process

What is the normal time frame for the approvals process?

Answers:

BELGIUM

Not defined.

CZECH REPUBLIC

Time for obtaining opinion issue:

- 30 days (design of common buildings).
- 60 days (design of specific buildings).

FINLAND

Not defined.

FRANCE

The last fire regulation allows the application of fire safety engineering (performance-based design), but in this case a favourable opinion for the study by a notified body is required. The fire scenarios for a performed based design are defined by local fire safety commissions.

GERMANY

2-6 months.

GREECE

Not defined.

HUNGARY

Not defined.

ITALY

The approval process, according to D.P.R. 37 (12/01/1998), is divided into two phases:

- Project Compliance to technical rules: 45 days from the date of submission;
- Issuance of the Fire Prevention Certificate: After completing works, the owner is required to apply for the certificate; within 90 days from the date of application, the fire brigades have to carry out an inspection to verify the compliance with the design prescriptions;
- Within another 15 days the Fire Prevention Certificate has to be issued.

POLAND

Normal time frame - 1 month. In a complex/complicated 2 months are allowed.

PORTUGAL

Not defined.

SLOVAKIA

The standard time is 30 days.

SPAIN

According to route selected for his approval.

UNITED KINGDOM

Variable dependent on complexity.

Question 3.6: Level of information needed

What level of information must be provided to the approving body?

Answers:

BELGIUM

The project of fire safety of the building.

CZECH REPUBLIC

The project of fire safety of the building.

Preparation of project of fire safety shall be proceeded on the basis of the requirements of specific legislation, normative requirements and requirements of the issued territorial decision.

FINLAND

All relevant information and documentation related to the fire safety of the building.

FRANCE

The project of fire safety of the building.

GERMANY

Detailed information. Fire safety concept and reports of all calculations.

GREECE

The project of fire safety of the building.

HUNGARY

The project of fire safety of the building.

ITALY

The project of fire safety of the building.

POLAND

The expert's technical report must prove that proposed alternative/substitute solution will provide not lower level of safety than prescriptive requirement.

PORTUGAL

The project of fire safety of the building.

SLOVAKIA

The project of fire safety of the building.

SPAIN

The full project of fire safety of the building, with engineering calculations and certificates of applicator of coatings or paints and their laboratory tests.

UNITED KINGDOM

All areas covered by regulations and approved documents.

Question 3.7: Specific facilitators

Are any specific facilitators required to help the engineer in the approvals process?

Answers:

BELGIUM

No.

CZECH REPUBLIC

Yes, Fire rescue service gives support to the designers.

FINLAND

Not defined.

FRANCE

No.

GERMANY

No.

GREECE

Yes, Technical Chamber of Greece could possibly give support to the designers.

HUNGARY

Yes, OKF gives support to the designers.

ITALY

Yes, Italian Fire Brigades give support to the designers.

POLAND

No.

PORTUGAL

Yes, ANPC gives support to the designers.

SLOVAKIA

Do not exist.

SPAIN

Usually the dialogue is open with the local officer.

UNITED KINGDOM

No.

INSURANCE COMPANIES

Question 4.1: Involvement

Are insurance companies involved in the design process?

Answers:

BELGIUM

Indirectly.

Some companies give discount when fire protection systems are foreseen.

Some companies ask for specific fire protection systems.

CZECH REPUBLIC

The insurance companies are involved rarely.

FINLAND

Not necessarily, but their views and conditions may have an influence on the design. It would be recommended to be in touch with the insurance companies at an early stage of the project and include them in the design process if necessary.

FRANCE

No.

GERMANY

Not usually.

GREECE

In most cases not.

HUNGARY

No.

ITALY

In most cases no.

POLAND

In most cases no.

PORTUGAL

In most cases no.

SLOVAKIA

No.

SPAIN

Requirements of insurance companies are more restrictive than the local regulations in important projects, for instance; skyscrapers or industrial installations.

UNITED KINGDOM

In most cases no.

Question 4.2: Discussion with insurance companies

Are insurance companies open to a discussion on fire safety?

Answers:

BELGIUM

Yes.

CZECH REPUBLIC

The insurance companies don't usually deal with discussion on fire safety. Insurance premium are offered in exceptional cases.

FINLAND

Yes, they usually are.

FRANCE

No.

GERMANY

Often they are conservative.

GREECE

In most cases, insurance companies are not particularly concerned with this matter when establishing insurance premium (except for high risk building categories).

HUNGARY

No.

ITALY

In most cases, insurance companies are not particularly concerned with this matter when establishing insurance premium.

POLAND

In most cases, insurance companies are not particularly concerned with this matter when establishing insurance premium. They usually run routine fire risk assessment. In an opinion of fire authorities it is not satisfactory.

PORTUGAL

In most cases, insurance companies are not particularly concerned with this matter when establishing insurance premium.

SLOVAKIA

At present time are the first steps in this field.

SPAIN

No. Insurance companies only have an important role in arson investigations.

UNITED KINGDOM

In most cases, insurance companies are not particularly concerned with this matter when establishing insurance premium.

QUALIFICATION REQUIREMENTS FOR DESIGNERS

Question 5.1: Certificates/licenses requirements

Is it required to hold specific certificates/licenses in the member state to undertake fire safety design and fire engineering?

Answers:

BELGIUM

Not really but there is a specific master degree:

International Master of Science in Fire Safety Engineering.

CZECH REPUBLIC

The fire safety design and fire engineering are elaborated only by qualified experts (certified technicians or certified engineers) according to Act No. 360/1992 Coll. on the Professional Practice of Certified Architects and on the Professional Practice of Certified Engineers and Technicians Active in Construction.

The conditions for qualification (certification) are required education, working experience and carry out expert test.

FINLAND

Fire safety engineers need to be certified. The certification process is administered by FISE Ltd. (www.fise.fi) and the requirements include:

- an applicable engineering degree
- sufficient studies in fire physics and relevant engineering topics
- a passed exam
- sufficient work experience in the field.
- Design based on prescriptive regulation can usually be carried out by practicing structural engineers.

FRANCE

No, is not required a special certificate for the realization of FSE studies, but in fact the number of the persons involved in these studies is very limited. The most of FSE studies in France are realised by notified bodies.

GERMANY

Generally not. In some federal states a license is required.

GREECE

Fire safety design projects are mainly edited by civil engineers (passive fire protection) or mechanical/electrical engineers (active fire protection) according to their professional rights.

HUNGARY

Fire experts need an exam. The Civil Defence give these permit to the fire experts.

ITALY

The designers are required to hold a professional qualification attending the " Specialization Course of Fire Prevention", supported by the Fire Department, according to Law n. 818/1984 and Decree of the Ministry of the Interior, 25/03/1985.

POLAND

Yes, but there are separate licenses for the structural designing and for the assessment of fire protection.

PORTUGAL

In the case of fire safety design for buildings of utilization-type of 3rd and 4th risk category, i.e., for those which have greater complexity, only designers with proven experience by professional association or that have been approved in recognized courses by ANPC can undertake fire safety projects related with the uses mentioned above.

SLOVAKIA

In Slovak Republic is important to have seemly education, specialist preparation and do the exam. After completion of that all conditions the people get the acknowledgment with name "specialist of fire protection, which is limited only for 5 years.

SPAIN

No. In Spain the designer is a person with technical academic formation, such engineer or architect.

In practice, there are professional designers for fire safety projects but not a specific license is necessary.

Otherwise, for a local officer or a referee of private body who revises and approves projects is required a specific licence.

UNITED KINGDOM

Currently there is no requirement.

Question 5.2: Specific design licenses

Are there certain types of buildings for which specific design licenses are required?

Answers:

BELGIUM

No.

CZECH REPUBLIC

No.

FINLAND

Yes, see answer directly above.

FRANCE

Actually, only for smoke evacuation of big volumes is delivered a licence by the Ministry of Interior.

GERMANY

No.

GREECE

No.

HUNGARY

No.

ITALY

There are no specific cases.

POLAND

Yes, regulations specify building types for which a project must be agreed with a fire expert (fire engineer).

PORTUGAL

Yes, for buildings of 3rd and 4th risk category.

SLOVAKIA

The solution of fire safety all buildings solve he specialist of fire protection.

SPAIN

Yes. The level of the licence allows the control of more complex projects of fire safety for local officers or external referees.

Usually, there are two levels: 1 or 2, function of local government of Spain.

UNITED KINGDOM

No.

Question 5.3: Licence holder

Is the licence holder an individual or an organisation?

Answers:

BELGIUM

Not answered

CZECH REPUBLIC

The license holder is individual, but under the auspices of the Czech Chamber of Certified Engineers.

FINLAND

The license holder is an individual.

FRANCE

Organisation.

GERMANY

Individual.

GREECE

The license holder is individual.

HUNGARY

The license holder is organisation.

ITALY

The license holder is individual.

POLAND

The license holder is an individual.

PORTUGAL

The license holder is individual.

SLOVAKIA

The license holder is personal entity.

SPAIN

The license holder is individual (levels 1 or 3).

The private body of control should have an additional licence which has a periodical inspection for its renovation from local government.

UNITED KINGDOM

N/A

Question 5.4 - Specific insurance

Is a specific insurance required?

Answers:

BELGIUM

Not answered

CZECH REPUBLIC

No.

FINLAND

Usually liability insurance is required, or at least recommended.

FRANCE

No.

GERMANY

Not answered

GREECE

No.

HUNGARY

No.

ITALY

No.

POLAND

All licensed structural engineers have to be insured.

For a fire expert (fire engineer) it is not obligatory, this is only a good practice but most are insured.

PORTUGAL

No.

SLOVAKIA

No. If you like it is solved with Standards.

SPAIN

No. The ordinary professional insurance is enough for individual holders.

UNITED KINGDOM

No.

PRECEDENCE OF PERFORMANCE-BASED FIRE ENGINEERING PROJECTS

Question 6.1: Project details

Project details

Answers:

BELGIUM

There were already some PhD projects in the Ghent University, and also the Master thesis's of the first session of the International Master of Science in Fire Safety Engineering.

CZECH REPUBLIC

Fire dynamic analysis and design of construction protection.

FINLAND

Salmisaari Wellness Centre, Helsinki, about 20 000 m².

<http://www.ruukki.com/References/Sport-arenas-and-terminals/>

FRANCE

The temperature of the fire compartment according the adopted fire scenario.

GERMANY

Not answered

GREECE

Not answered

HUNGARY

All the properties of the fire compartment are decided by authority having jurisdiction.

ITALY

The definition of fire scenarios and the temperature of the fire compartment according the adopted fire scenario.

POLAND

Fire scenarios, temperatures in particular compartments, fire duration, final safety certificate.

PORTUGAL

The temperature of the fire compartment according the adopted fire scenario.

SLOVAKIA

Calculation in agreement with Standards.

SPAIN

Smoke control, temperatures and evacuation.

Structural resistance of structure.

Alternative measures of security

UNITED KINGDOM

No specific criteria for the use of fire engineering as an alternative to other methods but usually size and complexity are the main reasons.

Question 6.2: Performance-based

What was performance-based?

Answers:

BELGIUM

N/A

CZECH REPUBLIC

Use various methods of quantitative analyses (deterministic or combined methods), not only in the area of fire protection of buildings.

FINLAND

Structural fire design of steel structures.

FRANCE

The time evacuation of the building, the stability of the building must be ensured throughout all fire, etc...

GERMANY

Not answered

GREECE

Not answered

HUNGARY

The fire scenarios and the structural fire behaviour.

ITALY

The fire scenarios and the structural fire behaviour.

POLAND

Calculation of Required Safe Escape Time or Available Safe Escape Time; selection of fire protection installations in an individual building - based on the assumed scenario of the fire development (computer simulations - fire models); defining parameters of fire protection installations (e.g. smoke control systems).

The fire scenarios and the structural fire behaviour.

PORTUGAL

The fire scenarios and the structural fire behaviour.

SLOVAKIA

Calculations.

SPAIN

The fire scenarios

UNITED KINGDOM

Tenability for life safety, means of escape and structural stability are the main performance criteria.

Question 6.3: Used techniques

What techniques are used to justify the non-compliance?

Answers:

BELGIUM

N/A

CZECH REPUBLIC

In technical standards is defined generally that in these techniques are buildings with extraordinary risk or special risk character in term of fire safety.

FINLAND

FDS simulations based on statistical data on fire loads in different premises. The cooling effect of sprinklers was partly accepted.

FRANCE

The difficulties to applied the prescriptive rules.

GERMANY

Not answered

GREECE

Not answered

HUNGARY

If the regulation, due to the big dimension in plan and height of the building, is not adequate to be adopted, the building can be classified as “atypical danger” and fire safety engineering can be used.

ITALY

The regulations are basically prescriptive and concern several types of building use (DM 12/02/1982).

The performance-based design and advanced calculation methods may be applied either in the lack of prescriptive rules or in the case of “derogation” with respect to prescriptive rules. The performance-based design has to developed according to D.M. 09/05/2007.

POLAND

Calculations, an individual assessment, agreements with local fire brigade authorities; a new project on creation of the supporting system for all fire brigades (State Fire Service) has been implemented (special IT tools allowing simple exchange of digital data).

PORTUGAL

If the regulation, due to the big dimension in plan and height of the building, is not adequate to be adopted, the building can be classified as “atypical danger” and fire safety engineering can be used.

SLOVAKIA

If it is in conflict with legal prescriptions.

SPAIN

Fire dynamic analysis techniques and advanced calculation models.

UNITED KINGDOM

Fire engineering is used along with code-based methods – no specific reasons or techniques required before it can be employed.

Question 6.4: Approvals route

What approvals route was used?

Answers:

BELGIUM

N/A

CZECH REPUBLIC

The fire safety project must be approved by Fire rescue service.

FINLAND

Local building and fire authorities together with responsible Fire Consultant, structural designer and steel structure manufacturer. The main simulation was done together with research institutes, VTT, TUT.

FRANCE

The fire safety project must be approved by local fire safety commission.

GERMANY

Not answered

GREECE

Not answered

HUNGARY

The fire safety project must be approved by Civil Defence.

ITALY

The fire safety project must be approved by Regional Fire Brigades.

POLAND

The fire safety project must be approved by entitled fire officer or (depending on a type of building) by Authority of Fire Brigade.

PORTUGAL

The fire safety project must be approved by ANPC – National Authority of Civil Protection.

SLOVAKIA

The accreditation is done by the Fire Brigade of Slovak Republic.

SPAIN

Ordinary route in local government.

UNITED KINGDOM

Usual route through functional building regulations.

PASSIVE FIRE PROTECTION

Question 7.1: Product approvals

What are the possible product approvals of fire protection materials and methods (National, ETA or CE marking)?

Answers:

BELGIUM

National: BENOR ATG

ETA

CE marking.

CZECH REPUBLIC

Namely CE marking.

FINLAND

CE marking / ETA for cases where Eurocodes are used

National product approvals for cases where the National Building Code is used for design / CE-marking or ETAs can sometimes also be used in this case.

FRANCE

CE marking.

GERMANY

National ü-marking or European CE-marking.

GREECE

CE marking.

HUNGARY

CE marking.

ITALY

CE marking.

POLAND

European Certification Process (CE marking)- with requirements of the EU harmonized standards. This procedure is required to issue a declaration of conformity with CPD (construction products) or PPE (personal protective equipment) directives by manufacturer – obligatory for all products used for fire protection.

National:

Regulation of the Minister of Interior and Administration dated 20th of June, 2007 regarding the list of products which ensure public safety or health care and life protection or property protection and

concerning the rules of issue the certificate of admittance for these products to use (O. J. No. 143 pos. 1002),

With requirements of Polish Standards, national technical approvals - this procedure is required to issue the national declaration of conformity and mark products with construction marking by its manufacturer.

PORTUGAL

CE marking.

SLOVAKIA

Certificate.

SPAIN

At the moment, the CE marking is not mandatory in Spain. The national standards tests in Spanish laboratories are required to certificate the fire protection materials and its application.

Nevertheless, there are several protocols for semiautomatic certification of products by the inter-laboratories European network.

After an extended period of transition, there are previsions of more two years for the mandatory CE marking in Spain

UNITED KINGDOM

National and CE marking